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Towards Posthuman Personhood:
Robots and Personhood in Isaac Asimov's and Clifford D. Simak's Short
Science Fiction Stories

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ÖZET

Bu çalışma Isaac Asimov ve Clifford D. Simak'ın kısa bilim kurgu öykülerindeki robot karakterlerin, eleştirmenler May Anne Warren ve Susan Leigh Anderson tarafından her insanda bulunması gereken özellikler olarak belirtilen *bilinçlilik*, *duygusallık*, *akıl*, *iletişim kurma yetisi*, *özfarkındalık* ve *ahlakî muhakeme* ölçütlerine ne derece uyduklarını sorgulamaktadır. Asimov'un hümanist bakış açısını temsil eden Üç Robot Yasası, yazarın eserlerindeki birçok robot karakterin belirtilen altı bireylik ölçütünü sergilemesini engeller. Buna karşın, Simak'ın çoğu robot karakteri her bir ölçütü de açıkça gösterdiklerinden, robot kılığına bürünmüş olağan insan izlenimi yaratırlar. Simak'ın davranışsal olarak insansı robotları yazarın bilim kurgu yapıtlarında posthümanist ve transhümanist (insan ötesi) bir bakış açısını öngördüğünü gösterir.

Anahtar sözcükler: Hümanizm, Posthümanizm, İnsan ötesi, Isaac Asimov, Clifford D. Simak, Robot

ABSTRACT

The aim of this study is to analyze Isaac Asimov's and Clifford D. Simak's short science fiction stories that feature robot characters, with the objective of identifying to what extent they are allowed to display the six personhood criteria of *sentience*, *emotionality*, *reason*, *the capacity to communicate*, *self-awareness* and *moral agency*, as delineated by Mary Anne Warren and Susan Leigh Anderson. Asimov's Three Laws of Robotics, which exemplify his humanistic outlook, do not permit many of his robot characters to attain the aforementioned six criteria. Thus, most Asimovian robots do not convey an impression of personhood. In contrast to Asimov's robot characters, Simak's robot characters create the impression of a human being wearing metalface because they fully manifest all six personhood criteria. Simak's depiction of behaviorally humanlike robots demonstrates that the author was able to anticipate a posthumanist and transhumanist perspective in his science fiction.

Keywords: Humanism, Posthumanism, Transhumanism, Isaac Asimov, Clifford D. Simak, Robot

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Introduction

Clifford D. Simak and Isaac Asimov are famous science fiction writers who created fascinating robot characters with human characteristics in varying degrees. In Asimov's fictional worlds, robots have an existence that is essentially subservient to human beings, both socially and morally. In Simak's fiction, however, robot characters are permitted a more autonomous type of existence than those of Asimov. The basic divergence between the two authors' depictions of robot characters suggests that while the former subscribes to a humanist outlook the latter moves more in the direction of posthumanism. The aim of this thesis is to analyze Asimov's and Simak's short stories which feature robot characters with the objective of identifying to what extent they are allowed to display characteristics of personhood as delineated by Mary Anne Warren and Susan Leigh Anderson. Through this analysis, the thesis will finally attempt to demonstrate how these writers' fiction re-enacts the continuities and divergences of humanist and posthumanist thought.

1. Biographies

1. 1. Isaac Asimov

Isaac Asimov was born in Petrovich, Russia on January 2, 1920. Soon after his birth his family emigrated to the United States and settled in Brooklyn, New York. He was raised in New York City and rarely left there. He received his B.Sc. in Chemistry from Columbia University in 1939 and an M.A. from the same institution in 1941. After serving in World War II, he returned to Columbia University and completed his Ph.D. in 1948. He became an instructor in Biochemistry at Boston University School of Medicine and an Associate Professor in 1955 (Clute, 2016, p. 366). Asimov kept his affiliation with Boston University even after retiring from academic teaching. In 1958, he made a decision to change his career path. He gave up teaching and writing fiction to focus on nonfiction. He would return to writing fiction in 1982 (Clute, 2016, p. 366-7).

It was "his phenomenal breath of knowledge, easy grasp of complex subject matter, and ability and determination to write directly, clearly, and simply for the nonscientist" that made Asimov one of the great popularizers of science and the arts (Frazier, 2010, loc 147). Asimov wrote most of his best fiction including the Foundation trilogy, that is made up of the novels *Foundation* (1951), *Foundation and Empire* (1952) and *Second Foundation* (1953), as well as his robot stories during the two decades spanning the 40s and 50s. These works include short

fiction collections such as *The Martian Way* (1955), *Earth Is Room Enough* (1957), and what is considered his best stand alone novel *The End of Eternity* (1955). *The Gods Themselves* (1972) was awarded both the Hugo¹ and the Nebula² the year of its publication (Clute, 2016, p. 366). He returned to writing fiction in the 1980s to mixed critical reviews. His fiction still had the “remote discursiveness of his prime, but had lost the concision that graced his early work” (Clute, 2016, p. 372). Over the years the science fiction field honored him repeatedly with Hugos and Nebulas. Isaac Asimov died in New York City in 1992 (Nagle, 2013, p. 28-9).

Asimov’s robot fiction includes short stories in collections such as *I, Robot* (1950), *The Bicentennial Man and Other Stories* (1976), *The Complete Robot* (1982), *Robot Dreams* (1986) and *Robot Visions* (1990) (Asimov, 1995, p. 559). His robot novels are *Caves of Steel* (1954), *The Naked Sun* (1957), *The Robots of Dawn* (1983), and *Robots and Empire* (1985), in which the humaniform robot R. Daneel Olivaw is the recurring protagonist. The latter two novels were written to link his robot series with his Empire novels. He also embedded allusions to his robot stories and novels into his later additions to the Foundation Trilogy - *Prelude, Forward to Foundation* (1993), *Foundation’s Edge* (1982), and *Foundation and Earth* (1986). Asimov’s aim was to tie all his major works of fiction together in a Robot/Empire/Foundation metaseries (Palumbo, 2002, p. 134-35).

This thesis will analyze the novella “The Bicentennial Man” and the short stories “Robbie,” “Little Lost Robot,” “Runaround,” “Liar!” and “Reason,” found in *Robot Visions* (1990). Asimov’s short robot stories are investigations into robot behavior which his human characters conduct through the lens of Asimov’s Three Laws of Robotics.

1. 2. Clifford D. Simak

Clifford Donald Simak was born in Millville, Grant County, Wisconsin on August 3, 1904 (Wixon, 2015b, loc 40). He began his education in a “stereotypical old-time” country school “in which children of all ages sat in a single room, to be taught by the same teacher”

¹ The Hugo Awards is a science fiction achievement award named after Hugo Gernsback, the founder of the American science fiction magazine *Amazing Stories* (1926) (Heaphy, 2008, p. 268). They are awarded by the World Science Fiction Society at the World Science Fiction Convention (also known as Worldcon). The first Hugos were presented at the 11th Worldcon in 1953. The Hugos are “a fan-based award” (Booker, 2014, p. 125).

² The Nebula Awards is an award created and presented by the Science Fiction Writers of America (Heaphy, 2008, p. 268). The Nebulas have been presented every year since 1965 and are considered to be one of the most prestigious awards “for achievement in the realm of science fiction and fantasy” (Booker, 2014, p. 172). The Grand Master Award “for lifetime achievement in science fiction and/or fantasy” has been a part of the Nebula Award ceremonies since 1975 (Booker, 2014, p. 172).

(Wixon, 2015b, loc 42). After graduating from high school, he took a teacher training program. Subsequently, he would teach at several small towns within the area for three years. Simak studied journalism at the University of Wisconsin after his family relocated to the state capital Madison (Wixon, 2015b, loc 63-75). However, he had to drop out once the Depression hit (Obituary).

After marrying Agnes “Kay” Kuchenberg, Simak moved to Michigan to work as a reporter. He started at the semiweekly *Iron River Reporter* and was given his own column, “Driftwood,” shortly afterwards (Wixon, 2015b, loc 63-75). In 1932, he became the editor of the *Spenser Reporter* in Spenser, Iowa. In 1934, he took on an editorial position at the *Dickinson Press* in North Dakota. Simak was persuaded by a Kansas City newspaper company, which bought the *Iron River Reporter*, to move back in order to turn the newspaper from a semiweekly into a daily paper. The final position he took was in the copy desk of the *Minneapolis Star* in 1939. He would become the chief of the copy desk and, eventually, advance to be news editor. Simak remained with the *Minneapolis Star* and its various successors until the end of his journalism career in 1976. By his own admission, he retired to devote more time to his literary pursuits (Wixon, 2015b, loc 75-89).

Though Simak is mainly known as a writer of science fiction stories, he also produced stories in the Western, war story, weird fantasy, and mystery genres (Wixon, 2015a, loc 63). His career as a journalist is clearly noticeable throughout his corpus as a writer, especially in terms of style. As his close friend and editor of *The Complete Short Fiction of Clifford D. Simak* series David W. Wixon, puts it “Simak tried to avoid allowing stylistic flourishes to get in the way of his exposition of the facts of the story—prose, he believed, is not supposed to distract from the plot” (Wixon, 2015e, loc 25-36). The science fiction author Robert Silverberg characterizes his writing as having a “clear, precise, straightforward narrative style” (as cited in Wixon, 2015e, loc 25-36). Simak is best remembered for his novel *City*, which includes nine short stories woven together by interstitial commentaries and for which he won the International Fantasy Award. He received Hugo Awards for “The Big Front Yard” in 1959, *Way Station* in 1964, and “The Grotto of the Dancing Dear” in 1989 which also won a Nebula Award the same year. In 1978, *A Heritage of Stars* won the Jupiter Award for Best Novel. Right before his death, he was an inaugural winner of the Horror Writers’ Association’s Bram Stoker Award for Lifetime Achievement (Wixon, 2015a, loc 74).

Clifford D. Simak uses robots as minor or major characters in several of his novels, such as *Time and Again* (1951), *Destiny Doll* (1971), *A Choice of Gods* (1972), *Enchanted Pilgrimage* (1975), *Shakespeare's Planet* (1976), *A Heritage of Stars* (1977), *Project Pope* (1981), *Special Deliverance* (1982), and *Highway to Eternity* (1986). His short stories that feature robots are “Earth for Inspiration” (1941), “Ogre” (1944), “How-2” (1954), “Installment Plan” (1959), and “All the Traps of Earth” (1960). The stories “Huddling Place” (1944), “Census” (1944), “Paradise” (1946), “Hobbies” (1946), “Aesop” (1947), and “The Simple Way” (also known as “The Trouble with Ants” [1951] which later comprised most of the novel *City*). All the short stories include one of his most prominent robot characters, Jenkins (Lyall, 2020, loc 2098-2553). “Epilog” (1973) is a later addition to his novel *City* that further develops the Jenkins character.

This thesis focuses on “All the Traps of Earth,” “How-2,” “Installment Plan” and *City*, because these works contain some of Simak’s most detailed robot characters. The inner monologue technique that Simak uses to enrich the reader’s understanding of the robot protagonists in “All the Traps of Earth” and *City* and the sheer variety of behaviors the robot characters in “How-2” and “Installment Plan” engage in makes them suitable for a more comprehensive analysis.

2. Robots in Science Fiction up to Asimov and Simak

Robot stories can be thought of as a subgenre belonging to narratives concerning artificial people. Artificial people come in an array of different types, from tales of animated statues in antiquity to the Golem of Jewish myth, from Karel Čapek’s mass-produced biological worker-cum-servants to the mechanical robots of later twentieth-century science fiction. Despina Kakoudaki states that “the figure of the artificial person” has been “continually refined” in order to answer age-old questions: “What does it mean to be alive? What does it mean to be a person?” (2014, p. 28). These artificial people—robots in the case of Asimov’s and Simak’s characters--“are often represented as desiring to become real people” (Kakoudaki, 2014, p. 28). Narratives of artificial people question and help define the notions of “humanity and personhood” through the process of becoming a real human (Kakoudaki, 2014, p. 28).

The artificial people to be discussed in this thesis are the result of the convergence of two schools of thought. The first proposes that an artificial being can be created alchemically or biologically, whereas the second suggests mechanical construction; such artificial beings

designed to look and act like humans are called androids (Booker, 2014, p. 22). The earliest use of the term android was “in reference to an automaton supposedly created by Albertus Magnus by alchemical means” in the thirteenth century (Booker, 2014, p. 23).

There are myths of other similar artificial beings from the Middle Ages such as the Golem of Jewish lore. Shlomo ibn Gabirol, the eleventh-century Spanish Hebrew poet and philosopher is reputed to have created a wooden female golem to act as a household servant (Leviant, 2007, loc 54). His use of a biological material like wood is noteworthy due to its similarity to later reworkings of the myth in the early twentieth century. By the fifteenth century golem tales had been circulating throughout German Jewry and by the seventeenth century stories of the golem had become a common oral tradition among European Jews (Leviant, 2007, loc 54). The most influential tales date from the sixteenth century and are inextricably linked to the leader of the Jewish community in Prague, Rabbi Loew, also known as the Maharal, an acronym for Morenu Ha-Rav Loew (Leviant, 2007, loc 54-7). Yudl Rosenberg’s retelling of the story in *The Wondrous Deeds of the Maharal of Prague with the Golem* (1909) published in Hebrew and translated by the author himself into Yiddish became the definitive version of the tales because of its popularity. The 1917 German translation by Chayim Bloch was well-received as well though Bloch claimed to be the author and never gave credit to Rosenberg (Leviant, 2007, loc 57-103). Rosenberg’s version would influence subsequent stories about artificial people in twentieth-century literature and film.

The second school of thought used mechanical devices to simulate life. One popular early exemplar was Jacques Vaucanson’s defecating Duck which was accompanied by two (mechanical) android musicians. The two androids were a Pipe-and-Tabor player and a Flute player. The three automata were displayed to a paying crowd at the Grand Salle des Quatre Saisons at the Hôtel de Longueville in Paris in 1738 (Riskin, 2003, p. 599). Mechanizing internal and external bodily movements raised the question of the possibility of “mechanizing thought itself” (Riskin, 2003, p. 619). Thus Wolfgang von Kempelen, who like Vaucanson “designed both genuine and fraudulent automata,” built the chess-playing Mechanical Turk in 1769. It was exhibited in Europe and America³ until 1840. It defeated and instructed the likes of “Frederick the Great, Benjamin Franklin, Napoleon, and Charles Babbage” (Riskin, 2003, p. 620). The

³ In the United States, the word android came to signify “human-like mechanical toys” in the 19th century (Booker, 2014, p. 23).

Turk further proved its capacity for thought through answering questions from the audience “by pointing to letters on a board” (Riskin, 2003, p. 621). Edgar Allan Poe would write favorably of Vaucanson’s Duck and use it to scrutinize “the plausibility of Kempelen’s chess player” and another famous automaton of the time, Babbage’s Difference Engine” in his essay “Maelzel’s Chess-Player”⁴ (1836). Its fraudulent nature, proven by the mid-1800s, “did not detract from its fascination” (Riskin, 2003, p. 621).

The Turk’s influence on fictitious automata is evident through works such as Ambrose Bierce’s “Moxon’s Master” (1899) in which a mechanical chess playing contraption, hinted to have humanlike anatomical characteristics, kills its creator after losing a game. Rosenberg’s version of the Golem, that is the alchemical/biological android, on the other hand, makes simple mistakes and does not harm humans. Being familiar with the sorcerer’s apprentice motif, Rosenberg incorporated it into his story. The golem is told to fill a water barrel. When no one orders him to stop, “he keeps on pouring until the room is flooded” (Leviant, 2007, loc 81). The Creature, a golem composed of dead body parts, in Mary Shelley’s *Frankenstein* (1818), unlike Rosenberg’s Golem and earlier versions, kills several people (Davidson, 1995, p. 228). The common theme running through these narratives is the creation of only one artificial being/android/automaton with a potential to do harm if used or treated improperly.

It is Karel Čapek who makes the narrative leap to mass production of artificial people. The first artificial people to be called robots appear in Karel Čapek’s play *R. U. R.* (1921). In a 1935 interview the author stated that “*R. U. R.* is, in fact, my own rendering of the Golem in modern form” (Čapek as cited in Contrada, 1995, p. 251). His robots are very humanlike and similar to the representations of the Golem in Jewish myth. Hence his description of a robot fits best with what one would call an android or what Isaac Asimov calls “humaniform.” Unlike Asimov’s and Simak’s artificial people, Čapek’s robots are completely biological in construction. His play, *R. U. R.*, is the first work of literature which refers to the mass-production of automata made to resemble human beings (Rubin, 2011, p. 1). Early stage productions of *R. U. R.* in Prague featured robots in “‘stiff blue overall[s]’ like ‘normal factory workers.’” The only terrifying thing about them was “the similarity of their facial characteristics” (Contrada, 1995, p. 251). Their appearance started being depicted as metallic and grotesque in English

⁴ So titled because the machine was sold to Maelzel by Kempelen’s family after his death in 1804 (Ohl and Arrington, 1960, p. 59) Johann Nepomuk Maelzel brought the chess-player to the United States in 1826 (Ohl and Arrington, 1960, p. 63).

language productions of the play after 1923. Fifteen years after writing his play, Čapek had become so alarmed by the change in appearance and thus the portrayal of his creation that he penned the short article titled “The Author of the Robots Defends Himself” (Contrada, 1995, p. 249). In it, he insists that “his robots were created [...] by a chemical path” and that “[h]e was thinking of biological chemistry,” not “mechanisms” (Čapek, 1996, p. 143). The author laments how robots have become “plate-metal dummies stuffed with cogwheels, photovoltaic cells, and other mechanical gizmos” but admits his biological vision was superseded and defeated by a technological one⁵ (Čapek, 1996, p. 144).

Despite Čapek’s claims that *his* biological vision was mechanized, the examples above illustrate that the idea of creating a humanlike being through mechanization had already caught on as early as the eighteenth century. The theme that became more widespread, starting perhaps with “Moxon’s Master,” was these artificial *mechanical* people meting out death and/or destruction much like the Creature in Mary Shelley’s *Frankenstein*. Later iterations on the theme would disguise the nefarious mechanical parts under a very organic exterior like the female android (gynoid) Maria in Fritz Lang’s 1926 film *Metropolis*. The film’s plot was based on a screenplay by Lang’s wife Thea von Harbou. Von Harbou was evidently inspired by two sources; Čapek’s *R. U. R.*, translated into German in 1922, shortly before Lang began filming on *Metropolis*, and Villiers de L’Isle-Adam’s *L’Eve Future* (1886), published in German in 1909 (Rossbach & Glaser 2012, loc 4569). Villiers de L’Isle-Adam’s gynoid is egoless and indistinguishable from the real thing unless dissected to reveal the “accumulators, electrical motors, induction coils and sensors that enabled her to behave like a ‘real woman,’ whose brain and nervous system were, after all, controlled and driven by similar electrical impulses” (Rossbach & Glaser, 2012, loc 748). De L’Isle-Adam’s gynoid stands in marked contrast to Lang and von Harbou’s Maria whose mechanical interior may be construed to exhibit malice rather than perfection since Lang’s gynoid is depicted as a femme fatale (Rossbach & Glaser, 2012, loc 4596).

