Learning to be human with sociable robots

https://doi.org/10.1515/pjbr-2020-0002
Received May 15, 2019; accepted November 15, 2019

Abstract: This essay examines the debate over the status of sociable robots and relational artifacts through the prism of our relationship to television. In their work on human-technology relations, Cynthia Breazeal and Sherry Turkle have staked out starkly different assessments. Breazeal’s work on sociable robots suggests that these technological artifacts will be human helpmates and sociable companions. Sherry Turkle argues that such relational artifacts seduce us into simulated relationships with technological others that largely serve to exploit our emotional vulnerabilities and undermine authentic human relationships. Drawing on an analysis of the television as our first relational artifact and on the AMC television show *Humans*, this essay argues that in order to intervene in this debate we need a multimediated theory of technology that situates our technical artifacts in the domestic realm and examines their impact on those populations especially impacted by such technologies, including women, children, and the elderly. It is only then that we will be able to take the full measure of the impact of such sociable technologies on our being human.

Keywords: sociable robot, relational artifact, television, Cynthia Breazeal, Sherry Turkle, Humans

1 Introduction

Consider two possible youthful avatars of a human future spent in the company of sociable robots. Sophie Hawkins, the youngest child of Joe and Laura Hawkins, has bonded indelibly with the various synthetic life forms that have been brought into her home. Perhaps too indelibly. Displaying signs of unconscious mirroring behavior, Sophie is diagnosed with Juvenile Synthetic Overidentification Disorder. She is one of a growing number of human children who pretend to be synthetic, adopting the fashion, speech, and behavior patterns of the synthetic life forms. As a therapist explains this new disorder to Joe and Laura:

Therapist: Basically, the patient identifies as Synthetic.
Joe: So she wants to be one of them?
Therapist: Perhaps she wants to be treated like one. We know Synths are incapable of conscious thought, but to a child, they’re as real as you and I. Perfect, kind, gentle versions of all the adults around them. They never fight, they never get upset, they never worry or let you down. It’s also possible that for Sophie, the boundaries between what is considered Synthetic and what is considered human have been blurred somehow [1].

The therapist counsels that the best thing now for Sophie is human contact. “No Synths, just her mum and dad, family and friends.”

Our second avatar is itself (himself?) a synthetic life form called Sam. A young boy, Sam is being educated by the synthetic life form Karen in how to pass as a “real” boy in school.

Karen: OK, now swing your legs. Too even. Your body is given to symmetry, precision, regular rhythms. The human body is wasteful, chaotic, expressive. Stick your finger up your nose. Humans can’t sit still. Their emotional and mental states are displaced involuntarily into their bodies. You have to keep moving.
Sam: And put my finger up my nose?
Karen: It’s popular with young boys.
Sam: Am I going to be ready?
Karen: Yes. Just remember, inefficiency is everything. Fidget, stumble, start over, get things wrong, OK? Be perfectly imperfect [1].

Sophie longs for the perfection and emotional stability of synthetic life forms while Sam learns to be imperfect, inefficiently fidgeting and picking his nose. Sophie and Sam are child characters in the AMC drama *Humans*. Together they represent the challenges of thinking through what it means to be human in the context of sociable robots and relational artifacts, a context in which the boundary between human and machine has become increasingly permeable and potentially fraught. *Humans* tells the story of a near future in which synthetic life forms, known as synths, have become common helpmates in all walks of life, from the office to the home. *Humans* is interesting for its focus
on what happens when we introduce sociable robots into the domestic sphere, the sphere of the family where children are raised and nurtured and where they learn to be human. It focuses on the domestic life of the Hawkins family and the consequences that result from Joe’s decision to purchase a synth and bring it into his family home.

As both Sophia’s and Sam’s experiences inhabiting some strange middle ground between human and synth attest, *Humans* addresses challenging philosophical issues that come to the fore when confronted with sociable robots. What does it mean to be human? How does our increasing congress with technological others impact our understanding of what it means to be human? How ought we to assess the growing prevalence in our daily lives of personal robots that seemingly care for us? And what will their impact be on our conceptions of what it means to be human?

These questions are made even more challenging by the seeming capacity of such robots to act as if they care for us. The synths of *Humans* are at the forefront of personal robotics and affective computing, in which we are witnessing a paradigm shift from an emphasis on artificial intelligence to an emphasis on emotion and sociality. Cynthia Breazeal, a leading proponent of sociable robots and head of the Personal Robots Group at MIT’s Media Lab, recently introduced Jibo, a robotic device designed for people to use at home, named by Time Magazine one of the best inventions of 2017. As a press release noted, Breazeal hopes users will find the robot so fun and friendly that it will become “part of the family” [2]. Humanoid social robots are emerging in the research programs of Hiroshi Ishiguro at Osaka University in Osaka, Japan [3], the USC Robotics Research Lab under the direction of Maja Matarić [4], Yale’s Social Robotics Lab, directed by Brian Scassellati [5], and at MIT’s Media Lab, where Breazeal’s *Designing Sociable Robots*, dedicated to “our children of the future, organic or synthetic,” defines sociable robots as robots that are able to “communicate and interact with us, understand and even relate to us, in a personal way. It is a robot that is socially intelligent in a human-like way. We interact with it as if it were a person, and ultimately as a friend. This is the dream of a sociable robot” [6]. With sociable robots, we are witnessing a paradigm shift from intelligence and smarts to affect and sociality that perhaps strikes at the heart of our conception of human beings.

