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“How Do You Know Who You Are?”: *Marjorie Prime* on Envisioning Humanity Through the Faculty of AI-Powered Memory as Reconstructive Tissue

ABSTRACT

In reference to the theme of the issue devoted to literary extremities, Jordan Harrison’s play *Marjorie Prime* raises thought-provoking questions about the potential benefits and drawbacks of advanced AI technology by exploring the nature of memory, identity, and mortality, as well as the ethical implications of creating artificial intelligence that can mimic human behavior and emotions. This article argues that the play positions its AI character—a computerized hologram of Marjorie’s late husband Walter—at the intersection of two divergent perspectives on memory reactivation enhanced by AI-powered technology. While, on the one hand, the humanoid is seen as a potent tool which helps to reduce the cognitive impairment caused by dementia, on the other hand, there is a concern that technological interventions may trigger episodic memory change, testifying to the plastic, and thus reconstructive, character of this foundational human faculty. The article seeks to negotiate the interplay of benefits and dangers of technology-assisted memory reactivation by exploring two divergent ideas represented by Marjorie’s daughter Tess and her son-in-law Jon regarding what would comfort their mother, and, ultimately, their differing ways of comforting each other and themselves individually as the carers of an elderly person. In analyzing how creative and destructive forces exhibited by AI-powered digital tools cross-inhabit the declining memory inflicted by dementia, the article unpacks both the vast potential and the limits of technology while attempting to answer uncomfortable questions about the essence of human existence posed by aging and dementia.

Keywords: memory, dementia, artificial intelligence, memory reactivation, *Marjorie Prime*.

“Aging, death, illness/health, love, marriage, memory, parenting/family.” These are the keywords which can be found at Concord Theatricals website in reference to the 2015 Pulitzer Prize nominated play *Marjorie Prime* by Jordan Harrison. The essence of the play was captured in a question posed by Frank Wood, the actor playing Jon, Marjorie’s son-in-law: “How do you know who you are?” (“*Marjorie Prime* at the Mark Taper Forum”). This question remains unanswered, but it is repeatedly reconfigured throughout the play, in which the characters obtain their AI companions, called “Primes,” to, among other things, slow down their cognitive decline by helping them remember the highlights of their lives. What is exceptional about *Marjorie Prime* is that, despite its holographic techno-characters, the play does not possess an overt atmosphere of science fiction, “at least not the predictive sort,” as Harrison put it, but instead serves as a 21st-century mirror for our own fears and tribulations about what constitutes us as human beings. Is this our presence, or a memory of our presence? In this essay, Frank Wood’s question will be explored in relation to the “intricate relationship between autobiographical memory and the self” (Vanderveren et al.). It is argued that, despite its futuristic setting, the play deals with classic familial discords and uncomfortable questions of existence posed by aging and dementia. As the characters use the Primes to comfort and assist their loved ones, they begin to feel reservations about the limitations and potential dangers of the devices. The Primes become what the humans want them to be, embodying the characters’ own half-truths and frustrations about their histories with the person the hologram represents.

The way in which Harrison, a playwright and a screenwriter,¹ has envisioned his futuristic engagement with the problem of memory loss takes the following trajectory: when the main character, Marjorie, suffers from dementia, the computer-generated hologram of her late husband Walter tries to remind her who she was by giving her the information provided by her son-in-law Jon about her past life that she has already forgotten. The question remains whether her lost memories provide her with what she needs to feel—as the playwright puts it—“more human” (Harrison 48). The suggestive power of Harrison’s vision is grounded in his conviction that it is impossible to disentangle the internal experience of memory loss from the external environment of family and friends. Therefore, it may be argued, after Catherine Malabou, that dementia is rhetorically constructed as it requires negotiation between more than one agent (49). Unlike kidney

¹ Jordan Harrison is not only an award-winning playwright (a 2015 Pulitzer Prize finalist for *Marjorie Prime*, recipient of, among others, a Guggenheim Fellowship, a Hodder Fellowship, and the Horton Foote Prize), but also a well-recognized screenwriter and producer (the Netflix original series *Orange is the New Black* in 2017 and a 2020 series *Dispatches from Elsewhere*).

or liver dysfunction, brain dysfunction not only impacts upon the affected person's self-identity, but also upon the closest circle of family and friends experiencing extreme cognitive and affective dissonances.