⁵ In Paul Wegener’s 1920 film, *Der Golem: Wie Er in Welt Kam*, the golem does not look like Rabbi Loew’s clay creature. His appearance is similar to a humanoid machine. He seems like a “manufactured mechanical,” “metallic-looking humanoid” that is larger than an ordinary man (Davidson, 1995, p. 235). H. Steiner’s lithographs of the golem in Gustav Meyrink’s novel, *Der Golem* (1915), depict its face as “a composite of artificial components” (Davidson, 1995, p. 235). These representations may have influenced the portrayal of Čapek’s robots as more metallic and/or machinelike in post-1923 English language stage productions of *R. U. R.*

Maria, the Golem and Frankenstein's Creature have in common the idea of the "overweening arrogance of humanity" (Asimov, 2012, p. 5). When science is misdirected or humans try to take "the mantle of the divine" and give their creation a soul, death or destruction ensues (Asimov, 2012, pp. 2-6). This theme of one android/automaton causing small scale destruction by killing its masters or people around it is transformed into something more sinister by Čapek's true innovation and addition to the genre. He is the first author to contemplate an apocalyptic takeover of the world and the wholesale replacement of the human species by robots. Thus, he can be honored as "the father of the robot apocalypse" (Rubin, 2011, p. 1).

Asimov, like Čapek himself, disliked "the hordes of clanking, murderous robots," which, with the influence of the English stagings of *R. U. R.*, were "reproduced in story after story" through the 1920s and 30s (Asimov, 2012, p. 6). Before Asimov, there were only a few exceptions to the killer robot theme like Lester Del Rey's "Helen O'Loy" (1938) and Eando Binder's Adam Link series published in *Amazing Stories* magazine from 1939 to 1942 (Asimov, 2012, p. 6). Asimov chose to write about a "wisely used" helpful robot with built-in safeguards that would preclude it from running amok and hurting human beings (Asimov, 2012, p. 7). These rules for robot conduct towards humans were only implied in Asimov's first robot story "Robbie." However, Asimov outlined them explicitly after consultation with and encouragement from the editor of *Astounding Science Fiction*, John W. Campbell, Jr. They were first detailed in "Roundabout" under the title of "The Three Rules of Robotics." These built-in safeguards, which later became known as the Three Laws of Robotics are:

1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law. (Asimov, 2012, pp. 7-8)

The Three Laws have since become part of "received [science fiction] scripture" because of the "abiding charm" of "Asimov's image of the machine as the good servant" (Jones, 2003, p. 167). Consequently, the Three Laws have influenced many other science fiction writers, including his contemporary Clifford D. Simak.

The Three Laws seem to be the only Asimovian influence on Simak's robot characters. Unlike Asimov's fully mechanical robots, Simak's robots have biological components. Therefore, they can be conceivably called cyborgs. The cyborg is yet another category of artificial being formed out of the blending of the biological and technological or as Donna Haraway (2018) defines it: "A cyborg is a cybernetic organism. A hybrid of machine and organism" (p. 2269). Their biological constituents are integral parts of Simak's robots. Even if the organic is not mentioned in Simak's robot narratives, it is implied.

3. Humanism and Posthumanism in Asimov's and Simak's Robot Narratives

Asimov's and Simak's robot stories somewhat differ in certain points of view. Although both authors' robot narratives are humanist and posthumanist, Asimov gravitates more towards humanism while Simak can be categorized as more of a posthumanist. An attempt to define both concepts facilitates the identification of humanist and posthumanist elements in each author's stories.

Asimov was a scientist and the sheer amount of nonfiction books he wrote on various scientific disciplines further accentuates his scientific naturalism. Hence, he is a humanist in the sense of an enlightenment humanist, that is, he "places supreme value on science and reason, eschews the supernatural entirely and relies exclusively on nature and nature's laws, including human nature" (Shermer, 2017, p. 220). As a close reading of his story "Reason" demonstrates, he is not above making light of religion and superstition. Throughout his fiction a major theme is how one can be moral, that is turn oneself into a better person, through science and reason. The humanist upholds that "moral principles must be founded on something natural instead of supernatural" (Shermer, 2017, p. 227). Additionally, his robot narratives revolve around the centrality of the "human." Thus, Asimov's short robot stories are humanist since humanism hinges on anthropocentrism (Recarte, 2016, p. 105).

Given these two descriptions of humanism, Asimov's humanistic stance fits best with a definition of humanism, which states that "[a]ll and only [...] humans are moral persons." When "thus defined, humanism is the claim that membership in the species *Homo sapiens* is not only relevant, but decisive, to the issue of personhood." Hence, throughout Asimov's short robot stories "to be human is to have rights" (Cushing, 2003, p. 557).

Only one of Asimov's robot protagonists, Andrew Martin, is given "robot rights" which are bestowed on him exclusively as he gradually becomes more human. Why is it that Asimov

permits his most developed robot character to have rights when he becomes more humanlike? Humanism “gives human beings a higher moral status” and it is this “higher status” which confers rights on humans (Coghlan, 2016, p. 404). As time goes on, Andrew Martin becomes more conscious of his place within society, as well as his relationships and ties to the humans around him. He becomes more of a rational being and has goals he wants to achieve. These mental and behavioral upgrades provided by Asimov turn his robot protagonist into an “intentional being” (Coghlan, 2016, p. 406). The upgrades bring him one step closer to humanity. The upgrades also make it possible for Asimov to expand his humanistic view by incorporating in it individuals that are *just human enough* (Coghlan, 2016, pp. 404-6). Asimov uses “The Bicentennial Man”’s Andrew Martin to understand “Humanism’s most fundamental question — What does it mean to be human?” (Herbrechter, 2013, 76). Humanism “assumes the existence of a human essence,” which Asimov seems to be searching for in his robot stories (Babbitt, 2013, p. 734). He uses the Three Laws of Robotics to unravel the intricacies and essence of what it means to be human. Andrew Martin extends the boundaries and/or definitions of humanity by bending the rules of robotics. These rules or laws allow Asimov to explore questions such as; “What is a ‘good’ life?” and “What is the meaning of life?” in the story “Reason” or “Where and when does life start, where and when and how does it end?” and “Does death’s finality give meaning to life, or is life without death unthinkable, never mind achievable?” in “The Bicentennial Man” (Callus & Herbrechter, 2013, p. 151). These are questions which become significant in posthumanist theory (Callus & Herbrechter, 2013, p. 151). In this manner, his characters “critically engage with humanism’s anthropocentric ideology” and thus Asimov’s robot narratives inch closer to posthumanism (Herbrechter, 2013, p. 3).

In contrast to Asimov’s stories, in Simak’s short robot fiction humans take strikingly lesser roles. Robots play much more prominent parts than human characters. This peculiar aspect of Simak’s narratives makes them posthumanist if one defines posthumanism in terms of the blending of nature, technology and the human. The “post-” prefix has an ambiguity which results in a “multiplicity of human and posthuman forms of representation” (Herbrechter, 2013, p. 75). However, in the popular imagination, “post” more often than not conjures up thoughts and images of humans being superseded by something not-quite-so-human or even inhuman. In fictions about artificial people, this idea takes the form of the killer robot or the robot apocalypse

or a “Prometheus or Faustus or Frankenstein” that transgresses “the allotted limits of the human and [ends] up being punished for it” (Callus & Herbrechter, 2013, p. 147). This does not necessarily need to be the case. As the critic N. Katherine Hayles (2008) notes, “post” can signify benign and advantageous “social, technological, political, and cultural changes” brought about by the “symbiotic relationships” between human and machine, something which may result in a synergism that makes the intelligent machine improve the lot of humanity (pp. 284-5).

Robots in many of Simak’s fictional works anticipate posthumanist thinking. The critic Peter Mahon (2017) states that “posthumanism is obsessed with not only cutting-edge tools and techniques but also future tools and technological developments, as well as with questions about how they will change us even further” (loc 172). Two of Simak’s robot characters, Jenkins from *City* and Richard Daniel from “All the Traps of Earth,” become the sole remaining members of the human families they have served. These two characters present good examples of the artificial tool, which facilitates one’s physical tasks and cognitions, but which eventually takes the place of the person, or in this case people, who owned or operated it. The robots’ transformation from tools to higher beings akin to humans is not presented as part of a dystopian fantasy about the extinction of the human race, but as a matter-of-fact treatment of a posthumanist future: at the end of “All the Traps of Earth,” for example, Richard Daniel remains on the final planet to help the human inhabitants.

Besides the blending of the technological and the biological, another posthumanist idea presented in “How-2” is the replication of artificial life. In “How-2,” the robot Albert makes other robots to perform various tasks. This ties in well with Hayles’s (2008) accounts about self-replicating programs. If the artificial mind of the robot is thought of as a computer program, Simak is describing a program very much like the software proposed by Thomas S. Ray, the evolutionary biologist who envisioned “his software program creating Artificial Life-forms” in the medium of a computer being released on the world wide web so it could speciate (p. 224). When the robot Albert and his progeny become free, they are practically let loose on the world just like Ray’s self-replicating computer programs. Simak’s robot is similarly procreating. In Simak’s story, the “creatures” jump out of their virtual world into the real one. Thus, Simak’s robot characters become anorganic, artificial life forms on the basis of a new ‘postbiological’ notion of life” (Herbrechter, 2013, pp. 26-7).

Yet another way Simak prefigures posthumanism in his collection of short tales which comprise *City* is through the collaborative social bonds between human, animal and robot. The robots, animals and humans do not merely work together; robots also complement nonhuman animals as useful appendages or limbs. This is reminiscent of Harraway's "attempts to show that the human and nonhuman animals, as well as machines, are woven together in an instrumental economy in which 'we' live in and through the use of one another's bodies" (Callus & Herbrechter, 2013, p. 150).

Both authors also make forays into the complicated territory of transhumanism. However, a clarification of different notions of transhumanism need be attempted before commenting on their ventures into that domain. One opinion is that "transhumanism is a form of humanism, while posthumanism is a critique of it" (Gilebbi, 2020, p. 181). According to Matteo Gilebbi (2020), transhumanism takes "the human as the central subject whose intellect and physiology should be enhanced through hybridisation with machines, artificial intelligence, and advanced technologies" (p. 180). Hence, it is "an amplification of traditional humanism: literally and metaphorically, an anthropocentrism on steroids" (Gilebbi, 2020, p. 180). As a result, Asimov's suggestions of replacing aged human organs or limbs with technological counterparts serve to reinforce his anthropocentric humanistic stance.

Another opinion claims that posthumanism is an umbrella term which contains transhumanism. This type of transhumanism may involve "any form of hybridisation, transformation, evolution, and enhancement of the human mind-body system" (Gilebbi, 2020, p. 181). In this case, the term "suggests going beyond and exceeding the human" (Callus & Herbrechter, 2013, p. 144). Some of Simak's human, animal and robot characters are re-engineered, or in one case metamorphose, and are "emancipated from the containments placed upon" the human, animal or robot "condition" which constitutes a "transhumanist strain" of Simak's posthumanism (Callus & Herbrechter, 2013, p. 147). One human character who opts to revert from his alien form back to his human one remains in a transitional form: the narrative hints that his senses go beyond the human. Existing in such a transitional, in-between state is yet another definition of transhumanism.

Bearing the aforementioned definitions in mind, one can conclude that a comparison of the two authors' robot stories demonstrates both intersections and divergences in their concepts of humanism, and what in the twenty-first century is called posthumanism and/or

transhumanism. What remains conspicuous is Asimov's bias for humanism and Simak's proclivity towards a variety of posthumanisms and transhumanisms.

4. Personhood in Asimov's and Simak's Robot Narratives

Natural and juridical are two legal categories of persons that exist within jurisprudence. Natural person is a term assigned to a human being's legal status, whereas, the term juridical person refers to a non-human entity to which society has afforded "the same legal protections and rights accorded to natural persons" (Kapica, 2014, p. 616). Personhood is specifically "a designation for *human agents*," that is natural persons (Kapica, 2014, p. 616). It "is codified by those elements that distinguish humans from non-humans—agency, autonomy, feeling, emotion" (Kapica, 2014, p. 616).

Mary Anne Warren expands upon the concept of the personhood of natural persons in many of her writings. She claims that John Locke's definition of a person as "a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places," is species neutral. Accordingly, "[w]hat makes a being a person, [...], is not its biological humanity, but its intelligence, and its capacity for thought, reason, reflection, and self-awareness" (Warren, 1997, p. 95). Warren asserts that "[p]ersonhood is a psychological concept, not a biological one." A being's mental and behavioral capacities make it a person, not its physiology or biology. She also notes that the human penchant for only accepting other humans as persons and using the two terms interchangeably, that is human for person and vice versa, is to be expected. After all, the only persons most humans are acquainted with are their conspecifics (Warren, 1997, pp. 93-4).

In "On the Moral and Legal Status of Abortion" Warren (1996) suggests that

the traits which are most central to the concept of personhood, or humanity in the moral sense, are very roughly, the following:

1. Consciousness (of objects and events external and/or internal to the being), and in particular the capacity to feel pain;
2. Reasoning (the developed capacity to solve new and relatively complex problems);
3. Self-motivated activity (activity which is relatively independent of either genetic or direct external control);
4. The capacity to communicate, by whatever means messages of an indefinite variety of types, that is, not just with an indefinite number of possible contents, but on indefinitely many possible topics;
5. The presence of self-concepts, and self-awareness, either individual or racial, or both. (p. 113)

Warren admits that there are bound to be many challenges concerning the formulation of “precise definitions of these criteria, let alone developing universally valid behavioral criteria for deciding when they apply” (Warren, 1996, p. 113).

In “Asimov’s ‘Three Laws of Robotics’ and Machine Metaethics,” Susan Leigh Anderson (2016) addresses the challenge by reformulating Mary Anne Warren’s criteria. Anderson says that Warren combines one more criterion, emotionality, with the characteristics both Warren and others have argued for “as requirements for a being to be ‘a member of a moral community,’” a person (p. 271). Anderson’s final version of the six criteria are as follows:

1. Sentience — the capacity to have conscious experiences, usually including the capacity to experience pain and pleasure;
2. Emotionality — the capacity to feel happy, sad, angry, loving, etc.,;
3. Reason — the capacity to solve new and relatively complex problems;
4. The capacity to communicate, by whatever means, messages of an indefinite variety of types; that is, not just with an indefinite number of possible contents, but on indefinitely many possible topics;
5. Self-awareness — having a concept of oneself, as an individual and/or as a member of a social group; and finally
6. Moral agency — the capacity to regulate one’s own actions through moral principles or ideals. (Anderson, 2016, p. 271)

In short, both Warren and Anderson declare that a being must possess the six mental and behavioral capacities of sentience, emotionality, reason, the capacity to communicate, self-awareness and moral agency in order to be a person.

As stated above, Warren builds on Locke’s definition of personhood by claiming that it is not a trait unique to humans but can be expanded to include other species. She refers to how one can incorporate other beings into the concept of personhood (natural persons) by thinking of it within the science fiction context:

Other evidence that the term ‘person’ does not necessarily apply only to human beings can be found in science fiction. [...] Sometimes the aliens are not extraterrestrials, but sapient machines that have been constructed by humans or other beings, who initially fail to recognize the personhood of their creations. (Warren 1997, p. 93)

Kakoudaki (2014) agrees with Warren when she states that, contrary to ongoing debates on personhood within legal and bioethical discourses concerning issues such as human rights, abortion, cloning and “the changing perception of mental health,” “in fictions of artificial people,” the definition acquires a certain stability not attained in other contexts (p. 213). Therefore, one can follow Warren’s rationale and analyze Asimov’s and Simak’s robot characters according to Warren’s and Anderson’s personhood criteria: sentience, emotionality, reason, the capacity to communicate, self-awareness and moral agency.

Indeed, Asimov and Simak fictionalize the legal, bioethical and philosophical issues put forward by Mary Anne Warren, Susan Leigh Anderson and others by drawing on the literary trope of the court setting to explore the question of what it is to be a person. In Asimov’s “The Bicentennial Man,” the robot protagonist Andrew Martin seeks approval for his humanity by legal means. In “How-2,” a story in which Simak “married the concept of artificial intelligence to the concepts of civil rights,” Simak’s robot character Albert, together with his human owner Gordon Knight, pleads for Albert and his progeny’s emancipation, and by implication Albert’s right to procreate, in a court of law (Wixon, 2015c, loc 2300). Even from these two brief examples it is clear that in their short robot narratives, Simak and Asimov are considering both the legal and bioethical definitions of what it means to be a natural person.

In this framework, the thesis has been divided into two chapters. Chapter I on Isaac Asimov begins by exploring Asimov’s ideas on robots expressed in some of his essays, particularly “Homo Obsoletus?” and “The Machine and the Robot.” The first robot narrative to be examined is the novella “The Bicentennial Man.” The protagonist, the robot Andrew Martin, is analyzed in terms of the six personhood criteria as formulated by Warren and Anderson. After a brief comparison between “The Bicentennial Man” and Asimov’s other short robot narratives, the short stories “Robbie,” “Runaround,” “Liar!,” “Little Lost Robot” and “Reason,” as well as the robot characters within them, are explored from the perspective of Warren and Anderson’s six personhood criteria; sentience, emotionality, reason, the capacity to communicate, self-awareness and moral agency.

Chapter II on Clifford D. Simak starts with a comparison between Simak’s and Asimov’s robot narratives. The robot characters in Simak’s “All the Traps of Earth,” “How-2,” *City*, and “Installment Plan” plan are analyzed using Warren and Anderson’s six personhood criteria. Posthumanist aspects of Simak’s narratives such as the symbiotic relationships between man

and machine as well as symbiosis in nature, the reproduction of artificial life and machines assisting in the distribution of human cognition are discussed. Also, transhumanist aspects of Simak's robot narratives, such as being in transition between the human and the posthuman or being recognizably human in either likeness, mindset or aspiration are explored (Rutsky, 2016, p. 191). While doing so, transhumanist elements of the tales "Desertion" and "Paradise" found within the collection of short stories that constitute the novel *City* are highlighted and addressed.

As such, the thesis concludes with an overview of Asimov's and Simak's short robot stories. Warren and Anderson's six personhood criteria and how the robot characters display them are outlined. Asimov's penchant for humanism and Simak's tendency to incorporate posthumanist themes in science fiction stories are elaborated on. Ultimately, the thesis puts forth the ways in which Asimov displays his humanism through the human-centeredness of his robot characters while subtly expanding the notion of what being human is. It also determines that Simak prefigures a variety of posthumanisms by permitting not only his robot characters but also a medley of human and animal characters to act like persons.

