Human Labor in Popular Science Fiction about Robots: Reflection, Critique, and Collaboration

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The word "robot" has been closely associated with its Czech meaning — involuntary labor — since entering English from Czech with the translation of Karel Čapek's *Rossum's Universal Robots*. In their mythic capacity as involuntary laborers, robots have been variously depicted in popular science fiction as a technology that hastens technological utopia, tools for manual labor, dangerous usurpers of humanity's self-reliance, sentient beings searching for equality, and in countless other capacities that reflect humanity's hopes and anxieties about the future. Given the breadth, depth, and history of science fiction, this plethora of robotic representation is perhaps unsurprising. Darko Suvin resoundingly declares that "basic human curiosity" is what gives rise to science fiction — a curiosity that "has always been wedded to a hope of finding in the unknown the ideal environment, tribe, state, intelligence or other aspect of the Supreme Good" (374). Similarly, Patricia Kerslake sees science fiction as a genre lacking "boundaries, connection with reality or formal precedent" that presents "caricatures from the human imagination" while simultaneously investing itself into cultural discourses rooted in "the knowledge and awareness humanity has of itself" and its "desire to experiment with its own future" (1). Because activity is endemic to the human condition as biological necessity and as an outgrowth of our need to make durable "the things whose sum total constitutes the human artifice" (Arendt 136), it is perhaps unsurprising that our collective imaginations have produced fantasy after fantasy in which purposefully designed automata free us from the demands of our material conditions.

When fantasizing about new, labor-saving, robotic technologies, however, we must keep in mind that the highest forms of fiction possess a kernel of reality.

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Wayne Booth reminds us that fiction "comes into existence as something communicable" and that it "can never be divorced from the human meanings [...] implicit whenever human beings act" (397). Fiction is never wholly separable from its historical and political context. To this, science fiction is no exception. Isaac Asimov reminds us that science fiction's existence stems from humanity's recent encounter with a "rapidly changing society due to the advent of modern technology" and that it serves to accustom "its readers to the thought of the inevitability of continuing change" (195). Because the subject matter of science fiction so often centers on the presence of an advanced, heretofore undeveloped science or technology — what Suvin terms a *novum* — it inherently roots itself in the modern experience of technology (373). From this view, then, popular science fiction about robots is not only a fantasy of discharging human activity to automata but also a tool for accustoming humanity to new, developing, and potential technologies.

The ability of science fiction to play this vital role in highly technological societies stems from the nature of narrativity itself. Walter Fischer contends that, at their core, "humans are essentially story tellers" and that "rationality is determined by the nature of persons as narrative beings" (8). For Fisher, humans ultimately tell stories to "give order to [...] experience and to induce others to dwell in them to establish ways of living in common" (6). In a world within which rapid technological innovation is a given, humanity's narrative impulses are a vital tool in acclimating to and comprehending change that otherwise may seem like upheaval. In this vein, David Nye writes that "Americans choose to understand technology using a wide variety of narratives" that help them to assimilate emerging technologies into society and to prepare for resultant potentialities ("Technological Prediction" 171-2). Similarly, James Herrick argues that stories rooted in the *mythos* of technological progress "assume that improvement inevitably occurs as a consequence of the interaction of the human mind with technology" and that "intentional appropriation of technology enhances the human condition" (38). By depicting a technological *novum* as a "central part of dramatic events," popular science fiction draws its audience's attention to aspects of technological development, whether it centers "on the old world that is fading into the past" or imagines "the future, projecting utopian images of ease and abundance" (Nye, *Narratives and Spaces* 3).

In this essay, I use Jacques Ellul's notion of *la technique* to think through how narratives in popular science fiction with robotic *novum* provide spaces for the

critique and propagandizing of new, developing, and potential technologies. In completing this task, I pay special attention to the types of labor that this genre depicts humanity taking on in response to the existence of robots. Doing so, I draw upon the understanding that human experiences of new or emerging technologies are never wholly utopian — a cavalcade of benefits with no drawbacks. Benefits are but one side of the coin, and the adoption of new technical systems often forces unforeseen or undesirable change. To be rendered plausible, popular science fiction about robots must reflect this reality. As well, by turning my gaze in this direction, I attune myself with the observation that an overarching issue with the analysis of science fiction about robots "is [...] emphasis on the robot rather than the human as the relevant moral actor" (Jordan 34). Thus, while human labor may not be the primary concern of popular science fiction about robots, turning our attention to how it is subtly depicted throughout these stories gives depth to our understanding of the role that such stories play in a highly technological world.