In his review of the 2022 production of Harrison's play staged at the Theatre in the Round in Minneapolis, Rob Dunkelberger admitted that he was taken by surprise by the way that the plot of *Marjorie Prime* developed in subsequent scenes. "What becomes interesting," states Dunkelberger, "is how it illustrates the fallacies of memory. We all remember things differently for one thing. One realization that comes out is withholding memories from the Prime is really just a way of avoiding dealing with them." Marjorie's daughter Tess is a staunch advocate of keeping family secrets away from the Prime. Tess's determination is well demonstrated in the following exchange with Jon:

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TESS: I don't know how memory works. I think of it like sedimentary layers in the brain, but I'm sure that's wrong. We should get a book.

JON: I like sedimentary layers. It means it's all still there.

....

TESS: It doesn't always seem that way.

JON: No.

Short pause.

JON: I think we should remind her, Tess.

TESS: And I think we should *not*, Jon, and she's my mom—

JON: You'd rather just let everything / slip away?

TESS: She's *my mom*, /Jon—

JON: How much does she have to forget before she's not your mom anymore?

Pause. (Harrison 21)

Tess is often read as an overprotective daughter who deems the truth harmful and who, by withholding the family secret from Walter Prime, hopes to finally extricate from her mother's demented mind the unspeakable burden of her son's suicide (Dunkelberger). Balancing on the thin line of

what constitutes a lie, Tess's reason for displaying distrust towards her father's holographic proxy is elucidated as a protective mechanism against revealing the painful family secret.

Throughout her whole life Tess was an agonizing witness to how her elder brother's (un)expected death destroyed Marjorie both as an individual, and, first and foremost, as the mother of a surviving child—the child who never felt good enough to compensate for her mother's heart-wrenching loss. When Jon puts forward the following argument that “[s]he took care of you, now it's your turn to take care of her,” Tess is visibly shaken and limits her reaction to a snap retort: “You weren't there,” thus ending a conversation which evokes immense distress (Harrison 19). The survivor of her sibling's suicide, the bereaved Tess was nevertheless deprived of a chance to comprehend the significance of the grieving process (Adams et al.; Jonas-Simpson et al.; Powell and Matthys). In her case, grieving was marred by her mother's physical and mental withdrawal and ensuing emotional coldness, a symptom of Marjorie's advancing depression, which proved devastating to her relation with her daughter. Marjorie's relationship with Tess was somewhat combative and her daughter has continued this dysfunctional and depressive pattern. Having lived through years of such agonizing experiences, Tess has reversed the logic of dementia as a destructive force.

Her line of thinking concurs with the observation expressed by playwright Peter M. Floyd, the author of *Absence*, a play reflecting on his mother's step-by-step cognitive decline. Floyd admitted that dementia, in its twisted reckoning with the growing absence of memories, also allowed his mother to finally reconcile with her daughter. Aware of the diametrically opposite rationale for the definition of happiness during illness, Floyd articulated what might be seen as the antithesis of a commonly defined value of life. On the one hand, in Floyd's *Absence* we gradually plunge into the unruly mind of a woman called Helen affected by the loss of cognitive functioning resulting in impaired memory. Don Aucoin aptly captured the inevitability of such a predicament:

Helen, who is in her mid-70s, gets lost while out on a walk. She forgets her own age. Twice within the span of five minutes she tells the same story about her father returning from World War II. She conflates her sister with her daughter while telling a tale of the former's biker boyfriend. As Helen's condition worsens, the words spoken to her by others register in a bizarre jumble, as when she hears her husband say, “It's not that the rabbits aren't indexing the volt. . . .”

