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Imagining Feminist Futures on the Small Screen

Inclusion and Care in VR Fictions

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Abstract

Virtual reality signifies not only an immersive media technology, but also a cultural desire to allow bodies to inhabit other worlds as easily as pushing a button or putting on goggles. As the VR industry has grown, so too have popular imaginings of its potential. We draw on feminist technoscience studies to analyze and evaluate recent VR science fiction media narratives. How do they articulate VR's role in the future, and for whom? Who are the heroes of these worlds and what makes them heroic? Steven Spielberg's would-be blockbuster *Ready Player One* (2018) (*RPO*) offers a techno-masculine narrative in which a hero saves the world. In contrast to *RPO*, television and streaming small screen science fiction narratives have focused on the extent to which VR can save not worlds, but individuals. A surprisingly consistent trope has emerged in these shows: one of VR as a therapeutic tool for a woman coping with trauma. While certainly a departure from *RPO*'s Hollywood vision of VR, this analysis examines how episodes of *Reverie*, *Philip K. Dick's Electric Dreams*, *Kiss Me First*, and *Black Mirror* offer visions of VR that reflect the feminist ambitions of the contemporary VR industry.

Prologue

"Virtual reality" holds in its name a contradiction similar to that of "science fiction." How can something be simultaneously virtual and real, science and fiction? It is precisely this contradiction that allows both media to open up new worlds. Both create spaces where the rules can be different; they are sites of play and experimentation. Feminist poet and science fiction author Marge Piercy (1994), drawing on Isaac Asimov, has written that science fiction (SF) asks

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three questions—“what if,” “if only,” and “if this continues.” By asking these questions, she articulates how SF can be a tool to imagine feminist worlds and to make them thinkable. In contrast to the normalized toxic masculinity and white supremacy in Hollywood and Silicon Valley, many members of the virtual reality (VR) community¹ see it as a fresh site for media innovation where diverse people can imagine, build, and share new worlds. In these inclusive worlds, VR expands who can experience answers to questions like “what if I were the hero?” and “if only that were my home!” SF, in turn, presents an opportunity to imagine new worlds for VR, experimenting with who makes and uses it, and for what purposes. We consider SF stories told about VR in contemporary traditional media to be explorations of the VR community’s anti-racist and feminist imaginaries.

SF has always mediated VR, creating a hall of mirrors when studying the worlds that VR creates and inhabits. Today’s VR innovators narrate their field through a mix of fictive and historical touchstones, centered on the tales of male progenitors. Sometimes the origin lies with narratives of mad science, such as H.G. Wells’s 1895 story, “The Remarkable Case of Davidson’s Eyes,” in which a freak laboratory accident has Davidson seeing and thinking himself on a distant island while his body remains in the lab. Other times, Stanley G. Weinbaum foreshadows the future in his 1930 story “Pygmalion’s Spectacles,” in which Dr. Ludwig creates goggles that immerse users in a fairytale love story. Most origin narratives trace to the actual engineering professor Ivan Sutherland, who imagined “The Ultimate Display” (1965) before building the first head mounted display (HMD) that could, like Davidson’s eyes or Ludwig’s goggles, create interactive visual illusions. Inspired by Sutherland’s research, the 1980s saw a wave of male SF authors imagining virtual worlds as new frontiers for cybercowboys, as in *Tron* (1982) and *Neuromancer* (1984). During this decade, polymath Jaron Lanier popularized the term “virtual reality” and by century’s end, Hollywood marshalled its special effects to place VR in the worlds of *The Lawnmower Man* (1992), *The Thirteenth Floor* (1999), *eXistenZ* (1999), and *The Matrix* (1999). The industry tried to realize these dreams—Nintendo offered the Virtual Boy (1995) for home gaming while W Industries introduced VR to the arcade.² Then a pause. The growth was too fast, the hype too high, and the tech too expensive, not to mention that the SF dreams of VR worlds looked like nightmares. Immersive VR

¹ As we elaborate later, the “VR community” refers to those developing VR hardware and VR content, as well as those both within and outside the industry advocating for a future where VR is a more integrated part of the day-to-day. This is distinct from both the vibrant communities that inhabit virtual worlds like *Second Life* and traditional media producers who tell stories about VR. There is, of course, overlap between all three of these groups.

² Balsamo (1996) illustrates the heteronormative masculinity of the VR industry in the 1990s.

retreated back into the laboratory. Screen-based virtual worlds like *Second Life* and massive multi-player online games like *World of Warcraft* proliferated, but the dream of fully immersive media was deferred.³

In 2011, the book *Ready Player One* told the curious story of a VR future steeped in 1980s nostalgia. What if the trajectory of VR development imagined in the 1990s came true? The author seems unaware of the research that took place during the interceding decade: psychological studies of perception using VR, clinical and surgical applications, and the steady development of lighter HMDs with better spatial tracking and graphics capabilities. In 2014, we come to the point in VR's story that today's industry treats as a watershed: Facebook purchased the VR headset company Oculus for a reported \$2 billion. Two years later, the Oculus Rift, a \$600 commercial HMD (that requires a \$1K gamer PC to run) hit the market. At last, mused the growing industry, the future of the technology seemed bright. But it was an industry steeped in the male tales of past decades. In response to a widely circulated image of Mark Zuckerberg striding through an auditorium of men in HMDs, the cultural critic Ian Bogost (2016) joked in *The Atlantic*, "In Virtual Reality, Finally a World for Men."

Since 2014, however, both the VR community and its SF representations have become more diverse. What worlds do today's cinematic depictions of VR imagine? Steven Spielberg's 2018 adaptation of *Ready Player One* (*RPO*) is the closest there has been to a big screen blockbuster while the small screen—streaming services and network TV—offers alternate imaginings of VR. Whereas *RPO* represents an orthodox Hollywood narrative, centering on a white male hero who must save the world, the small screen offers counternarratives (Giroux et al. 1996) foregrounding women, queer people, people of color, and neurodivergent protagonists who must save one another.

Comparing this dominant VR narrative to these counternarratives, we present an essay that, like the media it analyzes, unfolds in three acts. In Act 1, we develop the feminist STS lens we bring to these stories and draw on both authors' ethnographic work with the VR community to flesh out connections between industry and fiction. We show how these stories use the theme of trauma to stage the VR community's ostensibly feminist dreams of inclusive, technomediated care. In Act 2, we follow the fictional female heroes as they use VR as a tool of care, instead of a site of adventure. In Act 3, we consider how the motif of the home (be it virtual or otherwise) is transformed in these SF futures from a site of regressive nostalgia to a site of healing and

³ These virtual worlds have been notoriously hostile to women and minorities, most visibly in the #GamerGate controversy of 2015.

progress. With the drama resolved, we address the promises and pitfalls of producing feminist counternarratives in a non-feminist world.

