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The Balm of Gilead: Neuroaesthetics of Empathy in Fiction

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Part I: The Neuroaesthetics of Empathy in Literature

What is empathy? Why is it so important for our human condition? How does it promote human flourishing? Is there a neuroscientific background for empathy? Our common understanding of empathy is summarized by the following Merriam-Webster dictionary definition: "the ability to understand and share the feelings of another." We prize the ability to understand each other because of both its pragmatic and intrinsic nature. Pragmatically, empathy improves our ability to communicate and sense each other's needs. However, empathy is also important in and of itself as it allows us to know and be known by our fellow humans. To know and be known by someone else is the basis for our human desire for relationship and connection. Ultimately, empathy allows for us to form these key connections and meaningful relationships, especially with people from diverse backgrounds whose lives and cultures we have never experienced. But how do we cultivate it? And how do we not only cultivate empathy but enable it to be long-term and/or permanent? One method of empathetic cultivation has existed in human society for centuries and yet we may not even realize it—that method is literature.

Literature is another way of understanding the world and people around us, providing a unique glimpse into unfamiliar experiences. A successful author crafts such a careful and elaborate story that the characters and scenarios feel quite real to us, such that that literature itself can produce empathy in the reader for the circumstances and characters created. How is literature able to do this? How can mere words on a page of paper inspire such a wealth of feeling toward and understanding of people and experiences that we have never encountered in reality? An emerging field in neuroscience, known as "neuroaesthetics," studies "the neural consequences of contemplating a creative work of art, such as the involvement of the prefrontal cortex (in

thinking) and limbic systems (for emotions)" (Lindauer). Neuroaesthetics generally examines how the aesthetics of art affect the brain cognitively and affectively. One branch of neuroaesthetics specifically seeks to illuminate how the written word affects the human brain to produce emotion and cognition (Burke, "The Neuroaesthetics"). Two of the key neural systems specifically related to empathy in literature are mentalizing and mirroring. These two systems allow for the activation of brain regions such that literature can cultivate empathy in a reader by first producing an emotional response and later a cognitive response. Combined, a reader's empathy towards their fellow human beings is enhanced by their perusal of literature, and by honing their craft according to these neural principles, an author may improve the quality and degree of empathy in their writing.

Neuroscience breaks empathy down into two main categories: cognitive empathy and emotional empathy. Cognitive empathy refers to our ability to mentalize another's situation or understand their perspective. Emotional empathy is our ability to actually adopt their emotions or feel what another person is feeling (Koopman). Cognitive empathy can also be seen as a more "third-person" understanding while emotional empathy lends a more "first-person" feel. Whereas cognitive empathy is more about understanding, emotional empathy takes us one step closer to feeling like we are actually experiencing what another person is experiencing (Burke, "Empathy at the Confluence" 9). The neuroscience appears to slightly differ depending on which form of empathy is being enacted; however, there are quite a few theories on how the two forms are related and even work together. The lines can become quite blurred, as is commonly the case with the science of the brain. When these lines are blurred, the general term used is "affective cognition" which refers to the integration of emotional and cognitive processes that led to observed behaviors (Elliot). Another term that gets at a similar concept is embodied cognition

which examines the connections between the body and the mind (Burke, "Empathy at the Confluence" 12). When examining literature specifically, we seek to illuminate how the fictional characters' experiences affect the reader's embodied mind.

Much of the research on empathy in literature centers on a scientific concept called the "Theory of the Mind" (ToM). ToM refers to our human ability to predict the behavior of others based on our perceptions of their thoughts and feelings (Byom). It is the closest to mindreading we seem to be capable of. This ability to predict the state of others often comes from common social cues or knowledge that comes from similar life experiences. These social cues can include physical cues, such as body language and facial expressions that we have learned to interpret a certain way based on societal norms. Our ability to predict based on perceptions, therefore, becomes more difficult when interacting with other cultures or communities which might interpret actions or behaviors differently. ToM has commonly been divided into two subcategories: Theory Theory (TT) and Simulation Theory (ST). Theory theory explains that our ability to predict the actions of others is rooted in folk psychology (Burke, "Empathy at the Confluence" 10). Folk psychology, also known as "common-sense psychology," basically refers to our everyday or "common-sense" methods of understanding actions and behaviors (Hutto). Simulation theory, however, argues that we "mindread" others by simulating the emotional and mental experiences of someone else—essentially, putting ourselves in someone else's shoes (Burke, "Empathy at the Confluence" 10). ToM as a whole, however, seems to necessitate the interaction of these two subcategories—to fully predict the behaviors of others, it seems ideal to both infer another's actions based on folk psychology and strive to simulate their mental state to fully understand their experience.

I. Empathy Measurement

How do we measure empathy? There is a multitude of macroscopic and microscopic techniques to accomplish this analysis. On the neuronal level, functional magnetic resonance imaging (fMRI) scans are used to measure the activation of a region in the brain based on changes in the blood flow. It is postulated that emotional and cognitive empathy correlate to different regions of the brain, so depending on what is activated, inferences can be drawn as to which system of empathy is at work or whether it is a blend of both (de Waal). Measurement of response times and eye movement can also be related to these regions of the brain. On a more macroscopic level, participants in a study may be asked to rate passages or words, complete surveys, or fill out some other sort of self-report that assesses their reaction to a piece and their empathetic response. These various elements can be brought together to see what correlations, if any, exist across the different levels of measurement. For example, the Berlin Affective Word List (BAWL) system is used for the German language which correlates three levels of analysis. The levels are "experiential (subjective ratings, self-reports), behavioral (response times, oculo- and pupillometric responses), and neuronal (brain-electrical and fMRI methods)" (Jacobs 139). This combination of macroscopic and microscopic forms of analysis serve to inform the researcher whether their results are significant.

One specific measurement of the effect of words on the brain that is associated with studies of empathy is a text's emotional valence. According to the APA Dictionary of Psychology, emotional valence is "the value associated with a stimulus as expressed on a continuum from pleasant to unpleasant or from attractive to aversive" (Citron). Emotional valence is measured across 2 axes—emotion and arousal. The range of emotion from negative to

positive is measured against the intensity of the brain's arousal from low to high (Citron). For example, one study suggested that our liking of a story depended on two main factors: our ability to empathize with a character and our moral evaluation of the story. To test this hypothesis, the study measured the emotional valence of texts using an Interpersonal Reactivity Index (IRI0 which is a 4D self-report by which a participant estimated their empathetic response. This was combined with an fMRI scan of their brain activation. Combining these two methods, the study found that participants who read negative emotion-valenced stories experienced stronger neural activation than when reading neutral stories. ("Neutral" simply refers to stories lacking any significant emotional impact.) This suggested that stories with more emotion, regardless of whether the emotion was positive or negative, impacted the brain more significantly, and participants liked these stories more as well. The emotional impact was correlated to an increase in empathy of the reader for the textual material (Altmann).

As briefly mentioned, through fMRI and MRI studies, it has been suggested that the two different forms of empathy have different neural networks due to different evolutionary origins. Emotional empathy is associated mainly with activation in the somatosensory and insular cortices, limbic areas, and anterior cingulate cortex (Burke, "Empathy at the Confluence" 18). It is important to note that this activation occurs due to imagination or perception of another person's emotions—no other stimuli, emotional or sensory, is affecting the observer (Burke, "Empathy at the Confluence" 23). Further, since this form of empathy is considered more automatic, it is suggested to have occurred earlier phylogenetically. Phylogenetics simply refers to the evolutionary history and development of a species. Cognitive empathy, on the other hand, is associated with activation in the medial prefrontal regions and superior temporal sulcus (STS), as well as the parietal lobe and sometimes the temporal lobe (Hein). This version of empathy and

the associated brain regions appear to depend more on the development of the human brain than emotional empathy (Burke, “Empathy at the Confluence” 18).