Tragic as it may seem, Helen's dementia is simultaneously envisioned by Floyd as a peculiar form of catharsis, a life-saving tool which occurred at the last possible moment before her ultimate failure as a mother and a fulfilled

person. In an interview before *Absence's* premiere in Oslo, Floyd admitted that he “had never seen [his mother] happier than in the last few years of her life” (Aucoin). Indeed, the paradoxical counterbalance to losing the memory of the world she used to know was divesting herself of earthbound anguish. “Though the disease took away a part of her, it also took away her cares, her worries, her sadnesses,” the playwright observed (Aucoin). “It kind of freed her in a bizarre way. I was trying to show, with Helen, that as agonizing as it was, there was something releasing about it” (ibid.).

More often than not, however, theatre and cinema portray the “memory-stealing brain disorder” (Aucoin) as a spiral of collective tragedy affecting the sufferer’s closest circle of family and friends. The common factor in these productions is a recurring set of questions which were articulated by Jack Shea in his review of Arnie Reisman’s play with its telling—and chilling—title “Pay Attention to *Not Constantinople* While You Still Can.” Confronted with “memory loss, impaired thinking skills, diminished judgment and language, and an increasing inability to perform the functions of daily life” (Aucoin), Shea claims that the audience is propelled to stand in their truth and to ponder, not only for the characters, but, first and foremost, for themselves: “How do we manage getting old in a world that’s passed us by? How do we live in a world clouded by [dementia]? What are our choices? And does this society respect and nurture its old people?” (Shea).

Bruce Graham’s *The Outgoing Tide* and Barney Norris’s *Visitors* also tap into these questions, with a flashback reflection on the past life. These theatrical portrayals of families whose formulaic rituals gradually and quietly fall apart, “flood your emotions with [their] emotional truth” (Cohen), but “avoid that easy pity that is close cousin to contempt” (Billington). Similarly intimate, confined to the mythical family space of the character of Vivienne and her mother, is *Blackberry Winter* by Steve Yockey. This time, however, dementia is lived through the daughter’s perspective, which allows for a more contemplative and philosophical reflection on the inner turmoil of the offspring who must confront the gradual decline of the beloved parent. Examining Vivienne’s characterization, Rachael Carnes poignantly observes: “Cached within the comforting science of Vivienne’s routines, she has created a fable: a cosmological understanding of Alzheimer’s and its origins, a creation myth, to help herself comprehend and cope with her mother’s ever-entangling brain. Vivienne is heartbreaking—not because she fails but because like all of us, she sometimes falters.”²

² A different take on dementia is offered by two other playwrights. First, Arnie Reisman’s *Not Constantinople* is a dark comedy which puts to the forefront the inevitability of the passing time, ruminating over a question whether a witness stricken with the

This picture would not be complete without reference to two films which have greatly contributed to raising audience awareness of human frailty in the confrontation with the unexpected challenges of declining memory. In both cases, the performances of the actors playing protagonists stricken with dementia have been awarded with Oscars. In 2015 the Best Actress award went to Julianne Moore who in *Still Alice* played, in an exceptionally nuanced way, a terminally ill person aware enough to follow her own decline. In 2021 the Academy Award for Best Actor was presented to Anthony Hopkins for his superb performance in *The Father*. The mood swings of a man desperate over “losing his leaves, the branches, the wind and the rain” (*The Father*, last scene) are best rendered by cinematic means, which offer the kind of intimate viewing experience that is unavailable to the theatre goer. In his *Guardian* review, Peter Bradshaw alludes to the inconspicuous camera-work which at times subtly and at some other times more disturbingly conveys the protagonist’s perplexed mind, clinging to the last strands of vanishing memory. In an Eisensteinian vein, emotion is elicited “without obvious first-person camera tricks”; this is captured by Bradshaw when he describes how the film places the viewer in the protagonist’s mental space:

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We see and don’t see what he sees and doesn’t see. We are cleverly invited to assume that certain passages of dialogue are happening in reality—and then shown that they aren’t. We experience with Anthony, step by step, what appears to be the incremental deterioration in his condition, the disorientating time slips and time loops. People morph into other people; situations get elided; the apartment’s furniture seems suddenly and bewilderingly to change; a scene which had appeared to follow the previous one sequentially turns out to have preceded it, or to be Anthony’s delusion or his memory of something else. And new people, people he doesn’t recognise (played by Mark Gatiss and Olivia Williams) keep appearing in his apartment and responding to him with that same sweet smile of patience when he asks what they are doing there. The universe is gaslighting Anthony with these people.