Act I: Set-Up: Narratives, Trauma, and Virtual Reality's Present and Future

SF cinematic portrayals of VR often ask “what if” this technology reaches wide-scale adoption. David Kirby (2010) sees the goals of near-future SF as making an audience receptive toward emerging technology by placing it in a world where it is normal, useful, and viable. One of Kirby’s case studies is the 1992 movie *The Lawnmower Man*. Despite its horror and dystopian elements, Kirby explains how director Brett Leonard desired the movie to capture the potential of VR as an interactive medium by staging it as a seamlessly integrated part of its world. While he acknowledges that “a film’s narrative structure contextualizes technologies within the social sphere,” what is “new” in these futures is the tech, not society (Kirby 2010, 45). SF, in his view, advances “technoscientific agendas” (ibid.), not social agendas. However, in focusing on how *effortless* the depictions of these technologies are, one misses how *effortful* it is to live in these imagined futures.

What if the analysis of near-future VR SF pieces focused not on the technology but rather on the social worlds they imagine? The works of Marge Piercy, Ursula K. Le Guin, Octavia Butler, Margaret Atwood, and N.K. Jemisin are often analyzed as experiments in social relations because they focus more on the lives of characters than the technologies they live with (Pandian 2018; Penley et al. 1991; Womack 2013). Following suit, feminist STS scholarship has also taken a speculative turn to explore sociotechnical future-making, most prominently in the work of Donna Haraway (2013) and her methodology of speculative fabulation. Recently, Ruha Benjamin (2016) has highlighted how speculative methods can recast the future of sociocultural categories like race. Similarly, Joanna Radin’s (forthcoming, 7) cross-reading of Michael Crichton and STS theory proposes the speculative present as “a strategy for considering both the worlds depicted in speculative works and the world-building that those speculative visions are used to perform beyond them.” These speculative methods invoke fiction as a technique for giving shape and substance to marginalized visions of the future. Feminist interventions, stories, and their characters illustrate that technological agendas are always already social agendas.

We approach contemporary imaginings of VR futures as sites of cultural construction. While the big-screen blockbuster *RPO* enacts a technoscientific agenda promoting VR through a heroic, world-saving spectacle, the small screen VR counternarratives we introduce below are notable for offering imaginaries of VR in women’s everyday lives; not as world-savers, but

as heroines protecting communities and homes. We will first briefly explain how narratives of inclusion and care are reflective of the VR community's current understanding of itself before showing how, in shifting the analytic focus away from spectacular technology, we encounter unspectacular narratives of coping with everyday trauma.

The VR Industry and its Inclusion and Care Imaginaries

Both authors have done fieldwork in Los Angeles's VR industry, part of the city's growing tech scene otherwise known as Silicon Beach. Brandt (2013, 2016) focused on VR-augmented therapy, conducting research before the current VR boom when most VR innovation had retreated to military-funded university laboratories. In this period (2010-2011) when VR was still expensive, clunky, and difficult to develop, clinical VR was seen by many as not only benevolent but perhaps the only worthwhile use of the technology. Though VR was largely out of the entertainment media spotlight, hundreds of news stories hailed its potential to help care for traumatized war veterans. Messeri conducted fieldwork in 2018 with people producing VR content for both entertainment and workforce training. During this period of affordable hardware and accessible tools for creating VR experiences, the community embraced a narrative of VR being an inclusive industry; a counternarrative to the tech and entertainment industries that are traditionally male, white, and deeply hierarchical (Messeri 2018). In both periods, we found VR entangled in issues of gender and diversity as the industry reimagined itself as a site of care and inclusion.

The ethos of VR as a site of inclusion has its roots in the previous VR wave. Jacki Ford Morie has observed that during the 1980s and 1990s, when most VR efforts and research were geared toward military and industrial application, several artists—herself included—gained affiliation with VR labs to experiment with the technology as a new artistic medium. Whereas engineers working on VR were mostly male, these artists were predominantly (white) women.⁴ Looking back at the history of VR, Morie argues that “Truly unique works—those that serve to push the aesthetic boundaries of the medium appear to emerge from a feminine approach. This approach seems well suited to immersive environments as it incorporates aspects of inclusion, wholeness, and a blending of the body and spirit” (2012, 6). Female VR artists, Morie contends, create possibilities “for becoming” through emergent interaction between human and technology (ibid.) Morie argues that this approach realizes the full power of the medium

⁴ This imagination of a new medium as a potential site for inclusion is not unique to VR. Similar arguments have been made about the internet (Harcourt 1999) and web-based television (Christian 2018).

better than the more closed, pre-scripted, and rational one that she identifies with VR in male-dominated sectors. While cutting uncomfortably close to gender essentialism, the idea that VR has a unique potential to be an inclusive technology is reinforced by research that shows how virtual worlds like *Second Life* provide spaces for people with disabilities to reconfigure ideas of selfhood and agency (Boellstorff 2018; Davis and Boellstorff 2016; see also Brandt, Kiryakoza, and Reddan., forthcoming).

To be clear, inclusion and care aren't the only imaginaries animating the VR community, let alone VR SF. VR's military origins and gaming connotations are inescapable, even appearing in these narratives of care. In one series in our sample, *Kiss Me First*, the main character primarily uses VR for combat gaming before discovering a misfit community in a hidden oasis. In *Reverie*, another show in our sample, the leadership of a VR company comes to loggerheads over the Defense Department using their system in a secret counter-terrorism program. VR has also been used as a device to destigmatize care in popular culture by making it look "cool," like a war-themed video game (Brandt, n.d.); even before 2014, television crime dramas including *Lie to Me* (2010), *NCIS* (2012), and *Rizzoli and Isles* (2012) had episodes featuring VR as a high-tech tool for helping traumatized service members. But for the paper at hand, we're interested in how the entertainment industry's fictive narratives of VR futures reflect the feminist-inflected discourses of inclusion and care prevalent in the present-day VR industry.