I approach my argument through several avenues, using examples from across popular science fiction to demonstrate how new forms of human labor and its implications are depicted across the genre. In the first section, I provide a brief overview of *la technique* and use Fritz Lang's 1927 film *Metropolis* to demonstrate how science fiction about robots portrays *la technique* and dissatisfaction with its implications for humanity. In the second section, I show how popular science fiction about robots can also collaborate with *la technique* as a form of sociological propaganda. Here, I use *Star Trek: Picard* to show how robotic *novum* in popular science fiction suggest cultural norms about how humanity should interact with robots. As well, I also provide a cursory typology of human labor that popular science fiction suggests is plausible given the existence of robots. To conclude this essay, I briefly comment upon the importance of being attuned to the intersection of labor, popular science fiction, and *la technique*.

Fictional Robots and the Context of *La Technique*

How new and emerging technologies impact human behavior has been a concern of social commentors for centuries and, in science fiction, such impact is typically explored as it stems from some *novum*. However, it is important to bear in mind that fictional depictions in the science fiction genre reflect and critique conditions of real-life contexts. Popular science fiction about robots is no exception. In this section, I turn to the work of Jacques Ellul to more fully flesh out the technological

context that popular science fiction about robots reflects. Then, I use the film *Metropolis* to show how the genre portrays concerns about *la technique* and its impact on humanity.

Ellul writes of the growth of modern technological systems, contending that "it is vanity to think it can be checked and guided [...]Enclosed within his artificial creation, man finds that there is 'no exit'; that he cannot pierce the shell of technology to find again the ancient milieu to which he was adapted for hundreds of thousands of years" (*The Technological Society* 428). Ellul's remarks here, in the conclusion of his landmark *The Technological Society*, serve well to highlight the tone of his work and his apprehension about the impact of high technologies. A product of mid-twentieth century conflicts and industrial growth — which manifestly demonstrated exactly how sweeping the effects of modern technologies were on society — Ellul's understanding of new and emerging technologies is fundamentally reactionary; it seeks to underscore and critique the extensive changes they foisted upon humanity in the years following the industrial revolution. Ellul's critique focuses "on technology at the highest level of abstraction," viewing it as "a system, a worldview, and way of life" (Strate 28). Centering his focus in this manner enabled Ellul to avoid becoming bogged down in the analysis of individual technologies and instead to view those technologies' impact as a more-or-less unified whole. The resultant effect on his theoretical understanding of technology is that it encompasses a wide range of practices, including, but not limited to, organizational, economic, and educational techniques in addition to more straightforward conceptions of industrial and mechanical technical systems.

Central to Ellul's analysis of the repercussions of modern technology on humanity is the concept *la technique* — a system of organization, practices, and infrastructure born of humanity's relationship with the technologies it conjures into existence. In the basest sense, *la technique* is how the adoption of large, technical systems necessitates embracing practices and activities that make the functioning of those systems more efficient. In fact, for Ellul, ensuring that technical systems operate efficiently can be considered the essence of *la technique* (*The Technological Society* 21). To put the point finely, *la technique* is efficiency manifest. When humanity alters its actions and self-organizing principles in response to new and emerging technologies, Ellul contends that the impulse to do so usually is traceable back to the dictates of *la technique* (*The Technological Society* 72-3). Our drive to receive the full benefits of new technologies calls us to act in ways symmetrical with their production, and the design of technical systems

— which build upon design decisions that stretch back for decades — necessarily dictate what those actions are. As the *telos* of *la technique*, efficiency determines the equilibrium between humanity and technology. And as the design of technical systems becomes more and more standardized, black-boxed, and incomprehensible, the burden for maintaining this equilibrium weighs increasingly on the human side of the equation.