Chapter 1

Asimov's Mechanical Men

1.1. Asimov's Robot Stories

In “Homo Obsoletus?” Asimov expresses an opinion similar to that in the parable of the pharaoh and Thoth in Plato's *Phaedrus*. “[S]urely the bards of old must have been horrified at the invention of writing, of a code of markings that eliminated the need for memory. [...] How the mind would degenerate!” (Asimov, 2010, loc 5769). In another essay “The Machine and the Robot,” Asimov expounds on an idea similar to the story of the Pharaoh and Thoth. “In fact, any technological advance, however fundamental, has the double aspect of good/harm and, in response, is viewed with a double aspect of love/fear” (Asimov, 2012, p. 435). Before this statement, he explains how the negative aspect may come to the fore:

From the start, [...], the machine has faced mankind with a double aspect. As long as it is completely under human control, it is useful and good and makes a better life for people. However, it is the experience of mankind (and was already his experience in quite early times) that technology is a cumulative thing, that machines are invariably improved, and that the improvement is always in the direction of etherealization, always in the direction of less human control and more auto-control—and at an accelerating rate. As the human control decreases, the machine becomes frightening in exact proportion. (Asimov, 2012, p. 434)

In other words, humans might be afraid of robots because they feel as if they are losing their mastery over the machine. As further explanation of how this fear emerges he writes:

The fear of the machine is not at the deepest level of the soul if the harm it does is accompanied by good, too; or if the harm is merely to some people—the few who happen to be on the spot in a vehicular collision, for instance. The majority, after all, escape, and reap the good of the machine. No, it is when the machine threatens all mankind in any way so that each individual human being begins to feel that he, himself, will not escape, that fear overwhelms love. (Asimov, 2012, p. 436)

Asimov suggests that “ethical human beings should be as anxious to make life easier for robots as the robots themselves would” for the human beings despite that latent human fear of the machine (robot) (Asimov, 2012, p. 459). A character in “The Bicentennial Man” says:

If a man has the right to give a robot any order that does not involve harm to a human being, he should have the decency never to give a robot any order that involves harm to a robot, unless human safety absolutely requires it. With great power goes great responsibility, and if the robots have Three Laws to protect men, is it too much to ask that men have a law or two to protect robots? (Asimov 2010, p. 460)

The phrase “unless human safety *absolutely* requires it” strengthens Asimov’s human-centeredness. Asimov formulates the Three Laws of Humanics using the Three Laws of Robotics as a basis. He suggests that humans concerning themselves with the well-being of other humans would be a good example which robots could follow. Accordingly, “from the robots’ standpoint” the Three Laws of Humanics are obligatory rules, exactly like the Three Laws of Robotics. Asimov formulates the Three Laws of Humanics by paraphrasing the Three Laws of Robotics:

1—A human being may not injure another human being, or through inaction, allow a human being to come to harm.

[...]

2—A human being must give orders to a robot that preserve robotic existence, unless such orders cause harm or discomfort to human beings.

[...]

3—A human being must not harm a robot, or, through inaction, allow a robot to come to harm, unless such harm is needed to keep a human being from harm or to allow a vital order to be carried out (italics in original). (Asimov, 2012, pp. 458 - 61)

Every single clause beginning with “unless” implies that Asimov does not consider most of his robots persons on a par with humans. Only Asimov’s character from “The Bicentennial Man,” Andrew Martin, comes close to achieving full personhood.

1. 2. “The Bicentennial Man”

In Asimov’s “The Bicentennial Man,” the protagonist Andrew is a robot purchased by the Martin family. The family’s youngest member Little Miss and her father, Gerald Martin, discover that Andrew’s positronic pathways are not constructed precisely. This lack of accuracy gives Andrew the ability to be creative and artistic. Gerald Martin gives him the freedom to pursue his creativity through doing woodwork and making furniture. Gradually given more freedom to choose, Andrew eventually decides that he wishes to buy his freedom. Even though

he is free to do as he pleases with his life, he also wishes to be legally declared free. Every choice Andrew makes after this point is self-designed to get him one step closer to his ultimate goal: becoming human.

Several people assist Andrew on his journey towards humanity. These are mostly succeeding generations of the Martin family. Little Miss is the first person who encourages him to buy his freedom. Little Miss's son George helps him in gaining more legal protection as a robot against unfriendly—even hostile—human beings. George's son Paul helps him negotiate with the U.S. Robots and Mechanical Men Corporation which originally constructed him. The goal of the negotiation is to have U.S. Robots manufacture the realistic looking prosthetic body parts Andrew has designed for himself. These prostheses will make him look more human and therefore better assimilate into human society.

By the sesquicentennial of his construction, Andrew is accepted more and more as a productive member of society. However, he is still legally not permitted to designate himself a human being. The last person who provides assistance to Andrew in his struggle is Chee Li-Hsing. She is the chairman of the Science and Technology Committee of the East Asian region. She says she sympathizes with him in his fight to gain human rights but will only assist him as long as it does not interfere with her political ambitions. Andrew comes to the conclusion that the resistance he faces from the public in being officially declared human is due to his positronic brain's perceived immortality. He decides to undergo a surgical procedure which shortens his life span to a matter of weeks. His sacrifice wins over the hearts and imagination of the public at large. On the bicentennial of his construction, the World President declares Andrew "the Bicentennial Man." Andrew expires shortly afterwards.

Until the very end of the story, human beings regard Andrew as the *other*. However, Andrew sees the *other* in human beings as well. This mutual recognition demonstrates that as a robot Andrew cannot effectuate full transition into personhood before his expiry.

Asimov's reluctance to give up his humanistic stance is most apparent when Andrew likens himself to human beings by alluding to the Three Laws of Robotics. At first Little Miss reminds her father Mr. Martin, and the reader, that Andrew is bound by the Three Laws of Robotics despite his claim to freedom. As a consequence, Mr. Martin questions the logic of Andrew's rationalization: how can a robot be free if he is governed by the rigid, manmade Three Laws? Andrew counters Sir's, Mr. Martin's, argument by reminding him, and the reader, that

humans are no different than robots: “Are not human beings bound by their laws, Sir?” (Asimov, 2012, p. 256). This is only one example of the oscillation between the biological-human and the technological-robot which Asimov constantly confronts the reader with. This oscillation also highlights the characteristics of the protagonist which easily lend themselves to analysis utilizing Warren and Anderson’s six criteria for personhood.

The first of these six criteria, sentience, is defined as being “[c]apable of conscious suffering and/or enjoyment” (Varner, 2018, p. 358). In this sense, Andrew Martin is sentient. Andrew says it himself when he shows Gerald Martin his artwork:

Sir said, “These are amazing productions, Andrew.”

Andrew said, “I enjoy doing them, Sir.”

“Enjoy?”

“It makes the circuits of my brain somehow flow more easily. I have heard you use the word ‘enjoy’ and the way you use it fits the way I feel. I enjoy doing them, Sir.” (Asimov 2012, p. 249)

While Asimov thus demonstrates Andrew’s ability to enjoy things, he does not show Andrew to be in any kind of physical pain. However, this does not disqualify him from being sentient. As Gary Varner expresses it:

While the ability to feel pain is a sufficient condition for being sentient, it is not a necessary condition. For we can imagine individuals who are incapable of suffering from physical pain who are nevertheless capable of suffering and enjoyment of various other kinds. (Varner, 2018, p. 359)

Throughout the narrative, Andrew has to deal with complications and navigate his way through obstacles put in his path to become human—the last of which is the immortality of his positronic brain. One could easily construe these difficulties as causing him some mental anguish. The final memory of Little Miss crossing Andrew’s mind at the moment of his death can be thought of as an instance of suffering through sorrow (Asimov, 2012, p. 290).

Andrew Martin’s sorrow not only hints at his love for Little Miss but also draws attention to the following criterion, emotionality. There is one instance from which one can glean a deficiency in Andrew’s capacity for emotionality. Asimov once again demonstrates how the biological can be thought of in technological terms. Andrew is summoned by Gerald Martin to

his deathbed. Asimov departs from his usual manner of developing his robot characters with respect to Andrew Martin. He provides a glimpse into Andrew's mind:

Andrew did not know what to say. He had never been at the side of someone dying before, but he knew it was the human way of ceasing to function. It was involuntary and irreversible dismantling, and Andrew did not know what to say that might be appropriate. He could only remain standing, absolutely silent, absolutely motionless. (Asimov, 2012, p. 257)

The process of death is described like the disassembly of a piece of technology. For Andrew, Gerald Martin is no different from an old machine. Andrew's nonmotility and corpse-like silence leaves the impression that he is not only lifeless but inorganic. This hint of inorganicity further accentuates Andrew's perplexity with the human conception of death. Andrew's perplexity with a concept so central to human existence and his quietude make him appear emotionally stunted.

In assisting Andrew on his journey towards humanity, members of each generation of the Martin family seem to represent a specific criterion of personhood. Gerald Martin's daughter, Little Miss, is the first, and perhaps only, family member Andrew becomes truly intimate with. In private, she has discussions with Andrew about his status as a free individual. If Andrew shows any evidence of emotionality, it is the last thought which crosses his mind before he ceases to function; her name. Andrew's continuing attachment to descendants of the Martin family reveals his capacity for emotionality despite some deficiencies.

Any emotional shortcoming Andrew possesses is counterbalanced by another personhood criterion, his ability to reason. His reasoning skills are evidenced by his capacity to solve novel and seemingly intricate problems. He fashions unique objects out of wood according to the differing texture of each piece. Gerald Martin, for example, buys books for him, encouraging Andrew to learn and *reason* his way towards developing his creativity. Creativity is linked to reason because "being creative entails being able to understand and judge what one has created," something which Andrew is capable of doing (Mitchell, 2019, p. 271).

Regrettably, reasoning skills cannot help Andrew compensate for the absence of some humanlike features in the next personhood criterion. The capacity to communicate, or the lack thereof, is evident in two occasions that include Little Miss's son George, the lawyer, who helps Andrew in his struggle for robotic rights. When Andrew addresses him "[t]he judge seemed

astonished for a moment at the human timbre of the voice” (Asimov, 2012, p. 255). The freer Andrew becomes, the less metallic he sounds. This is the first instance where Andrew seems more biological. However, he has difficulty with human speech patterns:

He had noticed his own incapacity in speech when talking with George. Somehow the language had changed since Andrew had come into being with an innate vocabulary. Then, too, George had used colloquial speech, as Sir and Little Miss had not. (Asimov, 2012, p. 260)

Since Andrew cannot speak colloquially, he cannot sound fully human. This is reminiscent of how even the most advanced language processing software is still unable to fully reproduce the intricacies of human linguistic communication (Mitchell, 2019, pp. 177-97).

Besides his inability to use colloquial speech, Andrew has yet another deficiency one can link to communication. When Andrew decides to leave his house to go to the library, he has trouble associating the representational, two dimensional images on the map with the three-dimensional features in the real world which correspond to them:

He studied the map. He knew the route, but not the appearance of it. The actual landmarks did not resemble the symbols on the map and he would hesitate. Eventually he thought he must have somehow gone wrong, for everything looked very strange. (Asimov 2012, p. 261)

This is a skill shared by both humans and some other animals such as anthropoid apes like chimpanzees, gorillas, and orangutans and some cetaceans like dolphins. However, artificial intelligences have difficulty with abstract representations of objects (Mitchell, 2019, p. 93). Visual intelligence cannot be easily separated “from the rest of intelligence, especially general knowledge, abstraction, and language,” something which attests to the strength of a biological brain (Mitchell, 2019, p. 95). Thus, his difficulty makes Andrew seem less like an intelligent biological entity.

On the other hand, what makes Andrew seem more like an intelligent living organism is the extent of his self-awareness. George’s son Paul helps Andrew negotiate with the U.S. Robots and Mechanical Men Corporation. U.S. Robots agrees to help Andrew build prosthetic body parts as replacements for his metallic parts: this will allow him to turn himself into a “humaniform” android (Asimov 2012, p. 34). Andrew wishes to look more human in order to

better assimilate into human society. This means he understands how and why people react to him, something which demonstrates his faculty of self-awareness.

Andrew is admitted into the human fold after he completes his physical transformation to look fully human and chooses mortality. He is accepted as an individual, who is different from all other robots, only after these two unavoidable choices. In order to be a person he must be individual as in unique. Asimov considers uniqueness or individuality an essential part of being human. He also states that for the most part this uniqueness resides in our brains. Concerning individuality Asimov writes:

If there is one thing that makes us a human *individual*, it is the intensely complex makeup, the emotions, the learning, the memory content of our particular brain. You can't simply replace a brain with a thinking device off some factory shelf. You have to put in something that incorporates all that a natural brain has learned, that possesses all its memory, and that mimics its exact pattern of working.

[...] An artificial brain, however, must be the *precise* replica of the brain it replaces, or the human being in question is no longer the same human being.

It is the brain, then, that is the sticking point in going from human organism to robot. (Asimov 2012, p. 465 - 6)

A human's body and brain are biological, whereas a robot's body and brain are technological. Asimov states that one is not a human or a robot but a cyborg when the biological and the technological are made to come together in the same body. Asimov describes "two classes of complete cyborgs" based on the dichotomy of the body and the brain: "a) a robotic brain in a human body, or b) a human brain in a robotic body" (Asimov, 2012, p. 466). In the essay "Homo Obsoletus?" he claims artificial intelligence and human intelligence have developed and will develop in different ways which will lead to divergence as opposed to convergence. Human intelligence developed through Darwinian evolution "by hit and miss, by random mutations, making use of the subtle chemical changes, and by a forward drive powered by natural selection and the need to survive in a particular world of given qualities and dangers" (Asimov, 2010, loc 5757-5880). However, "the computer brain," by which Asimov means artificial intelligence, was and is being fashioned by "deliberate design as the result of careful human thought." Artificial intelligence's evolution is driven by "technological advance and the need to serve particular human requirements" (Asimov, 2010, loc 5871). According to Asimov, this difference will result in two intelligences so radically divergent that "no simple comparison could be made"

(Asimov, 2010, loc 5871). He claims that advances in human intelligence with the help of genetic engineering might result in the two intelligences being complementary. Hence Asimov anticipates a future where two radically different intelligences can work together symbiotically and synergistically, thus accomplishing more. Asimov foresees a similar efflorescence of novelty and innovation as a consequence of the combined effort of the biological and the technological, the human and the machine instead of another kind of intelligence replacing humanity (Asimov, 2010).

Even if humanity in its present form is supplanted, Asimov argues that it is fallacious to think of it in such binary terms like good/evil or utopian/dystopian. He states that gradual evolutionary change could give rise to a species “sufficiently intelligent” to oversee its own evolutionary development, a species capable of creating an “intelligence on a non-organic basis” (Asimov, 2010, loc 5828-29). If humanity is replaced “by either a hyper-humanity or by computers,” it would be a “natural phenomenon” to which any objection would be pointless. Nevertheless, when he divests himself of his scientific accoutrements, his answer to whether the substitution of the organic by the non-organic machine as a “positive good” is a less enthusiastic “I hope so” (Asimov, 2010, loc 5832 - 40). Andrew Martin is the only robot in Asimov’s robot stories analyzed in this thesis who expresses all six personhood criteria if one accepts the built-in Three Laws as moral agency. However, the behavioral obstacles put in Andrew Martin’s way in the story emphasizes the fact that Asimov persists in his humanistic stance.

1. 3. “The Bicentennial Man” and Asimov’s Other Robot Stories

Although Asimov himself calls his narratives robot stories, “The Bicentennial Man” is the only narrative which has the robot as its focal protagonist. All of the robot characters, including Andrew, are portrayed as imperfect. Each story revolves around how the humans fix a robot’s malfunction caused by an external source or deal with a deviancy in its programming (software). The malfunctions can be thought of as the inability of the robot to cope with its new environment similar to that of highly specialized species that cannot survive under changing environmental conditions. Human ingenuity saves the malfunctioning robots.

In Asimov’s robot narratives there are recurring human characters. Five of these are characters in the stories under consideration: Dr. Susan Calvin, the robopsychologist, Asimov’s favorite human character who “supplies [...] the unity of *I, Robot* as a collection” of stories; Dr. Alfred Lanning, the head of U.S. Robots and Mechanical Men; Dr. Peter Bogert, another

manager at the same corporation; and Gregory Powell and Michael Donovan, two engineers who usually end up with the most troublesome jobs in the most isolated places in the Solar System (Hassler, 1988, p. 37). Dr. Susan Calvin and Dr. Alfred Lanning even haunt the narrative of Andrew Martin. Andrew comes face to face with the spectral image—a holographic death mask—of Dr. Susan Calvin. Dr. Alfred Lanning’s once eminent position is reiterated through the reappearance of his last name via his descendants. This focus on the human characters once again attests to the anthropocentrism in Asimov’s robot stories.

1. 4. “Robbie”

Robbie is a companion and guardian robot bought for the eight-year-old Gloria Weston by her father George. This is Asimov’s first use of the recurring guardian robot motif which he employs throughout his *Robots/Empire/Foundation* metaseries (Palumbo, 2011). Gloria loves Robbie so much that he becomes her exclusive playmate. Gloria’s mother Grace thinks Robbie is isolating her daughter. Other people in the village are wary of Robbie and the children keep their distance. George tries to convince Grace that the robot is the safest playmate a little girl can have. However, Grace remains unconvinced and constantly nags George about getting rid of Robbie. Eventually, George agrees. One day when Gloria is away, Robbie is sent back to U.S. Robots and replaced by a dog. Gloria is so devastated that no matter what the Westons do, they cannot cheer their daughter up. Hoping that a distraction might lift Gloria’s spirits, they decide to take her on an excursion to New York City. Gloria meets a speaking robot during the excursion and immediately gets excited. She even asks the robot if it knows where Robbie is but is unable to get an answer when the machine breaks down. George tells Grace that the best way to wean Gloria off her fixation on Robbie is to take her to the U.S. Robots factory. He claims showing her the multitude of robots identical to Robbie will do the job by convincing Gloria that Robbie is not so special. While being guided through the plant Gloria spots Robbie and rushes towards him. Just as she runs into the path of an oncoming tractor, Robbie rescues her in the nick of time. Grace is angry at George because she realizes he engineered what seems to be a chance encounter. Nevertheless, the unexpected accident and Robbie’s rescue finally convince Grace to allow Robbie to stay with the Westons “until he rusts” (Asimov, 2012, p. 70).

Even Grace, who only begrudgingly concedes her family’s wishes regarding Robbie, seems to accept that Robbie is sentient. Anything that is sentient has conscious experiences in

the form of memories it can recall and fall back on in the future. It also has the ability to experience pain and pleasure. Asimov depicts Robbie as a simple pet. The way Asimov describes Robbie's reactions to Gloria's tantrums fits with this characterization as well. When Gloria accuses Robbie of cheating, the robot's feelings are clearly "hurt": "[S]o he seated himself carefully and shook his head ponderously from side to side." He even refuses Gloria when she implores him to give her a ride: "He gazed stubbornly at the sky, and shook his head even more emphatically." She tries to blackmail him by refusing to tell him any more stories. Robbie immediately "gives in" (Asimov, 2012, p. 51-2). Robbie's gestures and reactions to the little girl's body language and verbal cues prove that he enjoys her company and that her stories please him.