VR's Science Fiction Narratives and Counternarratives

We selected SF stories that premiered after 2014 (after Facebook's acquisition of Oculus) and imagine worlds in which VR has been widely adopted.⁵ VR, in these imaginaries, is a technologically mediated fully immersive experience of both body and mind. Today, VR is experienced through an HMD and researchers are working on haptics and feedback systems to make the feeling of being in the virtual space as convincing as possible. In the fictions here examined, some retain the HMD as the gateway to VR. Others play with subtler neuro-technological mechanisms to achieve a sense of immersion. We consider all of these to be stories about VR because they represent physical and mental interfaces with a computer-generated virtual world.

⁵ For aligned analyses of earlier media representations of VR, see Balsamo (1996), Bukatman (1993), Chan (2015), Dery (1996), Hayles (1999).

Our analytic focus is not on the VR gadgets in these fictions, but rather on the social relations that VR articulates. Both the dominant narrative and counternarratives presented below imagine VR as an accessible technology that provides access to other worlds where one can fulfill desires that cannot be met in the actual world.⁶ VR offers a site of healing by allowing users to go somewhere or be someone else for a time; to have a virtual home away from home. It is “virtual” in the sense of having virtues⁷; it offers an escape from everyday challenges of living. Even though they deviate from mainstream clinical VR practices, many of the stories do the political work of imagining VR as a technology of care with a capacity to improve and sustain the lives of its users (see also Martin, Myers & Viseu 2015; Puig de la Bellacasa 2010). Importantly, the depicted users of VR are far more diverse than those appearing in prior waves of VR SF (where both makers and consumers of VR were predominantly white men). We were drawn to this aspect of contemporary VR SF because it reflects the imagined inclusive future the VR industry has for itself. Diversity in casting and narratives (things visible to the viewer) are also influenced by trends occurring in traditional media production that are less visible to the viewer. While our analysis is primarily informed by (1) ethnographic research about the *VR industry* focused on producers of VR experiences and (2) analysis of fictional *representations* of VR futures, it is relevant to draw attention to scholarship in media studies and aligned disciplines that attends to issues of diversity in *traditional Hollywood production cultures* and impacts on representation. The lack of diversity behind the scenes affects the on-screen stories that are told (Bielby and Bielby 1996; Conor, Gill, and Taylor 2015; Erigha 2015; Lauzen and Dozier 1999). Not only do changes in staffing influence the diversity of stories that are told, but so do different technological and economic production pipelines (Christian 2018; Jenkins 2006; Maule 2017). For example, Netflix and Amazon are structured by a different economic logic than traditional network television.

It is significant to note that the media examples we selected as exemplary of diverse on-screen representation remain relatively ‘un-diverse’ behind the scenes.⁸ While two shows (*Reverie* and *Electric Dreams*) have some race and gender diversity among their directors and writers, for the most part, the directors, writers, producers, and creators are white men. In most of the shows, there is one white woman in a production role. The diverse socialities on screen

⁶ Instead of contrasting the “real” with the “virtual” (as is done in *RPO* and many of the other media here analyzed), we prefer to contrast “virtual” with “physical” or “actual”, underscoring the reality (and unreality) of both conditions (Boellstorff 2016; Lévy 1998).

⁷ This point has often been made by scholars of the virtual, including Haraway (2003), Hillis (1999), and Der Derian (2009).

⁸ Martha Lauzen researches present and past trends of women on and off camera. Demographic reports are available at <https://womenintvfilm.sdsu.edu/research/>.

do not yet reflect the off-screen reality. We will return to this paradox in the conclusion when asking just how feminist are these media pieces. For now, we shift to analyzing the content itself in which we find casts of diverse ethnicity, genders, sexualities, and ages. Going beyond the facade of diversity casting, we consider how the stories of VR that are being told might also be more inclusive than those that came before.

Let us enter these SF worlds, first by describing today's dominant VR narrative, and then introducing the counternarratives that reimagine some of its core virtues. The 2018 film *Ready Player One* represents the dominant VR narrative and also highlights the reflexive relationship between the VR industry and its media representations. When the book was published in 2011, fledgling VR companies quickly adopted it as both bible and vision.⁹ Spielberg signed on to direct in 2015 and during production utilized the commercial VR headsets that had just hit the market to test out different cinematographic moves in the virtual world where half the movie takes place.¹⁰ *RPO* represents the multi-directional flow between fiction and technological innovation, between Hollywood and industry (see also Lenoir and Caldwell 2018). Like *The Lawnmower Man* before it, it represents an effort by movie men to promote cool tech (Kirby 2010).

RPO takes place in 2045, with action split between Columbus, Ohio and a virtual world called the Oasis (Ontologically Anthropocentric Sensory Immersive Simulation). Users experience the Oasis through an upgraded imagining of today's commercial HMDs. Vast troubles beset the physical world in the late Anthropocene. Most people live in squalid conditions, making escape to the Oasis desirable to everyone we encounter. It provides an alternative habitation from a collapsed society and a devastated planet. The Oasis gives order, meaning, and an endless source of spectacular stimulation to the people of 2045. It fulfills many needs for the human inhabitants of a deeply traumatized world.

Upon his death, the co-creator of the Oasis, James Halliday, ceded his company to whoever could find three keys hidden inside the world. The movie unspools as a race between our heroes, a multi-ethnic team of five idealistic young gamers led by Wade (known as Parzival in the Oasis) who wish to preserve Halliday's utopian vision of the virtual world, and their nemesis, IOI (Innovative Online Industries). IOI are corporate villains intent on transforming

⁹ Facebook bought a copy of the book for all of the employees at Oculus to help inspire their work. This idea of SF motivating an industry is by no means unique (William Gibson's *Neuromancer* gave early Silicon Valley workers the language of cyberspace (see e.g. Stone 1991; and for SF's impact on the space industry (Kilgore 2003; Penley 1997)).

¹⁰ At least one other production ("San Junipero") utilized what is known as "virtual production"—using VR as a tool of filmic production, not as an object of storytelling (Brooker, Jones, and Arnopp 2018).

this place of escape into an advertisement-filled reflection of the bleak physical world, fueled by the forced labor of indentured cyber-serfs. In the end, the heroes prevail, find love and friendship, and decide that the Oasis needs to be turned off on Tuesdays and Thursdays because, as Wade narrates in the movie's final moralizing moments: "People need to spend more time in the real world. Because like Halliday said, reality is the only thing that's real." The disciple quotes the creator and restores order.