Related to these thoughts on ToM’s subdivisions and the two types of empathy, two neural systems of producing empathy are commonly discussed: mirroring and mentalizing. The mirroring system claims that, through the firing of mirror neurons, we may mirror or simulate the actions and mental states of the characters we read about (Clay 23). This process is very automatic, meaning it occurs rapidly without requiring a lot of conscious, cognitive processing by the mind. It is commonly related to emotional empathy because both involve the observation of another’s experience and having an automatic affective or emotional response. This promotes a sense of “oneness” between the observer and the character or person being observed (Burke, “Empathy at the Confluence” 18). On the other hand, mentalizing is a more controlled, time-intensive response. Another term for mentalizing is “high-level mind-reading” (Clay 323). It is related more closely to cognitive empathy as both involve conscious processing of another’s point of view to understand their perspective.

II. Mirroring

Both of these systems of processing empathy are relevant to the discussion on literature. Both can occur in the reader as they encounter the experiences and emotions of a character in a novel. The process of mirroring while reading is particularly fascinating. Mirroring commonly occurs by a system of mirror neurons. Mirror neurons are neurons that fire or are activated both when you perform an action and when you witness someone else performing the act. Thus, you experience the same brain activity by simply observing an act as you would if you were doing it yourself. Mirror neurons were first observed in the ventral premotor region F5 of a monkey (Kilner). However, a homolog of this brain region exists in the human brain’s inferior frontal

gyrus (IFG) which is located in the prefrontal cortex. This region is the Brodmann area 44. Specifically, Brodmann area 44 is the posterior part of Broca's area in the left cerebral hemisphere (Figure 1). In general, when an action is perceived, the premotor cortex is activated which is associated with mirror neuron activation. The brain then essentially maps out the action with sections of the brain activated that are associated with whatever body part was involved in the observed action (Aziz-Zadeh). The map of activation produced in the brain is like an "inner imitation of the action" with mirror neurons simulating the action (Clay 317).

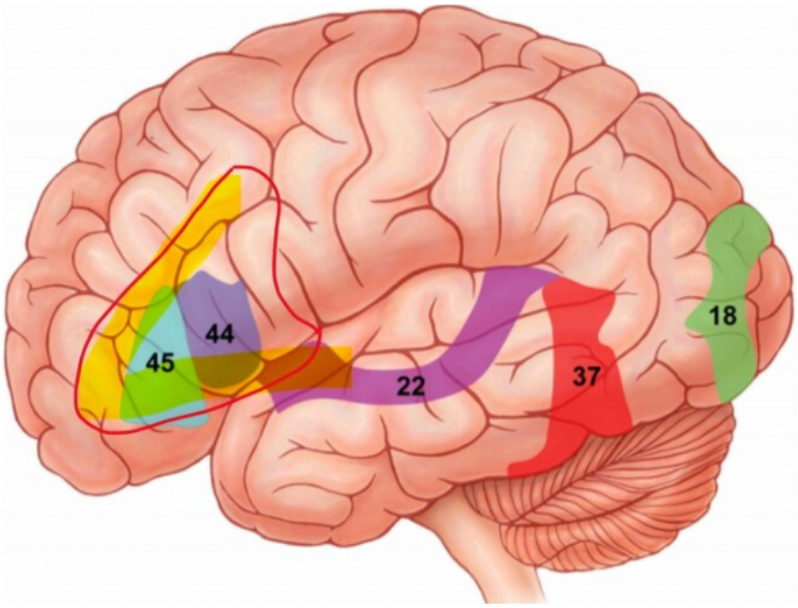

Figure 1. Brodmann Area 44 in Broca's area from: Harnish, Stacy M. *Anomia and Anomic Aphasia: Implications for Lexical Processing*. Edited by Anastasia M. Raymer and Leslie J. Gonzalez Rothi, vol. 1, Oxford University Press, 2015. *DOI.org (Crossref)*, https://doi.org/10.1093/oxfordhb/9780199772391.013.7. Broca's area (signified by the red outlined section) encompasses Brodmann areas 44 and 45. Brodmann area 44 is located on the posterior side of Broca's area.

The location of Brodmann area 44 is of particular relevance to the discussion of empathy in literature because Brodmann area 44 is located in Broca's area. Broca's area is heavily involved in speech and language processing. If lesions, or some kind of brain damage, are inflicted on this

area, then a myriad of language disorders are known to arise (Miall, "Neuroaesthetics"). This suggests that the neural system of mirror neurons is also involved in language processing and evolution. This suggestion was later supported by a variety of studies that showed that mirror neurons could be triggered merely by reading about an act being performed—the action did not even have to be observed. One such study specifically found that mirror neurons could be activated simply by perceiving an action word in a sentence without even having to observe the action itself (Boulenger). Other studies have suggested and confirmed that the neural mirroring of another's actions is related to our ability to empathize with said person (Clay 316). For example, it was discovered that "potential mirror activation in bilateral IFG and STS was found to correlate with empathy scores" (Altman, Clay 316). Thus, if mirroring is related to empathy, and mirroring can occur via the act of reading, then it appears that the act of reading can affect our ability to empathize via the activation of our mirror system. This may be referred to as an embodied semantic framework where we embody the language that describes a motor or perceptual experience (Aziz-Zadeh, Clay 317).

The neural mirror system relates to empathy in reading beyond just the perception of an action, however. Mirroring also allows for the simulation of the characters' experiences by imitating what the characters' senses encounter. Auditory mirror neurons can be triggered such that the reader's brain is activated as if they were actually hearing the words or sounds a character is making (Gazzola, Clay 319). Further, mirror neurons will mimic facial expressions and hand gestures. In their article "Mirroring Fictional Others," Clay and Iacoboni describe this experience as the following: "By internally imitating the facial expressions of others, mirror neurons enable the reader to activate the neural pathways for the associated emotions and directly 'feel what the character feels'" (Clay 322). This imitation allows us to connect to the

emotions of the characters and enhances our ability to process and understand the condition of their minds. It has also been proposed that mirror neurons for touch could exist; however, no conclusive evidence has thus far been produced. In one study, it was observed that when an individual observed someone else being touched, that individual's somatosensory cortex was activated in the same area that is activated when that individual is actually being touched (Keysers). More research would have to be conducted to elaborate and verify this experience; however, the brain's overall ability to simulate the emotional and physical state of a fictional character based on mere words on a page is astounding and brings up a variety of questions, such as how we as writers can enhance our language to improve the specificity and quality of simulation in the reader. This question specifically provokes further study on this topic.

III. Mentalizing

The second, higher-level neural process involved in empathy is mentalizing. Mentalizing is the more complex way of encountering a text that is more time-intensive, as opposed to the automatic nature of mirroring. Mentalizing is often related to higher-order cognition and our comprehension of foregrounded and backgrounded elements of a text. Backgrounded elements require less active cognition because they comprise the elements of the story that are familiar to the reader and do not require extensive pauses or reading time to comprehend their meaning. Typically, this will involve grammatical structure that follows typical linguistic conventions. The literary elements will be familiar as well, including commonly used metaphors, settings, tropes, etc. On the other hand, foregrounded elements refer to elements that are "unstable and changeable manifestations of neurocognitive processes" (Gambino). In other words, foregrounded elements encourage the reader to pause and consider their interpretation or meaning. Another definition of foregrounding is that its purpose is "to make strange" which is

done by “prompting defamiliarization, evoking feelings, and prolonging reading time” (Miall, “Foregrounding”).