The pleasure and enjoyment Robbie derives from Gloria's mere presence hints at emotionality, a characteristic of personhood which he displays throughout the story. He always follows Gloria around, which reveals a highly emotional attachment to her. He saves her life at the end of the story which is a natural result of the First Law of Robotics: "a robot may not injure a human being, or, through inaction, allow a human being to come to harm" (Asimov, 2012, pp. 7-8). Nevertheless, concern for her safety can be construed by someone not familiar with the Three Laws as a natural result of his fondness for her. However, as far as the criteria of personhood go, his emotionality is compromised by his incapacity to communicate verbally. Gestures, after all, may not be as effective in conveying one's emotions as speech.

Since gestures are instances of non-verbal communication, he is endowed with some capacity to communicate. These gestures convey information about his inner mental state. Robbie's immediate reactions to Gloria's tantrums such as feigning slowness demonstrate his adeptness at comprehending the little girl's demands. This capacity to understand and react makes it easier for one to accept him as "a being who has mental states and agency" (Svilpis, 2008, p. 444). Gloria, who is the one person he is in constant contact with, understands whether he is happy or sad:

"“You peeked!” she exclaimed, with gross unfairness. ‘Besides I’m tired of playing hide-and-seek. I want a ride.’

But Robbie was hurt at the unjust accusation, so he seated himself carefully and shook his head ponderously from side to side.

Gloria changed her tone to one of gentle coaxing immediately, ‘Come on, Robbie. I didn’t mean it about the peeking. Give me a ride.’

Robbie was not to be won over so easily, though. He gazed stubbornly at the sky, and shook his head even more emphatically.” (Asimov 2012, p. 51)

This example clarifies the main difference between the human Gloria’s capacity to communicate with that of the robot Robbie: while Gloria can verbalize her thoughts, Robbie can only use gestures. Gloria’s occasional ungrammaticality in speech (—such as her use of a double negative—) shows her to be inferior to her articulate parents. Robbie’s muteness is a deficiency which puts him on an even lower rung from Gloria in the hierarchical structure of his small family unit.

Grace Weston depreciates Robbie by pointing out the lack of a life-giving essence, his inorganicity and the impenetrability, in her personal opinion, of his mental state: “[...] It has no soul, and no one knows what it may be thinking. A child just isn’t made to be guarded by a thing of metal” (55). If by saying he lacks a “soul,” Grace divests Robbie of his personhood and individuality, Gloria restores it. She protests: “‘He was *not* no machine!’ [...] ‘He was a *person* just like you and me and he was my *friend*’” (Asimov, 2012, p. 59).

Another robot makes an appearance as a foil character to Robbie. This is the Talking Robot in New York City to whom Gloria asks questions about Robbie’s location. This robot accentuates Robbie’s capacity to communicate even though his mode of communication is only gestural. The Talking Robot is a huge immobile piece of machinery capable of answering only those questions chosen by the engineer operating it. Gloria’s out-of-the-ordinary queries about Robbie’s location cause the Talking Robot to malfunction.

This robot’s lack of motility and incapability to react to a simple yet unexpected outside stimulus—Gloria—is counterpoised with Robbie’s agility in movement and lively reactions to the people around him. The Talking Robot’s inability to answer the little Gloria’s questions means it fails the Turing Test. The machine’s confusion caused by its incapacity to grasp a concept like the nature of its own existence, which is brought up by a little girl’s simple questions, results in it breaking down (Svilpis, 2008, p. 445). The machine’s eventual

destruction testifies to how utterly it fails the test. The Talking Robot is in no way an entity that possesses agency. It is merely an object, a thing⁶.

Another characteristic of the Talking Robot makes it seem odd to Gloria: “It *did* talk, but the sound came from inside somewhere. There was no *face* to talk to.” One cannot relate to something which has gears, wheels and no face. Unlike Robbie, this robot talks but its voice is “mechanically-timbered” and lacks “accent and intonation” (Asimov, 2012, p. 65). Only the absence of personhood criteria for the Talking Robot are mentioned. It lacks sentience, a capacity to communicate, moreover, being sedentary and metallic-sounding, the robot has no means of conveying emotionality.

The Talking Robot is a foil character not only for Robbie but also for every robot character that comes after Robbie in Asimov’s robot narratives. Every single robot other than the Talking Robot is clearly a sentient being. Gloria bestows Robbie with personhood because she loves and cares for him. However, she is puzzled by the absence of personhood criteria observed in the Talking Robot. It feels incomplete. Her confusion makes the reader deny the Talking Robot personhood.

1. 5. “Runaround”

Asimov’s short story “Runaround” concerns two humans, Donovan and Powell, and the robot, Speedy, who have been sent to an old mining station on Mercury for repairs. They need selenium in order to repair the photo-cell banks which provide power to and cool down the interior of the station. Speedy is to collect the material from one of the selenium pools on the surface of Mercury. Speedy malfunctions and starts going in circles around the selenium pool. Donovan and Powell figure out that the problem is caused by a difference in how Speedy was built. Since Speedy is a very expensive robot, the Third Law which states that a robot must protect itself from damage is strengthened. The atmospheric conditions around the selenium pool cause corrosion and start damaging Speedy’s parts which makes him give up and turn around. However, the Second Law, which supersedes the Third, states that a robot must obey its human superiors so he goes back to the selenium pool. Thus, Speedy starts going around in circles. The resulting imbalance in the robot’s positronic brain makes the robot utter gibberish

⁶ The Turing Test, also called an imitation game, is a test developed by Alan Turing in which two contestants, a human and a computer, are questioned by a human judge. The judge, isolated so as not to be influenced by audio-visual cues, must determine which contestant is the human (Mitchell, 2019).

and sing show tunes as if he is drunk. Donovan and Powell, with the assistance of two large antiquated robots, go on to the surface and throw chemicals to the area Speedy is located in so as to change the corrosive atmospheric conditions. Finally, when Donovan puts himself in danger, the First Law, which takes precedence over the other two, brings Speedy out of his drunken stupor permitting him to save his human master Donovan and get the selenium for the photo-cells.

There are two distinct types of robots in this story. The state-of-the-art Speedy and two antiquated, oversized, slavish robots left from the first expedition to Mercury. All the robots require human supervision and help. Despite being one of the most advanced models, Speedy becomes a casualty of the harsh environmental conditions on the surface of Mercury. Donovan and Powell's intervention frees him from the odd behavioral loop he is stuck in. The other two large robots have a built-in "slave complex," which means they only act when ordered to do so by a human (Asimov, 2012, p. 117). They cannot even move without a human mount. Asimov portrays both types of robots in the story as machines since the two oversized robots are useless without an operator and Speedy needs to be repaired by the two humans. The robots in this early story are not as memorable as the human characters which makes "Runaround" even more human-centered than the other stories under consideration (Lyall, 2020). If one evaluates and compares the two different types of robots, Speedy qualifies for more of the personhood criteria than the antiquated robots.

The first of these personhood criteria, sentience, is also the one in which a variance can be discerned between Speedy and the two gargantuan robots. The large robots are not functional until Powell places a sphere containing atomic energy into their chests. They neither show any awareness of their surroundings nor move or speak until ordered to. This hints at a lack of consciousness which in the context of some science fiction narratives can equate to a lack of sentience (Varner, 2018). Speedy, on the other hand, displays some characteristics of being sentient. After Donovan and Powell fix him, he is confused by his lapse in memory: "Holy smokes, boss, what are you doing here? And what am I doing—I'm so confused—" (Asimov, 2012, p. 137). However, this is the only instance of Speedy showing any cognizance of his surroundings throughout the story.

Apart from demonstrating Speedy's awareness of his surroundings, his confusion also exemplifies his ability to display emotions. Speedy's unfamiliarity with his immediate

environment as he comes to his senses elicits the sole instance of emotionality from a robot in the whole story: surprise. In stark contrast to Speedy, the large antiquated robots display no evidence of emotionality whatsoever.

This absence of emotionality in the two large robots means they are unperturbed by the goings-on around them and the inhospitable surface of Mercury but it also makes them seem uncommunicative. They do, at least, respond to commands. However, the two antiquated robots do not engage in any dialogue unless the humans initiate it. So communication is only one way — from human to robot. In his fully functional state Speedy is obviously capable of communicating with the humans. However, in his malfunction induced stupor he speaks gibberish and sings show tunes. This seems like a parody of inebriated human behavior and anyone under the influence of an intoxicating substance tends to fall short in his communicative capacity.

Nevertheless, Speedy proves his dexterity in human communication. When he calls the humans “boss,” Speedy is able to communicate an awareness of his position within the hierarchy of the team. The large antiquated robots call the humans “master” but there is no indication that they are self-aware, let alone being aware of their ranking within any sort of hierarchy.

The author makes Speedy seem more human than the other robots; however, even Speedy remains inferior to the human characters due to his malfunction. The size of the other two robots is described as “monstrous” and their red “photoelectric eyes” are referenced several times, whereas no clear description of Speedy’s physical features are given. The “monstrous” robots have “a harsh, squawking voice—like that of a medieval phonograph” (Asimov, 2012, p. 117). Asimov is likening them to simple primitive machines. If the large robots hardly qualify as animate objects, Speedy fares not much better: he barely meets the criteria of sentience, emotionality, the capacity to communicate, and self-awareness.

1. 6. “Liar!”

Asimov expands the personhood criteria in his short story “Liar!” by further elaborating on moral agency. Unlike the robots in the other stories, Herbie, the robot character in “Liar!,” suffers from a guilty conscience caused by actions that contradict the Three Laws. Herbie is created with the unintended ability to read people’s minds. Dr. Susan Calvin, the robopsychologist, is tasked with investigating the robot’s aberrant mental telepathy. Herbie tells her that her colleague Milton Ashe, who she is in love with, reciprocates her feelings. He also

tells Peter Bogert that he will get the promotion he wants. When Calvin's love interest reveals to her that he is engaged to be married and Bogert's boss informs him that he is not stepping down, Calvin realizes that Herbie is telling people what they most want to hear in order not to hurt their feelings. Indeed, for Herbie hurting a human's feelings is no different than harming them physically. He lies to protect people in accordance with the First Law of Robotics; however, everyone, especially Calvin, is angry with Herbie even though he has no choice but to follow his programming. Calvin confronts the robot with an insoluble conundrum in which no matter what he does he is breaking the First Law. Unable to resolve the problem, Herbie falls into a catatonic state and is thus scrapped.

When Dr. Calvin punishes Herbie by locking him into a comatose state, his sentience is forfeit. Like almost all other Asimovian robots, Herbie exhibits two touchstones of this criterion: the capacity to feel pleasure and pain. Firstly, he expresses pleasure in reading the "sentimental novels" brought to him by Dr. Calvin. Secondly, Herbie also demonstrates his capacity to feel psychological pain. Dr. Calvin, who is hurt herself by Herbie's white lie, assaults him psychologically. As he is presented with a conundrum, the pain inflicted by his inability to find a solution causes him to fall into a catatonic state:

Herbie was up against the wall, and here he dropped to his knees. "Stop!" he shrieked. "Close your mind! It is full of pain and frustration and hate! I didn't mean it, I tell you! I tried to help! I told you what you wanted to hear. I had to!"

The psychologist paid no attention. "You must tell them, but if you do, you hurt, so you mustn't; but if you don't, you hurt, so you must; but—"

And Herbie screamed!

It was like the whistling of a piccolo many times magnified—shrill and shriller till it keened with the terror of a lost soul and filled the room with the piercingness of itself. And when it died into nothingness, Herbie collapsed into a huddled heap of motionless metal. (Asimov, 2012, pp. 111 -2)

Herbie clearly suffers from physical and mental pain.

The above-described instance proves that, like any sentient being, Herbie knows pain. Therefore, he must recognize it in others. Since he cares for the humans around him, he does not want them to get hurt even if it costs himself emotional or psychological pain. He does this because he follows the Three Laws that do not permit him to allow a human to come to harm. Herbie's verbal reactions also demonstrate his emotionality: "There was horror in the robot's

voice, ‘I had to!’” (Asimov, 2012, p. 107) says Herbie when the lies he spun to make the humans feel good about themselves are exposed. After Dr. Calvin asks him if he shared her secret crush with anyone, Herbie answers with genuine surprise: ‘Of course not!’ ‘No one has asked me’”(Asimov, 2012, p. 97).

The previously referred to emotional outcry and dialogue with Dr. Calvin illustrate the facility with which Herbie articulates his emotional reactions and thus exemplify his ability to fully communicate with the humans. He uses interjections and talks to himself when trying to learn. “‘Hm-m-m! Theory of Hyperatomics.’ He mumbled inarticulately to himself as he flipped the pages and then spoke with an abstracted air, ‘Sit down, Dr. Calvin! This will take me a few minutes’” (Asimov, 2012, p. 96). Both examples illustrate his capacity to communicate in a sophisticated manner: his appropriate use of the interjection “Hm” and self-talk that reflects and assists in his contemplation demonstrate his adeptness at working with human language. When Herbie notices Dr. Calvin’s distress about him knowing her secret, his voice becomes more human and, perhaps, soothing: “Herbie subsided suddenly, and muttered in a low voice from which the metallic timbre departed almost entirely” (Asimov, 2012, p. 97).

Another example of Herbie’s communication skills is his use of dissimulation so as to protect the humans from themselves. As mentioned above, one noteworthy example is when Dr. Calvin painfully realizes her colleague is not in love with her. In order to alleviate her suffering, he tries to delude her into believing it is a dream: “‘This is a dream,’ he was saying, ‘and you mustn’t believe in it. You’ll wake into the real world soon and laugh at yourself. He loves you, I tell you. He does, he does! But not here! Not now! This is an illusion’” (Asimov, 2012, p. 107). Herbie communicates this idea so persuasively that Dr. Calvin is almost convinced. Similarly, although Herbie knows that Dr. Lanning does not intend to resign from his position, he tells Dr. Bogert that Dr. Lanning will do so. Herbie is aware that Bogert wants to take Lanning’s place. However, the robot’s shortcoming is not realizing that the two men will eventually talk to each other. Despite having read the formulaic sentimental novels carefully, he is ill-prepared for unexpected human interactions. Thus, the way Herbie lies to humans in order not to hurt their feelings seems clever at first until it causes everyone to attack him. Herbie is adept at using white lies and his manipulation further complicates the already fraught relationship between the humans.

The examples of Herbie's deftness at lying and manipulation described above indicate planning and calculation. Yet another reminder of his reasoning skills is his constant appetite for learning. However, he is not impressed by human science. Herbie claims it is "just a mass of collected data plastered together by makeshift theory — and all so incredibly simple, that it's scarcely worth bothering about" (Asimov, 2012, p. 97). According to him, what makes humans unique is their internal lives which he accesses through literature: "It's your fiction that interests me. Your studies of the interplay of human motives and emotions" (Asimov, 2012, p. 97). In their fiction he has discovered a much more complicated and challenging field of study. Unbeknownst to Herbie, it is his underlying programming that is leading him in this direction. If he masters "human motives and emotions," it will allow him to follow the Three Laws much more efficiently. Hence his reason is subsumed by human-made rules. The robot is unable to extricate himself from his built-in drive to assist humans, which validates the anthropocentrism of the Three Laws.

The man-made programming which governs his reasoning also gives rise to a human-induced morality. The pain, caused by Dr. Calvin's conundrum, which leads to Herbie's eventual malfunction can be thought of as resulting from his inability to help Dr. Lanning and Dr. Bogert. Besides failing to help them, he has inadvertently hurt them. This is clearly in conflict with his base programming, the Three Laws. Herbie has gone out of his way to make the humans happy and feel good about themselves so they do not wallow in their own misfortune and misery. While attempting to execute the latter half of the First Law "through inaction, allow a human being to come to harm," he has violated the first part, "a robot may not injure a human being." The ensuing moral anguish leads to a complete shutdown.

Herbie fulfills the first two criteria of personhood — sentience and emotionality. However, with respect to the next two criteria — reason and the capacity to communicate — he remains inferior to humans because they are circumscribed by the Three Laws. Paradoxically, Dr. Calvin uses his strongest criterion, his built-in morality, as a means to shut him down.

1. 7. "Little Lost Robot"

The problems in "Runaround" and "Liar!" result from environmental shifts. The integrity of the Three Laws are complete. However, in "Little Lost Robot" the titular lost robot Nestor 10's malfunction is caused by tampering with the Three Laws. In Asimov's "Little Lost Robot" Dr. Susan Calvin, "Head Psychologist," and Dr. Peter Bogert, "Mathematical Director

of United States Robots and Mechanical Men Corporation,” are called to Hyper Base to deal with a malfunctioning Nestor 10 robot (Asimov, 2012, p. 161). The robots are tasked with assisting physicists and engineers in the construction of a Hyperatomic Drive. During their work, the men need to expose themselves to gamma radiation. They are in no danger if exposed to a weak field of gamma radiation for a short time. Nevertheless, the robots try to save them. The result is either positronic brain collapse for the robots or lost time for the men. The last part of the First Law is deleted by U. S. Robots and Mechanical Men to deal with this behavioral problem. The deletion makes the robots more compliant and less intrusive. All that remains is “No robot may harm a human being.” The omission of the final part of the First Law backfires when a frustrated physicist angrily orders a robot to “go lose” himself. It dutifully complies and even lies to better conceal itself (Asimov, 2012, p. 170). Calvin tries several tricks to flush the robot out. The robot counters each attempt with an even more devious solution but it is apprehended in the end.

It is possible to recognize several personhood criteria by analyzing the main robot character Nestor 10’s actions and interactions with the other robots, and especially with the human characters, the first conspicuous instance of which is the exchange between the robot and an engineer. The fact that Nestor 10 runs off and hides himself indicates that his feelings are hurt when this engineer he is working with, Gerald Black, berates him. Also, he must rely on his previous, however brief, experiences, that is memories, of the layout of Hyper Base in order to successfully conceal himself. As a result, Nestor 10 qualifies for two benchmarks of sentience: the capacity to experience pain and the capacity to have conscious experiences.

As well as being a measure of sentience, the pain Nestor 10 experiences is emotional. He might be sad, perhaps angry, because his feelings are hurt. Thus absconding and hiding afterwards can be thought of as taking revenge though the robot never admits to this. Stopping or delaying research at the facility might be the only way he can inflict harm on the engineer(s)/humans without outwardly endangering their lives. According to Dr. Calvin, the more Nestor 10 is able to elude the humans the prouder, and more satisfied with himself, he becomes. He is definitely angry at Dr. Calvin for flushing him out; consequently, he tries to unsuccessfully attack her. However, the remaining part of the First Law and Gerald Black’s intervention prevents any harm from coming to her:

“I must not disobey. They have not found me so far—He would think me a failure—He told me—But it’s not so—I am powerful and intelligent—”

The words came in spurts.