Because the presence of *la technique* is a fundamental condition of highly technological societies, it stands to reason that it would be depicted in their science fiction because of the genre's propensity to reflect its political and cultural context. The use of robots as a *novum* offers added ability to explore the implications of *la technique* on humanity due to their intertwinement with complex systems of production and their status as a "possible marriage between human beings and our technical creations" (Telotte 101). Fritz Lang's 1927 silent film *Metropolis* offers a clear example of *la technique* in both setting and as a function of robotic characters. From the get-go in the film, we find that the city of Metropolis is dominated by a mechanical, industrial modernity. In the opening scene, "after an initial montage of pistons, flywheels and gears in repetitive movement," the camera "zeros in on a shot of the 10-hour work-clock that organizes the time of the city" (Cowan 236). Repetition of clock imagery throughout the film emphasizes how life in Metropolis — especially the workers' lives — orbits the needs of machines that keep the city running. In fact, the world Lang creates for *Metropolis* "reflects fears rooted in the very present European world of the early-twentieth century" where "Industrialization, mechanization, and urbanization were wreaking havoc on the work habits and lifestyles inherited from the mid-nineteenth century" (MacWilliams 94). Use of a clock to represent how industrial technologies shaped society in their image is no happenchance and hearkens back to these basic experiences during the heyday of the industrial revolution. During this period, the standardization of time to increase the efficiency of production dramatically impacted customary rhythms of life. Ultimately, the need for technical efficiency led to innovations that sought to make human labor more machinelike, such as hourly wage, time clocks, Taylorism, Fordism, and a host of other now commonplace practices (Noble 40). This driving force to mold society in ways friendly to new and developing technologies is the essence of Ellul's *la technique*, and the enduring allure of *Metropolis* shows that *la technique's* existence has proved a worthy foil for fiction and non-fiction concerned with changed human behavior linked to technological progress. *Metropolis* itself questions changes

called forth by technological progress by showing workers in open rebellion against the industrial order in response to their working *and* living conditions.

Metropolis also provides an illuminating example of how robots and *la technique* intersect in science fiction. In the film, frustration with *la technique* is demonstrated not only through the conditions that foment a worker's rebellion, but also through rebelling workers burning-at-the-stake robotic Maria (Brigitte Helm), who exhorted them to take actions that ran contrary to their own interests. As MacWilliams argues, the robotic version of Maria "epitomizes evil and deceit," misleading "her worker devotees by suddenly arguing for the use of violence" and not possessing "any ingrained sense of right or wrong [...] any remorse over the consequences of her call to destruction, or [...] any misgivings over her assumption" of human identity (96). While robotic Maria is a layered character with many dimensions, at the most basic level she can be interpreted as a machine that augments human activity so that its own purpose may be more efficiently achieved. Ultimately, it is through the transmission of "false knowledge" that neutralizes the workers' power and ability to act in their accustomed manner that robotic Maria effects change (MacWilliams 19). The workers' witch hunt for and destruction of robotic Maria demonstrates latent frustration with the implications of unplanned change in their own behavior, especially when the changed behavior has moral consequences that would lead to its rejection in other circumstances.

From another angle, Rotwang's (Rudolf Kleine-Rogge) transformation of the machine-person into the robotic Maria also raises questions about the mechanization of humanity. While many commentators on *Metropolis* have seen this transformation as a humanization of the machine, it is difficult to ignore implicit questions about how a human being with the interworking of a machine might behave. Robotic Maria — indistinguishable from the true Maria in all but action — follows the bidding of her masters with consequences they could not predict. She bewitches the upper classes and nearly leads the workers to ruin with no thought for the moral, political, or economic repercussions of her actions. Her job is merely to obey imputed actions. In the robotic Maria, we see a prescient image of a twisted humanity without freewill, beholden to efficiently complying with commands that are ultimately intended to keep Metropolis' technological systems humming. Truly, she is an image of humanity possessed by *la technique*. Her destruction at the hands of the workers exposes her true nature as a machine and visually removes all traces of humanity from her, restoring them to the true Maria and exposing the deceit of robotic Maria's actions.

Metropolis, and science fiction that resonates with it, shows a notable level of concern for how life in a highly technologized society impacts human behavior. Ellul reminds us that "*la technique* integrates the machine into society [...] constructs the kind of world the machine needs and [...] clarifies, arranges, and rationalizes" (*The Technological Society* 5). Thus, we might understand the anxiety demonstrated in popular science fiction like *Metropolis* as concern with the erosion of older ways of life at the behest of technological development — a change that leads to the supplementation of traditional forms of labor with labor that leaves little room for individuality and artistry.