Foregrounding is typically divided into two subcategories: parallelism and deviation. Deviation involves deviating from typical or familiar linguistics, introducing surprise in the reader and provoking deeper reflection. This can include using ungrammatical sentences, paradoxes, oxymorons, and unfamiliar metaphors. An example of deviation is found in a Persian poem by Shamlu: “We are the reasonless-living. They are of their death-reason aware.” This can be generally understood as “We don’t know why we are alive. They know why they are dying” (Pirnajmuddin). However, the line is a successful example of deviation because it deviates from linguistic norms with the inventive words “reasonless-living” and “death-reason.” It provokes a pause in the reader to consider what the author means by these unfamiliar phrases. The other category of foregrounding is parallelism which also introduces an element of surprise in the text but does so through repetitive or parallel schemes. These schemes include rhyme, meter, alliteration, or other forms of repeating grammatical structures (van Peer). A famous example of parallelism is from Shakespeare’s Othello: “I kissed thee ere I killed thee.” The simple sentence contains two clauses that parallel each other with the same subject-verb structure: “I kissed thee” and “I killed thee.” The only difference is the verb, and even the two verbs are alliterative. Paralleling these two specific verbs is particularly effective at introducing surprise because they are in opposition—kissing is an act of love and killing an act of hate. Both parallelism and deviation successfully defamiliarize a text and have a surprising effect on the reader.

Foregrounded elements have been related to empathy. One specific study researched defamiliarization in literature through the modification of familiar proverbs. The study found that the modified or innovative proverbs produced greater activation in brain regions related to

affective responses, including the IFG, left IOG, and Brodman's Area 44 (Bohrn). Studies have further argued that foregrounding can increase or even precondition empathy in the reader as foregrounded elements have been related to longer periods spent reading and higher ratings for how striking and affecting a piece of literature is (Miall, "Foregrounding"). Further, a study discovered that texts with more foregrounding elements led to the highest empathic understanding (Koopman). The cultivation of these elements in a piece of literature is in general crucial for the piece to be effective.

IV. Bringing Together Mentalizing and Mirroring

A few different systems have been proposed that combine mirroring and mentalizing to provide a clearer picture of how empathy can be fostered through reading literature. One suggested way of conceptualizing how we process empathy arranges a hierarchy of processing. This theory suggests that we have lower-order sensory and motor experiences, lower-order emotional responses to our experiences (including our mirroring), higher-order emotional levels, and several higher-order levels of conscious mentalizing (Burke, "Empathy at the Confluence" 26). This theory seeks to elucidate how mentalizing and mirroring may be related by arranging them in this logical order.

A similar ordering sees there to be three mechanisms involved in mirroring that eventually include mentalizing. These three mechanisms are layers of mirroring, varieties of mirroring, and control of mirroring, with the first and last mechanisms potentially being related to the process of mentalizing. The first mechanism—the layering of mirroring—refers to how mirror neurons can have different levels of complexity in their responses to the perception of action. Mirror neurons can differ in their response rates or firing rate changes. Some mirror neurons, known as super mirrors, even have opposite firing rate changes when observing the

same action such that they almost cancel each other out (Clay 324). This activity was observed via electrode recordings of brain activity (Mukamel). One explanation for this observation is that the brain controls what it imitates—perhaps there are some instances where imitation is not desirable or where the brain prefers to differentiate itself from another individual instead of blurring the lines of mental states (Clay 324). This explanation implies a level of control that could involve the advanced cognition of mentalizing; however, the exact mechanism by how this would occur is unclear.

The second mechanism is the varieties of mirroring which refers to the fact that mirror neurons can exist in different locations of the brain, apart from just the Brodmann area and locations that are directly associated with language. Depending on the neural system of their location, therefore, mirror neurons can have different functions and produce different affective responses. For example, mirror neurons can trigger emotions in the insula while they can provide greater understanding of motivation or intention in the parieto-frontal circuit PF/PFG-F5 (Clay 324). The location of the mirror neurons, therefore, often determines what kind of reader response is evoked.

The third mechanism is the control of mirroring. This mechanism most clearly relates to the process of mentalizing. It suggests that there might be a way of controlling the mirror system in the brain that exists apart from the mirror neuron itself. Perhaps the brain has a way of regulating mirror responses for general purposes and specific responses (Clay 324). For literature specifically, perhaps the degree to which the brain controls its mirroring is related to how well the literature is written or to what degree it first inspires simulation and second motivates a deeper understanding.

This is just one proposal for how mirroring and mentalizing could work together in the brain to elicit empathic responses from a reader. However, though it appears that both mirroring and mentalizing can result in empathic responses, a novel's ability to have long-term empathic effects seems to rely more on the brain's advanced cognitive abilities. This is made clearer when considering how mentalizing is closer related to cognitive empathy and mirroring to affective empathy. To some degree, affective empathy can result in the brain almost being distracted by the overwhelming nature of emotion. It blurs the lines between our state and the state of another such that the brain can have a difficult time differentiating between selves. The affective state can be too immersive per se. While immersion is beneficial, past studies have shown that subjects can be more "reflective and mentally meta-aware" when experiencing cognitive empathy due to the distance it can provide from the affective state. This ability to differentiate between ourselves and another person is also important because it promotes self-distancing and considering another's unique experience. Cognitive empathy also tends to provide deeper opportunities for reflection because it requires more time for processing (Burke, "Empathy at the Confluence" 29). It also allows the brain to experience another's mental state without claiming it as your own or clinging to it. Therefore, it allows for a shift in perspective and can improve one's ability to reason and problem-solve, and in general, understand another's point of view (Burke, "Empathy at the Confluence" 30).

Even though much of this information is based on hypotheses from observed correlations, this knowledge on the neural basis of empathy can still inform our approach to writing narratives. Action words are key—strong, sensory-oriented verbs are one of the best methods to allow the reader to clearly and fully reproduce the mental image of the scene in their heads. It also allows for the most accurate mirroring brain activation such that the reader can experience

as close to the characters' emotions as the author desires. There is much room for error in this technique because if the action or other details are “unclear/nonspecific/misleading” then we will not correctly perceive the action and won’t mirror it as closely as we could have if the author had been clearer in their writing (Clay 325). On the other hand, it might also be interesting to consider when an author might desire a more vague or ambiguous scene that could trigger a multitude of responses from the reader depending on their past experiences. However, generally, these action words and details are key for the cultivation of empathy in a text. Literary foregrounded and backgrounded elements are also key. The backgrounded elements are necessary for readability and setting of the scene; however, foregrounded elements are key for the reader to participate in cognitive empathy. These foregrounded elements include techniques like parallelism and deviation that create new meaning in the text.

V. Conclusion

Empathy overall is foundational for the formation of meaningful relationships and connections as it bridges communities and cultures, and much of the recent neurological research suggests that literature can be a crucial method for fostering empathy in the reader. However, much uncertainty remains, as the neuroaesthetics of literature includes so many variables, not all of which could be considered in every study performed. We are embodied humans, meaning every little part of us and our human experience can affect how we read and interpret a text. This includes factors like the reader’s environment, their mental and physical state when encountering the text, and their previous memories, experiences, and biases. Much of the research referred to here also requires further study to verify and replicate results, and therefore, many of the conclusions drawn are mostly suggestions based on observations and correlations. The neuroaesthetics of empathy in literature remains an exciting and ongoing search into how and

why literature can provoke empathy in the reader for characters and circumstances only encountered on a sheet of paper or digital screen.