Against the backdrop of these true-to-life dementia chronicles, Harrison’s *Marjorie Prime* proposes its own vision of the desperate race with time, situating its story in the liminal space between humans and machines powered by AI technology. Analyzing the scientific component

intensifying bouts of dementia would be able to testify against his former mafia bosses before his mind wanders off in an unknown direction. Then, in *The Other Place* by Sharr White the emphasis is shifted from the consequences of the brain degeneration towards kindling the awareness of losing a grasp on reality at the onset of an illness, the diagnosis of which came way too early for a successful scientist and a trailblazing businesswoman.

of the AI-powered Primes in *Playwrights Horizons*, Sarah Lunnie explores the process of “deep learning” in which “computer software sifts through large amounts of data, and, by identifying patterns, develops a kind of autonomous creative intelligence.” To exemplify the possible use of this technology, Lunnie refers to the grant received by the University of Arizona School of Music for developing a robot whose task would be to absorb the library of jazz recordings. Through learning the musical patterns whose sheer volume would overwhelm the cognitive capacity of even the most skillful and talented musician, the robot would develop the ability to improvise while jamming with a band of human players. The breakthrough technology of the AI component would allow the robot to tap into its knowledge base in order to make its own decisions and produce self-created improvised musical pieces. “We’re trying to build something that communicates with humans and doesn’t just wait for the human to tell it what to do,” concluded the creator of the Music Improvising Collaborative Agent, the equivalent of the fictional Prime in the real world of arts and music (Lunnie).³

As mentioned in the introduction, the advanced technology of Primes is not supposed to frame the play as science fiction. This was an intended strategy on Harrison’s part, who explained his vision in the playwright’s notes, significantly titled “Thoughts on the Primes.” Impersonating humans, Primes “are not physical robots.” Instead, “[t]hey are artificial intelligence programs—descendants of the current chatbots—that use sophisticated holographic projections” (Harrison 75). Having read Harrison’s notes on staging, what might come as a surprise is his meticulous approach to keeping the semblance of veracity. The Primes “can move around, of course, but I suspect that they shouldn’t pick up anything or touch anyone (and no such moment is scripted),” explains the playwright; instead, “[i]t may be interesting to highlight, in contrast, the physical contact in scenes between human beings” (75). Even the theatrical space should help to highlight the distinctiveness of Primes. Harrison’s suggestion is that “it may be helpful if there is a kind of dim perimeter around the living room which the Primes occupy after they’ve been introduced, when they aren’t actively in a scene” (75). The spatial boundary, however, extends beyond the stage design for highlighting ontological differences in a particular theatrical moment. For Harrison, the dim perimeter should extend its meaning beyond the marker of a physical space, and, while economically drawn, the strip of darkness should

³ “Whether you think this is good news or bad could be an interesting psycho-spiritual Rorschach test, especially considering who’s footing the bill,” concluded Sarah Lunnie. The last part was a reference to the institution administering the apparently arts-related grant, namely DARPA. The name stands for the Defense Advanced Research Projects Agency, operating in the field of a military technology.

eventually encompass time. “I imagine,” says Harrison, “that this will help establish the sense of their immortality in Part Three—the way that they far outlive the flesh-and-blood problems of the people they’re mimicking” (76).

The author was explicit about a strict rule for staging which would permit only a single element—the phrase “I don’t have that information” spoken “when the Primes incriminate themselves” or “when they’re stumped by something”—to let the audience discern the thin line between a robot and a human (75). This strategy does work, if only on my own single example. Harrison intended to narrate the family story with an authority which invites our trust:

There shouldn’t be anything robotic or creepy or less-than-human about the Primes’ behavior. That is why I haven’t identified them in the script as “Walter Prime,” “Marjorie Prime” or “Tess Prime.” The technology is advanced enough that they aren’t broadcasting their inhumanness—and we, like the characters in the play, should be able to forget that they aren’t real. (75)

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If we are to immerse ourselves in the story, the robots operating “on a technology more advanced than what we’re accustomed to” must not act as a distraction: “The less the audience is put in mind of how the technology works, the better” (75).