While the film touches on the idea that VR can be a site of identity play ("People come to the Oasis for all the things they can do. But they stay for all the things they can be") or masking (Wade's best male friend in the Oasis, Aech, is a female, Helen, in the physical world),¹¹ the movie seems less interested in how VR shapes relationships than in reinforcing the trope of the gentle, misunderstood genius and the hero who, with the help of some friends—a morally centered white female love interest, and a powerful mentor—can save the world. While *RPO* is on the surface reflective of the increasing diversity of Hollywood casting, at its core it reinforces the narrative of the white male technological genius, saturated as it is with references to a very white version of 1980s nostalgia. It is a male tale told by and for male industries; the future it imagines for VR is no feminist utopia.

Contrast this VR SF imaginary with other recent ones that unfold on the small screen.¹² In these counternarratives, instead of VR being a world that needs saving, VR is a tool through which people seek salvation. In surveying post-2014 small-screen fiction, we were surprised to see how often this theme appeared, not only in the stories examined here, but also in shows like *Altered Carbon* and *Maniac* (both released on Netflix in 2018). Our analysis focuses on a sample of four stories that center on female protagonists in speculative futures.¹³ In "San Junipero" (2016), an episode of the Netflix series *Black Mirror*, the virtual world is a therapeutic retreat for those facing death as well as an optional afterlife for the consciousness to inhabit after the body has died. We follow the love story of Yorkie and Kelly, women whose families did not let them

¹¹ In the novel *Ready Player One*, Helen explains to Wade that her masculine avatar enabled her to safely enjoy the virtual world of the Oasis by experiencing it through a socially privileged body. This kind of avatar gender-swapping is practiced by many real-world gamers seeking to avoid unwanted attention and the kinds of toxic social relations in virtual communities made public during the #Gamergate controversy of 2014.

¹² The different economic logics (alluded to above) between movie and television (and again between network and streaming) also impact the kind of stories being told (and for whom these stories are intended). On the big screen, the need to appeal to a global audience leads to storytelling that rests on visual spectacle (explosions!) rather than the intimate character development we see in our counternarratives. For a review of various approaches to studying the political economy of the entertainment industry, as well as a proposal for a critical media industry studies approach, see Havens et al. (2009).

¹³ In *Altered Carbon*, the story of Lizzie Elliot's post-traumatic virtual rehabilitation is a subplot. *Maniac* ostensibly has two protagonists, Owen and Annie, but Owen's recovery is foregrounded. The story takes place in an alternate future based on 1990s technology and does not speculate on where current technology will lead.

live as lesbians in the physical world, but who can now explore that aspect of themselves *in virtuo* as they approach the end of their lives. In the Amazon Prime/Channel 4 series *Philip K. Dick's Electric Dreams*, the episode "Real Life" (2017) features a policewoman suffering from survivor's guilt who explores the healing potential of embodying someone else (and in so doing gets caught up in a twisty revenge fantasy that grapples with toxic masculinity). In the series *Kiss Me First* (2018, co-produced by Channel 4 and Netflix), we meet Leila, coping with the aftermath of assisting in her sick mother's suicide. She finds comfort amongst other psychologically hurting peers in the virtual world Azanda, only to find actual healing through connection with these online friends in the physical world. In NBC's series *Reverie* (2018), Mara was a talented hostage negotiator for the LAPD before failing to save her sister's family from fatal domestic violence. Two years later, an old friend hires her to use an experimental social VR program—and her pain—to connect with other users who refuse to unplug. Collectively, these counternarratives offer a different VR SF imaginary from the one offered by *RPO*.

In moving from planetary traumas and battles over the world's fate to the personal traumas of family and workplace violence, these small screen stories provide opportunities for more inclusive counternarratives. These stories position VR as an almost everyday tool that people use to cope with pain. In so doing, they recognize that it will not take ecological and societal collapse to motivate some people to seek an alternative world. Rather than assuming a dystopian future in which value lies exclusively in a virtual world (as in *RPO*), when we consider everyday violence, we can identify many reasons why someone would prefer a virtual home over the actual one.

Small-screen stories use fiction to ask serious questions about VR's therapeutic potential. Focusing on the lives of traumatized women who enter VR in search of a sense of home and healing, they ask what role the technology might play in how and where we care for ourselves and one another.

Act 2: Conflict: Heroism and Care

One of the major criticisms of *RPO* has been that despite its cast diversity, the story is essentially Wade's heroic journey. Like many prior Spielberg films (*ET*, *Gremlins*, etc.), the narrative is about a white, mid-western boy who saves the world (Johnson 2018). But even more consequential than this is that the narrative constructs heroism in a way that unwittingly celebrates exclusionary elements of hardcore fan culture, especially in gaming communities.

To save the Oasis, Wade quests for three keys (each clued by a riddle) that Halliday has hidden. Though the Oasis has grown exponentially since Halliday created it as a gaming

platform, it still bears his mark through the seemingly infinite places and elements he recreated from the (white, male, nerd) popular culture he loved as a lonely boy in the 1980s. These include scenes and elements from Atari and Nintendo video games, movies starring Harrison Ford or adapted from Stephen King novels, *Monty Python* gags, and *Dungeons & Dragons* role playing. To find the keys, people like Wade, and the many researchers employed by IOI, become scholars of Halliday's life, developing an encyclopedic knowledge of the media he consumed. They comb through personal media archives and watch simulations of his life in order to interpret Halliday's personal semiotics, the symbolic logic of the clues, and the places to which they refer. Additionally, they need to develop comparable video game skills as Halliday in order to complete these tasks.

This vision of heroism foregrounds a narrative of rightful succession based on meritocratic performance. The person who best demonstrates their identification with Halliday will inherit the Oasis, and potentially save it from corporate greed. The film suggests that Halliday cannot be fully understood—nor the clues deciphered—through the exclusively objective approach to his biography that Wade and others pursue. At a moment of tension when it seems that pop culture trivia alone cannot pinpoint Halliday's intent, Wade's love interest Samantha (aka Art3mis) considers Halliday's emotional motivations in order to solve a puzzle. However, to secure the final key, Wade does not need to learn empathy, but rather efficiently finds the Easter egg left by Halliday's own (again, white and male) hero, the early video game developer Warren Robinett, in the Atari 2600 game *Adventure*. In sum, *RPO* envisions VR as the stage for Wade's heroic quest to save the world through identification with a genius artist from a prior generation.