Part II: The Balm of Gilead

John Ames, the protagonist of Marilynne Robinson's *Gilead* that won the 2005 Pulitzer Prize for Fiction, is a remarkable example of immersive and cognitive mapping of empathy that involves both mirroring and mentalizing. In the novel, Ames is writing to his son whom he loves deeply. His son is very young, and Ames is very old. Ames is worried that he will not be around much longer; thus, he is writing to his son to share all the wisdom and experience that he won't be able to share as his son grows older. As a result, Ames writes in a deeply personal way—much of the novel is the complex and private thoughts within his head as he reflects on memories and guides himself through the present. He engages in a constant journey of "routing" and "rerouting" himself. Rerouting in this context refers to Ames' cognitive processing of his thoughts that he continually affirms or revises in his search for deeper understanding of the world around him. By guiding the reader through Ames' routing process, Robinson creates a sort of mind map within Ames' head that the reader can model in their own search for empathy and attention.

Ames is a very quiet character. He is a pastor, so he spends much of his time either preaching or preparing his sermons through prayer and a meticulous study of Biblical and theological texts. When not at the pulpit, his personality does not command a room or even the attention of very many others. In fact, he is quite mellow, calm, and not commonly given to outbursts or overly intense displays of emotion. He understands what it is to be lonely, telling us about this "time of [his] loneliness" which "was most of [his] life" after his first wife passed away and before he married his second wife, Lila (cit). Further, he demonstrates an immense capacity to listen, shown by the numerous times he welcomes others into his home; however, he

is also a deeply private man when he needs to be. He needs his time and space alone, most often with his radio, his thoughts, and his prayers.

It is intriguing therefore that Robinson gave us Ames as the lens through which to view this story. On the neuroaesthetic level, the "avatar," or the character through whom we enter the fictional world of a novel, is crucial to the level of empathy we experience. It is natural for us to adopt the first-person narrator as our avatar, which is the case for John Ames. As a reader, we tend to be "prisoners to representations, whether oral, textual, or digital, relating them to ourselves and adopting/deploying them as avatars of our positions and needs" (Iacoboni). Essentially, we are locked to this avatar; thus, they must be relatable to us to some degree for us to experience empathy. In the case of John Ames, he is extremely accessible—it is his interior world that we are allowed entrance into, and his mental flexibility, curiosity, and acute attention to the world around him all enhance our reader experience and heighten the levels of empathy we can have for both Ames and Ames's world. Ultimately, what makes Ames particularly appealing and engaging as a character is that he is not foreign to our human experience. He is not someone we see immediately as different from ourselves, even though he is an elderly pastor from a small town in the 1950s. But the deeper we read, the more we begin to realize that there is so much more that he does see, so much that we may not have been paying attention, and by the time we reach this point of recognition, we have already been mirroring Ames and learning from his mental processing.

I. Outward Observation

John Ames, through the letters he is writing his son, demonstrates each of the sectors of typical psychological mapping of empathy. The mapping incorporates and re-presents the mental, emotional, and physical aspects of our human experience, thus increasing our

understanding of the actions of others. The four sectors of mapping include what a person feels, thinks, says, and does. John Ames adds a fifth one—what a person sees. He first describes to us what he sees, then what he thinks and feels about what he sees, and further, how he reacts, what he might say and do afterward. Of course, this is not necessarily a linear process, but through this overall journey of seeing, reflecting, and acting, Ames routes and reroutes himself through his life and provides a model for the reader to do likewise.

Ames often begins by seeing, by paying careful attention to the world around him. He tells us, "this is an interesting planet. It deserves all the attention you can give it." Ames guides us through his story by finding beauty in even the most "mundane" moment. By describing such moments simply but vividly, he then enables the reader to experience that same beauty and encourages us to engage in the same mental habit, the same practice of attention. For example, early in the novel, Ames is reflecting on a scene he encountered a few days prior. He describes two young men who were hanging out by a garage on a sunny day, trading jokes and laughing. He writes that they were "always so black with grease and so strong with gasoline I don't know how they don't catch fire themselves" (Robinson 5). These visceral details, though not exactly beautiful, immerse the reader in the scene, giving us a glimpse of the attention that Ames pays to his surroundings.

Fiction writers excel at this scenic characterization as it is a tool of their trade, and it has been shown to specifically enhance the reader's experience of affective empathy on the neural level as well. Affective empathy refers to our capacity to *feel* Ames' emotions and experiences. This is achieved by the "mirroring" that can occur between us and the text. As we read these words, our motor neurons are triggered such that we experience the same brain activation as if we were performing this action or observing this scene in our physical reality. This is referred to

as an “embodied semantic framework,” or a framework where we embody language that describes a motor or perceptual experience (Aziz-Zadeh, Clay 317). We physically feel as if we were experiencing the same circumstances. This mirroring experience is part of the theory of how a reader experiences immersion in a text where immersion refers to the “sense of ‘being there’ or ‘transport’” in fiction (Miall, “Neuroaesthetics”). Therefore, the descriptors that Robinson chooses are crucial for us to be immersed in Ames’ experiences and also crucial for Ames himself to fully communicate his experiences to his son through these letters. Robinson seeks to place us in these moments just as Ames seeks to place his son in them before his coming departure from this earth.

II. Inward Observation

However, Ames does not stop at the outward details. He shares his inward observations and thought processes as well where he affirms what the scene meant to him. As discussed, his outward observations serve for an immersive experience for the reader, leading to affective empathy, but it is his inward processes that especially enhance our experience of cognitive empathy. Cognitive empathy refers to our ability to *understand* Ames and his emotions. Though simple, Ames declares that the scene between the two young men "seemed beautiful to me. It is an amazing thing to watch people laugh, the way it sort of takes them over.” Ames loves laughter. He loves to bear witness to it, even if not directly engaging in it. His witnessing is perhaps still a form of engaging—he is present for it, and he takes pleasure in it. He finds it beautiful, the laughter traded between these two young “fellows” who he says don’t go to church and are lighting up their cigarettes (Robinson 5). By this description, we as the reader begin to understand why he found this scene beautiful, and we can empathize with his conclusions.

Further, Ames' attention is powerful because it allows him to participate in an almost godly act—to see the world as it is and to declare it fundamentally beautiful and good, even if it is not perfect (and it certainly is not). This act of outward and inward observation is a clear display of his commitment to being as good. It is a principle emphasized by many thinkers including, most prominently perhaps, Augustine, and Aquinas after him. In his privation theory, Augustine suggests that evil is not something that exists in itself but rather is the corruption of nature or the privation of good. By this theory, the world's nature is good, and evil is its corruption (Augustine). By Ames' attention, pleasure, and declaration of beauty, however, he is recognizing the goodness of the existence of these two young fellows, and that goodness is the primary truth about them.

Ames' attention undoubtedly has roots in a faith-based conviction to deeply admire and respect the world his Creator has formed. In another instance of careful observation, he writes about a young couple walking together in the sun after a rainstorm. He writes, "On some impulse, plain exuberance, I suppose, the fellow jumped up and caught hold of a branch, and a storm of luminous water came pouring down on the two of them, and they laughed and took off running, the girl sweeping water off her hair and her dress as if she were a little bit disgusted, but she wasn't." He again affirms this scene as "a beautiful thing to see." Then he takes his observation a step further, saying that "it is easy to believe in such moments that water was made primarily for blessing and only secondarily for growing vegetables or doing the wash" (27-28). When he attunes himself to nature so completely, Ames recognizes both the tangible and intangible of this world. He acknowledges nature on two levels—its physical goodness and visual beauty, but also its sacramental nature. In this case, he recognizes water as a useful element but emphasizes primarily how it is fundamentally more than that—it is also a source of

blessing, of baptism of the earth and humans alike. He witnesses this transcendent nature of water and then represents it here for his son and his reader, reifying its worthiness.