Even though the characters (and the audience) are meant to be deluded that the Primes are human, they nevertheless comply with Asimov’s laws of robotics (1950) in the sense that they obey the orders given to them by the humans. Still, there is a twist regarding the robot’s apparent agency (Grynszpan et. al; Barlas), most probably intended. This occurs when the Prime initiates the topics of the conversation (“I could tell you a story”) or scrutinizes Marjorie’s apparent reluctance to eat (“Marjorie. Where are the dishes?” or “We both know what no dishes means”) to veil the aura of artificiality of a human-robot exchange. Yet we still fall for it and take the agency’s initiative in good faith. The way in which the illusion works can be illustrated by this particular excerpt from Scene 1 in Part One of the play:

WALTER: I could tell you about the time we went to the movies.

MARJORIE: We went to a lot of movies.

WALTER (*Does she remember the significance?*): But one time we saw *My Best Friend’s Wedding*.

MARJORIE (*She doesn’t remember*): *My Best Friend’s Wedding*. . .

WALTER: There's a woman—Julia Roberts. For a while it was always Julia Roberts. And she has an agreement with her best friend, her male best friend, that if they're not married by a certain age, then they'll marry each other. And she's about to remind him of the agreement but it turns out he's already fallen in love with this nice blond—Cameron Diaz. And so Julia Roberts spends the whole movie trying to ruin things between her friend and Cameron Diaz, which is not very sympathetic behavior for America's Sweetheart. But it's all okay in the end, and she has a gay best friend who delivers one-liners.

MARJORIE: Did I like it?

WALTER: You said you wanted a gay best friend afterwards.

MARJORIE: Did I get one?

WALTER (*Faintly generic*): I'm afraid I don't have that information.

Pause. She scrutinizes him.

MARJORIE: Why did you pick that story? Why did you pick *My Best Friend's Wedding*?

WALTER: It's the night I proposed to you.

MARJORIE: Oh Marjorie, the things you forget.

You were trying to tell me and I wouldn't let you. (Harrison 9)

The scene constitutes our first encounter with Marjorie and Walter Prime so there is still a sense of novelty and caution before we comprehend the mechanism on which the Primes as companions operate. Then we may think we have grasped it. The stage is set, the rules seem clear: Marjorie embodies a dementia-stricken woman in her late 80s with a staunch sympathy tinged with exasperation, and Walter, who looks like her late husband in his 30s, keeps her company to help her untangle her ever-entangling brain and “provide comfort.” Praiseworthy, indeed. So we move on to follow up on the rest of their conversation, but, for some, the reality of the situation remains uncertain. Only the last pages of the text, Harrison's “Thoughts on Primes,” clarifies it as we read: “The set should never broadcast that we're in the future. Rather, the audience should catch on through the dissonant experience of watching an 85-year-old woman with the memories of someone born in 1977” (76). Indeed, when *My Best Friend's Wedding* was released in 1997, it must have been a long time since

Walter had proposed to Marjorie. If we have failed to notice such a subtle clue, then there is a high probability that the illusion has worked.

The story with the movie has a sequel. Since the entire filmic narrative spans through Part One and Part Three, as such it constitutes a protracted dramaturgical path from the exposition through the climax up to the denouement, offering the reconceptualization of human identity shaped by autobiographical memory. Right after the improbable story of Walter's proposal, Marjorie conjures up the individuating alternative to the backbone of her most romantic memory:

MARJORIE: What if we saw *Casablanca* instead? Let's say we saw *Casablanca* in an old theatre with velvet seats, and then, on the way home, you proposed. Then, by the next time we talk, it will be true.

WALTER: You mean make it up?