The female heroes that appear in the small screen counternarratives offer alternatives to the objective-oriented vision of heroism in *RPO*. Like Wade, the heroines of "Real Life" and *Reverie* interpret elements of the virtual world in order to understand another person, but they do so not to save the world, but rather, to save someone from their pain. Like Samantha, these women are written as empathetic and interested in the emotional lives of others. VR is depicted not as a social world, but as an individualized experience, much as it is in contemporary clinical VR. But rather than being pre-scripted and controlled, the therapeutic VR experiences of *Reverie* and "Real Life" emerge through the creative intra-action of human and computer reminiscent of Morie's (2012) vision of feminine VR. However, this fusion creates complexity and danger, especially in the ways that the computer interprets human desire and reflects it in the simulation they experience. VR provides a metaphor for drug addiction, as users turn to a

technologically mediated escape from reality. The heroic work of these stories is one of care: that of saving users from choosing a world that will destroy them.

The work of care is the central drama of these SF imaginaries. While care work has historically been feminized and devalued (Martin, Myers & Viseu 2015), the counternarratives explored here elevate the status of this affective labor to heroic labor. Staged in the context of VR SF, practices of empathetic communication become a form of “tech work,” in which VR is a tool to understand, interpret, and/or intervene in the pain of others. These women are not heroic fans and gamers, but rather heroic caregivers: not the soldiers of the virtual world, but the nurses who remedy and sustain its occupants.

Virtual Vacation as Trauma Trap in “Real Life”

In the Amazon Prime series, *Electric Dreams*, Philip K. Dick’s SF stories of white everymen in strange worlds have been intentionally recast with women and people of color in order to make them more inclusive (Miller 2018).¹⁴ The story told in the episode “Real Life,” reimagines the Dick story “Exhibit Piece,” to explore a woman’s truly “electric dream.” Here, the protagonist is a traumatized person in pain and in need of care, while the hero is a loving caregiver who offers VR as relief. The episode follows the story of a policewoman named Sarah in a far future Chicago. When we meet her, she is struggling to move past the massacre of several recruits a year earlier, and still suffering from constant flashbacks and anxiety. One night after work, her wife, a redhead named Kate, offers her a gift of care that provides the opportunity to disconnect: a “vacation” in the form of a small device that attaches to her temple.

“I’m not into the whole virtual tropical beach thing,”¹⁵ Sarah tells Kate. Kate explains, “It’s not just another simulation. It’s another life.” Comparing the experience to a dream, she explains to Sarah, “You’re not just going to be somewhere else. You’re going to be someone else.” Kate cannot tell Sarah who she will be because “Every user’s experience is different. But it will be someone based on your own thoughts and dreams, drawn directly from your own subconscious.” Her gift is one of escape, and seeking relief, Sarah enthusiastically agrees to try it. When she touches the device, its lights up blue, and her pupil dilates. She wakes up in a world several generations before her own time (a near future for the viewers). In her avatar body, the blond mid-30s white woman becomes George Miller, a black male tech billionaire in his late 40s.

¹⁴ Of the ten episodes in the first season, all were written and directed by white men with the exception of “Human Is” (Francesca Gregorini and Jessica Mecklenburg) and “Kill the Others” (Dee Rees).

¹⁵ These are actually common stress-reducing VR applications.

Despite his wealth, George's life does not seem like a vacation. Like Sarah, George wants justice for a murder, that of his wife—who looks exactly like Kate—who was killed on a viral video. Also like Sarah, George indulges in VR as a “vacation” from his trauma. When he puts on his near-future headset he awakens as Sarah in the far future. In a story that draws on central themes from Philip K. Dicks' work, Sarah/George and the audience become suspicious of which life is real, and which is wish fulfillment.

One night Kate playfully coaxes Sarah into describing her vacation, which she assumes is a sexual fantasy, only to hear George's story instead. At first, Kate is intrigued by the “tale of heartbreak and revenge,” but as Sarah remains serious, Kate grows concerned. “It's still real to you, isn't it?” Sarah reveals that when she looks at Kate she sees the “other Katie. My murdered wife.” Kate is taken aback as Sarah enumerates the parallels between “both worlds.” She insists there is only one world, but Sarah worries that her own is “too perfect” to be the real one:

I mean, think about it. Doesn't it seem like some kind of ancient male fantasy? What they used to call ‘science fiction’? I literally have a flying car. I'm a lesbian with a gorgeous wife who wants to have sex all the time. I mean, can't you see how perfect it all is? Doesn't it seem like somebody else's fucking fantasy? What have *I* done to deserve a life like this?

While Sarah interprets her VR dream to mean that she is George's avatar, Kate offers a counter-interpretation based on her knowledge of the program's design:

The program is designed to generate a scenario based on the hidden desires and dreams in a user's subconscious in order to create a completely new life. You have been wracked with guilt over the massacre for over a year and the last thing you said before you started the program was that your wife is too good for you. Sarah, don't you see? The program created a world where I'm dead and you're tortured with guilt because that's what it thinks you really want deep down

Kate's tries heroically to empathize with Sarah in order to help her understand her virtual experiences. Though Kate's relationship to the company that made the device is unclear, she serves as its representative, a role to which she brings an ethic of care by taking responsibility for its unintended consequences. Realizing that the program has the potential to destroy her

wife, Kate plans to wipe the program from Sarah's implants the next day. But in the middle of the night, Sarah returns to George's world. George, too, is struggling to choose a reality to commit to. He is also struggling with memory, and shocked when his friend Paula tells him they were having an affair when his wife was killed. Paula asks George which is more plausible: that he is actually a guilty, grieving widower or a married lesbian supercop? Paula proves more persuasive than Kate in convincing her lover to face "reality." As George stomps on the headset, we hear Kate scream, "Sarah!" She and Sarah's police partner, Mario, are watching this scene play out on a screen projected above Sarah, unconscious and wired to a high-tech hospital bed. Mario asks why she would choose that life and Kate explains: "She wanted to be punished for her sins, real and imagined."

In this dark vision of VR, we are asked to consider how VR, as an escape from trauma, could instead become a trap. A gift of care becomes a self-made prison when the user cuts herself off from the possibility of interacting with her "real" loved ones. Heroic efforts to care are undermined by broken channels of communication.

Bringing the Lost Ones Home in Reverie

Reverie takes place in a near future tech company called Onira-Tech, which makes a VR program called *Reverie* that allows users to live inside of neuro-cyborg dreams. Onira-Tech is cast as a diverse team of tech professionals: the CEO, Alexis, is a young female East Asian tech phenom, working alongside the talented Chief Oneirologist, Paul, who is Indian. The chief of security, Charlie is black, while his contact at the Department of Defense (an investor), Monica, is a white woman in her mid-thirties. In this way, *Reverie* resembles *RPO* as an effort to create an ensemble cast of (somewhat tokenist) diversity. Its hero, however, does not save virtual worlds, but rather saves people from them.