Depictions of Fictional Robots as *La Technique's* Propaganda

Popular science fiction with robotic *novum* also provides an example of how narrative propaganda about *la technique* can condition how we perceive new, developing, and potential technologies. Whereas the previous section shows how the presence and implications of *la technique* are reflected in popular science fiction, in this section I am interested in how *la technique* can be advanced through fictional stories and representations of robots. Because *la technique* and science fiction are multifaceted phenomena, I would be remiss to not consider how they appropriate and expose one another. To tease out this relationship, I provide an overview of sociological propaganda and define robotic labor. Then, I offer *Star Trek: Picard* as a demonstration of how depictions of robotic labor necessitate the depiction of new forms of human activity. Lastly, to demonstrate the many avenues through which *la technique* can appropriate science fiction narratives, I provide a cursory typology of new forms of human labor that commonly arise in popular science fiction with a robotic *novum.*

In *Propaganda*, Ellul himself strongly suggests that *la technique* can make use of narrative. Here, he writes that societal discourses — written, spoken, or otherwise — "aim [...] to control human behavior so that we are integrated into the technological system" (Strate 28). Ellul defines discourse that fits this purpose as technologically oriented propaganda. Though he suggests several different types of propaganda, most relevant to popular narratives' potential role in maintaining *la technique* is "sociological propaganda." With sociological propaganda, Ellul refers directly to instances when technological ideologies and ways of being become latent in a given sociological context (*Propaganda* 63). Cultural artifacts capable of disseminating sociological propaganda are many, and include commercial and

non-politically oriented advertisements, movies, educational materials, and popular venues for the written word. Unlike forms of communication that are more traditionally associated with propaganda — for example, government-sponsored posters and newsreels — sociological propaganda does not present a unified front or explicitly identifiable *telos*. Rather, it is a collection of diffuse-yet-related phenomena "based on general climate, an atmosphere that influences people imperceptibly without having the appearance of propaganda [...] a progressive adaption to a certain order of things, a certain concept of human relations, which unconsciously molds individuals and makes them conform to society" (*Propaganda* 64). More plainly, because the stories we tell about science and technology — including those with a robotic *novum* — act as sociological propaganda, they possess the ability to influence how we interact with our technological milieu.

The first season of *Star Trek: Picard*, which aired in 2020, provides an example of how science fiction with a robotic *novum* paints a picture of and reinforces common expectations about how humans should interact with new, developing, and potential technologies. Of course, Gene Rodenberry's *Star Trek* franchise has long posed questions about the nature of science and technology and its relationship with humanity. As part of a new generation of *Star Trek* series, however, *Picard* builds upon previous story arcs in ways especially relevant to contemporary concerns about robotics and artificial intelligence. Namely, the beliefs that subtly permeate *Star Trek: Picard*'s first season revolve around the purpose of robotics and synthetic life. What must they contribute to society to be accepted? What labor must they provide by virtue of their existence? How should humans value them if these expectations are not met? Narrativizing assumptions related to these questions, *Star Trek: Picard* shows how popular science fiction can unintentionally become embroiled with ways of being associated with *la technique*.

Before proceeding too far into this example, it is necessary to flesh out what I consider to constitute robotic labor in popular science fiction. When considering robotic labor, I draw primarily upon Arendt's theory of action. In *The Human Condition*, Arendt paints a picture of a tripartite human existence — what she refers to as the *vita activa*. In this image, the *vita activa* is the underlying condition "under which life on earth has been given to man" and comprises the spectrum of what must be toiled upon for both human life and society to continue unabated (Arendt 7-8). Its three constitutive parts are:

1. Labor, or the "activity which corresponds to the biological process of the human body" (Arendt 7), primarily referring to biologically necessary activity such as reproduction and agriculture.

2. Work, or the "activity which corresponds to the unnaturalness of the human condition" that provides an "artificial world of things, distinctly different from all natural surroundings" (Arendt 7). This primarily refers to activity that creates our social artifice such as printing a book or constructing a table.

3. Action, or the "activity [...] that goes on between men without the intermediary of things of matter, corresponds to the human condition of plurality [...] the condition of political life" (Arendt 7). This primarily refers to activity through which we disclose ourselves to one another as unique beings.

Together, the three divisions of the *vita activa* can be understood as comprising the breadth of human activity (Voice 36-7).