MARJORIE (*Narrowing her eyes*): You're very serious. You're like them. Especially Tess. (Harrison 10)

Suddenly, we find ourselves in a game in which the stakes are particularly high—the episodic memory which has a tremendous impact on the functioning of the self. In an unexpected move, Marjorie takes the initiative and reclaims the agency attributed to her holographic companion. “Let's invent our past anew!”, she seems to be saying, for once mindful of her deteriorating capacity for the retrieval of the past memories, but also triumphant of her cunning plot to defy her daughter's imposing authority. “Everything gets me in trouble with her,” complains the incapacitated parent who grows eerily aware that in the traditionally established hierarchical pattern of the mother/daughter relationship their tables have irreversibly turned (Harrison 10). “She's the mother now,” concludes Marjorie, and with this pessimistic admission her resigned tone unexpectedly subsides (10). Instead of triggering the redress for what she takes as injustice, Marjorie's momentary flare abruptly loses its spark. Instead of a vaunted triumph heralded by the return of cognitive reflexivity and reclaimed agency, she sinks again, and, reassuming her passive role, watches Walter once more take the lead. In a “faintly generic” manner he asks a follow-up question: “Tell me more about your mother,” which proves that he must have misinterpreted the context in which Marjorie has just used the word “mother” (10). Then, suddenly, when we think it is all over, in Part Three, we are transferred to a space where not only the tables have turned again. This is the same living room, but it feels more minimalistic. It is a bright, empty

space that seems to have been untouched by the passing of time, even though centuries may have passed, “planets [may] have turned” and “bones [may] have been bleached” (Harrison 70). In a surreal scene, Tess Prime, Marjorie Prime and Walter Prime sit together, appearing lively and human-like rather than robotic. Walter begins to tell a familiar story that we recognize from Scene 1, which suggests that memory and truth are often mistaken for each other. The scene involves an old movie theatre that played classic films, including *Casablanca*—one of Marjorie’s favorites. Marjorie recites a line from the movie, and Walter says that they went to see it together:

MARJORIE: I wore blue.

WALTER: And Sam played, and Bogie drank, and Bergman was beautiful—but not as beautiful as her.

TESS (*“That’s sweet”*): Aww, Dad.

WALTER: And I stopped her in the alley outside the theatre afterwards, and I got down on one knee—the pavement was wet but I didn’t care—and I got out the ring.

TESS: And you said yes, of course?

MARJORIE: It was “maybe.”

WALTER (*To Tess, scandalized*): “Maybe”!

MARJORIE (*Playful*): I had world number eight to consider.

WALTER: But she came around.

TESS: How?

WALTER: A campaign of constant prodding.

MARJORIE: He wore me down—isn’t that romantic?

WALTER: But aren’t you glad I did?

MARJORIE: I am.

WALTER: And the rest is history.

Beat. (Harrison 70)

Although Marjorie and Walter's story featuring *Casablanca* does not display the same level of cunning agency as Marjorie's original tale, it serves as the most vivid mode of inventiveness. This dialogue calls for an approach that deals with both memory and technology. Revisiting Endel Tulving's seminal theory of episodic memory shows that the Primes do not sidestep meaning, but rather carry and alter it, with unforeseen consequences. Tulving explained episodic memory as "a recently evolved, late-developing, and early-deteriorating past-oriented memory system, more vulnerable than other memory systems to neuronal dysfunction, and probably unique to humans" (5). Unlike semantic memory which is used for storing facts, episodic memory "makes possible mental time travel through subjective time, from the present to the past, thus allowing one to re-experience, through autoeic awareness, one's own previous experiences" (Tulving 5). It must be remembered that the Primes are designed to assist people with fading memories by being fed with information about the individual they are simulating. The accuracy and the completeness of the memories which the Primes store depend on the information they receive. Therefore, there is no agency on their part and factual inaccuracies can only be attributed to the source, namely, the humans. We are capable of distorting our past by omission or commission (Schacter 5). When the past recedes with the occurrence of new experiences (Schacter 12) or our memories are permeable to outside suggestive influences (Schacter 112), these alterations, as research suggests (cf., among others, O'Keane; Bernecker and Michaelian; Loftus), should not be treated as flaws in the system design, but rather as "a window on the adaptive strengths of memory" (Schacter 6). Reactivating the past in *Marjorie Prime* proves that memories are not "snapshots from family albums" which can always be retrieved in the same form; rather, they are malleable formations tinted with bias "by attributing to them emotion or knowledge we acquired after the event" (Schacter 9). As Hilde and Ylva Østby explain via a metaphor related to the play:

Memory is more like live theater, where there are constantly new productions of the same pieces. . . . Each and every one of our memories is a mix of fact and fiction. In most memories, the central story is based on true events, but it's still reconstructed every time we recall it. (63)

In the analyzed case, the imprecision of the title of the movie (*My Best Friend's Wedding*, or *Casablanca*, or perhaps another one) ruptures the existing schemata which entail that "one is the same person now as in the past and will be in the future" and any subsequent changes "are explained and understood through experiences of growth that lead to new perspectives on self" (Vanderveren et al.) There is a cognitive dissonance

which occurs when we realize in Part Three that the version which prevailed as a specific personal memory (*Casablanca*) was indeed the result of a factual manipulation. While this particular memory manipulation may have a tremendous impact on the characters' identity, it must be emphasized that this phenomenon is no longer confined to the realm of a fictional world. In 2019 a report was published in *Scientific American* describing an experiment leading to the creation of artificial memories:

Using laboratory animals, investigators reverse engineered a specific natural memory by mapping the brain circuits underlying its formation. They then "trained" another animal by stimulating brain cells in the pattern of the natural memory. Doing so created an artificial memory that was retained and recalled in a manner indistinguishable from a natural one. (Martone)

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The significance of this experiment was that it demonstrated that "by manipulating specific circuits in the brain, memories can be separated from that narrative and formed in the complete absence of real experience" (Martone). The question remains how the possibility of manipulating human emotions, which is becoming all the more real, translates into the susceptibility of the life story schema to distort "a mental representation of major components of a person's life and . . . the individual's understanding of how one's life story is constructed within the culture one lives in" (Vanderveren et al.).

Finally, with reference to an important function of memory, namely facilitating the process of coping with and resolving negative emotions, in *Marjorie Prime* such therapeutic intervention ultimately turns out to be disastrous in its consequences. For Marjorie's daughter, Tess, who was exposed to the Primes experiment initiated by her husband Jon, the aftermath of this relationship found its tragic finale in her suicide. Due to the overwhelming accumulation of negative emotions, Tess's autobiographical memory integrated too many destructive episodic memories related to her difficult relationship with her mother following her elder brother's suicide. The activation of negative emotions may be attributed to her troubled relation with Walter Prime. It was Tess's firm belief that the Prime impersonating her late father is harmful because it may remind her mother of the truth about her son's Damien's suicide, the burden of which she had just been liberated from due to dementia.

Apart from reading Tess's visible distrust of the AI companions as a protective mechanism, I would like to offer a complementary interpretation rooted in Masahiro Mori's concept of the *uncanny valley*. In 1970 a robotics professor from Tokyo wrote an essay on the trajectory

of a human reaction to humanoid robots. From the example of a human reaction to a prosthetic hand, Mori traced the appearance of an “eerie sensation” when “a person’s response to a humanlike robot would abruptly shift from empathy to revulsion as it approached, but failed to attain, a lifelike appearance” (Mori et al. 98). Mori designed a mathematical graph depicting the relation between “the human likeness of an entity, and the perceiver’s affinity for it” (99). While the affinity for the industrial or toy robots would grow proportionately upwards, in the case of a prosthetic hand, which resembles the human hand most of all the quoted examples both in looks and in function, the relation plummeted and reached a negative value. It was this slump on the graph which Mori called the uncanny valley and his explanation for the phenomenon hinged on our loss of affinity when the object looks “almost” real:

One might say that the prosthetic hand has achieved a degree of resemblance to the human form, perhaps on par with false teeth. However, once we realize that the hand that looked real at first sight is actually artificial, we experience an eerie sensation. For example, we could be startled during a handshake by its limp boneless grip together with its texture and coldness. When this happens, we lose our sense of affinity, and the hand becomes uncanny. (99)

“Why were we equipped with this eerie sensation? Is it essential for human beings?”, asks the scientist and his response links our sense of alienation to the human instinct of self-preservation (100). When activated, this instinct “protects us from proximal, rather than distal, sources of danger. Proximal sources of danger include corpses, members of different species, and other entities we can closely approach. Distal sources of danger include windstorms and floods” (100).