Sociable robots and the paradigm shift they represent raise a host of complicated ontological, ethical, and technological questions. In this essay I’d like to explore these questions through the prism that *Humans* and, more broadly, television affords us. I’ll first set out the challenges that these technological developments set out for us by turning to MIT’s Media Lab and exploring the contrast between Breazeal’s work as part of the Personal Robots Group and Sherry Turkle’s critique of what she calls relational artifacts. I’ll then turn to an analysis of television as both technology and medium and suggest that as our first relational artifact we can learn a lot about addressing these challenges by thinking about and watching television. Finally, I’ll return to some of the challenging questions that sociable robots and relational artifacts raise and argue that our experience with television can inform how we address the ontological, ethical, and technological questions surrounding machines that care.

## 2 Sociable Robots and Relational Artifacts

It’s no understatement to say that MIT’s Media Lab has been ground zero in the west for imagining our future life with robotic companions. From Rodney Brooks’ groundbreaking work on situated and embodied robots, to his work on Cog and his student Cynthia Breazeal’s work on Kismet and Leonardo, to Rosalind Picard’s work with the Affective Computing group, the Media Lab has challenged traditional strong, symbolic A.I. with an alternative vision of embodied and sociable technologies integrated not only on the shop floor, but in nursing homes, day care centers, and even the family room. Brooks’ many students, including Breazeal, Mataric, and Scassellati, have had an outsized influence on the development of social robotics. At the same time, the Media Lab was also home to Sherry Turkle, whose own groundbreaking work celebrated early computers and the Internet as tools to think with, technologies that challenged our traditional conceptions of mind and self. Increasingly, though, Turkle has been having second thoughts. In both *Alone Together* and *Reclaiming Conversation*, Turkle has turned increasingly critical of both smart phones and what she terms relational artifacts.

Breazeal and Turkle exhibit a similar focus on children and the nexus of care, nurturance, and sociability when thinking about human-technology relations. Breazeal’s most famous robot, Kismet, is specifically modeled after caregiving relations [4] and Turkle has consistently focused on the impact of technology on children’s conceptions of self and other [7]. And yet their assessment of these developments is starkly different. In this section, I briefly develop the contrast between Breazeal’s vision of sociable robots and Turkle’s critique of relational artifacts. It’s a contrast already evident in decisions about how to refer to these emerging technologies. Breazeal prefers to speak
of sociable robots, as the title of her book Designing Sociable Robots attests, while Turkle prefers the more psychoanalytically evocative “relational artifacts.” Breazeal’s Personal Robots Group conducts “research that advances the state-of-the-art in socially intelligent robot partners that interact with humans to promote social and intellectual benefits, work alongside with humans as peers, learn from people as apprentices, and foster more engaging interaction between people” [8]. As she opens her TED Talk on “the rise of personal robots,” Breazeal observes, 

Ever since I was a little girl seeing “Star Wars” for the first time, I’ve been fascinated by this idea of personal robots. And as a little girl, I loved the idea of a robot that interacted with us much more like a helpful, trusted sidekick – something that would delight us, enrich our lives and help us save a galaxy or two [9].

For Breazeal, sociable robots help us connect and become more creative. They are our trusted sidekicks “helping us attain our personal goals in becoming our highest and best selves,” personal assistants we can train and interact with in our daily lives [9]. Where traditional robotics presents a picture of autonomous robots situated on the factory floor, Breazeal’s picture is geared toward robots in the home helping with domestic tasks. “The objective shared by many is to build robots that will assist us in anything from the mundane tasks of cooking and cleaning to more intellectual and social endeavors of entertainment and caregiving” [10]. Breazeal’s Personal Robots Group highlights the use of robots in educational and pediatric care contexts, complementing or supplementing what caregivers or educators already provide and enabling personalized education or care. As the title of one of her recent talks suggests, the focus is on “living better with robots.” Her vision is of helpful and productive robots: “Sociable robots are now a reality; it’s time for us to put these engaging technologies to work in ways that we find helpful and productive” [9].

In order to realize that vision, Breazeal’s work focuses on several key elements, beginning with communication. Breazeal notes that human–computer interaction has often had to be done on technology’s terms, from punch cards to keyboards. Breazeal’s work is geared toward developing robots that we can interact with naturally and intuitively, designing robots that can interact with people on human terms. Social robots are robots to which people apply a social model in order to interact with and to understand. “Using social cues in interactions between people and robots offers an attractive alternative to traditional methods of communicating with robots” [9]. These robots are not autonomous and independent but are designed to interact with people, responding to our social cues, vocal intonation, and facial expressions, and they in turn are designed to respond with their own facial features, learning how to interact with us and become part of our social world.

To design robots that can interact with people, Breazeal begins from the evolution of our own sociability. While Breazeal seeks to design sociable robots, her work is also predicated on understanding social intelligence and human sociability. Breazeal observes that human beings are profoundly social animals who have evolved their own social machinery and she seeks to leverage that sociability in the design of robots [9]. “If we want to use technology to help people learn, we have to provide information in the way the human mind evolved to receive it. We have to speak the mind’s language, and that includes the language not only of information but also of social cues” [11].