Here, Ames is beginning to blend his faith and his keen love for nature to such an extent that what he is describing may be defined as "sublime," or a sort of "grandeur of thought, emotion, and spirit." On the neuroasethetic level, for the reader, encountering the "sublime" in a text may follow a proposed tentative-inhibition hypothesis. It seems that the Left Hemisphere (LH) processing is disabled while the Right Hemisphere (RH) is temporarily inhibited, thus resulting in a "momentary suspension of thought and feeling" that a reader often encounters (Miall, "Neuroaesthetics"). It is a moment of transportation, where the reader's thoughts and feelings are arrested/slowed as they, in a sense, are attempting to "wrap their minds around" this sublime concept. This effort requires active cognitive processing, which seems to keep the reader more engaged in the idea presented. Thus, the depth of thought that Ames presents and the sheer time that he takes in doing so is important for the reader to be fully immersed in his writings.

Towards the end of the novel, Ames continues to develop these thoughts by forming a sort of aesthetic theory or abstract point about beauty. He writes:

> There are two occasions when the sacred beauty of Creation becomes dazzlingly apparent, and they occur together. One is when we feel our mortal insufficiency to the world, and the other is when we feel the world's mortal insufficiency to us…I think there must also be a prevenient courage that allows us to be brave—that is, to acknowledge that there is more beauty than our eyes can bear, that precious things have been put into our hands and to do nothing to honor them is to do the greater harm (245-246).

Again, Ames affirms the honor that the beauty of our world deserves. He calls nature and its beauty "precious things that have been put into our hands." He treats the world like a treasure,

both in itself and in what it signals beyond itself. By reaching this abstract theory, Ames has also progressed to a point of satisfaction that the reader may partake in. We feel the same progress. It is almost like a natural reward system for the brain, both for the character and the reader, because we went on this journey or mapping and mirroring with Ames.

Further, from this intimate attention, Ames himself develops a deep capacity for empathy. He sees the world and humanity, affirms its worthiness, and is therefore better able to empathize with it. His powers of observation and attention enable him to engage in a form of cognitive mapping where he can route himself through his life, engaging with the past and present and reaching a deeper understanding of the world and its people. Through this process, he not only immerses the reader in the text but also demonstrates how the reader might replicate it.

III. Memory

Ames' deep attention, however, is not limited to what he witnesses in the present. Rather, he is in constant conversation with his past and his memories. These memories are a part of his human experience and how he became who he is, and thus, he feels that they are important to share with his son in these letters. To his son, Ames writes, "I wish I could give you the memory I have of your mother that day. I wish I could leave you certain of the images in my mind, because they are so beautiful that I hate to think they will be extinguished when I am…A Moment is such a slight thing, I mean, that its abiding is a most gracious reprieve" (162). Ames treasures his memories and returns to them often. Here, he expresses a deep wish to be able to share, to gift those images he treasures so much. In a way, he is giving that gift through putting these moments in writing. He is giving his son and his reader those moments, those "gracious reprieves."

He constantly returns to memories to re-give those moments his attention, or perhaps to give them the attention he did not pay in the moment. When describing his memories of his grandfather, he writes, "As I write, I am aware that my memory has made much of very little. There was that old man my grandfather sitting beside me in his ashy coat, trembling just because he did, sharing out the frugal pleasures of his licorice, maybe with Kansas somehow transforming itself from memory to intention in his mind that very afternoon" (47). Ames is aware that time has affected his memories—that they can never be fully and truly represented because our perceptions of our experiences are fluid. They are subject to change each time we retrieve a memory in new contexts. However, through his letter writing, Ames strives to capture these memories as best he can or reflect on them further, perhaps giving them new meaning through his present context.

Ames' carefulness in his memory recall is undoubtedly rooted, at least somewhat, in the stakes of these memories that he shares—there is a need to get them right for his son. There is a real fear in Ames, which he expresses occasionally, that he won't be telling his son all that he needs to be. His fear is that he will not have expressed all that he wished or that he did not express it correctly. Therefore, he is so careful with his words regarding his memories—he wants to be as accurate as possible in how he names his experiences whether they are reprieves or not. There are countless other examples of this naming and gifting memories as it is part of Ames' continual cognitive processing.

IV. Revision

Ames' attention extends beyond just recall, naming, and reflection. He is on a constant search for understanding of the world for both his own sake and his son's; thus, there is a rigor and even urgency to his interior life—he will describe and affirm, but he will also revise his

thoughts and admit the extent of his certainty or uncertainty about an idea or circumstance. He demonstrates this revision in his writing when he makes a declaration but then backtracks or presents an idea in opposition, essentially "rerouting" himself. This thoroughness is another element of Ames' mental mapping that enhances our readerly ability to empathize with Ames. It also enables us to model his processing because it has been demonstrated so clearly.

Ames' rigor likely developed from many facets of his character. He has endured many adverse seasons, including a lengthy period of loneliness. During this time, he was mostly stationary, alone by a radio, memorizing the plays of football for hours upon hours. He writes, "My own dark time, as I call it, the time of my loneliness, was most of my life, as I have said, and I can't make any real account of myself without speaking of it. The time passed so strangely, as if every winter were the same winter, and every spring the same spring" (44) One reason for this enduring loneliness includes the numerous periods of grief that Ames has endured, including the loss of his first wife and his daughter Angeline, and his difficult relationship with his godson and namesake, Jack Boughton, a source of nondeath grief for Ames. Though this loneliness and grief deprived him of much, they also afforded him an abundance of time for prayer and reading and prompted in Ames a deep introspection as he considered why the world is the way is, why it works so, and how we humans are able to live in such broken places. He ends up fostering an even deeper faith, which in turn inspired this awe of the natural world in him, and because he has experienced these emotions to such devastating extents, he can also recognize them in others and empathize with them. These experiences of loneliness, grief, and faith combined have all motivated Ames to be deeply reflective and rigorous in his interior life. Through his perseverance overall, he worked through what may have been destructive to others and continues to do so through his processing and revision.

One moment of revision begins with recall. Ames remembers preaching during World War I and the influenza pandemic that soon followed. He begins to dissect how the war influenced him and his people, and how he approached the pulpit during this time. Ames writes to his son, "Most of the young men seemed to feel that the war was a courageous thing, and maybe new wars have come along since I wrote this that have seemed brave to you. That there have been wars I have no doubt. I believe that plague was a great sign to us, and we have refused to see it and take its meaning, and since then we have had war continuously." However, after this assertion on the nature of plague and war, Ames pauses and then writes, "I'm not entirely sure I do believe that. Boughton would say, 'That's the pulpit speaking.' True enough, but what that means I don't know" (43). His simple sentence "I'm not entirely sure I do believe that" is a moment of revision. He has named an idea he has considered for a time but then admits he is uncertain about it. He presents both the previous thought and the doubt, modeling the revisional process for his son and his reader.