In other words, the uncanny valley represents our survival response towards something human-like, but not a hundred percent life-like. As Helen Hastie from the National Robotarium in Edinburgh explained on the occasion of the unveiling of Optimus, Tesla’s prototype humanoid robot: “If it’s too human-like, it will put off the human” (qtd. in Kleinman). The uncanny valley sensation evolved from an analogous affective response to death or disease (Moosa and Ud-Dean 13). This type of repulsive response was once theorized by Silvan S. Tomkins as an affect of disgust and by Julia Kristeva as an abject. In the case of Tess, the following dialogue with Jon exposes the full range of motivations supporting the occurrence of the uncanny valley sensation in relation to Walter Prime:

JON: Does it bother you that she’s talking to a computer program? Or that it’s a computer program pretending to be your dad.

TESS: It bothers me that you're *helping* it pretend to be my dad—or some weird fountain of youth version / of him—

JON: That's how she / remembers him—

TESS: Both of you are helping it.

JON: Not “helping”—that's just how it works. The more you talk, the more it absorbs.

TESS: Until we become unnecessary. Isn't that how it goes?

JON: In science *fiction*.

TESS: Science fiction is *here*, Jonathan. Every *day* is science fiction. My head spins. Doesn't your head spin? We buy these things that already know our moods and what we want for lunch even though we don't know ourselves. And we *listen* to them, we do what we're told. Or in this case we tell them our deepest secrets, even though we have no earthly idea how they work. We treat them like our loved ones.

Beat.

JON: Are you jealous?

TESS: What? No. Of the Prime?

JON: You are!

TESS: Am I supposed to not notice she's being nicer to that thing than to me?

JON: It's your father she's being nice to.

TESS: It is not my father.

Short pause. (Harrison 18)

While the urge to protect her mother from the haunting memories of the past might have constituted a viable motive for Tess's aversion to the Prime, from a cognitive point of view, one of the underlying causes might have been the neuro-physiological mechanism which amplified Tess's felt experience. It first triggered the biological response (repulsion), only later to be combined with a psychological feeling of apprehension and finally to culminate with a complex combination of affects with autobiographical memories of her

family tragedy. In line with Tomkins's affect-feeling-emotion trio, cognitive dissonance combined with the self-preserving mechanism provided a backbone for Tess's motivation to treat the AI companion with ambivalence.

In contrast, her husband Jon embraces the uncanny sensation in a completely different way. In Part Two, we observe a particularly emotional scene in which Jon is programming the Prime of his recently deceased wife. He is fully aware that it is him who holds all the memories and that the Prime is only "a backboard" (Harrison 67). Therefore, it eventually occurs to him that Tess was right and that talking to a Prime signifies talking to oneself. Nevertheless, despite all the reservations, for Jon the Prime becomes a tool for dealing with a complete loss. He comes to appreciate the AI hologram as a sophisticated technology that can provide a sense of comfort and companionship despite its uncanny quality.

In the closing remarks of his article on experiments with artificial memory, Robert Martone provides a clear indication that the "scribes of the soul," as he calls memories, "cut to the core of our humanity." Therefore, as a conclusion to this essay, it may be ascertained that in *Marjorie Prime*, the relationships which the human protagonists—Marjorie, Tess and Jon—have developed with the Primes—the humanoids powered by Artificial Intelligence—provide a multilayered ground for exploring and theorizing how the self can be conceptualized in reference to the reactivation of memory affected by dementia. The play explores the benefits and dangers of relying on technology to preserve memories and the ways in which we create our own delusions and frustrations about our past when interacting with the Primes. The play also delves into the concept of selective memory and how people often remember things differently, depending on their own biases and perspectives. Overall, Harrison's approach to memory in *Marjorie Prime* is a nuanced and thought-provoking exploration of the ways in which we remember and forget, and the impact that technology can have on our memories and our relationships.

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