Breazeal’s robots, such as Kismet, are designed to be childlike and to evoke a natural care-giving response in which the human being partners with the robot in an interactive fashion to foster the emergence and growth of appropriate social cues and behavior. Indeed, Breazeal very explicitly models her work on the basis of the parent-child caregiver model.

Great care has been taken in designing Kismet’s physical appearance, its sensory apparatus, its mechanical specification, and its observable behavior (motor acts and vocal acts) to establish a robot-human relationship that follows the infant-caregiver metaphor. Following the baby-scheme of Eibl-Eibesfeldt, Kismet’s appearance encourages people to treat it as if it were a very young child or infant. Kismet has been given a child-like voice and it babbles in its own characteristic manner [7].

Breazeal’s goal is to develop robots that can interact physically, affectively, and socially with humans in order to learn from them, building a robot whose social intelligence might someday rival our own [7]. “The ultimate challenge for a sociable robot is to interact with humans as another person would and to be accepted as part of the human community” [7]. While Designing Social Robots addresses some of the “grand challenges of building sociable robots,” it’s relatively silent on matters related to authenticity and deception, concerns that as we shall see are central to Turkle’s analysis of relational artifacts. Breazeal does note that as we increasingly interact with sociable robots, our own opinions and expectations toward them will change. “Sociable robots will grow and change with people, as people will grow and change with them” [7]. Referring once more to Star Wars and Star Trek, Breazeal ponders what it would take to build a robot such as C3PO or Data that could be a genuine friend.

Breazeal’s emphasis on sidekicks and robot friends suggests that the robots don’t fundamentally change us.
They are helpful to carrying out tasks and in a deeper sense helpful to understanding ourselves and the nature of sociality better. But they don’t fundamentally alter us and don’t enter into a relation with who and what we are. Turkle, on the other hand, seems to prefer relational artifacts as “artifacts that present themselves as having ‘states of mind’ for which an understanding of those states enriches human encounters with them” [11]. Relational artifacts refers to a broader class of technological artifacts, as they need not be embodied, as sociable robots are, but can be virtual. And the reference to relational artifacts underscores Turkle’s interest in the psychoanalytic tradition and a perspective that highlights the human meaning often projected onto to such artifacts. More than just side-kicks, relational artifacts and sociable robots alike serve as screens onto which Turkle’s ethnographic subjects often project their own emotional needs. Relational artifacts, Turkle notes, call forth a desire to nurture and be nurtured.

Like Breazeal, Turkle sees smartphones and sociable robots as part of an emerging paradigm shift from A.I. and an emphasis on cognition to a focus on social relationships in which we are moving away from designing objects with intelligence to designing likeable objects that engage us. With relational artifacts, Turkle suggests we are moving from intelligence to empathy, from projection to engagement, and from object to subject. It’s this shift that has Turkle especially concerned. We’ve moved from the question of how to design intelligent machines to how to design machines that exploit human vulnerabilities and engage us socially and emotionally. We’ve witnessed a shift from a neutral mirror, an evocative object to think with to a relational entity that provokes engagement. This challenges the boundary between user and object, between human being and technology in a way that Turkle finds transgressive and forbidden.

Why do we want robots to care for us? I understand the virtues of partnership with a robot in war, space, and medicine. I understand that robots are useful in dangerous working conditions. But why are we so keen on “caring”? To me, it seems transgressive, a “forbidden experiment” [12].

Turkle argues that these “robots that care” exploit three weaknesses in human beings: our Darwinian buttons, our human vulnerabilities, and a culture increasingly built on the shifting sands of simulation. Turkle argues that “we see robots as close to human if they do such things as make eye contact, track our motions, and gesture in a show of friendship. These appear to be ‘Darwinian buttons’ that cause people to imagine that the robot is an ‘other,’ that there is, colloquially speaking, ‘somebody home’ [12]. Turkle further argues that these objects are proliferating at a time when we human beings are suffering from a “certain fatigue with the difficulties of dealing with people” [13] and they offer the illusion of relationship without the demands. “One can be a loner yet never alone,” as she notes [13]. Again, “the seductions of the robotic provide a window onto how much people are tempted to sidestep encounters with friends and family” [13]. When these Darwinian buttons are being pushed in a context where we are especially vulnerable, where the number and quality of human relationships has deteriorated, we are especially prone to anthropomorphize relational artifacts and engage with them in a simulated dance of relationship.

Turkle is equally concerned that our ready acceptance of relational artifacts as substitutes for genuine human relationships in turn further convinces us that there is little difference between genuine and simulated emotional responses. In a computer culture predicated upon the power of simulation, our connection to reality has grown so tenuous that we no longer value real human emotional responses and we are inclined to see other people’s behaviors as a matter of simulation. We are unable today to even differentiate between authentic and simulated engagement and emotions. Turkle’s research has focused especially on children and the elderly, two vulnerable populations in which we can witness first-hand the implications of turning over care to relational artifacts. In treating machines as people, she is concerned that the result will be that we end up treating people as machines. As she observes in Reclaiming Conversation,

The more we talk about conversation as something machines can do, the more we can end up devaluing conversations with people—because they don’t offer what machines provide. When we treat people’s lives as ready to be worked on by algorithm, when machine advice becomes the gold standard, we learn not to feel safe with fallible people [14].