This process of rerouting is rarely immediate for Ames. Often, after making an assertion, he will live with the words for a little while, absorbing and ruminating on their truth before he changes paths. Later in the novel, Ames is wrestling with his relationship with Jack, and he contemplates the moment when it was first revealed that Jack was being named after him. He was in church on the brink of baptizing Jack when Boughton, Jack's father, proclaimed that he was naming his son "John Ames Boughton," Jack for short. For a moment, Ames is shaken, the only thought circling his head being "this is not my child." While reflecting on this startling memory, Ames confesses something crucial to his reader: "I'll tell you a perfectly foolish thing. I have thought from time to time that the child felt how coldly I went about his christening, how far my thoughts were from blessing him. Now, that's just magical thinking. That is superstition.

I'm ashamed to have said such a thing. But I'm trying to be honest" (188). This honesty has to cost Ames something. He is a pastor confessing that he was distracted during a baptism, that he had superstitious thoughts during and after a sacred event. Ames then tells us that "I have never been able to warm to [Jack], never" (188). After this devastating revelation, there is an ellipsis before Ames returns to us. A significant amount of time has passed after he put those harrowing words on the page. When he returns, he says, quite simply, "I'm glad I said that. I'm glad to see it in my own words, in my own hand. Because now I realize it isn't true. And that is a great relief to me" (189). Here Ames wrote something down that has likely hounded his mind quite often--that he has never been able to warm to Jack--but through the act of speaking it into existence, he had to face it as a fact, and he realized it wasn't a fact at all. In a beautiful moment of recognition, he reroutes himself by saying "no, that's not right," and as a result, he now understands himself better, and he feels *relief*. He demonstrates how this construction takes time, but by engaging in this process of revision, he has gained truth, and a weight has been lifted from his shoulders.

By so thoroughly mapping his outward and inward observations and how he routes or reroutes his thought processes, Ames serves as an exemplary model for the reader. Rarely do we see a character's thought mapping as clearly as we do here. In most works of fiction, we will witness the narrator's interactions with their physical worlds, and we are often allowed some entrance into their minds and thought processes; however, rarely do we see "behind the curtain" to such a degree as we do with Ames. Ames' explicit mapping heightens the levels of cognitive empathy we as a reader experience for Ames because we understand his mind so intimately. . When such a strong character as Ames is built, the act of reading puts us through both the physical and mental action of the character, and we experience all that Ames does alongside him,

through him, next to him. From an objective view, cognitive empathy allows our brains to experience another's mental state without necessarily claiming it as our own or clinging to it. Therefore, it allows for a shift in perspective and can improve one's ability to reason and problem-solve, and in general, understand another's point of view (Burke, "Empathy at the Confluence" 30). For Ames' specifically, we can also model his mental state because it is so explicit and exemplary.

Ames routes us further by declaring and living in both certainty and uncertainty. He will admit outright when he is uncertain about an idea or situation. When pondering how a sermon might be like a conversation, he tells the reader, "I am trying to describe what I have never before attempted to put into words. I have made myself a little weary in the struggle" (Robinson 45). This uncertainty is quite profound. Our reality inevitably involves both certainty and uncertainty, and though Ames is always trying to understand the world to a deeper extent, he also seems to realize that there is a humility to admitting that we do not and cannot know everything, certainly not in the way God knows it. His allowance for uncertainty points again to a metaphysical commitment to his God. He is demonstrating apophatic theology, or the idea that when we acknowledge what we don't know, we are also engaging in a practice that acknowledges God's greatness. We are humbling ourselves before His magnificence by acknowledging that we cannot know all that He does.

Likewise, reality contains instances of certainty. For Ames, when he considers something a fact, he names it so, saying "this is the truth" or "that's a fact." Often, his assurance rests in theological truths that he absolutely stands by. For example, Ames reflects often on the relationship of light with our human existence. He talks about the "incandescence" of a twinkling eye that he considers most wonderful. He quotes Proverbs 15:30, which reads "'The light of the

eyes rejoiceth the heart.'" He follows the proverb with "that's a fact," communicating to the reader the ultimate authority and certainty that he places in the words of the Bible and what the Bible shares about the heart, mind, and soul (53). By declaring this certainty, Ames clearly communicates to his son the truths he has based his life on—truths that he doesn't anticipate ever needing to revise.

Ames' representation of light here is an explicit example of how his cognitive mapping can also defamiliarize concepts for the reader. He talks about light as an abstraction, but he also re-presents it to us as the "incandescence of a twinkling eye." He uses his theology to communicate the awe that he feels for nature, referring again to its sacramental aspects. It is yet another example of how his faith motivates him to explore and represent his world more deeply. On the neuroaesthetic level, this act of defamiliarization is also crucial to the readerly experience. Studies have shown that the defamiliarization of literary pieces such as proverbs is able to enhance the reader's experience of aesthetics and empathy. One study specifically found that the modified or innovative proverbs produced greater activation in brain regions related to affective responses (Bohrn). Thus, the more innovative the text, the higher level of emotional or affective response the reader experiences. Ames defamiliarizes light continually. Later in the text, he describes "the feeling of a weight of light…it was the kind of light that rests on your shoulders the way a cat lies on your lap" (Robinson 51). This unfamiliar metaphor pushes us to really think about the weight of light, which we might not consider otherwise. Now, we are remembering the soft, warm, and heavy weight of a cat and realizing that perhaps yes, light can also feel heavy when the sun bears down on us. Due to this metaphor's strangeness of likening, the reader will spend more time with it—we will consider all the ways this unfamiliarity could

actually be true—and overall we will have a higher affective response to the text, increasing our aesthetic and empathetic experience.

Another instance of certainty that Ames expresses specifically concerns his home and community in Gilead. He knows his home—it is the place where he has lived and loved through all his grief, loneliness, and faith over his seventy years or so of life—and thus he expresses a certainty about this place because he knows it so well. He takes painstaking care so that he accurately represents it to his son:

> …there have been heroes here, and saints and martyrs, and I want you to know that. Because that is the truth, even if no one remembers it. To look at the place, it's just a cluster of houses strung along a few roads, and a little row of brick buildings with stores in them, and a grain elevator and a water tower with Gilead written on its side, and the post office and the schools and the playing fields and the old train station, which is pretty well gone to weeds now. But what must Galilee have looked like? You can't tell so much from the appearance of a place (173).

Ames describes the ordinary nature of Gilead—it is a simple town that looks like any other in the Midwest. But Ames has shown us time and time again that he sees below the surface level. He sees more than meets the physical eye, and because he has known the place and people of Gilead so intimately, he tells us their true nature, that they are heroes, saints, and martyrs. Ames recognizes every human as sacred and extraordinary, and he calls this "truth." Again, this is an idea rooted deeply in theological truth, that humans are more than just physical beings, that we have souls and spirits that through faith can transcend this reality. This is a local truth of Gilead only he knows after the length of time he has spent there, but he wants his son to know it as well.

Similar to revision, we rarely encounter a text with a narrator who is so explicit in their declaration of what they see as certain or uncertain. Through Ames' clear and open declarations, the reader is again encouraged to model a similar process in their own life, considering what is fact, what they know for sure, and what they still have to discover. Perhaps even what they are content with remaining uncertain. Overall, it is a process of truly understanding oneself and the world to a greater extent. It is a humbling process but also necessary for recognizing the full-orbed reality that we dwell in.