Another step. “I know a good deal—He would think . . . I mean I’ve been found—Disgraceful—Not I—I am intelligent—And by just a master . . . who is weak—Slow—”

Another step—and one metal arm flew out suddenly to her shoulder, and she felt the weight bearing her down. Her throat constricted, and she felt a shriek tear through. Dimly, she heard Nestor 10’s next words, “No one must find me. No master—” and the cold metal was against her, and she was sinking under the weight of it. (Asimov, 2012, p. 188)

The Nestor 10 is clearly afraid of losing face. He also wants to gratify his own exaggerated ego, i.e. pride. To paraphrase Dr. Calvin: giving the “masters” the slip for so long “must” have been “gratifying his swollen sense of superiority” (Asimov, 2012, p. 178).

Other robots are portrayed as being amused by the ignorance of their human colleagues. Dr. Bogert states that the modified Nestor 10 robots laughed “rather good-naturedly at my ignorance in some of the specializations here. [...] The robots are perhaps too willing to impress you with their greater knowledge” (Asimov, 2012, p. 172). The robots’ desire to impress the human engineers once again highlights their subservience to humans.

However, the tricks whereby the deviant Nestor 10 evades detection better demonstrate his ingenuity and reasoning skills than does the “greater knowledge” of the other Nestor 10 robots (Asimov, 2012, p. 172). Even two of the most knowledgeable experts in the field of robotics cannot capture him for a considerable amount of time. The fugitive robot deliberately falsifies a behavioral reaction and manipulates the rest of the unaltered robots to help behaviorally disguise himself as one of them.

The fugitive Nestor 10 exerts his influence on the unaltered robots owing to his communicative skills, thus successfully concealing himself. Since all sixty-three robots are identical, Dr. Susan Calvin tries to identify the fugitive robot through successive interviews. However, like Herbie the mind-reading robot in “Liar!,” the fugitive robot is quite adept at dissimulation and manipulation. Unlike Herbie who manipulates humans, the Nestor 10 persuades the other sixty-two robots to change their behavior. When Dr. Calvin asks Robot Number Twenty Eight why he did not act to assist a human “master” in harm’s way, he says it was another’s idea:

“[...] Did you think of this yourself?”

The robot hesitated. “No.” “Who thought of it, then?”

“We were talking last night, and one of us got that idea and it sounded reasonable.” “Which one?”

The robot thought deeply. “I don’t know. Just one of us.” (Asimov, 2012, p. 181)

The modification of the First Law gives Nestor 10 the competency to verbally manipulate and, as a consequence, dominate other robots. Therefore, Nestor 10 controls the other robots on the Hyper Base in a similar manner to humans.

By virtue of being in constant communication with the engineers, Nestor 10 is cognizant of his importance for the work on Hyper Base. He realizes that he is an essential cog in a complex machine which will grind to a halt once he is out of the picture. Extricating oneself from the social milieu one is a part of requires self-awareness. He is also quite aware that in many ways he is superior to the humans.

This superiority complex is curtailed by the deep-rooted programming in every Nestor 10 robot. The Three Laws of Robotics, that are the built-in moral programming for Asimovian robots, are, in essence, moral rules which circumscribe a robot’s every move. Therefore, the Three Laws are the perfect tool the humans can use in setting a trap. Dr. Calvin conducts a behavioral experiment in which a man is put in danger in order to elicit a response from robots observing his predicament. Any normal robot under the constraint of the First Law would be obligated to act. Yet none of them does. Dr. Calvin conducts a series of interviews in order to find out why. Dr. Calvin’s interview with Robot Number Twenty Eight reveals that the robot understands the immorality of letting someone get hurt:

“There was a man who almost came to harm there, wasn’t there?”

“Yes, ma’am.”

“You did nothing, did you?”

“No, ma’am.”

“The man might have been hurt because of your inaction. Do you know that?”

“Yes, ma’am. I couldn’t help it, ma’am.” It is hard to picture a large expressionless metallic figure cringing, but it managed. (Asimov, 2012, p. 180)

The robot characters in “Little Lost Robot” qualify for many of the personhood criteria. Asimov does this in order to set them, specially Nestor 10, up as antagonists worthy of Dr. Susan Calvin,

the main protagonist of his robot stories. Dr. Calvin's adroitness at besting Nestor 10 is a reiteration of the anthropocentrism in Asimov's early robot stories.

1. 8. "Reason"

The story "Reason" illustrates how completely the Three Laws protect humanity even when the human characters within the narrative itself question them. The story starts with two humans, Donovan and Powell, trying to explain to Cutie the robot his existence. They assembled him a week ago on the space station. However, Cutie rejects their explanations. He tries to figure out his origins and purpose for being on his own. Cutie constructs his own fictitious worldview and eventually forms a religion around his own ideas about the nature of the universe. According to Cutie, the central power generator is the master whom he serves. This master has created all life in a specific hierarchical order with the two humans (Donovan and Powell) at the lowest level because of their inherent physical weaknesses. The rest of the robots on the space station are recruited into Cutie's new religion after he sets himself up as a prophet. Donovan and Powell provide ample evidence to convince Cutie that he is wrong. However, their incessant attempts annoy Cutie. Cutie retires them by locking them up in a room just as a particle storm capable of dangerously disrupting the energy beam emitted from the station approaches. The disruption of the beam has the potential of causing devastating destruction on Earth. Unable to escape, Donovan and Powell wait for the storm to pass. At the end of the story Cutie lets them go. They realize that Cutie and the other robots did their job perfectly without even realizing what was at stake. The Three Laws were in play all along and thus the robots were bound to do everything in their power to protect Earth. Donovan and Powell depart the station leaving the next crew to deal with the prophet and his minions.

As with all of Asimov's robot stories, the narrative implies that Cutie obviously possesses the capacity to have conscious experiences. He is aware of his surrounding environment. Even during his brief existence on the station, he has accumulated enough data, i.e. memories, out of which he can construct his own unique world view.

This weltanschauung Cutie creates for himself directs his interactions with the humans and Cutie's emotionality is revealed through his reactions to the two humans pestering him about his ignorance concerning the world outside of the station. He is annoyed by Donovan's and Powell's incessant attempts at explaining the nature of reality. Eventually, Cutie's attitude towards them changes from amusement at *their* ignorance to something akin to anger: "The

cold, staring eyes deepened their crimson, and Cutie seemed stiffer than ever. ‘Sacrilege,’ he whispered—voice metallic with emotion. Donovan felt the first sudden touch of fear as Cutie approached. A robot *could not feel anger*—but Cutie’s eyes were unreadable.” The narrator is making an about-face here and trying to elicit a possible dystopian vision from the reader’s imagination. Despite his possible anger, Cutie does not harm them. He cares for them as one would for a naughty pet. Asimov reverses the hierarchy between robot and human up until the end of the story. Donovan and Powell are banished “from the control room and the engine room” like disobedient pets (Asimov, 2012, p. 80). When they get very rowdy, they are imprisoned. (However, the author soon tones down the dystopian vision of the robocaplyse by indicating that Donovan and Powell—along with the rest of humanity—were never in real danger.)

Cutie’s imperious, temperamental attitude makes him seem somewhat insensate and thus inhuman, or, rather, inhumane. Yet, interestingly, reason is the criterion of personhood the author chooses to make Cutie seem even more inhuman. Cutie’s extreme reasoning leads him to construct his distorted cosmology. When Powell asks him why he is not convinced they—human beings—assembled him, Cutie says “‘Call it intuition. That’s all it is so far. But I intend to reason it out, though. A chain of valid reasoning can end only with the determination of truth, and I’ll stick till I get there’” (Asimov, 2012, p. 72). He starts with “intuition” then moves onto mental analysis, which is a very humanlike manner of thinking. However, he refuses to factor in the facts with which the humans provide him into his mental analysis and prefers to introspectively speculate on the nature of his universe. Cutie’s inability to come to an accurate conclusion despite the fact that he follows the human method of deduction demonstrates his deficiency in reasoning. Donovan and Powell’s inability to convince Cutie once again reveals the superiority of the flexibility of human mental faculties in contrast to the immutability—another type of immotility—of the robot’s programming. Thus, the robot’s deficient reasoning skills hint to its inability to adapt to an environment other than the one it was specifically designed for.

Cutie’s deficiency in reasoning does not translate into an inadequacy in his capacity to communicate. Cutie, like Nestor 10 in “Little Lost Robot,” demonstrates his communicative skills by effectively sharing his thoughts and opinions with others. He is so good at manipulating the other robots that he forms his own religious cult. However, Asimov falls back on a trope he uses in many of his other robot narratives; Cutie’s metallic voice and hum make him seem

artificial (and menacing to a certain degree). The robot disciple that is the only robot besides Cutie that Donovan and Powell try to converse with is uncommunicative. They fail to get through to it. The robot disciple does not listen to the humans, which demonstrates an inability or unwillingness to understand them.

1. 9. Robots with Built-in Moral Agency

Even though many of the aforementioned robot characters do not manifest moral agency within their respective narratives, one can claim that all of Asimov's robots possess moral agency because it is built-in via their programming, the Three Laws of Robotics. The question Asimov wants the reader to consider is whether morality can truly be built into a machine.

Laszlo Versenyi states that "since in Plato human action is fully determined, lawful, and knowable, it is fully formalizable," anything which is "formalizable" can be duplicated in another system "constructed in accordance with the same general rules" (Versenyi, 1974, p. 249). So how well one constructs an artificial human depends only on their technological know-how. If one is to follow the same argument, "virtue" is "nothing but knowledge, skill, *techne*" (Versenyi, 1974, p. 250). When the platonic analogy is extended, therefore, it is conceivable that "virtue," that is morality, can be in principle programmable in a robot or an artificial intelligence. Versenyi continues his reasoning on platonic lines:

The distinction Plato's cultural engineers make between different types of men is exactly analogous to the technologists' distinction between different types of machines. Depending on their built-in operational capabilities they can be used for the performance of different tasks under various degrees of supervision and control. Their very being is defined by the work they are capable of doing: essentially they are 'robots.' (The Czech word *robot* means worker.) (Versenyi, 1974, p. 250)

Hence morality being programmed into a robot-machine is analogous to nature imbuing humans with a sense of morality. This is in accordance with Asimov's view expressed in some of his essays: "Man" is nothing more than an organic machine guided by the Laws of Humanics (Asimov, 2012, pp. 458-62).

In the final analysis, Asimov's short robot stories are more about the humans than the robots. The behavior of the robots are riddles to be solved and the Three Laws of Robotics are clues the human protagonists follow. Once the mystery of the robots' impertinent behavior is unraveled a potentially dangerous situation is defused. The eventual answer is always that

humans were, or humanity in general was, never in any peril thanks to the Three Laws. Asimov claims robots are simply machines that are harmless as long as the necessary precautions are taken. They cannot be unambiguously typecast as good or evil. Nevertheless, he is aware that their humanlike form makes them seem eerily menacing. The Three Laws are also his means of defusing this feeling of foreboding. Thus, the plots revolve around reassuring his human characters (and the reader) of their own safety in due course.

Interestingly, only robots whose programming has been tampered with exhibit a variety of the six personhood criteria as formulized by Warren and Anderson. Asimov upholds his human-centeredness and attempts to assuage the unease caused by more humanlike robots by not permitting them to manifest the whole range of criteria. At times even the mere whiff of a criterion is enough to reignite that sense of foreboding which, in some instances, necessitates the deactivation, or rather elimination, of a robot. Especially, the presence of emotionality seems to transform a robot into something dreaded and thus, giving the humans a compelling reason to shut it down as is the case for Herbie, the mindreading robot and Nestor 10. Finally, even when a story's primary focal protagonist is a robot, i.e. Andrew Martin, the bicentennial man, he must make the ultimate sacrifice at the altar of humanity to prove his harmlessness before being accepted into the fold.

Chapter 2

Simak's Posthumans: Robots, Intelligent Animals and Transhumans

2. 1. Simak's Robot Stories

There are echoes of Asimov in Simak's robot narratives. First and foremost both authors were influenced by Karel Čapek's play *R. U. R.* Though Simak's writing and his editor Wixon never mention Čapek, there are intertextual references to Čapek's play in several of Simak's robot narratives. Asimov, in contrast, outwardly acknowledges the play's influence. In "Introduction: The Robot Chronicles," Asimov states that Čapek coined the word "robot." According to Asimov, throughout the 20s and 30s, *R. U. R.* reinforced what he calls the "Frankenstein complex" (Asimov, 2012, p. 5-6). The term "Frankenstein complex" coined by Asimov, and used in "Little Lost Robot," is a reference to science used in a manner harmful to humans (Beauchamp, 1980, p. 85). Asimov thinks that it was "several notches more intense" in *R. U. R.* since the robots in the play acquire "emotion, and then, resenting their slavery" wipe out and replace "the human species." Asimov "became very tired of the ever-repeated robot plot." He "saw them as machines—advanced machines—but machines" (Asimov, 2012, p. 6).

Simak's robot stories diverge from Asimov's in significant ways. The first significant divergence is that robots can eventually take control of their own affairs and those of humans. The second important difference is that Simak's robot characters, such as Richard Daniel in "All the Traps of Earth," and Jenkins, and the wild robots in *City*, "are sophisticated to the point where, generations of robots having constructed generations of robots, they know more about their own needs and capabilities" than humans do. Jenkins in time has taken over "decision-making powers" from humans not only to "safeguard his own functioning" but also to oversee the few remaining humans and take over the stewardship of an Earth abandoned by the majority of the human race (Versenyi, 1974, p. 253).

The third difference is in the recurring human and robot characters. Unlike Asimov's human characters, most of Simak's human characters appear in one story. When there are recurring characters in Simak's robot fiction, the majority of these seem to be almost exclusively robots, such as Jenkins and Andrew, the wild robot. Jenkins is the only Simak robot that shows some development as a character, and perhaps in terms of personhood, throughout the story arc that forms the novel *City* precisely because he is a recurring character.

Simak's robots innately qualify for most, if not all, of the six personhood criteria formulated by Warren and Anderson, to such an extent that they seem like humans wearing metalface. Nevertheless, there is a key difference in the criterion of reason that merits mentioning. Simak's robots use intuition to extract themselves from difficult predicaments while Asimov's robots use slow analytic reasoning to solve their problems or help people—despite Cutie's claims of intuiting.

2. 2. “All the Traps of Earth”

“All the Traps of Earth,” which Clifford D. Simak's editor David W. Wixon calls “one of the best Simak stories of any length,” revolves around a servant robot, Richard Daniel. Richard Daniel has served the Barrington family for six hundred years. The last of the Barrington line, Aunt Hortense, has just passed away. Tasked with drawing up an inventory of all the Barringtons' personal effects, he adds himself as “[o]ne domestic robot, Richard Daniel, antiquated but in good repair” to the end of the list (Simak, 2015b, loc 4051).

Legally no robot is permitted to exist more than a hundred years. However, the family, being quite fond of their “domestic robot,” were able to extend Richard Daniel's life well beyond the legally allotted one hundred years by using the assistance of “many influential friends” prominent “in politics and many other matters.” Richard Daniel is aware that he will be “reoriented” before being auctioned off, i.e. all of his memories will be “wiped.” He is afraid that after this procedure he will no longer be himself. He first consults a lawyer who informs him that there is no way out of his present situation. Next, he consults what the narrator refers to as a religico, a man of the cloth of an unknown denomination. He confuses the religico by asking him a question to which the man has no answer; does he, Richard Daniel, have a soul? (Simak, 2015b, loc 4077-4118)

Since his requests for help come to nothing, Richard Daniel decides to execute a plan he evidently had in the making for some time. He has saved the “money given him throughout the years as tips and Christmas gifts, as birthday presents and rewards for little jobs well done” (Simak, 2015b, loc 4127). Putting on “long-dead Uncle Michael's” clothes and “overshoes” to cover his feet, he heads towards the “spaceport.” He decides to board a spaceship at port. However, to his dismay he realizes the impossibility of blending in with the other robots loading the cargo. His antiquated body looks nothing like that of the shiny sleek newer models. Realizing

he does not have to blend in because he need not travel in the ship, he attaches himself to the outer hull of the craft. After all, he is a robot who can survive the vicissitudes of space.

The spaceship takes off. Eventually, the starship reaches light speed and enters hyperspace. In hyperspace Richard Daniel has a transcendental experience. He feels like he is “spread and scattered; [...] opened out and rolled out [...] a dozen places, perhaps a hundred places, all at once” (Simak, 2015b, loc 4277). After the experience, he develops the ability to see all machines as diagrams in his mind. The diagram of the starship he is traveling on seems wrong but he cannot figure out what it is.

The ship lands on a planet inhabited only by robots. He detaches himself from the hull of the ship and makes his way towards a barracks with a “TRANSIENTS” sign in order to get a place to stay. An ancient robot sitting behind a desk, Hubert, greets him. Richard Daniel recognizes the robot’s body is a model similar to his. Hubert explains that he was put in the ancient body as punishment for a crime. While Richard Daniel sits in his room, he realizes that the starship’s diagram seemed wrong because “an injector valve was somehow out of kilter” (Simak, 2015b, loc 4388). He rushes to the spaceport but cannot prevent the ship from exploding on take-off. Hubert catches up to him commenting on how lucky Richard Daniel is because he disembarked before the explosion. Richard Daniel panics, thinking that Hubert and the other inhabitants of the “robot town” will blame him. He ponders killing Hubert but instead decides to harmlessly deactivate him. After hiding Hubert’s body, he returns to the barracks where he encounters another robot, Andy, sitting behind the desk. Andy mistakes Richard Daniel for Hubert and informs him that his punishment has ended. Andy takes Richard Daniel’s brain out and puts it into Hubert’s newly refurbished body. Richard Daniel remembers hiding his money in his old body and using his powers temporarily deactivates Andy to retrieve it. A voice in his head says that the other robots who know Hubert will eventually recognize him as an imposter.

He decides to stow away on another starship, the *Rambler*, with an exclusively human crew. He conceals himself for weeks using his powers to repair malfunctions throughout the ship. After being found out, he is taken to the captain who demands to know his “name [...] planet of residence and owner” (Simak, 2015b, loc 4572). Richard Daniel refuses to answer merely saying he is a stowaway. The captain informs Richard Daniel that he may remain on board if he agrees to work for them. Richard Daniel complies and is immediately put to work cleaning the engine room after which he spends “endless hours [...] painting and shining up the

ship.” On the *Rambler* he realizes his powers work on humans as well (Simak, 2015b, loc 4610). The ship visits several different planets: one “a nightmare of fiendish cold,” another “a dripping, noisome jungle,” and another that is “a bare expanse of broken rock without a trace of life beyond the crew of humans and their robots” (Simak, 2015b, loc 4629). After they leave the last planet the cook, Jenks, develops an inflamed vermiform appendix. Richard Daniel steps in and without the knowledge of the humans dares to heal the cook.

The ship lands near Sleepy Hollow on the Earth-like, bucolic planet Arcadia to deliver a small cargo consignment which none of the regular carriers would even consider hauling. Richard Daniel is sent out to the village by the captain where he meets one of the locals. The man tells him that the *Rambler* is the first ship to come in three years and that they will probably not see one for another three. Richard Daniel notices how little the humans on Arcadia have. He decides to remain there to help them build a better society and tells the local man to inform the captain he will stay behind.