The hero of *Reverie* is Mara Kint, a former hostage negotiator, played by Iranian-American actress Sarah Shahi. When we meet Mara, she is teaching a course on interpersonal communication and concerned about the role of technology in undermining the skills she values so dearly, especially empathy. The drama of the show unfolds after Charlie invites her to Onira-Tech to help them prevent a potential PR nightmare: Some users refuse to leave their *Reverie* fantasy world, endangering both their material bodies and human relationships. In order to save them, Mara joins them using an experimental social version of the program (2.0). There, she draws upon her empathy and communication skills to convince them to rejoin their "real" lives.

Each episode tells the story of how Mara helps a different user come “home” from the *Reverie* system. The first three users are white and relatively unmarked, but later episodes include a black woman, an elderly Latina, a Syrian boy, a woman in a wheelchair, and a white man with OCD.¹⁶ Though each encounter begins with an effort to communicate with the user’s avatar, Mara generally finds them reluctant to trust her. In response to these challenges, Mara interprets users’ private virtual world as an expression of their underlying motivations for abandoning their material lives. Though users have some agency to construct *Reverie* scenarios, Paul explains to Mara that the program interprets users’ desires and translates them into experiences in the virtual world. As in “Real Life,” VR gives users what they want, becoming a projection of them. To convince them to leave, Mara has to decipher what need *Reverie* is filling and find a way to fill it in the actual world.

The *Reverie* users Mara meets often struggle with trauma. The third user Mara helps, for example, is a white suburban man, Nate, who has spent the past two weeks as a bank robber, leaving behind his pregnant wife. Just when Nate seems ready to talk, he is captured by a beastly biker with a scarred face. Mara researches what this might mean to Nate, and learns that his home had been robbed some months earlier. When Mara confronts Nate about this in *Reverie*, the soon-to-be father admits that the scarred robber had returned to threaten him and he cannot shake his fear, nor the feeling of being an inadequate protector. *Reverie*, Mara realizes, provides Nate a (toxic) masculine fantasy of empowerment, allowing him to become what he fears—a violent thief—but fails to help him face the true object of this fear. She uses her LAPD connections to find the scarred robber and promises Nate justice if he will leave *Reverie* to identify him.

While centering on the theme of empathy as a heroic skill, *Reverie* does not endorse the vision of VR as “ultimate empathy machine” as it has been advocated by VR innovators like Chris Milk (2015) and Nonny de la Peña (2016).¹⁷ Rather than offering a view of empathy as an automatic effect of VR, *Reverie* emphasizes that empathy and communication are skills that one must *bring to* VR. Mara herself was traumatized when she was unable to protect her sister and niece from her brother-in-law’s gun, and this painful experience is something she often

¹⁶ The diverse producers and users of *Reverie* are somewhat reflective of the diversity of the production team, which included more women and people of color than the other programs in our sample. Only 3/7 writers and 6/10 directors were white men. Women of color including director Dawn Wilkinson and writers Erika Green Swafford and Margaret Rose Lester notably were involved in the episodes featuring more ethnically diverse users.

¹⁷ VR as an “empathy machine” was a major trope just after 2014. But by 2018, Messeri observed during fieldwork that the community was reflexively critiquing the use of empathy. Several VR filmmakers who (like Milk and de la Peña) produce VR documentaries with an eye toward social change have asked fellow VR makers to realize that empathy itself is no good if it doesn’t translate into action.

discloses to users like Nate in order to connect with them. The show's vision of VR is one that allows users to share worlds, both literally and emotionally.

Caring for Real Pain in Virtual Worlds

Both "Real Life" and *Reverie* explore the healing potential of exploring other worlds and lives, but their narratives express concern about VR as a stand-alone therapeutic technology. Concerns about self-help applications are similarly prevalent in the clinical VR sphere, where psychologists like Skip Rizzo insist that VR should not be a "doc-in-a-box," but rather a tool in the hands of a competent practitioner (Brandt, n.d.) While Onira-Tech's employees (including Mara) express great enthusiasm for the therapeutic potential of virtual role playing as a relief from pain—not unlike Kate—the show's premise is that technology alone cannot alleviate the underlying source of the trauma that they seek relief from. Both programs suggest that the therapeutic potential of VR must be safeguarded against those who would use it to escape from reality rather than to heal. Its answer to this problem is a revaluation of the empathic caregiver who becomes an SF hero by recognizing the power of VR to harm as well as heal.

Act 3: Resolution: Home and Healing

VR counternarratives scale down drama from the world to the individual and recast the hero from male savior to female empath. *Reverie*'s Mara uses her empathic powers to metaphorically bring those in need of saving "home." Similar to how, in having a female hero, undervalued traits are made essential, the themes of inclusion and care also recast the often-feminized home as a site of power.

In *RPO*, home is either ephemeral or a site of nostalgia. Wade's home is destroyed by IOI in a scene of spectacular destruction (with little regard to the emotional and human loss) and Samantha's home—where Wade momentarily finds safety—is also destroyed. In the end, our heroes find temporary safety in Helen's (Wade's best friend Aech in the Oasis) van, a mobile and precarious site. The other home we enter is Halliday's childhood home. After Parzival finds the third key, effectively winning the contest, he is transported to Halliday's childhood home, which is inhabited by both an older and younger Halliday. While young Halliday plays video games, old Halliday explains to Wade (no longer appearing as his avatar), "I created the Oasis because I never felt at home in the real world." Halliday explains that his deathbed regret was how much he feared to inhabit himself in the physical world. "As terrifying and painful as reality can be... reality is real." This ends up being the final philosophy of the movie (reiterated

by Wade in the closing voiceover) creating an association between home, childhood, and nostalgia. In the counternarratives, home is recast from a site of regret and regression to a site of healing and progress if one is willing to face fear and pain directly.

“Home” in the contemporary western context of the media here analyzed is often coded as a feminized, domestic space. Consequently, the home, and labor done in the home are devalued. There are other ways to value and understand “the home.” bell hooks (1990, 43) writes of her memories of her grandmother’s home as a site of safety, an escape from white supremacy: “I want to speak about the importance of the homeplace in the midst of oppression and domination, of homeplace as a site of resistance and liberation struggle.” The home and the role of black women as stewards of the home played an important role in the Civil Rights movement and hooks worries that as the struggle abates, as black people adapt white bourgeois norms, the home will lose its political potency, and women their role in resisting. hooks is calling for the home to remain a site of subversion and resistance.