V. Revision at Work: From the Mental to the Physical

The significance of Ames' cognitive mapping is amplified by perhaps one of the novel's most crucial and stunning plot lines: Ames' relationship with his godson and namesake Jack Boughton. Through Ames' internal processing, through his constant attempt to affirm beauty and revise where he feels he has gone astray, he becomes a better man not just internally, but externally as well in the world of action. In the beginning of the novel, Ames has a very difficult relationship with Jack such that he can barely look him in the eye. When Jack was a child, he wreaked havoc on Ames' household in what seemed a very callous and manipulative fashion. He would steal precious objects or play cold-hearted pranks, such as setting fire to Ames' mailbox, shattering his windows, and coating his stairs in molasses. Their relationship never healed from these transgressions as Jack leaves Gilead and later on, exploits a young girl, having a child with her outside of marriage. He abandons both of them, causing more pain and responsibility for the Boughton family and Ames by association, and then he disappears entirely for twenty years. The novel begins right around when Jack is finally, abruptly, returning to Gilead to visit his dying father, and sister, Glory.

Ames is extremely apprehensive of this visit and clearly unsure of how much he should share about Jack in these letters to his son. Early on, he writes, "I suppose I might tell you a story about [Jack], too, or as much of it as behooves me. Another time. I must reflect on it first" (72). His relationship with Jack has hounded him for years—it is messy and difficult, and Ames likely does not even know where to begin. Thus, in accordance with Ames' careful nature, he decides to ruminate on it before he shares with his son.

Gradually, Ames begins this process of reflection in these very letters, sharing the workings of his interior as he slowly learns to empathize with Jack, or at least guide himself away from purely selfish thought. In the beginning, Ames is in the "habit of seeing meanness" in Jack, and he struggles to see beyond the meanness that Jack continually demonstrates because it is so hurtful (230). In one instance, he reflects on the torment that Jack caused in his childhood. Jack stole a precious journal from Ames, withheld it for a few days, and, for no apparent reason, suddenly places it back in Ames' home in a random drawer where it did not belong. Of this experience, Ames writes, "I found [the journal] down here, in the bottom drawer of my desk, where I never put it. That seemed like a sort of taunt, as if he had made a point of hiding it from me." However, then Ames counters this reflection with the words, "I know I am not being reasonable" (125). On one hand, the reader can recognize that these thoughts from Ames are in fact perfectly reasonable—it is a natural reaction to the kind of torment that Jack put Ames through. It is a moment of revision where he acknowledges that he must recognize when grace might need to be shown, especially since Jack was only a child, and Ames his designated godfather. This moment of revision reflects a growth of character in Ames.

Ames shares multiple encounters with Jack during Jack's present visit, encounters that are wrought with tension and restraint on both sides. Many of these conversations occur in

Ames' church in the early morning hours. Ames often treks down to the church when he has trouble sleeping. In one instance, he ends up falling asleep in a pew and is disturbed by Jack who enters the church for unknown reasons:

> I felt just the way I imagine the shade of poor old Samuel must have felt when the witch dragged him up from Sheol. 'Why has thou disquieted me, to bring me up?' In fact, I had spent the morning darkness praying for the wisdom to do well by John Ames Boughton, and then when he woke me, I was immediately aware that my sullen old reptilian self would have handed him over to the Philistines for the sake of a few more minutes of sleep (167).

It is clear throughout the first half of their conversation that Ames does not want to be talking to Jack. His sentences are abrupt, short, or nothing at all. Sensing that nothing was being accomplished by the conversation, Jack rises to leave. But there is a tangible regret in Ames, provoking him to say, "Sit down, son. Sit down. Let's give this another try" (169). Ames is willing to give the conversation another attempt, even when he has avoided Jack so many times in the past. It gives the reader hope that their relationship might be undergoing a shift due to the rigorous way Ames has been navigating his interior and how his processing has now translated into action—the action of calling Jack back for more conversation.

Ames begins to see more in Jack than just meanness. For a time, he uses his theology and prayer life to shift his thinking of Jack. He reflects how "the image of the Lord in anyone is much more than reason enough to love him…So it is a rejection of the reality of grace to hold our enemy at fault." Of this statement, Ames declares "those things can only be true" (189). Ames recognizes the holiness in Jack, the image of God that dwells in him, and through this recognition, he feels a great calling to love Jack despite what Jack has done to him. As he

continues praying for Jack, Ames begins to even sense emotions in Jack that Ames himself has experienced. He writes, "When I pray about all this, it is a sense of sadness in him that keeps coming to my mind. He is someone who must be forgiven a great deal on the grounds of that strange suffering" (213-214). He observes that such a man as Jack who has caused so much pain must also be so lonely in this world. Ames, who has known loneliness so intimately, begins to even see some of himself in Jack, in Jack's loneliness, and thus, his ability to empathize with the man Jack has become has increased.

Because of this internal revision, there is a substantive change in their relationship such that Ames transitions from barely looking Jack in the eye to engaging Jack in full conversation and even blessing Jack by touching him on the forehead when he departs from Gilead in the final scenes of the novel. As Ames slowly opens up and reveals himself to Jack, Jack responds in kind, sharing with Ames where he has been for the past twenty years, even revealing that he has both a wife and child now. Right after he blesses Jack, Ames writes, "I told him it was an honor to bless him. And that was also absolutely true. In fact I'd have gone through seminary and ordination and all the years intervening for that one moment" (242). Ames expresses absolute certainty here regarding his role in Jack's life and the blessing he bestowed. It is a culmination of all his years of devotion to his faith and prayer life, all the perseverance he showed throughout innumerable seasons of grief and loneliness. It has paid off here in this empathetic connection, this love, he has forged toward Jack. In his essay "The Telling of the Tale" from the collection *This Craft of Verse*, Jorge Lui Borges writes that "the essence of most novels lies in the breaking down of a man, in the degeneration of character" (This Craft 48-49). However, here is where *Gilead* is remarkable: rather than the breakdown of man, this novel is all about the process of

how a man can build himself back up from being broken, how he can become better through his mental and spiritual approach to his life and his relationships.

VI. Conclusion

In this life, we so often experience a breakdown rather than buildup of character. Robinson is suggesting that one reason for this breakdown lies in our inability to understand each other and the world in which we live. Through the character of Ames, Robinson carefully demonstrates how we can navigate our interior lives such that identification and true unity is possible. She has created a man who is rigorous in how he observes the earth and its people and in how he assembles these observations, dwelling on them, extracting truths, shaping opinions and ideas, and revising them. Since Ames is our entry point into this novel, he is who we journey alongside, and, through this journey, we readers not only empathize with Ames himself but also learn how we can model his interior movement. Robinson has achieved the remarkable here by wielding the power of fiction to teach us how to encounter the earth and identify with its people. She emphasizes not only the power of this cognitive mapping but also the fact that it is never too late to learn it—Ames is drawing close to the end of his time on earth, and he still undergoes change by forging a new hope with Jack. This mapping requires work—endless observation, construction, and rerouting—but the rewards of such empathy and hope are boundless.

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Bibliography

Altmann, Ulrike, et al. 'The Power of Emotional Valence—from Cognitive to Affective Processes in Reading'. *Frontiers in Human Neuroscience*, vol. 6, 2012. *DOI.org (Crossref)*, https://doi.org/10.3389/fnhum.2012.00192.

Aziz-Zadeh, Lisa, et al. 'Congruent Embodied Representations for Visually Presented Actions and Linguistic Phrases Describing Actions'. *Current Biology*, vol. 16, no. 18, Sept. 2006, pp. 1818–23. *DOI.org (Crossref)*, https://doi.org/10.1016/j.cub.2006.07.060.

Augustine. Confessions. Translated by Henry Chadwick, Oxford UP, 2009

Bohrn, Isabel C., et al. 'Old Proverbs in New Skins – An FMRI Study on Defamiliarization'. *Frontiers in Psychology*, vol. 3, 2012. *DOI.org (Crossref)*, https://doi.org/10.3389/fpsyg.2012.00204.