I consider robotic labor in popular science fiction to occur during any occasion in which a robot supplants or augments human activity in the *vita activa*. Fictionally, a robot can be and is inserted along any point of this spectrum. Bender from Matt Groening and David X. Cohen's *Futurama*'s is initially designed to perform the rote labor of bending for the construction of suicide booths. Isaac from Seth McFarlane's *The Orville* is activated to help determine if biological life is worth maintaining — a decidedly philosophical and political question. Marvin the Paranoid Robot of Douglas Adams' *The Hitchhiker's Guide to the Galaxy* appears to do it all with a hearty grumble. The point here is that even robots that participate in higher-order activities associated with societal living are no doubt *intended* to be productive in this manner (or, if not, are quickly appropriated to do so). Of course, using Arendt's *vita activa* as a guide when considering robotic activity stretches it beyond what we might usually consider it to be. This is because robotic labor is more traditionally understood to be repetitive and rote tasks that are performed with "various inputs" in an effort to "act upon the physical environment" (Jordan 4). However, because robots — especially fictional ones — are imagined with the objective of reducing the amount of activity necessary for humans, it is fruitful to think of robotic labor as reflective of Arendt's three-part division. This is a wide conception to be sure, but it allows for a broad understanding of robotic labor. Moreover, using Arendt's conception as a guide illustrates clearly how questions

of robotic labor are at the center of much science fiction that depicts robots and ultimately how science fiction reinforces beliefs related to *la technique*.

Let us return to *Star Trek: Picard* to see how subtle assumptions about robotic *novum* link to the *vita activa* and *la technique*. Here, in a story set decades after the finale of the last *Star Trek: The Next Generation* film, we find main character Captain Jean-Luc Picard (Patrick Stewart) fighting to save descendants of his late friend, Data (Brent Spiner) — an android. Banned from existence within the Federation, the androids and their creators find refuge on a distant world. Their existence, however, is not unnoticed as a group of Zhat Vash Romulans seeks to destroy them. It is the Zhat Vash's plot that Picard works to stymie. Throughout *Star Trek: Picard* we are presented with two contrasting moral understandings of the androids that stem from these plot lines. On the one hand, Picard's approach — that favored to triumph by the show's writers — echoes *Star Trek* lore, loudly proclaiming that the androids are sentient beings, have a right to live, and are masters of their own destiny. On the other hand, the Zhat Vash spins a tale of inevitable destruction, contending that synthetic life will destroy organic life if left unchecked.

There could not be two stances with more enmity. Yet, at the barest ontological level when viewed through the *vita activa* the two understandings agree on the *telos*, or ultimate purpose, of the androids: to provide through action. In the series finale, Picard poetically contends that the androids "have life" but that "no one is teaching them what it is for," further arguing that "to be alive is a responsibility" — subtly suggesting that by virtue of being imbued with life, the androids now carry a responsibility to provide something of themselves to the universe ("Et in Arcadia Ego: Part 2" 00:21:45-00:22:00). Why, after all, were androids created to begin with? Certainly, to have the opportunity to contribute *something*, be it rote work, companionship, insight, individuality, or so on. Through their contributions, the androids are understood to help carry the burden placed upon all organic life, to lessen the load of the *vita activa*. Moreover, in a more nuanced sense, Picard uses questions about the technological providence of the androids to articulate and disseminate his own morality, making them tools for action in his own *vita activa*.

The ostensibly contrasting Zhat Vash approach — which calls for snuffing out the androids — too appears fundamentally concerned with the technological providence of the beings. Worried about what they foresee as an inevitable galactic apocalypse if synthetic life propagates, the Zhat Vash wage a shadow war against research into sentient automata. *Star Trek: Picard*'s second episode provides

insight into the Romulan mindset. Here, in a conversation between Picard and his Romulan caretakers, it is revealed that careful attention to Romulan culture shows the species' clear lack of interest in "cybernetics, androids, or A.I." and the realization that Romulan "computers are only used for numerical functions," suggesting fastidiousness about the use-value of advanced technologies ("Maps and Legends" 00:11:10-00:12:00). In other words, how might robots and other automata be forced to contribute to the human (or, in this case, Romulan) artifice. Concern with use-value from the Romulan perspective is confirmed throughout the opening episodes of *Star Trek: Picard* in which Narek (Harry Treadaway), a Zhat Vash agent, befriends Soji (Isa Briones), a descendent of Data, to glean information about their origins and home world. Despite his belief in the apocalyptic *telos* of synthetic life, Narek allows Soji to function so long as she proves useful — or, seen another way, so long as she produces information of value toward maintaining society (Arendt's "work").