Similar concerns are raised by Noel and Amanda Sharkey, who suggest that a growing reliance on childcare robots will have deleterious consequences on the emotional and psychological wellbeing of children [15] and Robert and Linda Sparrow, who argue that efforts to replace care for the aged with robots is ethically misguided [16].
3 Television, the original relational artifact

Sociable robot and trusted sidekick or avatar of inauthentic and devalued relationships? Breazeal suggests that the relationship between human beings and sociable robots reveals our own social nature and that in interacting with these technological helpmates they will learn to be more human from us and we will learn to accept them as part of the human community [9]. Alternatively, Turkle argues that what we are learning is how to be seduced by machines into entering into simulated and inauthentic relationships that will ultimately result in our treating human beings as machines. How ought we to evaluate these competing visions? As Glenda Shaw-Garlock notes, “there is need for methodological and theoretical perspectives that enable us to think through techno-cultural hybrid configurations of people and machines” [17]. In this section, I argue that in developing such a perspective, we might learn a thing or two from the original relational artifact, television.

While on the surface it might seem somewhat perverse to turn to a 20th century analogue technology to address these competing visions of a 21st century digital technology, television in fact presents us with an intriguing, well, analogue, if you will. Indeed, I will argue in this and the next section that we think of television as the original relational artifact and that an exploration of both its technological form and its televisual content might prove helpful to navigating some of the complexities of the debate over sociable robots and relational artifacts. Allow me to make several preliminary points in defending this approach, drawing on television as both medium and technological form.

Why think that an analogy to television will be helpful here? Well, first, we might observe that television got there first and is part of the origin story of sociable robots. Both Rodney Brooks, Cynthia Breazeal’s professor and mentor, and Breazeal herself routinely turn to science fiction and televisual examples when articulating their vision of sociable robots. In their ruminations on a future populated by robots, they regularly intertwine science fact and science fantasy. Brooks notes in his 2002 book *Flesh and Machine* that people mark a clear distinction between the robots of science fiction and the machines in our daily lives, but that his thesis is “that in just twenty years the boundary between fantasy and reality will be rent asunder. Just five years from now that boundary will be breached in ways that are as unimaginable to most people today as daily use of the World Wide Web was ten years ago” [18]. Breazeal’s biography is regularly tied to her early experiences as a child watching *Star Wars* and *Star Trek* and in *Designing Sociable Robots*, she notes: “It is difficult to predict what other applications the future holds for socially intelligent robots. Science fiction has certainly been a source of inspiration for many of the applications being explored today” [7]. Like Brooks, her introductory chapter highlights a number of examples from science fiction that epitomize the vision of a sociable robot [7].

Secondly, we might observe that television has long been engaged in thinking through our relationship to personal and sociable robots. In 1938, the BBC aired the first televised science fiction show, a live recording of Karl Čapek’s play *R.U.R.*, in which he introduced the word “robot” and highlighted both the industrial and domestic uses of robots. From the early days of television as a broadcast medium, in shows such as *The Twilight Zone* and *The Outer Limits*, visions of sociable robots were common, as I argue elsewhere [20]. From television shows in the 1960s such as *Star Trek* to more contemporary visions such as *West World*, *Black Mirror*, and *Battlestar Galactica*, it’s no exaggeration to say that television has been preoccupied with shows that engage with the issue of relational artifacts and the question of what it means to be human in the company of intelligent and sociable machines. Furthermore, while I won’t defend the claim here, the vision of robots that most preoccupies television tends to be situated in the kind of domestic spaces that are central to the debate over sociable robots and relational artifacts, rather than more cinematically-inclined military, industrial, and outer spaces.

Beyond its engagement with these issues, television as both technological form and medium might usefully be thought of as our first relational artifact. Indeed, both Breazeal and Turkle draw on the work of Clifford Nass and Byron Reeves, who argue in *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places* that it is neither rare nor unreasonable for people to equate mediated and real life. Their research project on social responses to communication technologies finds that “individuals’ interactions with computers, television, and new media are fundamentally social and natural, just like interactions in real life” [19]. Reeves and Nass’ conclusions find confirmation in Don Ihde’s postphenomenological discussion of our alterity relations with technologies in which we fantasize that our technologies are quasi-others [20]. As both technology and medium, the television serves as a quasi-other we turn to for precisely the reasons Turkle suggests we turn to relational artifacts in general, the desire for communication, connection, and nurturance. Adopting Turkle, we might say that the televi-
sion, like the computer, is an intimate machine [21], a technology fostering an emotional relationship not unlike our relation to others. It’s widely recognized that many people do in fact treat their favorite television characters as friends, as people they have a relation with. And television is surely as engaging as most relational artifacts. Television is a babysitter, emotional comforter, companion, it’s sound and light serving to fill a living room as a quasi-other providing some sense of accompaniment. It’s often the first thing we turn on in the morning upon getting up or in the evening upon returning from work. It’s what we turn to in times of distress. Television is the regular companion for both children and the elderly, the exact same populations that are the target of our newer relational artifacts. And as a largely domestic technology occupying the family room and long associated with women and children, television occupies something of a marginal space not unlike the liminal space occupied by children, the elderly, and sociable robots.