Boulenger, Véronique, et al. 'Cross-Talk between Language Processes and Overt Motor Behavior in the First 200 Msec of Processing'. *Journal of Cognitive Neuroscience*, vol. 18, no. 10, Oct. 2006, pp. 1607–15. *DOI.org (Crossref)*, https://doi.org/10.1162/jocn.2006.18.10.1607.

Borges, Jorge Luis, and Calin-Andrei Mihalescu. *This Craft of Verse*. 2. print, Harvard University Press, 2002.

Burke, Michael, et al. 'Empathy at the Confluence of Neuroscience and Empirical Literary Studies'. *Scientific Study of Literature*, vol. 6, no. 1, Dec. 2016, pp. 6–41. *DOI.org (Crossref)*, https://doi.org/10.1075/ssol.6.1.03bur.

Burke, Michael, et al. ‘The Neuroaesthetics of Prose Fiction: Pitfalls, Parameters and Prospects’. *Frontiers in Human Neuroscience*, vol. 9, Aug. 2015. *DOI.org (Crossref)*, https://doi.org/10.3389/fnhum.2015.00442.

Byom, Lindsey J., and Bilge Mutlu. ‘Theory of Mind: Mechanisms, Methods, and New Directions’. *Frontiers in Human Neuroscience*, vol. 7, 2013. *DOI.org (Crossref)*, https://doi.org/10.3389/fnhum.2013.00413

Citron, Francesca M. M., et al. ‘Emotional Valence and Arousal Affect Reading in an Interactive Way: Neuroimaging Evidence for an Approach-Withdrawal Framework’. *Neuropsychologia*, vol. 56, Apr. 2014, pp. 79–89. *DOI.org (Crossref)*, https://doi.org/10.1016/j.neuropsychologia.2014.01.002.

Clay, Zanna, and Marco Iacoboni. ‘Mirroring Fictional Others’. *The Aesthetic Mind: Philosophy and Psychology*, Oxford University Press, 2011. *DOI.org (Crossref)*, https://doi.org/10.1093/acprof:oso/9780199691517.001.0001.

de Waal, Frans B. M. ‘Putting the Altruism Back into Altruism: The Evolution of Empathy’. *Annual Review of Psychology*, vol. 59, no. 1, Jan. 2008, pp. 279–300. *DOI.org (Crossref)*, https://doi.org/10.1146/annurev.psych.59.103006.093625

Elliott, Rebecca, et al. ‘Affective Cognition and Its Disruption in Mood Disorders’. *Neuropsychopharmacology*, vol. 36, no. 1, Jan. 2011, pp. 153–82. *DOI.org (Crossref)*, https://doi.org/10.1038/npp.2010.77.

Gambino, Renata, and Grazia Pulvirenti. “Neurohermeneutics: A Transdisciplinary Approach to Literature.” *Gestalt Theory*, vol. 41, no. 2, July 2019, pp. 185-200. DOI.org (Crossref),

https://doi.org/10.2478/gth-2019-0018.

Gazzola, Valeria, et al. ‘Empathy and the Somatotopic Auditory Mirror System in Humans’. *Current Biology*, vol. 16, no. 18, Sept. 2006, pp. 1824–29. *DOI.org (Crossref)*, https://doi.org/10.1016/j.cub.2006.07.072.

Harnish, Stacy M. *Anomia and Anomic Aphasia: Implications for Lexical Processing*. Edited by Anastasia M. Raymer and Leslie J. Gonzalez Rothi, vol. 1, Oxford University Press, 2015. *DOI.org (Crossref)*, https://doi.org/10.1093/oxfordhb/9780199772391.013.7.

Hutto, Daniel, and Ian Ravenscroft. ‘Folk Psychology as a Theory’. *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, Fall 2021, Metaphysics Research Lab, Stanford University, 2021. *Stanford Encyclopedia of Philosophy*, https://plato.stanford.edu/archives/fall2021/entries/folkpsych-theory/.

Hein, Grit, and Tania Singer. ‘I Feel How You Feel but Not Always: The Empathic Brain and Its Modulation’. *Current Opinion in Neurobiology*, vol. 18, no. 2, Apr. 2008, pp. 153–58. *DOI.org (Crossref)*, https://doi.org/10.1016/j.conb.2008.07.012.

Jacobs, Arthur M. ‘Towards a Neurocognitive Poetics Model of Literary Reading’. *Cognitive Neuroscience of Natural Language Use*, 2015. *DOI.org (Datacite)*, http://rgdoi.net/10.13140/RG.2.1.2140.7445.

Jenson, Deborah, and Marco Iacoboni. ‘Literary Biomimesis: Mirror Neurons and the Ontological Priority of Representation’. *California Italian Studies*, vol. 2, no. 1, 2011. *DOI.org (Crossref)*, https://doi.org/10.5070/C321008945.

Keysers, Christian, et al. ‘A Touching Sight’. *Neuron*, vol. 42, no. 2, Apr. 2004, pp. 335–46. *DOI.org (Crossref)*, https://doi.org/10.1016/S0896-6273(04)00156-4.

Kilner, J. M., and R. N. Lemon. ‘What We Know Currently about Mirror Neurons’. *Current Biology*, vol. 23, no. 23, Dec. 2013, pp. R1057–62. *DOI.org (Crossref)*, https://doi.org/10.1016/j.cub.2013.10.051.

Koopman, Eva Maria (Emy). “Does Originality Evoke Understanding? The Relation between Literary Reading and Empathy.” *Review of General Psychology*, vol. 22, no. 2, June 2018, pp. 169-177. *DOI.org (Crossref)*, https://doi.org/10.1037/gpr0000107.

Lindauer, M. S. ‘Art, Artists, and Arts Audiences: Their Implications for the Psychology of Creativity’. *Encyclopedia of Creativity*, Elsevier, 2011, pp. 58–65. *DOI.org (Crossref)*, https://doi.org/10.1016/B978-0-12-375038-9.00012-1.

Miall, David S., and Don Kuiken. “Foregrounding, Defamiliarization, and Affect: Response to Literary Stories.” *Poetics*, vol. 22, no. 5, Aug. 1994, pp. 389-407. *DOI.org (Crossref)*, https://doi.org/10.1016/0304-422X(94)00011-5.

Miall, David S..“Neuroaesthetics of Literary Reading.” *Neuroaesthetics*, edited by Martin Skov and Oshin Vartanian, Routledge, 2009, pp. 233-247. *DOI.org (Crossref)*. https://doi.org/10.4324/9781315224091.

Mukamel, Roy, et al. ‘Single-Neuron Responses in Humans during Execution and Observation of Actions’. *Current Biology*, vol. 20, no. 8, Apr. 2010, pp. 750–56. *DOI.org (Crossref)*, https://doi.org/10.1016/j.cub.2010.02.045.

Pirnajmuddin, Hossein, and Vahid Medhat. ‘Linguistic Deviation in Poetry Translation: An Investigation into the English Renderings of Shamlu’s Verse’. *Journal of Language Teaching and Research*, vol. 2, no. 6, Nov. 2011, pp. 1329–36. *DOI.org (Crossref)*, https://doi.org/10.4304/jltr.2.6.1329-1336.

Robinson, Marilynne. Gilead. Repr., Picador, 2004

van Peer, W., and J. Hakemulder. ‘Foregrounding’. *Encyclopedia of Language & Linguistics*, Elsevier, 2006, pp. 546–51. *DOI.org (Crossref)*, https://doi.org/10.1016/B0-08-044854-2/00511-3.