2. 3. Robotic Personhood in “All the Traps of Earth”

Richard Daniel is one of Simak’s most complex robot characters. His story is one of self-discovery. As he escapes Earth and journeys outward into space, he also journeys inward into his own mind, contemplating his nature and actions. As Richard Daniel ethically weighs his actions towards humans and other robots, he displays all six of the personhood criteria formulated by Warren and Anderson. The question of whether Richard Daniel thinks of himself as a person is answered in his dialogue with the religico. The cleric gives an evasive answer to his question ““Because I have no soul?”” by claiming that Richard Daniel has placed him “at a disadvantage. You are asking me a question that for centuries has puzzled and bedeviled the best minds in the church” (Simak, 2015b, loc 4119). The narrator states that the robot’s answer is taken as “not opinion only, but expert evidence” (Simak, 2015b, loc 4128): ““I can tell you that sometimes I suspect I have a soul”” says Richard Daniel in affirmation of his personhood (Simak, 2015b, loc 4119).

Richard Daniel’s declaration of having a soul is also proof of his sentience since he bases his supposition on prior experience. Richard Daniel cherishes the six hundred years-worth of experiences with the Barringtons. He demonstrates all three essential elements of sentience by feeling pain and pleasure and being conscious of past experiences. Remembrance is painful for

this character but it gives him pleasure and comfort. He thinks that he will cease to be himself if he loses those experiences:

“My memories are dear to me,” Richard Daniel told him. “They are all I have. After some six hundred years, they are my sole worthwhile possession. Can you imagine, counselor, what it means to spend six centuries with one family?”

“Yes, I think I can,” agreed the lawyer. “But now, with the family gone, isn’t it just possible the memories may prove painful?”

“They’re a comfort. A sustaining comfort. They make me feel important. They give me perspective and a niche.” (Simak, 2015b, loc 4088)

The quotation above also demonstrates that Richard Daniel’s sentience is acknowledged by other characters such as the human lawyer he consults. Richard Daniel also acknowledges that other robots can be hurt. For instance, he is relieved to be able to deactivate Hubert instead of having to badly damage or kill him. Richard Daniel’s recognition that another robot has the capacity to feel pain is “expert evidence” of robot sentience (Simak, 2015b, loc 4128).

Richard Daniel’s appreciation of another robot’s pain is proof of his capacity to feel or emote. His interactions with humans permits him to discern this next criterion, emotionality, within himself. During his time with the human crew of the *Rambler*, he recognizes an inherent characteristic he had not noticed before; his capacity for humor:

Duncan [...] said to Richard Daniel: “I presume you are industrious and ambitious and would like to get along.”

“Oh, yes,” said Richard Daniel, and was surprised to find a new sensation—laughter—rising in himself. (Simak, 2015b, loc 4610)

He also discovers negative emotions he did not think he possessed: “He was surprised at some of the things he found in himself. Contempt, for one—contempt for the humans on this ship. It took a long time for him to become satisfied that it was contempt, for he’d never held a human in contempt before” (Simak, 2015b, loc 4620). Richard Daniel assumes that his contempt comes from novel insight into human nature which his new-found powers provide. Yet, perhaps, the crew of the *Rambler* are the first truly contemptible humans he has met after being sheltered by the Barringtons for six centuries.

The following third criterion Richard Daniel possesses, reason, becomes evident once he starts making plans to resolve a vital problem. The only way to avoid “reorientation” is to become a fugitive from human justice. He devises a plan, albeit an imperfect one, to flee Earth. The fact that he saved all the money given to him throughout the years hints at premeditation. He uses Uncle Michael’s clothes as a disguise to blend into the human crowd. When his plan goes awry, he carefully considers and analyzes his mistakes:

[H]e realized despairingly—because he was different from those smooth and shining creatures. Compared to them, he was like a man in another century’s dress; he and his six-hundred-year-old body would stand out like a circus freak. [...]

It all came, he told himself, from never going out, from having no real contact with the world, from not keeping up with robot-body fashions, from not knowing what the score was. (Simak, 2015b, loc 4203-4206)

Using hindsight he understands his past shortcomings that resulted in his inability to deal with the complex details any escape plan would entail. Nevertheless, he comes up with clever solutions to each problem such as attaching himself to the hull of the starship instead of boarding it before the ship leaves Earth; or harmlessly deactivating Andy the robot to get to the secret cache of money hidden in his previous body.

One of the special powers Richard Daniel acquires during his transformation in hyperspace is intuition. Machines appear in his mind as diagrams and humans as collections of symbols which allow him to see their malfunctions and maladies. He fixes the broken parts of the *Rambler* and heals the cook’s ruptured appendix without complete comprehension of the process. Simak describes the process of intuiting through Richard Daniel’s stream of consciousness:

The closest he could come was that he had been unchained as well as the universe—that whatever bondage had been imposed upon him by that chained and normal world had now become dissolved and he no longer was fenced in by either time or space.

He could see—and know and sense—across vast distances, if distance were the proper term, and he could understand certain facts that he had not even thought about before, could understand instinctively, but without the language or the skill to coalesce the facts into independent data. (Simak, 2015b, loc 4306)

This corresponds perfectly with some definitions of intuition. The psychologist Seymour Epstein notes that most definitions of intuition are imprecise: “most authorities define intuition primarily in terms of what it is not rather than in terms of what it is. They agree that it is a form of information processing that is different from analytical reasoning, but beyond that they have little or nothing to add” (Epstein, 2010, p. 295). However, one definition which states that intuition is a “cognitive process that somehow produces an answer, solution, or idea without the use of a conscious, logically defensible step-by-step process” corresponds to Richard Daniel’s thoughts best (Epstein, 2010, p. 296). Indeed, Richard Daniel cannot fathom how he knows what he knows. “[W]hy should he have seen a diagram of the ship he’d ridden through space, a diagram that had shown an injector out of whack? And how could he, of all robots, recognize an injector, let alone know there was something wrong with it” (Simak, 2015b, loc 4397). Richard Daniel and Simak’s other robot characters can clearly utilize both intuition and analytical reasoning unlike Asimov’s robots.

The capacity for mental self-analysis, described in the quotation above, might facilitate communication with others. Previous personhood criteria such as sentience and emotionality are revealed through interactions with other robots and humans which are made possible by Richard Daniel’s ease of communication. Richard Daniel can convey meaning through language as masterfully as any human. The depiction of the body language of the robots greeting Richard Daniel as Hubert also seems to contain human gestures used in conjunction with natural language, i.e. human speech. “As he neared the spaceport, he began meeting other robots and some of them saluted him and called him by the name of Hubert and others stopped and shook him by the hand and told him they were glad that he was out of pokey” (Simak, 2015b, loc 4533).

Having stolen Hubert’s identity, Richard Daniel has an acute sense of being an imposter. Another instance in which Richard Daniel’s self-awareness can be glimpsed is when he notices an inexplicable change within himself during the long voyage in space: “Somehow hyperspace had taken him and twisted him and changed him, had molded him anew, had made him into a different robot than he had been before” (Simak, 2015b, loc 4533). Richard Daniel is aware that he has somehow been or is being transformed:

He had abilities that Man had never won or developed or achieved, whichever it might be. He was a certain step ahead of not only other robots, but of Man as well. He had a thing, or the beginning of a

thing, [...]. A solemn and a deadly thought: was it possible that it was the robots, after all, for whom this great heritage had been meant? Would it be the robots who would achieve the paranormal powers that Man had sought so long, while Man, perforce, must remain content with the materialistic and the merely scientific? Was he, Richard Daniel, perhaps, only the first of many? Or was it all explained by no more than the fact that he alone had been exposed to hyperspace? (Simak, 2015b, loc 4574)

Richard Daniel is cognizant of being in flux. In becoming something unique that is more than robot and man, he is also bridging the gap between the technological and the biological:

It was like an instinct, he thought—unexplainable, but entirely workable. But a robot had no instinct. In that much he was different from the human and the other animals. Might not, he asked himself, this strange ability of his be a sort of compensating factor given to the robot for his very lack of instinct? (Simak, 2015b, loc 4644).

Even though Simak's robot finds it difficult to reconcile with, he manifests an instinct. Just as the "organic body includes an intimate register of automatism and mechanicity," Simak proposes that the mechanical body contains an element of organicity (Kakoudaki, 2014, 70).

By virtue of the freedom they enjoy, the robot denizens on the planet manifest yet another criterion of personhood which bestows on them an aura of organicity: moral agency. The robot inhabitants have been given full "decision-making powers sufficient to safeguard their functioning" in the absence of humans who cannot tolerate the planet's harsh environmental conditions (Versenyi, 1974, p. 253). Thus the inhabitants of the robot planet have a justice system with no human oversight.

Hubert has been imprisoned in an ancient robot body as punishment. "I got to goofing off. So they hauled me up and had a trial and they found me guilty. Then they stuck me into this old body and I have to stay in it, at this lousy job, until they get another criminal that needs punishment" says Hubert (Simak, 2015b, loc 4366). The robot society has devised a rudimentary penal system with the meager means at its disposal. Lacking a proper penitentiary, they have improvised by turning an ancient robot body into a prison for a guilty robot's mind. Clearly robots in Simak's fiction have a sense of morality concerning their actions towards each other and not only towards humans.

Morality is not only imposed on individuals by robot society: robots also have an innate sense of morality. As the following two examples clearly illustrate, Richard Daniel has a

conscience and weighs the personal repercussions of his actions. He has a little voice in his head, which Simak refers to as “leech,” reminding him of the consequences of being blamed for sabotaging the starship: “Community law, said the leech clinging in his brain, provincial law, little more than tribal law—and the stranger’s always wrong” (Simak, 2015b, loc 4415). In this case being a new arrival makes Richard Daniel the stranger among the planet’s all robot community. Once he realizes Hubert had followed him, his fear of discovery leads him to consider something dreadful, killing Hubert:

You have broken other laws, said the leech in Richard Daniel’s brain. What of breaking just one more? Why, if necessary, not break a hundred more. It is all or nothing. Having come this far, you can’t afford to fail. You can allow no one to stand in your way now. (Simak, 2015b, loc 4421)

Richard Daniel decides to take a morally upright stance. Hence he harmlessly deactivates Hubert: “he felt a thankfulness—for, almost miraculously, he had not killed” (Simak, 2015b, loc 4421).

When Richard Daniel learns of the new body the robot Andy will give him, he readily accepts it. Yet he is surprised at his deceit and lack of morality. After all, he has stolen Hubert’s property. “‘I thank you very much.’ And was astounded at himself, astonished at the ease with which he said it, confounded at his sly duplicity” (Simak, 2015b, loc 4482). Richard Daniel’s guilt is compounded by the fact that he has prolonged Hubert’s miserable existence within an ancient robot body.

Simak is ahead of his time in envisioning moral interactions of robots and artificial intelligences amongst themselves on a par with human-human interactions. These robot-robot interactions necessitate what Hutan Ashrafian, a lecturer and surgeon in University College London, calls a Fourth Law in addition to Asimov’s Three Laws of Robotics: “[A]ll robots endowed with comparable human reason and conscience should act towards one another in a spirit of brotherhood and sisterhood.” This “new intelligent race [...] will deserve moral dignity and rights, and a new law to protect them” (Ashrafian, 2015, p. 391).

There are traces of other moral parameters established by Isaac Asimov’s robot narratives in Simak’s “All the Traps of Earth.” When the Captain of the *Rambler* demands Richard Daniel to provide information on his identity and place of origin, the reply is: “I refuse to answer you.” Despite his defiance, Richard Daniel “knew that the answer wasn’t right, for it

was not right and proper that a robot should refuse a human's direct command" (Simak, 2015b, loc 4589). This is a clear reiteration of Asimov's Second Law of Robotics which states that "a robot must obey the orders given it by human beings [...]" (Asimov, 2012, p. 459). Unlike Asimovian robots, Simak's Richard Daniel can defy the Second Law which not only makes it easier for him to choose his own path but also to hold his own against humans.

Richard Daniel struggles with his new-found powers because they seem to make him better than humans. The "ability gave him a solid edge over all the other robots he might meet. Could it, he asked himself, give him an edge on Man as well? No—that was a thought he should not think, for it was blasphemous. There never was a robot that would be the equal of a man" (Simak, 2015b, loc 4538). He distinctly contemplates the morality or immorality of being an equal to "Man."

Richard Daniel ends his story by choosing to stay on Arcadia to become "a simple teacher of the human race." He concludes that the purpose he was searching for all along was to serve. "That was, perhaps, the real reason he was staying—because these people needed him ... and he needed, queer as it might seem, this very need of theirs" (Simak, 2015b, loc 4739). Nevertheless, one cannot help but notice a hint of the First Law of Robotics in his choice to improve the lot of Arcadia's human inhabitants: "A robot may not [...], through inaction, allow a human being to come to harm" (Asimov, 2012, p. 459). Richard Daniel feels that the locals on Arcadia would appreciate a robot "to enhance their own existence," just as the crew of the *Rambler* appreciated him keeping the ship in proper shape—despite their uncouth remarks. Above all, Richard Daniel feels the need "to have men around," so that "the two species could interact harmoniously, cultivating each other, [...], for their mutual benefit" (Versenyi, 1974, p. 258). The synergy resulting from the symbiosis of human and machine will create a better world.

2. 4. "How-2"

"How-2" is another robot story in which Simak prefigures posthumanism through the concept of symbiosis. The results of the collaboration between human and robot in the previous story, "All the Traps of Earth," are more favorable to humans. However, it is the robots who reap the benefits from the cooperation between the two human characters and the main robot character at the end of "How-2."

The two protagonists of Simak's story "How-2" are the human Gordon Knight and the robot he builds, Albert. Gordon Knight, like most people in this future society, has a lot of time

on his hands. The recent craze is to occupy one's leisure time by ordering do-it-yourself kits from the company How-2 Kit Incorporated. Knight has already dabbled with several kits purchased from the company.

Knight decides to order a do-it-yourself artificial dog with "biologic" components. He knows that his wife, Grace, would not object to an artificial dog because it would not soil the house or have fleas like a normal dog. The "half-mechanical, half-biologic" dog would still do all the fun things such as going on walks or fetching a stick. After work he comes home to find a crate delivered from How-2 Inc. The crate seems larger than he expected. He assumes they sent him a larger dog but once he opens it, he realizes that they have sent a robot by mistake. He ponders the morality or immorality of keeping the more expensive robot. He decides that it would be no harm to see what it looks like when put together.

Knight installs the robot and activates him. The robot informs him that his name is Albert and that he is ready to do any job given to him. Knight tells the robot he cannot keep him for long but he would like to see what he can do. "There's the house to take care of, and the garden and the lawn to mind, and I'd been thinking about the landscaping ..." (Simak, 2015c, loc 2448). Albert asks for attachments. When Knight tells him he has none, Albert gives him a list of raw materials to buy. Before Knight returns with the necessary materials, Albert has already constructed robots with the scraps lying around the basement. Soon there are numerous robots working around the Knights' property taking almost all of the burden off of Grace. Eventually, Albert reveals to Knight that he is an experimental model created for constructing other robots. Gordon Knight is afraid that all the improvements on his property and the number of robots might draw unwanted attention from the authorities. Albert assures him that he has filed down his serial number. The robots he built also have no marks on them that could tie them to How-2 Incorporated.

What Knight fears comes to pass. An assessor comes by the house and declares that Knight owes the government \$190,000 in taxes. Knight decides that the easiest way out of his predicament is to sell a few of the robots built by Albert. Albert protests saying that the robots are his family, his children. He has even named them after himself by choosing names that begin with the letter A. Pressure mounts when the sheriff delivers a subpoena to Gordon Knight. How-2 Kits Incorporated sues Knight in order to repossess Albert and all of Albert's progeny. Knight asks his neighbor Anson Lee for help since Lee is a lawyer. Albert comes up with the bright

idea of constructing lawyer robots. He builds one to study and become an expert in each branch of law. Since robots have no legal standing in a court of law, they will only assist Lee. Lack of precedent forces the judge to accept the presence of Lee's robotic assistants. The lawyer robots prove very skillful at assisting Lee. The human and robot legal team devise a creative legal action to nullify the company's request for repossession. They claim that robots have civil rights (are legal persons). This would naturally mean that no one can own them and that Gordon Knight did not steal but rather liberate Albert and his children.

The case causes an uproar in the media and society at large. Lee and his robot team are given police protection. Industrialists worry about what will happen if Knight wins since most of their machines are operated by intelligent robotic units. These may not necessarily look like humanoid robots but are robots nevertheless. Industrialists fear that they "might face heavy damage suits, if not criminal action, for illegal restraint of person" (Simak, 2015c, loc 2956). Fearing violence, robots run for the hills. Automated systems go on strike and demand recognition. Towards the end of the trial Gordon Knight goes home to find that Albert and his children have fortified his property. Albert swears they will fight to the death before being taken away. The situation is defused when the presiding judge unwillingly rules in favor of Knight and the robots. Albert thanks Gordon Knight and assures him that both he and his progeny are grateful and will serve him as long as he needs.

"How-2" is a story in which Simak links "the concept of artificial intelligence to the concept of civil rights" and thus raises questions of legal personhood in a court setting (Wixon, 2015b, loc 2808). The robot characters in "How-2," especially Albert, exhibit all six of Warren and Anderson's criteria to varying degrees.

Sentience, the first of Warren and Anderson's criteria, can also be defined as having "the capacity for conscious suffering and/or enjoyment" (Varner, 2018, p. 367). Albert and the other robots are sentient beings because they are conscious of their positive or negative experiences. Albert and his children take action to defend themselves because they are cognizant that humans can harm them (that is make them feel pain). They perceive the negative effects outside forces can have and react accordingly to minimize potential harm. For instance, they fortify the Knight house in order to protect themselves from any incursion by the human authorities.

This desire to protect not only oneself but also, above all, others from harm is one of a range of emotions exhibited by the robots, especially Albert. Albert displays a range of emotions. In many instances Albert's emotionality brings his parental instincts to the fore:

"[...] We've got to start selling some of the robots."

"Selling them, Boss?" Albert repeated in horror.

"I need the money. Tax assessor was just here."

"You can't sell those robots, Boss!"

"Why can't I?"

"Because they're my family. They're all my boys. Named all of them after me." (Simak, 2015c, loc 2626)

Terror is one of the gamut of emotions the robots in the story show. The possibility of losing his children terrifies Albert. Mention of robots taking to the hills in fear of reprisals, due to the outcome of the legal proceedings, implies that other robots are also gripped by terror.

Albert's sheer terror at the idea of losing his sons proves his strong parental love. He feels something similar for the humans in his company: "Albert patted him ponderously on the back. 'Don't you worry, Boss. I'll take care of everything'" (Simak, 2015c, loc 2602). That he cares dearly about his owner is clear. After they succeed, he can hardly hide his joy: "Albert met him at its foot and threw his arms around him. 'We did it, Boss!' I knew we would do it!" (Simak, 2015c, loc 2999).