Finally, in paying attention to television, we may come to recognize just how it is that technologies geared for domestic consumption in the home often aren’t attended to. As a domestic technology and a technology seemingly defined by our passive consumption, television has never received the kind of extended philosophical analyses afforded other technologies. In general, domestic technologies are often given minimal attention when it comes to the analysis of technology, a point that many feminist critics of technology studies have long made [22]. We see this in the case of television in many ways, treated as a technology that is not taken seriously and studied in the way that industrial, military, and converging technologies are studied, despite the fact that human beings spend more time watching and worrying about television than probably any other technology. Indeed, in contemporary philosophy of technology, while human-technology relations are central to the discourses of postphenomenology, critical theories of technology, and posthumanism, the television barely rates a mention.

This last point begins to indicate what we might learn about the analysis of social robots once we begin to pay attention to television. When it comes to the introduction of sociable robots into the domestic sphere, we are entering the sphere of reproduction rather than the sphere of production, and our analyses will have to be suitably informed. We may be less attuned to the implications and consequences of these technologies precisely because we don’t take such domestic technologies seriously and we don’t attend to the populations they most impact, in this case women, children, and the elderly, often treated more marginally in the analysis of technology’s effects. Relatively, many analyses of technology fail to attend to their dissemination in domestic spheres and the manner in which they are ultimately domesticated by users in the home. The work of Ruth Schwartz Cowan, on the intersection of technology and “mother’s work,” [23] as well as on what she refers to as the consumption junction [24], has been instrumental in highlighting the oversights of mainstream analyses of technology, which have largely ignored the impacts of technology on the domestic sphere and its inhabitants.

As we move toward a future where more and more technologies are being designed for and situated in the home, it is incumbent that we situate our analyses of these technologies in those very same domestic spaces, developing frameworks for the analysis of technology that are informed by work on the domestic sphere and the consumption of these technologies. If we’re going to come to terms with the impact of sociable robots on human beings and human relationships, then we’re going to have to give thought not only to the design of sociable robots, but the manner in which sociable robots are “consumed” and domesticated in the private sphere. Roger Silverstone and other proponents of television studies have already established a thriving domestication approach to the study of media technologies in the home, examining what happens when technologies are acquired and used in the home. In a line appropriate to the debate over our ambivalent relationship to sociable robots, Silverstone and Hirsch note in their introduction to Consuming Technology that “We are, indeed, great consumers of technology. At the same time, we are often quite anxious about technologies’ capacity to consume us” [25]. While an account of domestication theory is beyond the scope of this essay, its strength as a framework for examining debates over sociable robots lies in its recognition that some artifacts are unique in demanding an analysis that combines insight into both material form and symbolic configuration. As Pablo Boczkowski and Leah Lievrouw observe, “Media and information technologies are not only artifacts in the material sense but also the means for creating, circulating, and appropriating meaning” [26]. We can make sense of the television only by delving into both its technological form and its symbolic content. Domestication theory begins from an awareness that such technologies are, as Silverstone and Hirsch note, “the embodiment of our desires for the new, as well as…transmitters of all the images and information that fuel those desires” [25]. In summing up the methodology of domestication theory, Thomas Berker and his colleagues note:

Media technologies are highly symbolic and have a significant status in the organization and lived experience
of everyday life and, as such, have demanded a methodology that explores the nuances of their symbolism, appropriation and interpretation in the context of consumption [27].

One of the lessons we learn in turning to television, then, is the need for an appropriate framework that is attentive to the dimensions of these doubly articulated domestic technologies. Allow me to highlight three: (1) the interpretive flexibility of technology, (2) the networked nature of technology, (3) our complex and contradictory relationship to technology.

While the network era of the 60s is often held up as the definitive model of television, media scholar William Uricchio argues that from the beginning television, as a concept and a technology, has enjoyed a remarkable conceptual flexibility and intermedia character as it is positioned differently among related media, conceptual frames, and national developments. Television’s “new media” convergence with the Internet, streaming services, cell phones and tablets, Uricchio argues, is simply a reflection of its historical flexibility. Uricchio suggests that the television has an “intermedia” character, taking on distinct forms as it connects to other forms of technology. He emphasizes television’s long history of entanglements with other media. “Television, as a concept and a technology, has positioned itself among related media (e.g., telephone, camera obscura, image telegraph), conceptual frames (e.g., communication, entertainment, journalism, surveillance), and national developments (with most Western nations and Japan contributing important patents and technological insights)” [28]. The ontological ambivalence of television reminds those of us who study technology that technologies are never finally stable entities and that especially as they enter the home, technologies mutate and potentially introduce unintended consequences. As sociable robots enter a domestic space increasingly colonized by smart home technologies and an Internet of Things brought to us by Amazon, Google, and Apple, we may be hard pressed to fully discern their impact.

The television as a model for thinking through relational artifacts also forces us to confront the networked nature of the relational artifact. Television only exists in a complex network that includes broadcasters, studios, regulators, laws, etc. and we cannot assess the television without thinking about this complex assemblage. In order to assess television, we must perform pay attention to what Uricchio refers to as the televisural dispositif, the historically specific constellation of technologies, logics, and practices that constitute the medium [29]. This view of technical artifacts as assemblages reminds us too that these technologies will need to be domesticated as they enter popular culture and the domestic sphere. Lynn Spigel’s work on the history of television [30] demonstrates the manner in which a complex network of magazines, advertisers, manufacturers, and parents’ groups were mobilized to shape the introduction of the television into the family home. The television’s social and symbolic life in the home was shaped by a vast consumer industry often directed towards instructing women how to live and work with television. No analysis of a domestic technology would be complete were it to ignore the manner in which such technologies are enrolled in complex assemblages.