Thus, through the lens of the *vita activa* we find an agreement at the deepest levels between two ostensibly opposed fictional stances about robotic automata. Both approaches — one hopeful for the sentient automata and the other fearful of the changes they may bring — ultimately root their beliefs and actions in some interpretation of how the robots are fruitful through their activity. One looks to the responsibility and potential of the lifeforms to contribute fruitfully to the galaxy. The other acknowledges, even uses, this contribution when convenient, yet remains fearful of its eventual consequences. Together, they demonstrate that issues of robotic labor are at the center of popular science fiction about robots. Ultimately, they show how robots are deemed most valuable when offsetting or contributing to human activity.

From the perspective of *la technique*, these assumptions about labor and robotic *novum* rooted in their technical providence are intriguing. They suggest new forms of human activity resultant from the presence of robots and related to those robots designed nature. Ortega y Gassett's definition of the technical act underscores this point. Arguing that technology can be defined as "improvement brought about [...] by man for the satisfaction of his necessities" and that humanity answers the challenges of nature by "imposing change on nature" with the use of designed, technical systems, Ortega y Gassett reminds us that the creation of any technology implies a host of labors related to emergent issues of design, policy, construction, and maintenance (95). Other noted conceptions of technology adopt a similar stance. Winner writes that "technology [...] is inherently pragmatic" and that it

"deals with establishing what one wants and how one wants to pursue it" through technical, social, and organizational developments (7-12). Likewise, Pacey contends that technology is "the application of scientific and other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines" (6). Nye argues that technology cannot be understood apart from social evolution because "humans continually redefine their necessities to include more," piling up the alterations that we accept as needing to be made to the world. (*Technology Matters* 3). Thus, it is from "imagination of altered circumstances" that technologies sprout, as "making a tool immediately implies a succession of events in which one exercises some control over outcomes" (Nye, *Technology Matters* 3).

In *Star Trek: Picard* latent assumptions about robotic labor imply, at the very least, a human labor of design and evaluation through which robotic technology is coaxed to operate more "efficiently." Both the Zhat Vash and Picard strive to ensure that robotics function in a manner symmetrical with their own cultural context, creating labor for creators and ensuring that robots operate well within the original parameters and logics of their design. While this form of narrativization is subtle and does not explicitly exhort audiences to act in a specific way, they do ultimately promote "the promulgation of ideas and prejudices" and "a style of life" that is indicative of sociological propaganda in the interest of *la technique* (Ellul, *Propaganda* 70).

A Typology of Robotic Labor in Popular Science Fiction

The types of human labor that can be depicted in popular science fiction as an outgrowth of robotic *novum*, of course, extend beyond what is demonstrated by *Star Trek: Picard*. Popular science fiction is a vast genre. It stands to reason that its intersection with a phenomenon as nuanced and multifaceted as *la technique* also is nuanced and multifaceted. I would be remiss to confine my scope only to the examples I have provided thus far. With this in mind, in this section I suggest a cursory typology of these forms of labor and provide brief examples, keeping in mind that the types of activity *la technique* suggests in sociological propaganda is often subtle — located in nuance rather than explicit detail. I suggest five forms of human activity related to the intersection of a robotic *novum* and *la technique*: 1) educational activity; 2) maintenance activity; 3) collaborative activity; 4) emotional activity; and 5) resistance activity. While this typology is by no means exhaustive,

I believe that it identifies the major categories of human activity depicted in response to stories about fictional robots' need to reflect the realities of *la technique* as well as lays a tentative groundwork for future study. In the proceeding paragraphs, I will briefly give substance to each type of activity by succinctly defining them and offering relevant examples.