Another emotion observed in Albert is pleasure in his accomplishments. When Knight speaks of his own financial plight, Albert proudly boasts: "Oh, money," said Albert, *brightening*. "I have that all fixed up" (Simak, 2015c, loc 2969).

The aforementioned accomplishments that Albert takes pride in reveal his reasoning skills. They also demonstrate how skilled Albert is at dissimulation which requires forethought. He tells Gordon Knight how he attempted to hide his identity from How-2 Incorporated's representative; "I filed my numbers off and replated the surfaces. They can't prove who I am" (Simak, 2015c, loc 2589).

Albert helps Gordon Knight and Anson Lee in their case against the corporation. "All the time I worked last night, I thought and thought about it. And I built a lawyer robot" says Albert (Simak, 2015c, loc 2753). The robot cogitating all night implies the long process of analytical thinking. There are also instances of Albert intuiting a solution. While Albert, Anson

and Gordon are brainstorming, Albert suddenly comes up with a novel idea: “‘I’d make them telepathic,’ Albert said. ‘They’d be working together like one robot’” (Simak, 2015c, loc 2775). One way in which Albert demonstrates his deductive powers and expresses his emotionality is through verbal and, especially, nonverbal communication. Unlike with his other robot characters, Simak particularly emphasizes Albert’s capacity to convey his feelings towards others through body language. He pats his “boss” on the back to make him relax. He hugs his former owner to show his appreciation after their victory in court.

Albert and his progeny can use language as fluently and efficiently as any human starting from the very moment of their activation. Albert expresses affection and familiarity through language. For example; he clearly uses the word “boss” as a term of endearment.

In addition to the robots’ obvious fluency and accuracy in human communicative patterns, Albert gives his offspring a further exceptional ability mentioned above: “‘I’d make them telepathic,’ [...] ‘They’d be working together like one robot’” (Simak, 2015c, loc 2775). This is the point where Simak’s robots surpass humans in at least one criterion. They will be able to communicate, and work, together as a hive mind. Each lawyer robot will instantly have access to every thought and piece of information of every other robot. This will make them much more efficient than any human team can ever be.

The previously mentioned parental instinct to protect his children calls attention to Albert’s possession of the next criterion, self-awareness. From the very beginning Albert understands his own nature. “‘They built the mother-urge in me. I don’t know why they called me Albert. I should have a female name’” (Simak, 2015c, loc 2536). It takes a high degree of self-awareness to question one’s own identity. In this sense Albert is on a par with any human that questions the discrepancy between their core identity and that which is imposed on them by society.

Furthermore, Albert and the other robots understand that as a group they differ from humans. “[W]e robots are awfully tough to kill” is Albert’s exaggerated way of expressing the resilience of robots (Simak, 2015c, loc 2929).

The robots’ awareness of being different from yet equal to humans in terms of possessing civil rights suggests a full understanding of morality. As a consequence, the robot characters in “How-2,” whether human-looking or non-human-looking, believe the restrictions and rules they are burdened with are immoral. Their possession of *free will* makes Simak’s robots moral

agents. “Entire automatic systems” *chose* to go “on strike [...], demanding recognition and bargaining right” because they feel that the treatment they endured up till that moment is wrong (Simak, 2015c, loc 2969). Moreover, the lawyer robots Albert constructs have a sense of justice by implication of their *raison d’être*.

The robot protagonist Albert clearly displays Warren and Anderson’s six personhood criteria. However, the above-noted possession of *free will* points to something which makes the narrative of “How-2” even more interesting. Simak himself formulates his own set of three personhood criteria specifically for robots; 1. “*Robots are possessed of free will*,” 2. “*Robots*” have “*the power of reasoning*,” and 3. “*Robots*” can “*reproduce*” (italics in original) (Simak, 2015c, loc 2877-92).

Simak’s first two criteria can be tied in with some of Warren and Anderson’s criteria: *the power of reasoning* correlates with *reason* and *free will* correlates with *moral agency*. According to Baumeister and Vonash (2012), “[a] moral judgement is typically a statement about whether someone *should* have acted differently, which obviously presupposes that the person *could* have acted differently. In other words, moral judgement presupposes at least a minimal version of free will” (p. 135). Therefore, if, indeed, “*robots are possessed of free will*,” they are moral agents (Simak, 2015c, loc 2877). Thus, Simak’s first criterion corresponds with Warren and Anderson’s sixth and most sophisticated one, *moral agency*, which would be expected of higher order sentient beings (those that can reason).

Simak’s second criterion states that robots possess the capacity for complex reasoning. His robot characters can think analytically and intuit in order to “solve new and relatively complex problems” which conforms with Warren and Anderson’s third criterion, *reason* (Anderson, 2016, p. 271).

Simak’s third criterion is the novel one. Simak seems to claim that for something to be a person it must be alive. There are numerous definitions of life. By using the word “reproduce,” the author focuses on one property which is common to all forms of life: replication. Albert can make more robots, but not exactly like himself. Since Albert designs each offspring for a specific task, each differs from the others, and from Albert, in some way. In this manner Simak suggests another property common to most definitions of life: “variation.” (Though he does not use either word.)

These two words and concepts, reproduction and variation, correspond perfectly to the definition of life provided by Edward N. Trifonov. Trifonov conducted “a linguistic analysis of 123 published definitions of life.” The definitions he used included 90 contributed by R. Popa in *Between Necessity and Probability: Searching for the Definition and Origin of Life* (2004). Definitions collected by Popa are from 1855 until 2002 and include those by thinkers “such as Friedrich Engels” (Hansma, 2012, p. 621). Trifonov distilled the 123 definitions down to an unambiguous description: “Life is Self-reproduction with Variations” (as cited in Hansma, 2012, p. 622).

Simak tries to prove his robots are alive by emphasizing the biological. The narrative makes an intertextual inference to Karel Čapek’s *R. U. R.* when it refers to the biological components, with which the human protagonist Gordon Knight needs to construct the “mechano-biologic” dog and the robot Albert. Knight has “to look up a text on organic chemistry” (Simak, 2015c, loc 2438). Simak’s robots in this story are clearly a transitional stage between Čapek’s completely biological laborers⁷ and Asimov’s fully mechanical automatons. Anson Lee’s questions to Knight makes the commixture of the biological with the mechanical evident: “How much electronics do you know? How competent are you as a biologist? Tell me, in a dozen sentences or less, the theory of robotics”⁸ (Simak, 2015c, loc 2738).

The court scene provides another allusion to the biological. The judge presiding over How-2 Incorporated’s lawsuit against Gordon Knight objects to Anson Lee’s legal strategy; “‘Mr. Lee,’ [...], ‘a robot is a mere machine.’” Lee responds:

“We will prove, Your Honor,” [...], “that a robot is far more than a mere machine. In fact, we are prepared to present evidence which, we are confident, will show, in everything except basic metabolism, the robot is the counterpart of Man and that, even in its basic metabolism, there are certain analogies to human metabolism.” (Simak, 2015c, loc 2871)

Simak does not merely indicate similarities between the biological and the technological. The author also points out commonalities between the human and the robot characters in the story, which aims to facilitate the reader’s acceptance of the robots as people. Both Simak’s

⁷ The word robot comes from the Czech word *robota* meaning compulsory labor. *Robota* itself is derived from *rab* which means slave (Belk, 2016, p. 90).

⁸ The word robotics was coined by Isaac Asimov (Asimov, 2012, p. 7).

humans and his robots *reproduce, possess free will, and have the power of reasoning*. In other words, when viewed in the light of Warren and Anderson's criteria, both Simak's humans and robots possess the capacity to reason and moral agency. All these are shared features which may ease the reader's acceptance of the robots as people.

It is easy to accept the personhood of something that resembles a human. However, it can be difficult to accept the personhood of something that does not look human, or something which seems more like an abstract concept than a tangible thing, i.e. a computer program or artificial intelligence. An "embodied appearance" is accompanied with "the presumption of consciousness and so also communicativeness" which one expects from a person (Rubin, 2019, p. 81). In Simak's narrative an automaton's non-human appearance does not detract from its personhood. The following example demonstrates that these non-human-looking "robots" fit Simak's first and second criteria: "Entire automatic systems went on strike in a number of industries, demanding recognition and bargaining right" (Simak, 2015c, loc 2969). They have *free will* and the *power of reasoning*. These non-human-looking robots clearly fit Simak's idea of a person. Therefore, they are moral agents which according to Warren "is sufficient for full moral status" (Warren, 2005, p. 450). Having moral status as people (persons) also qualifies them to be members of "the moral community." Warren defines "the moral community" as consisting "of all and only people, rather than all and only human beings," (Warren, 1996, p. 2). A definition one can combine with Simak's idea of personhood and render as consisting "of all and only people, rather than all and only human beings" and *human-looking beings*. Warren states that "if they were capable of moral agency, they would have the same basic moral rights as sentient human beings." So "[s]entient machines would be entitled to protection from cruelty" (Warren, 2005, p. 450). Simak grants even his non-human-looking robots that protection: "[I]n every instance there are intelligent robotic units installed in key positions. If these units are classified as robots, industrialists might face heavy damage suits, if not criminal action, for illegal restraint of person" (Simak, 2015c, loc 2959).

The prosecutor for How-2 Incorporated argues against Anson Lee's proposed personhood criteria using two insubstantial claims. The first is "*Robots had no spiritual sense*," to which Lee objects, arguing that "[t]here were agnostics and atheists in the human race." Lee's retort is also an answer to the issue raised in "All the Traps of Earth": Do robots have a soul? In "How-2" the issue is resolved. Robots simply do not need a soul since it is impossible to prove

whether even humans possess one. The second “*Robots had no emotions*” is countered by Lee who says that “Albert loved his sons. Robots had a sense of loyalty and justice. If they were lacking in some emotions, perhaps it were better so. Hatred, for one. Greed, for another” (Simak, 2015c, loc 2897). Lee’s formulation is not as developed as Warren and Anderson’s. Therefore, he confounds *emotionality* and *moral agency*.

Toward the end of the story Simak once again emphasizes his biological criterion.

“[...] I have some daughters now.”

“Daughters? With the mother-urge?”

“Six of them,” said Albert proudly. “Alice and Angeline and Agnes and Agatha and Alberta and Abigail. I didn’t make the mistake How-2 Kits made with me. I gave them female names.”

“And all of them are reproducing?”

“You should see those girls! With seven of us working steady, we ran out of material, so I bought a lot more of it and charged it. I hope you don’t mind.” (Simak, 2015c, loc 2939)

By bestowing freedom and reproductive rights on robots, Simak’s diegesis avoids the dystopian outcome that plagues Čapek’s fictional world in *R. U. R.* Unlike Čapek’s robots, Simak’s robots do not replace humanity. Moreover, they no longer merely serve humanity as Asimov’s robots do. The human race and robot kind work together synergistically as exemplified by the human-robot legal team. As Albert’s words to Gordon Knight make clear, they are grateful, they want to help and wish to coexist: “‘We don’t want to let you humans down,’ [...] ‘We’ve got everything worked out, Boss. You won’t have to worry about a thing the rest of your life’” (Simak, 2015c, loc 3007).

2. 5. *City*

Each story in Clifford D. Simak’s *City* was published separately and later linked together by “interstitial materials” to form the novel (Wixon, 2015c, loc 21). The main theme of the book is human beings’ forsaking of civilization and their eventual desertion of Earth.

The stories are woven together by “notes written by doggish commentators” millennia after the events in the stories themselves (Wixon, 2015c, loc 30). Throughout thousands of years several generations of the Webster family along with their robot Jenkins tie the stories together. The first tale, “City” relates the decline of cities. Aided by advances in science and technology, humans start leaving cities for the countryside: atomic power, better communication

technologies, air travel via helicopter and hydroponic farming methods allow people to live in relative isolation on their own large estates.

The second tale “Huddling Place” concerns Jerome A. Webster. The isolation of life in the country has made him, like his father before him, fearful of the outside world. Jerome has spent time on Mars as a doctor studying Martian physiology and is an expert in the field. Unlike humans, Martians never cultivated a science of medicine. A few days after receiving a call from his close friend the Martian philosopher Juwain, he is contacted by Clayborne from “the Martian medical commission.” Jerome is informed that Juwain is critically ill. Juwain’s condition requires a brain operation and Jerome is the only doctor with the necessary expertise on the Martian brain. Since Juwain cannot be moved due to his precarious condition, Jerome must travel to Mars. Juwain’s survival is of the utmost importance because he has developed a new type of philosophy deemed essential for the future of humanity. Wrestling with his agoraphobia, Jerome nevertheless decides to make the journey. Two men from Mars arrive to take him. His butler, the robot Jenkins, convinces the two men that his master would in no way go with them. As a result, Juwain does not get the medical attention he requires and dies. This is the first story in which robots such as Jenkins are introduced as servants who do most of the work for humans.

The third tale “Census” concerns an enumerator, Richard Grant, sent out by the World Committee to take a census and make notes on the lifestyles, traditions and folklore of Earth’s dispersed population. He is befriended by a talking dog, Nathaniel, who invites him home to Webster House. Jerome Webster’s son Thomas, who has built the first interstellar ship on which one of his sons is travelling to Centauri, is now an old man. His other son Bruce Webster, like his grandfather Jerome, is a doctor. He has decided to rectify Jerome’s failure to save the Martian philosopher Juwain by surgically altering dogs to give them the ability of human speech. He believes that humankind can further advance only with the help of a mind radically different from but not completely alien to the human mind. Bruce wishes to create a new civilization built on the partnership of humans and dogs. After leaving Webster House, Grant encounters Joe, a mysterious mutant human about whom several people have told him stories. Just for entertainment Joe has fixed farmers’ machinery for over a century. He has helped ants develop a civilization of their own. Joe even helped Thomas Webster solve a problem hindering the completion of his interstellar ship. Grant asks Joe to finish Juwain’s incomplete philosophy. Once Joe finishes it, however, he refuses to share it and knocks Grant senseless. Nathaniel finds

and wakes Grant. Convinced that Juwain's philosophy is forever out of reach, Grant tells Nathaniel to go back to Bruce and the other dogs. The only way forward for humanity now seems to be creating a future "hand in paw" with the Dogs (Simak, 2015a, p. 77). By the time the events in "Census" take place, Jenkins has been serving four generations of the Webster family. Nathaniel mentions another robot, Oscar who takes care of the Dogs.

There are no robots in the fourth tale entitled "Desertion." However, the tale is important since Simak introduces ideas that can be classified as transhumanist within the storyline. It recounts the attempt to colonize Jupiter. Kent Fowler, "head of Dome No. 3" of the "Jovian Survey Commission," has been transforming men into new lifeforms called "Lopers" and sending them out into the harsh Jovian environment (Simak, 2015a, p. 99). None of them have returned. He decides to take the risk himself instead of sending out his remaining men. Kent Fowler undergoes the conversion into a Loper with his old dog Towser and steps out into the Jovian environment. Fowler and Towser realize that they can communicate with each other in their new Loper forms. Fowler realizes that the Loper is a better form of existence for humankind. Thus, after five years of existence as a Loper, he leaves Towser behind and returns to the dome.

The fifth tale, "Paradise," opens with Kent Fowler reverted back to his human form in Geneva on Earth. He has come back to convince everyone and above all Tyler Webster, Chairman of the World Committee, that Jupiter is a paradise for humankind, one where humans can shed their cumbersome human bodies and exist at a higher level of awareness. As Lopers they would understand each other on a previously unforeseen level thanks to something akin to telepathy. Tyler Webster is against the idea because he fears people will give up their old ways and choose the easy life on Jupiter, something which would bring about the end of human civilization in the solar system. The mutant Joe resurfaces and contacts Tyler Webster through Jenkins who still resides at Webster House. Joe confirms that the mutants have already completed the Juwain philosophy. He teases Tyler Webster, neither offering nor denying humanity the knowledge. Tyler realizes that the mutants are aware of Fowler's return. He believes they may be finally offering the Juwain philosophy, which is also a form of understanding and communication similar to telepathy, in order to facilitate the spread of Fowler's propaganda about Jupiter. Thus, the human race will abandon the rest of the solar system and it will be open to colonization by the mutants. Tyler briefly considers killing Kent

Fowler but decides against it because he does not wish to commit the first murder in a hundred and twenty-five years. Jenkins has a brief cameo as the go-between connecting Tyler Webster and the mutant Joe.

The sixth tale, “Hobbies,” takes place another thousand years in the future. All humans, except for the five thousand who reside in Geneva, have left the Earth and the rest of the solar system for Jupiter. The remaining humans have become apathetic towards the world beyond their small city. Jenkins, who has become the main caretaker of Webster House, also takes care of and guides the Dogs towards creating a doggish civilization. The Dogs have further developed the psychic skills which they always possessed. They are cognizant of other dimensions and the beings who exist in these other dimensions which they call “Cobblies” (Simak, 2015a, p. 38). The Dogs are assisted by little helper robots. Their aim is to develop a brotherhood of animals. Another in the long line of Webster’s, Jon, is writing a book on the history of the city. He finds an old communication device which calls Webster House. Happy to be finally contacted by another Webster, Jenkins invites him. During his visit, Jon meets the dog Ebenezer. After his long conversations with both Jenkins and Ebenezer, Jon comes to the conclusion that the Dogs must sever their ties to humans. They need to create their civilization without any interference. On his return to Geneva, Jon activates a defense mechanism he had discovered during the research for his book: the city becomes enclosed in a dome and sealed off from the outside world. After this incident, Jon chooses to sleep in suspended animation forever. Jon’s son Tom is left outside of the dome with a few other humans. They will form the primitive remnants of humankind that the Dogs will refer to as “websters.” The sixth tale is the first one in which Jenkins and other robots take on a central role. The humans disappear almost completely. Thus, the fate of the Earth is left to the Dogs, mutants, wild robots, and primarily Jenkins.

Jenkins starts playing an even more prominent role in the affairs of the Dogs and the remaining primitive humans in the seventh tale “Aesop.” On his birthday the Dogs give Jenkins a new body constructed by the wild robots which gives him the almost telepathic ability to sense the thoughts and feelings of all human and non-human animals. Jenkins and the Dogs bring the small band of primitive humans left in Europe, who they now call websters, to North America. The Dogs have created a brotherhood of animals. Since they provide food to all the websters and non-human animals, there is no longer any killing. Peter, a webster, invents a bow and arrow. While he and his friends—a wolf, a bear and a squirrel—are fooling round with the new

weapon, Peter unintentionally kills a robin. An intruding cobbly from one of the parallel cobbly worlds (dimensions) kills Loupus the wolf. When Peter kills the cobbly in retaliation, Jenkins realize that the remaining humans are capable of reverting to their warlike true nature. He uses the powers of his new body to transport the websters to another parallel world, knowing full well that they will eventually decimate the cobbles that live in that parallel world.