Uricchio’s and Spigel’s close attention to the complex assemblage surrounding the television and the manner in which television has been differently situated historically and culturally is relevant to addressing differences noted in the Japanese and Western design and reception of sociable robots. Naho Kitano notes that the Japanese tradition of Animism, its culturally specific understanding of ethics as Rinri, and its rapid modernization has led to a more “affinitive rapport between robots and humans” [31]. Similarly, Glenda Shaw-Garlock, comparing Breazeal’s Kismet and Hiroshi Ishiguro’s Repliée-Q2, argues that we must take into consideration a nation’s specific history, popular myths and culture, and religious traditions in order to fully understand both the design choices made in pursuing social robots as well as the broader cultural reception of such robots [32]. The ontological ambivalence of television finds a parallel in the manner in which robots may very well be differently situated in a nation’s cultural, religious, and political networks.

Finally, these two prior points are themselves entangled in western ambivalence over television and the complex and sometimes contradictory attitudes we take toward it. Television may have been our first relational artifact, but it’s also one of the most demonized technologies found in the home. Television has long been recognized as a vast wasteland, as early as 1961 when Newton Minow [33] coined the phrase. The then Chair of the Federal Communication Commission, speaking before the National Association of Broadcasters, Minow bemoaned the screaming, cajoling, offending commercials and the procession of blood and thunder, mayhem, violence, sadism, and murder that made up most of the broadcasting day. Minow’s critique of television set the bar for how the medium is often treated by scholars and mothers alike. Representative of this treatment is Marie Winn’s 1977 book The Plug-In Drug: Television, Children, and the Family [34]. Winn describes the phenomenon of the television zombie: “trancelike…the jaw is relaxed and hangs open slightly; the tongue rests on the front teeth (if there are any). The
eyes have a glazed, vacant look... There is certainly little indication that they are active and alert mentally” [34]. One of the few philosophers to take up an analysis of television, Albert Borgmann would seemingly agree with Winn. In his 1984 Technology and the Character of Contemporary Life, Borgmann notes that the televisual procurement of entertainment is the foremost foreground of technology. The attractiveness that television possesses, which Borgmann likens to addiction, belies its tendency to prevent an idyllic childhood and a vigorous adolescence, to suffocate conversation, reduce common meals, supersede reading, and crowd out games, walks, and social occasions, focal practices in Borgmann’s terms [35]. Focusing on the television reminds us of the complex ways a technology is received and treated. The lowly TV set is simultaneously an object of desire and scorn. As Silverstone and Hirsch observe, “At issue is the complex and often contradictory nature of consumption, which is increasingly being seen as alternatively fragmenting, homogenizing, alienating, or liberating our daily social and economic relationships” [25].

Given its compelling and contradictory nature, our ambivalence towards it, and its complex status as both cultural material and material culture, the television calls forth inter- and trans-disciplinary approaches to the study of technology. Anne Balsamo notes that contemporary media technologies call for multimediated theories of technology that take inspiration from various disciplines and intellectual methodologies that should include feminist and cultural and TV Studies [36]. What does this mean for sociable robots and the contrast between Breazeal’s and Turkle’s visions? It is to this question that I turn in the next section.

4 Watching Humans

Both Brooks and Breazeal write of the inspiration they draw from Star Wars and Star Trek. Brooks especially regularly returns to the image of Data, the android from Star Trek: The Next Generation as an inspiring model for sociable robots. In her TED Talk, Breazeal notes that she wants to spark kids’ imaginations, “the way mine was sparked as a little girl watching ‘Star Wars.’ But I want to do more than that. I actually want them to create those experiences” [9]. Most kids, though, aren’t going to encounter a robot on the bridge of a starship or in the midst of a galactic war. Indeed, Star Wars and Star Trek are notable for not focusing on children at all. The main characters are rational adult human beings who, we may surmise, have already achieved their humanity. AMC’s Humans is interesting precisely because it focuses on a different milieu and different populations in its exploration of sociable robots and their impact on being human. In doing so, Humans serves as an extended thought experiment that underscores Balsamo’s claim that we need multimediated theories of technology to fully do justice to the analysis of contemporary technologies.

While telling a complex set of intertwined narratives, the focus of Humans is largely on the impact of sociable robots on the Hawkins family as a synth is brought into the home to initially help with housework and family maintenance. Rather than situating its focus on the military and space exploration, it situates it largely in the home and the domestic sphere. A second storyline in the first season focuses on the relationship between an elderly inventor of the synths, Dr. George Millican, and his synthetic “child” and caretaker Odi. Millican is largely alienated from the outside world and Odi is his only “human” relation. As Odi is beginning to malfunction, the state intervenes and replaces him with an updated model, Vera, who is tasked with ensuring that Millican takes his medicine, eats a proper diet, and gets enough exercise.