In two of the more explicitly feminist counternarratives, “San Junipero” and *Kiss Me First*, the home is similarly brought to the foreground and re-valued, this time as a space of retreat, safety, and healing. The home (be it virtual or physical) is the locus of the female hero and a site where a chosen family can be constituted (Weston 1997).

Kelly’s Home in “San Junipero”

In the *Black Mirror* episode “San Junipero,” we follow the biracial love story of Kelly and Yorkie. In this future, the virtual world of San Junipero is a place for those who are old or dying to revisit past selves and past eras. They don’t travel to old memories, but rather inhabit their younger bodies and socialize with others in VR. We learn that users can visit for 5 hours a week—a safeguard Onira-Tech could use—and, upon bodily death, can opt to remain in San Junipero for their afterlife. We initially meet Kelly and Yorkie as their younger selves, but find out that Kelly, a black woman, is dying of cancer and Yorkie, a white woman, has been in a coma all of her adult life. Both live in institutions, though in this future Kelly’s care facility and Yorkie’s hospital are bright and airy. Humanity seems to have saved itself from environmental destruction and people care for each other (in contrast to *RPO*). San Junipero is not a retreat from the everyday, but explicitly developed as a therapeutic tool to help those near their life’s end keep on living.

Kelly and Yorkie nonetheless are both dealing with the lasting effects of having come of age in 1980s America, before living an openly gay life was fully accepted. Kelly had a loving marriage to a man but, in ignoring her bisexuality, didn’t live her true self. Yorkie, we learn

when she finally confides in Kelly, is in a coma because when she came out to her family in her 20s they kicked her out and as she drove away from her home, upset and in tears, she had a catastrophic car accident. She never got to live as an openly gay woman. But in San Junipero, old, dying, and incapacitated bodies do not get in the way of living a full, embodied life.

Kelly and Yorkie first meet in the public space of a 1980s bar. Kelly is an outgoing regular, Yorkie is new and shy. Their love story unfolds as Yorkie finds the courage to experience the things she never got to in life and Kelly struggles to keep her relationship with Yorkie casual despite a powerful connection. Whereas Yorkie is planning to stay in San Junipero after she dies, Kelly had promised her Christian husband that she would join him in his afterlife.

Kelly's home in San Junipero—a white clapboard house on the beach—serves as a site of union, reconciliation, and ultimately the place where Kelly and Yorkie decide to become family. Kelly visits Yorkie in the hospital and learns that a nurse, Greg, has agreed to marry Yorkie so that, as kin, he can allow for her to be euthanized. After learning this, the next time they are together in San Junipero, Kelly proposes to Yorkie outside of her home. They get married in the hospital and hours later Yorkie's physical body dies, so she can live full time in San Junipero. When Yorkie and Kelly next meet *in virtuo* (the only place they now both exist), they wear wedding dresses, celebrating their union. In post-nuptial bliss, Yorkie once more asks Kelly to stay with her in San Junipero for eternity. Kelly is struggling, both with this decision and with her health. We see Kelly die and all but believe she has forgone eternity with Yorkie. In San Junipero, Yorkie drives up to Kelly's home. For a moment nothing happens, until Kelly bursts joyously through the door. Belinda Carlisle's "Heaven is a Place on Earth" provides the soundtrack as they drive into the sunset.

Kelly's home might be shaded with nostalgia—a reminder of the life she had—but it also became the place where she and Yorkie chose each other and built a different world where they could be together in a way neither of them was able in their previous life and world. For them, heaven is indeed a place on earth, even if its material reality is a server farm (as we see in the closing credits).

The Three Homes of Kiss Me First

Kiss Me First is a thriller that follows the protagonist, Leila (early 20s, white) as she tries to save friends she initially meets in VR from Adrian, a savior-turned-sociopath. This six-episode series set in the UK takes place in the present. VR is experienced on home computers with HMDs that mirror today's tech. Users inhabit a world like *RPO*'s Oasis, called Azana. Initially, Leila

visits Azana as a fantasy escape, flying and fighting in epic battles. When Adrian invites her to join a secret part of Azana, Red Pill (*pace The Matrix*), she forms a close friendship with Tess (a black woman, also in her 20s). As the newest member of Red Pill, Leila is quick to see that something is out of sorts. Most of the action takes place in the physical world as Leila tracks down the people she met in Red Pill, attempting to save their lives from the sadistic Adrian.

Similar to “San Junipero” and *Reverie*, Leila is looking for a family after her only biological kin, her mother, has died. Her home is a site of this formation. She lets new people into her space: Tess and her roommate/lover Jonty. Leila takes on the role of saving Tess, removing her from an unhealthy lifestyle. But she also does not hesitate to banish Tess and Jonty from her house when they seem to betray her. When Leila herself is captured by Adrian, it is at Leila’s home that Jonty and Tess reconnect and set off to rescue her.

Whereas Leila’s home functions in a similar way to Kelly’s, two other homes in *KMF* that become sites for querying the relationship between “the real” and “the virtual” and thus the ultimate ability for the virtual to have an impact—as salve or thorn—on the physical world.

KMF follows Leila as she forges relationships with other denizens of Red Pill. The secret community is populated by half a dozen people, gathered by the mysterious Adrian (the only character we exclusively encounter as an avatar or disembodied voice), each troubled in their own way. Much like the heroines of *Reverie* and “Real Life,” Leila draws on her innate empathy and compassion to help each member of Red Pill through their trauma before Adrian can lead them to harm or death. Whereas at the beginning of the series, the virtual world seems to be a site of connection and healing, by the series end we see that the same technology that can bring health can also bring harm. Adrian is a reminder of the dangers that come with the anonymity afforded by internet culture.

In the latter half of the series, two other homes become sites for asking questions of “reality.” Leila visits the disgraced inventor of Azana, Ruth Palmer, at her home, warning her that bad things are happening inside her creation, and begging her to intervene. “It’s not real,” Ruth says dismissively, but Leila fights back, “I know what’s real.” Ruth demures: “You can’t tell what’s actual and what’s not right now. I’m safe, Leila. You should be too.” Ruth dismisses Leila and the conversation by turning to a window and speaking the command: “Home.” The window turns opaque and it projects a picture that viewers recognize as Red Pill.