Educational Activity. Educational activity in response to the presence of robots in fictional narratives can be understood as any work or action undertaken regarding the creation, dissemination, or attainment of knowledge that emerges as a direct result of the existence of robots. As well, educational activity that ultimately leads to the creation of robots might also be considered as part of this category. Specific activities in this category may include, but are not limited to, studying robotics or cybernetics, learning how to repair robots, development of ethical guidelines about robots, and public service messages about interaction with robots. Some examples of popular science fiction that illustrate this type of activity are: in *Big Hero 6* (Don Hall and Chris Williams, 2014) the work of robotics research depicted at the San Fransokyo Institute of Technology; and, in Asimov's short story "Runaround" (1941), the main characters' struggle to understand SPD-13's behavior through analysis of the Three Laws of Robotics.

Maintenance Activity. Maintenance activity is labor, work, or action that arises through the need to maintain, repair, and generally sustain robotic technologies. While perhaps easy to view with a blasé attitude because of its more rote qualities, the depiction of maintenance activity is common in stories that contain a high tech *novum*, especially robots. It is worth noting that maintenance activities, to some degree, are related to educational activity insofar that knowledge creation through troubleshooting (a la *Runaround*) is inevitable, so some overlap between these two categories is to be expected. Specific activities in this category include, but are not limited to, repair work on defunct or ailing robots, repair work on malfunctioning technical systems that help make possible the existence of robots, preventative maintenance on robots or their associated technical systems, or even proactive maintenance intended to improve the efficiency of robots through upgrades to keep abreast with the advance of technological progress. Some examples of popular science fiction that illustrate this type of labor are: in the 2018 Netflix adaption of *Lost in Space* (Irwin Allen), the Robinson family's repeated need to alter their plans to repair both Robot and Scarecrow; in the *Star Wars* franchise (George Lucas, 1977) evidence of maintenance activity is sprinkled throughout, especially with regard to maintaining C3P0 and R2D2; and, in the television series *Futurama* (Matt

Groening and David X Cohen, 1999), multiple episodes within which Bender is upgraded for various purposes.

Collaborative Activity. Collaborative activity is that which results from labor, work, and action that has become possible through collaboration with robots. This category of activity is predicated on the understanding that interaction between humanity and robots designed to influence the physical world makes plausible the emergence of new forms of labor, work, and action. Potential activities of this category include, but are not limited to, construction work undertaken with the cooperation of robots, combat entered with the cooperation of robots, computation performed with the assistance of robots, or even political revolution accomplished hand-in-hand with robotic compatriots. Some examples of popular science fiction that illustrates this types of labor are: in the television series *Star Trek: The Next Generation* (Gene Rodenberry and Rick Bernman, 1987), countless plots within which the crew of the USS Enterprise work with Data to accomplish a task that would have been difficult or impossible without his aid; in the film series *Transformers* (Michael Bay, 2007), Sam Witwicky and other main characters working with the Autobots to ensure that Earth remains a haven for both their species; and, in Jack Williamson's novel *The Humanoids* (1949), humanoid robots moving from planet to planet helping to eliminate problems created by humans when requested.

Emotional Activity. Emotional activity can be understood as labor, work, or action undertaken by humans in response to the emotional impact of the presence of or interaction with robots. Unlike more traditionally understood forms of labor, work, or action that center purely on the manipulation of the physical world, emotional activity centers on manipulation of the self. While this manipulation may manifest itself in a physical form on the body or in how one interacts with the world, often, it is represented by an internal change that may not be readily apparent. Nonetheless, as activity that occurs because of the presence of robots, its depiction in popular science fiction represents a form of human activity that we would be remiss to overlook, given its general acceptance as plausible. Specific activities in this category include, but are not limited to, general feelings of emotional attachment to robots, maintaining friendships either with or enabled by robots, grief associated with the loss of a robot, romantic relationships with a robot, and managing social situations which have been altered by the presence or existence of robots. Some examples of popular science fiction that illustrate this type of activity are: in Stanislaw Lem's play *The Faithful Robot* (1961), Tom Clempner's difficulty

with managing his relationship with Graumer once the robot appears in his life; in the film *Ex Machina* (Alex Garland, 2014), Caleb Smith's actions as a result of his attraction to Ava; in *Star Trek: Picard*, when Picard wrestles with Data's death throughout the series; and, in the film *Terminator 2: Judgement Day* (James Cameron, 1991), John Connor's friendship with the Model 101 Terminator.