Thinking through television as an analogue of sociable robots and relational artifacts serves to remind us that an adequate analysis of either technology must include attention to populations that are often obscured in the analysis of technology, especially women, children, and the elderly, and must include attention to those spaces where the technologies are in fact consumed, in this case domestic spaces. While it’s a long road from Jibo to Mia The Synth, Humans, in its complexly structured narratives, highlights anxieties as these new “wild animals” are brought into the home and domesticated. Questions about how one learns to be human and what it means to be human are both more apparent and more pressing in the context of children that are learning to be human and the elderly that are often socially marginalized and who’s “value” is questioned. In focusing on these populations, Humans serves to complicate our analysis of technology’s impact on learning to be human. Humans begins from the standpoint of the Synths as domestic technologies brought into the home, thereby focusing our attention on the import of Cowan’s consumption junction, the “interface where technological diffusion occurs, and...the place where technologies begin to reorganize social structures” [24].

These complications are directly revealed in Humans’ treatment of its two central children, Sophie and Sam, especially as it highlights their respective paths towards humanity. Sam is one of the first synths built as a child and owing to hostilities between humans and synths has
to learn to pass as a human boy in order to survive. Karen, a synth who has long passed as human, encourages him to fidget, pick his nose, feign an interest in sports. Sam learns hacks that allow him to pass as human. Karen’s education of Sam recalls Brooks’s own comments on Kismet, Breazeal’s most famous sociable robot. In describing Kismet, Brooks observes that “Kismet can interact with people like a human. Kismet acts like it is alive… Kismet gets at the essence of humanity…” But we also learn that what makes Kismet work are “little pieces of mechanism that together make a wondrous artificial creature” [18].

Sam learns to pass as human, to interact with people like a human, by learning the mechanisms that encourage human beings to treat him as a real boy. Sophie’s education in humanity is far more complicated and fraught. Sophie, recall, is the youngest child of Joe and Laura Hawkins and she accompanies her father when he, at his children’s insistence, purchases the synth Mia, ostensibly to help with family chores but implicitly as well to serve as a rebuke to Laura who works fulltime and has not, Joe thinks, properly attended to the care and feeding of the family. Laura resents the presence of Mia in the house and her introduction into the household is initially disruptive. Joe and Laura’s son Toby develops a school boy crush on the synth and their daughter Mattie, a budding programmer, tries to hack Mia’s software. Meanwhile, Joe activates Mia’s “adult” menu and uses her for sex, leading to the dissolution of his and Laura’s marriage.

The domestic troubles Sophie is exposed to in the Hawkins household, lead her to wish for an easier, “robotic” existence. Sophie learns from Toby’s friend Renie about a subculture of youths who pretend to be synthies, adopting their fashions, speech, and behavior. Renie too is dealing with difficult domestic issues and retreats into the synthie subculture for the peace and control it affords her. Sophie is soon copying Renie and begins to affect life as a synthie and is eventually diagnosed with Juvenile Synthetic Overidentification Disorder.

I’ve only hinted at parts of Sophie’s and Sam’s stories and the complex manner in which Humans explores the multiple impacts of the introduction of synthies into the characters’ domestic lives. But merely by situating the story of sociable robots in a domestic context and focusing on the possible impacts on the lives of children and adolescents, Humans underscores that the introduction of technology into the home will likely have complex repercussions. And in highlighting Sophie’s and Sam’s learning to be human, Humans serves to remind us that humanity is an achievement, that it is an achievement that takes place in the home, and that it is an achievement that can take complex, sometimes discomfiting forms. At the center of discussions of sociable robots is precisely the nature of sociability, but we can’t get at the complexities of sociability until we think about it as situated in the proper context for studying it: in the home, with complex parents who sometimes fail us, siblings with whom we sometimes experience jealousy and competition, all the while experiencing emotions and desires that we sometimes find troubling. We become human in and through relations with others forged over long years during which we are vulnerable and dependent, often characterized by care and nurturance, but sometimes by aggression and hostility. Humans underscores, contra Brooks, that Kismet’s form of sociability doesn’t get at the essence of humanity and that Breazeal’s model of the infant-caregiver relationship is decidedly attenuated. Focusing on the domestic context and taking into consideration children learning to be human, we see how different Kismet’s and Sam’s upbringing is going to be from Sophie’s. Breazeal suggests that we can learn about human sociality by studying it in controlled conditions and via the production of sociable robots. Humans counters with a picture of how complex learning to be human is and how the introduction of new technologies could potentially transform if not derail it.

Humans perhaps reminds us as well, though, that this contrast between Sam and Sophie in their different paths of social or human development is just one contrast and that the relationship of human to machine is decidedly more complex. While Karen teaches Sam some quick hacks for deceiving humans into thinking he is a real boy, Sophie learns that Sam is in fact a synth and she chooses to take on the task of caring for Sam and helping him to develop a deeper understanding of human sociability, including learning how to play. Sophie is drawn into a relationship with Sam and the two together learn something about what it is to be children playing together. Humans doesn’t demonize technology but shows us the complex and sometimes unexpected ways in which humans and technologies interact. I suggested earlier that television as our first relational artifact highlights the manner in which technologies are assemblages, networks of other technologies, institutions, social norms, legal policies, etc. Humans serves to reminds us that we human beings too are intertwined with the material world of artifacts and how we think about what it means to be human is going to be impacted by our interactions with those artifacts.