Adrian is Ruth’s son and Red Pill is modeled after a site of childhood happiness, their vacation home in Croatia. After Leila kicks Tess out, she and another Red Pill member go there, thinking it a site of safety. But in Adrian’s hands, it becomes something more sinister. The women are consuming literal red pills, and when Leila arrives to save them, she has to

convince them that this house, though in the physical world, is not real. She manages to save Tess, but is taken captive by Adrian. Leila awakens in a sparse room where Adrian's avatar tortures her until she realizes she is actually in a photorealistic virtual world. She takes off her headset and reunites with her chosen family, Jonty and Tess.

Home, Healing, and the Virtual

Home operates differently across these three SF worlds. Each piece suggests a different attitude toward the healing potential of VR. In *RPO*, home is not a site of power, resistance, or healing. Wade does spend the movie drawing together friends to form a family, but the ultimate healing happens through heteronormative romance and a realization that the virtual is only ever a distraction from the physical world. "San Junipero" takes an opposite approach and imagines VR exclusively as a therapeutic technology. This is a good world and so too is the technology. It is a future where the potential problems of VR have been assuaged—users (that are still living) are limited to five hours a week such that VR remains therapy, not escape. While this is a similar view of the potential danger of the technology that *RPO* presents, the protagonists of "San Junipero" are those who fully become themselves in the virtual world. Though Kelly's house and the 1980s setting trade on nostalgia (indeed the San Junipero System is clinically described as "immersive nostalgia therapy") this is nostalgia transformed into liberation. It doesn't stand for the past in the same way the image of home does in *RPO*, but rather represents a site of becoming.

The meaning of the home is most complex in *KMF* and so, too, is the show's views on the healing potential of VR. If there is potential for it to heal, there is also potential for it to do damage (a paradox also explored in *Reverie*). This echoes an op-ed by social psychologist and VR researcher Jeremy Bailenson (2018), penned weeks after the Parkland school shooting.¹⁸ Citing neuroscience research (Adamovich et al. 2009), he explains that VR changes brain structure. What you do in the virtual world can help you become better at similar tasks in the physical world. If VR can train you to be better at your job (and there are several VR companies, including one co-founded by Bailenson, promising just that) then it could potentially also make you a more proficient shooter.¹⁹ In *KMF*, VR can be both a site of healing

¹⁸ On February 14, 2018, a white gunman opened fire at Marjory Stoneman Douglas High School in Parkland, Florida. He killed 17 people. In the aftermath of the tragedy, the students became vocal organizers and political spokespeople, advocating for gun reform in the United States, where school shootings (indeed public gun massacres) have become a normal part of citizens' lives.

¹⁹ This claim was not well-received by many in the VR community, who dismissed it as rehashing the moral panic over video games causing violence. Bailenson explicitly stated that he was not suggesting that shooter VR games

and harm. In contrast to Leila's home—a site of resistance and healing—Adrian's Croatian home is a hybrid of the real and the virtual in which there is only the illusion of healing (complete with magical red pills) rather than actual healing.

Epilogue: Promises and Pitfalls of Feminist Storytelling in Non-Feminist Worlds

“What if” the stories we tell about a technology's future are inclusive and center on interpersonal care rather than defeating one's enemies in contests of mastery? What if the innovations on display in science fiction multimedia were social relations rather than technomaterial marvels? In Act 1, we showed that for both *RPO* and the small screen stories, the worlds created imagine VR as an inclusive medium. The casts are diverse, but the counternarratives go a step further, centering the story on a character other than a young, white, able-bodied male. But do these SF futures present both different kinds of faces and bodies, and different kinds of sociality? In Act 2, we explored the female heroines at the heart of these stories, who used their skills of care and empathy to try to save those in danger from their own isolating coping strategies. Centering our analysis on the social rather than the technological allowed us to show how, in these SF worlds, power and transformation lie in human relationships rather than technology. We also suggest, through the analysis of the home in Act 3, that progress occurs not in the public sphere but in the private space of the home.

In Act 1, we emphasized the interchange between the VR industry and its fictive representations. In the shadow of #metoo and #timesup,²⁰ the industry is also engaging in speculation: “What if” there was diversity on and off the screen? Judging by the media we have analyzed, on-screen diversity is ahead of off-screen reality in traditional media. The fledgling VR industry, on the other hand, has proved easier for women and people of color to take leadership positions—a fact that industry leaders have woven into a story about VR as a model for inclusion, which other industries ought to follow. In these early days, it is still unknown whether there will be significant change and if such change will solve the problems of abuse attributed to the male-centric hierarchy in both entertainment and tech industries. The future imagined by the VR industry asks, much like its media representations, what happens if women

would *make* someone a mass shooter, but rather that it could *enable* someone with that predilection to become better at it.

²⁰ Following the public reporting of Hollywood producer Harvey Weinstein's chronic sexual harassment and assault, the entertainment industry began a public awareness campaign of what women are made to endure in male-dominated workplaces. Women in other industries (including academia) began using the hashtag #metoo to express solidarity, giving voice to previously silenced violences. #timesup became a slogan for the future. Started by women in Hollywood, the campaign states that sexual harassment and assault will no longer be tolerated.

have a different kind of role in society? Will our stories teach us to value care and home as sites to be safeguarded in feminist futures?

Many VR innovators we spoke with, especially those who were around in the 80s and 90s and continue to be involved in today's industry, reflected on the male tales that characterized VR SF in the 1980s and 1990s. This earlier wave of VR crashed for many reasons, but partially because the media portrayal of the tech (notably in *The Lawnmower Man*) exaggerated what the tech could actually deliver. VR consumers in the 90s found it underwhelming and not nearly as immersive as promised on the big screen. The VR innovators we spoke with felt the industry had deflated in the 90s because the reality of VR technologies failed to live up to the hype. However, it is also undeniable that the largely white, militaristic, techno-masculine VR worlds that were most vividly imagined in science fiction weren't ones that many people actually wanted to inhabit.

In this analysis, we recast current VR SF as "hyping" innovative social configurations rather than tech devices. Much is at stake in these portrayals. They may help to reorient how the VR industry imagines itself, how it imagines its own purpose and labor in building worlds for others to inhabit, and how it imagines who can participate in building and occupying these worlds. It seems important that these stories do not simply gender-swap female characters into masculine hero journeys. Though they toe the line of gender essentialism, the stories we have examined nevertheless carve out spaces where women may be seen as heroes because they never lose sight of the human(ity) in technology. With these fictional images in place, the actual VR industry faces the challenge of bringing forth the worlds it is now evidently capable of imagining.

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