Resistance Activity. Resistance activity — perhaps the most common in apocalyptic and dystopian media — can be understood as labor, work, or action that results from a need to resist the presence, growth, expansion, or hostility of robots. In short, activity that is usually associated with resistance to robotic takeover. Resistance activity is counterintuitive from the perspective of *la technique* as the framework contends that fictional human activity should reflect the need to make robots more efficient — a goal not attainable through stymieing the machines. However, here we must recall that robots are best understood as a technology designed or appropriated for human use. Thus, resistance to robots out-of-control is in effect activity that seeks to maintain their status as productive and efficient servants. Potential activities in this category include, but are not limited to, armed resistance, persuading other humans to adopt the ideological beliefs of resistance, spying, and damaging or destroying technical infrastructures. Some examples of popular science fiction that illustrate this category are: in Karel Čapek's play *Rossum's Universal Robots* (1920), resistance to the robots conquering of Earth, leaving all but Alquist dead), Phillip K. Dick's *Do Androids Dream of Electric Sheep?* (1968), Rick Deckard's work as an agent enforcing laws that keep androids off Earth); in *Metropolis* (Fritz Lang, 1927) when the robotic Maria leads the city astray and must be stopped; and, in the film series *The Matrix* (Lana Wachowski and Lilly Wachowski, 1999), humanity's resistance to the machines through continuing human society deep underground.

Collectively, the categories this section presents illustrate the extent to which popular science fiction with a robotic *novum* is necessarily intertwined with humanity's search for efficient labor and robust technological systems. Using Ellul's categories of propaganda as an overlay shows how narrative manifestations of this search in popular science fiction transcend time and medium. This is not to argue that popular science fiction about robots is primarily propaganda designed to guide humanity's relationship with new and emerging technologies. It clearly has cultural meanings beyond this role that also carry great significance. Rather, the importance of the typology I propose in this section is in how it demonstrates the subtly with which technological forms of thought interplay with cultural practices

traditionally understood as critical of that thought. As the categories show, the expectation that robots function efficiently remains, regardless of how a narrative depicts humanity's relationship with robots. In each case, narratives that depict robotic labor reflect and reinforce preexisting beliefs about the purpose and worth of technological systems and suggest how humanity should act accordingly.

Conclusion: At the Intersection of Technology, Ethics, and Science Fiction

Because science fiction reflects the cultural and political realities of the world in which it is created in addition to playing a role in how we come to terms with new, developing, and potential technologies, I believe it is appropriate to highlight science fiction's ethical implications. In the same vein, I would also like to appraise the ethical implications of science fiction criticism in light of what I have articulated about the intersection of labor, science fiction, and *la technique* in this essay.

Throughout this essay, I have striven to demonstrate the centrality of labor concerns in popular science fiction about robots and how that centrality necessitates the depiction of resultant human activity by virtue of *la technique*. While the categories of human activity I have discussed throughout this essay are admittedly cursory and likely incomplete, we should not allow this to undermine their importance. As I have suggested, their depiction in popular science fiction potentially represents a form of sociological propaganda through which humanity is accustomed to acceptance of actions that emerge from our drive to operate efficiently systems of high technology. As well, these depictions open a space within which *la technique* can be critiqued. The stories that popular science fiction tells has fidelity to our lives that empowers them with persuasive power. More than simply reflect the realities of living in a world of *la technique*, these stories also point toward types of activity that humanity imagines as acceptable and, given the influence of popular media, inevitably must impact the types of technological development we find desirable and inevitable.

As critics of popular media, we would be remiss to overlook this influence solely in favor of less circumspect analyses centered solely on nuances of plot. As technology ethicists astutely observe, humanity has a strong hand in its own technological evolution, even if the endpoint of technological development appears preordained. Aware of the wide-ranging impact of newly adopted technical systems, technology ethicists emphasize the need for collective reflection on the

growth of technologies now common, reminding us that we are a self-engineering species solely responsible for designing the technologies we live with. As Shannon Vallor contends, we must "fashion, test, and disseminate [...] new habits and practices for living well" in a world of emerging technologies (254). We must be mindful of how and why we have adopted new technologies and the impact they have had as well as the types of change we find acceptable and the methods through which such change becomes accepted. If, then, living well through mindfulness is the key to desirable technological development, then attentiveness to how we depict future human activity in a technological world is vital — lest we mistakenly condone what in truth we find unacceptable. Turning our attention to the types of human activity that our science fiction stories illustrate is at least one method through which this task may be accomplished.

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