In studying the television, Roger Silverstone points out that we learn that we are shaped by our technologies as much as our technologies are shaped by us. In this respect, perhaps Turkle could learn something from Humans.
sider, for instance, Turkle’s reflections on observing a human being interact with Kismet:

When Kismet lowers its eyes, suddenly “shy,” Rich does not want to let go. We are at a moment of more. Who is leading and who is following in this dance? As in a moment of romantic encounter, one loses track and discovers a new rhythm where it doesn’t matter; each animates and reanimates the other. Rich senses that he has lost control in a way that pleases him [12].

Turkle speaks of losing control in a pleasing way, but also wants to clearly delineate between who is leading and who is following in this dance. And yet if our relationship with technology is characterized as a dance, then perhaps we ought to recognize that it is no longer legitimate to insist on asking who is leading. Turkle’s insistence that we do so, even when confronted by her subject’s pleasure in losing control, can sometimes come across as naive and old-fashioned, as she herself recognizes. “...if you’re spending three, four, or five hours a day in an online game or virtual world (a time commitment that is not unusual), there’s got to be someplace you’re not. And that someplace you’re not is often with your family and friends—sitting around, playing Scrabble face-to-face, taking a walk, watching a movie together in the old-fashioned way” [12]. Turkle suggests that having envisaged our lives with technology, the times “have brought us back to such homilies” [12]. In this respect, Turkle’s analysis of relational artifacts parallels Borgmann’s analysis of television as a device that procures entertainment at the expense of more focal practices [35]. One has to wonder, though, whether old-fashioned homilies are a sufficient response to our complexly technologically mediated lives. Old-fashioned games of Scrabble may have been nice, but Turkle risks idealizing the past while foreclosing upon whatever possible future pleasures may come from our “dancing” with sociable robots. Turkle’s vision of an alternative to relational artifacts seems to be rather a family life structured around board games and authentic family dialogue. But one might wonder about the viability of that vision, especially given that family life has already been reshaped by technology. Families have learned to incorporate television into their lives and have acquired new routines and practices that they find equally engaging. Turkle’s analysis seemingly suggests that we are introducing sociable robots into something that resembles a 19th century prairie homestead. We haven’t had that kind of home life in quite a while. Joe and Laura Hawkins are counseled that the best thing for Sophie is human contact. “No Synths, just her mum and dad, family and friends.” In fact, though, they ignore that advice and Sophie learns to navigate her humanity in the company of Sam and other synths. Humans perhaps reminds us that the path forward is not backward.

5 Conclusion

Where then does this leave us, following our initial contrast between Breazeal’s optimism regarding sociable robots and Turkle’s pessimism regarding relational artifacts? How has this foray through television and Humans helped us navigate the complexities of this debate? It’s clear that we’re witnessing something of a paradigm shift from learning machines and information processors to sociable machines and engaging artifacts. This paradigm shift and the increasing likelihood that our domestic spaces will soon be occupied by sociable robots and relational artifacts poses complex ontological, ethical, and technological questions. What do we understand by “being human”? How is being human impacted by these new technologies? How do we or ought we to understand the relationship between human being and technological artifact? We clearly need new conceptual maps to navigate these complex questions and yet it’s equally clear that the territory we are trying to map is shifting ground at precisely the same time we are trying to map it. It’s no wonder that we are ambivalent about these developments.

I have suggested that one step forward in this debate might come from our turning to and on television. We’ve long been ambivalent toward our televisions, too, vilifying them but also according them a central spot in our most cherished domestic spaces. In defense of this ambivalence, TV Studies scholars Horace Newcomb and Paul Hirsch have suggested that we think of television as a cultural forum:

In its role as central cultural medium [television] presents a multiplicity of meanings rather than a monolithic dominant point of view. It often focuses on our most prevalent concerns, our deepest dilemmas. Our most traditional views, those that are repressive and reactionary, as well as those that are subversive and emancipatory, are upheld, examined, maintained, and transformed. The emphasis is on process rather than product, on discussion rather than indoctrination, on contradiction and confusion rather than coherence [37].

Newcomb and Hirsch treat television as a dense, rich, complex, liminal medium that challenges us to work through our complex, contradictory, and confused perspectives. For Newcomb and Hirsch, television is a liminal realm in which “we allow our monsters to come out and play, our dreams to be wrought into pictures, our fan-
tasties transformed into plot structures” [37]. We see those monsters, dreams, and fantasies play out in Humans, foregrounding complex attitudes toward the introduction of synths and mirroring our own ambivalence toward the incursion of technology, from televisions to sociable robots, into the domestic realm. Being human is a messy business and introducing sociable robots into the home is going to be a messy endeavor precisely because human life is messy. We see that ambivalence reflected in Joe and Laura Hawkins’ responses to the growing presence of synths in their lives. Having divorced, partly owing to Joe’s sexual relations with the synth Mia, Joe moves to a small town that has banned synths and opens a small grocery store selling organic food. Laura meanwhile becomes a leading advocate and political activist for synth rights. Meanwhile, Sophia and Sam learn to play with one another as they work through new forms of human-machine relationships, suggesting that perhaps in the end it will turn out that the kids are alright.

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