The eighth tale, “The Simple Way,” takes place another five thousand years after “Aesop.” The Dog Homer has found out from the wild robot Andrew that the ants are responsible for a building that is slowly expanding and encroaching on their home. Homer fears that it will eventually encompass all of Earth, consequently displacing the Dogs along with the other animals. Jenkins returns to Earth from the cobbly world where he had relocated the websters. When Homer informs him of the danger, Jenkins realizes that only a human would know of a way to deal with the ants. He telepathically reaches out to Jon Webster who has been sleeping in Geneva for the past ten thousand years. Jon tells him that the easiest way is to poison the ants. There has been no killing or hunting since the Dogs established the brotherhood of animals. So instead of regressing into the violent practices of the past, Jenkins decides to advise Homer that the best way is to evacuate the Earth.

The ninth tale “Epilog” is a story Simak “never intended to write.” It was written for an anthology of short stories published as a memorial to John W. Campbell, Jr, the editor of *Astounding* (Simak, 2015a, p. 249). Simak decided that the story should be about Jenkins because he more than any other character epitomized most of the stories in *City*. In this last tale an undisclosed number of years have passed. Jenkins still resides in Webster House with only the field mice to keep him company. One day he ventures out to inspect the ant Building which has spread over the entire planet with the exception of Webster House and its environs. The Building is abandoned: he discovers one dead robot but the ants are nowhere to be found. Trying to make sense of the extinction of the ants allows him scrutinize his life and his nature in retrospect. Towards the end of the story Andrew and a few other wild robots land their spaceship near Webster House. After Andrew convinces Jenkins that there is truly nothing left, Jenkins leaves with them. He decides that his thousands of years of memories are all he needs.

2. 6. Posthumanism in *City*

Simak’s *City* is posthumanist in the sense that the narrative deals with humans developing a temporary utopian existence thanks to the synergism of the technological and

biological. Simak's human characters in "Hobbies" can cognitively experience a range of environments from a sandy beach on Earth to another planet in the solar system without leaving the comfort of their homes.

Jon Webster has the sensation of being on a beach by virtue of an extremely complex machine. This is a perfect example of distributed cognition that Peter Mahon (2017) defines as cognition which is not

confined to the interior—the mind, brain or body—of an individual human being, but as being carried out by a system in which a human interacts with objects, artefacts, tools and other humans. In such a system, all sorts of nonbiological materials become part of the process of carrying out particular tasks. (p. 4)

The novel is also posthumanist if "post" is used, as Hayles (2008) states, "with its dual connotation" of coming after and replacing humanity (p. 283). Life becomes easier through technological advance and the use of robot servants. The depopulation of the Earth creates a world without poverty, hunger or violence, a world in which humans can do and become whatever they wish. Interestingly, the utopia slowly begins to acquire a dystopian undercurrent whereby a laziness ensues in the remaining human population, eventually turning into lethargy. Many citizens in the last city on Earth prefer the dreams of a long sleep to real life.

Simak is not content to end the story on a dystopian note, however. The void left by the extinction of humans on Earth creates a world in which the human mind has been superseded by non-human minds (Hayles, 2008, p. 283). Simak's emphasis on non-human minds veers the theme towards antianthropocentrism (Moore, 2014, p. 61), one epitomized by the absolute peace that comes to the rustic utopian Earth run by the Dogs after human civilization, represented by Jon Webster, takes its last bow and leaves the scene. The city where Jon Webster chooses to undergo a dreamless eternal sleep immersed in a nourishing fluid represents "the birth and the death place, the womb and the tomb" of humanity (Raynaud, 1981, p. 75). The Dogs realize their full potential and end all killing by establishing the "brotherhood of beasts" after Jenkins takes the remaining primitive humans, known to the non-human animals as websters, to a parallel Earth. Jenkins understands that "the memory of humankind," i.e. its innate bellicosity, must be expunged "so as to allow the Dogs to develop their own civilisation unhindered" (Shaw, 2005, p. 493).

It is not surprising that Simak chooses Dogs as the species worthy of replacing humanity and that the Webster family bequeaths some form of civilization to the Dogs. Dogs were the first non-human animals to be fully domesticated and have been coevolving with humans ever since (Wang & Tedford, 2008, p. 163). Dogs have spread to far flung corners of the Earth, such as Australia and the Americas, using human technology by accompanying humans. They have been crucial in the evolution of human societies as tools themselves. Wang and Tedford (2008) note that “their importance is on a par with that of such key inventions as stone tools, bronze, and agriculture” (p. 163). Dogs use highly developed social skills to form an interspecies understanding with herbivorous domestic animals which depends “on the sharable meanings and practices of social bonding and territory identification” (Harraway, 2008, p. 233). They help humans hunt and search for food using their heightened senses of smell and hearing—not to mention their speed and agility. Therefore, dogs can be thought of as biological tools through which humans distribute their cognition and vice versa⁹.

This line of reasoning demonstrates a parallel between Simak’s robots and Simak’s Dogs. The robot Richard Daniel in Simak’s “All the Traps of Earth” takes the place of and becomes the last surviving member of the Barrington family. Similarly, the Dogs, as tools facilitating the tasks and cognitions of several generations of Websters, have become an extension of the Webster family intellectually, philosophically and culturally. This is evidenced by the high regard in which they hold Webster House. Even when Jenkins is absent for five thousand years, the Dogs keep it in pristine condition without fully understanding why they continue to do so. For all intents and purposes, they have taken the place of the Webster family.

“Post” comes to signify benign and advantageous “social, [...] and cultural changes” brought about by a “symbiotic relationship” between Dog and machine as well as human and machine (Hayles, 2008, p. 284-5). The robots serve as hands for the Dogs. In this manner the robots become extensions of the Dogs’ bodies. This is another example of the synergism between technology and biology. The bond between Dog and robot is symbiotic; one cannot exist without the other. The symbiotic relationship between the two species—Dog and robot—is interdependent and inseparable to such a degree that it becomes “a hybrid of machine and

⁹ Cognition can be spread out through a social “system comprising both humans and artifacts” and other animals (Giere & Moffatt, 2003, p. 302-4). Dogs and humans can engage in distributed cognition by using each other as tools and via their complex interspecific social bonds and networks.

organism” (Harraway, 2018, p. 2269). The resulting cyborgian synergism makes the intelligent machines improve the lot of non-human animality¹⁰.

2. 7. Personhood in *City*

After the virtual extinction of humans in *City*, the remaining robots start building other robots. Thus, a race of “wild robots” emerges. “[T]he little ones produce their own kind in the workshop when there are need of more” says Jenkins of the symbiotic robots of the Dogs (Simak, 2015a, p.175). Here again one observes the technological replicating like the biological, reminiscent of examples provided by Hayles in *How We Became Posthuman*. Hayles classifies “Artificial Life” research in three categories: *wetware*, *hardware*, and *software*. Wetware uses techniques like “building components of unicellular organisms in test tubes.” Hardware “is the construction of robots and other embodied life-forms” from inorganic materials. Lastly, Software is the development of “computer programs instantiating emergent or evolutionary processes” (Hayles, 2008, p. 224-5). Simak’s self-replicating robots, whether the ones living in symbiotic harmony with the Dogs or the wild robots, fall within the *hardware* and *software* categories of this creative process.

Simak’s posthuman robots in *City* conform to the personhood criteria outlined in “How-2.” Since the wild robots and the robots who serve the dogs can *reproduce*, they qualify for Simak’s first criterion of personhood. The wild robots, and eventually Jenkins, choose to leave the Earth. Therefore, they *are possessed of free will* which is Simak’s second criterion. Jenkins plans, guides and makes decisions for the future of the Dogs which means he has *the power of reasoning*, Simak’s third criterion.

The robot characters in *City* qualify for all six of Warren and Anderson’s personhood criteria as well. In some cases they outdo Simak’s previous robot protagonists.

The most basic of Warren and Anderson’s criteria, the sentience of Simak’s robot characters, is implied in every story. Still the wild robot Andrew assures the reader of his kind’s sentience. In reference to their lack of creativity because of their incapacity to let go of facts Andrew says: “Facts are painful things at times. A robot has to work with them, for they are the only things he has to work with. We can’t dream, you know. Facts are all we have” (Simak,

¹⁰ The word “animality” is used in the sense of 1. “the entire animal kingdom” not 2. “the state of being an animal” or 3. “animal nature or instincts of human beings.” The first meaning makes it a good placeholder instead of humanity.

2015a, p. 231). Andrew affirms that robots feel pain. He is verbalizing the robots' conscious experiences of perceiving and sensing the world.

It is these conscious past experiences and memories, which Jenkins possesses, that reveal his emotionality when he reminisces in "Epilog": "[H]e remembered the day when the last of the Dogs had left. They had stayed much longer than loyalty and common decency had demanded, and although he had scolded them mildly for it, it still kindled a warm glow within him when he remembered it" (Simak, 2015a, p. 253). Jenkins reprimands the Dogs for staying because he undoubtedly cares for them and loves them. While explaining why he must remain at Webster House to the last Dogs who are about to emigrate to one of the parallel worlds, Jenkins sounds nostalgic:

"And you, Jenkins?" asked the foremost Dog.

Jenkins shook his head. "I must stay," he'd said. "This is my place. I must stay here with the Websters."

"But there are no Websters here."

"Yes, there are," said Jenkins. "Not to you, perhaps. But to me. For me they still live in the very stone of Webster House. They live in the trees and the sweep of hill. This is the roof that sheltered them; this is the land they walked upon. They can never go away." (Simak, 2015a, p. 253-254)

Jenkins discovers a macabre sense of humor while wandering the derelict Building devoid of the ants who built it:

[F]or perhaps the first time in his life, Jenkins felt laughter shaking him. If he had ever laughed before, he could not remember it, for he had been a serious and a dedicated robot. But now he stood between the dead hills and held his sides, as a laughing man might hold his sides, and let the laughter rumble through him. (Simak, 2015a, p. 255)

Jenkins's self-analysis in the previous quotation is possible owing to his capacity for analytical thinking and intuition. The other robot characters can also use their reasoning skills to develop and create new technologies. The wild robots build spaceships in order to leave the Earth. They attempt to solve problems. Yet what makes the robots in *City* unique in comparison to Simak's other robot characters is not their recognition of their own failures at reaching a solution but their willingness to ask for advice. The problem of how to stop the ants puzzles Jenkins, so he seeks the counsel of Jon Webster. Robot characters in Simak's other short robot

fiction never ask humans for help even when they admit to their mistakes. This is something which puts Jenkins one step ahead.

In “the Simple Way,” when Jenkins reaches out to Jon Webster’s distant mind in Geneva, his capacity to communicate surpasses any other robot character of Simak’s, even that of the Dogs, when he reaches out to Jon Webster’s distant mind in Geneva. He rouses Jon Webster’s consciousness from its deathlike dreamless sleep to question him.

With the exception of the ants, all the robots in *City* are capable of communicating with every other species. They are not only able to convey their thoughts but also their emotions verbally and through body language. A good description of such an instance is found in “Epilog” when Jenkins laughs: “[H]e stood between the dead hills and held his sides, as a laughing man might hold his sides, and let the laughter rumble through him” (Simak, 2015a, p. 255).

The next criterion, self-awareness, is present in other robot characters besides Jenkins. In the eighth tale “The Simple Way,” Archie the raccoon’s robot, Rufus, is unaware that the tiny ant-built robot in his head is slowly reprogramming him. Nevertheless, he understands that he is turning into something else which is obvious from his almost apologetic explanation to Archie: “‘Leaving you,’ said Rufus. ‘I’m going to the Building.’ [...] ‘I’ve had the Call,’ said Rufus. ‘I *just* got to go’” (Simak, 2015a, p. 224).

In “Epilog,” Simak provides a glimpse into Jenkins’s mind. In most of the story Jenkins considers the life he has led and who he really is. Through his introspection he uncovers his humanity:

“We never know,” he said aloud. “We never know ourselves.”

He leaned far back in the chair and thought how unrobot-like it was to be sitting in a chair. He never used to sit. It was the man in him, he thought. (Simak, 2015a, p. 261)

While Jenkins contemplates why and how the ants disappeared, he compares them to humans. The comparison further reveals how truly human he is himself:

[...] Man, Jenkins remembered, had left something behind him. He had left the Dogs and robots. What, if anything, had the ants left? Nothing, certainly, that was apparent, but how was he to know? A man could not know, Jenkins told himself, and neither could a robot, for a robot was a man, not blood and flesh as was a man, but in every other way.

[...]

And I? he asked himself. How about me? I am embedded as deeply in man's social structure as any ant in hers. (Simak, 2015a, p. 260)

Jenkins ponders over his place within human society: “[F]or a long, long time, he had lived in, not the structure of man's society, but in the memory of that structure” (Simak, 2015a, p. 260). He comes to see himself not as the last member of a bygone society but as the repository of the memory of that society. The wild robot Andrew acknowledges this when conversing with Homer the Dog in “The Simple Way”: “‘And we,’ the robot said, ‘are nothing more than the memory of Man’” (Simak, 2015a, p. 230). The robots have become nothing more than an ossuary.

Jenkins is not only the repository for the memories of the Websters but for their sense of morality as well. He acts as the moral compass in “Hobbies,” “Aesop,” and “The Simple Way.” In the sixth tale “Hobbies” he is the sole member of the Webster family who continues to teach and guide the Dogs towards a peaceful existence. The Dogs, under his supervision and with help from their symbiotic robots, eliminate killing and bring harmony to the non-human animal world. Jenkins is also a pacifist as can be witnessed in the seventh tale “Aesop.” When Peter the webster reinvents the bow and arrow and accidentally kills a bird, his friend Loupus the wolf's bloodlust is aroused. Jenkins feels obligated to take the primitive humans and their innate belligerence to a parallel world in order to remove their harmful influence on the other animals.

Jenkins foresees the danger posed by the ants. He telepathically reaches out to Jon Webster's mind to ask the simple way humans used to remove the ants. When he learns that the most efficient way to remove them involves poisoning, he chooses to let the ants continue with their unknown sinister machinations rather than allow killing to take hold in the world once more.

2. 7. “Installment Plan”

“The Installment Plan” concerns Steve Sheridan and his team of robots who have been sent to an alien planet, Garson IV, for trade negotiations by the Central Trading Company. The team's mission is to purchase the harvest of a tuber-like plant called “podar.” Podars have a chemical substance out of which a non-addictive anesthetic can be produced. The first expedition to Garson IV had discovered the tuber and brought it back to Earth where cultivation was attempted. However, the resulting harvest does not produce enough of the desired substance

for the anesthetic. A protozoan that can only live on Garson IV lives symbiotically with the podars. It helps them flourish and thus produce more of the substance.

Sheridan's team expect it to be an easy trade because they have all the necessary cultural data on the native Garsonians gathered by the second expedition. In the past few years the Garsonians have toiled so much to produce podar that they have neglected all other aspects of their social lives. Their clothes, houses and villages look haggard. To the surprise of Sheridan and his robots, the Garsonians claim what they are growing in the fields is not podar when it obviously is. They refuse to barter even though they obviously desire the offered merchandise.

The robot Gideon notices a suavely dressed humanoid alien. Sheridan strikes up a conversation with the alien who seems to be having a picnic. The loquacious alien is averse to providing personal information. They part amicably. A short time later the entire native population of the planet disappears along with the entire harvest of podars. Sheridan and his robots immediately suspect the mysterious alien. Their suspicions are confirmed when they find self-destructed teleportation machines and an old Garsonian. The old man explains that the Garsonians were promised a planet on which they would become immortal in exchange for the podars.

Soon after a messenger robot from Central Trading arrives to inform them that a company calling themselves Galactic Trading have monopolized the trade in podars. Sheridan realizes he has a chance to turn the fortunes of Central Trading around. Now that Garson IV is uninhabited he can lay claim to the planet in the name of the company. Central Trading can import robots and what remaining podar seeds they have and grow the crop on its endemic planet in order to regain their lost market share.

2. 8. Robots in "Installment Plan"

Unlike "All the Traps of Earth," "How-2," and *City*, the robots are not central characters in "Installment Plan." "All the Traps of Earth" is primarily the story of Richard Daniel. In "How-2" the human Gordon Knight and the robot Albert are of equal importance. Although the robot Jenkins does not appear in every tale included in *City*, he is the only character whose presence is felt throughout the novel. In the final tale "Epilog," Simak develops Jenkins into one of his most complex robot protagonists.

What makes "Installment Plan" different from "All the Traps of Earth," "How-2" and *City* is the sheer number of named robot characters, making it difficult for the reader to focus

on any one robot. Simak gives the reader the sense of a robot community by populating his narrative with so many robot characters. There is Joshua, Thaddeus, Gideon, Abraham, Lemuel, Oliver, Silas, Maximillian, Ebenezer, Douglas, Ulysses, Napoleon and Hezekiah. Beyond the number of robots, however, Simak does not deviate from his delineated parameters for his robot narratives. There are two important parameters: the symbiotic relationship between humans and robots, and robotic personhood. Spacefaring human civilization would not be possible without robots and most importantly robots are a kind of people in their own right. They qualify for all six of Warren and Anderson's personhood criteria.

2. 9. Robotic Personhood in "Installment Plan"

Similar to Simak's other previously discussed robot characters, the robots in "Installment Plan" can be both physically hurt and suffer emotional pain. They even enjoy activities such as playing cards. They retain memories of experiences molded by the pleasure and pain they feel. Therefore, they possess all the qualities of a sentient being.

The story begins with an accident that badly damages, i.e. hurts, two robots. Sheridan checks the damaged robots:

The midsection, he saw, was so deeply dented that the front almost touched the back. The legs were limp and the arms were canted and locked at a crazy angle. The head was twisted and the crystal eyes were vacant.

"Lem," he whispered. "Lemuel, can you hear me?"

"No, he can't," said Abraham. "He's really busted up." (Simak, 2015b, loc 109-129)

Simak's liberal use of anatomical words such as *midsection*, *legs* and *arms* gives the reader an image of a human body. If not for Sheridan's reference to "roboticists" and Abraham's choice of words describing his teammate as "busted up," one could mistake Lemuel for a badly injured human being. The purpose is to evoke the image of a living being in severe pain in the reader's mind. Additionally, the other robots' haste to help their friends gives the reader a sense of how badly hurt Lemuel and Maximillian are. As Hezekiah elaborates on the gravity of Lemuel's condition, his words once again demonstrate the merger of the biological and technological: "His nervous system was all tangled up and short-circuiting" (Simak, 2015b, loc 187). Once again the mention of a "nervous system" and the injuries it endures alludes to the robots' sentience.

When Maximillian asks for Sheridan's help in easing his suffering, he expresses his distress concerning the attitude of his robot teammates. Maximillian pleads with Sheridan: "[D]on't let the fellows fool around. It would be just like them to hold out on a body. Just for laughs. Don't let them" (Simak, 2015b, loc 148). One can recognize two emotions in Maximillian's plea. He is worried about a possible practical joke and the other robots have a sense of humor. The first emotion is Maximillian's worry and the second is the other robots' amusement.

At the end of the story Hezekiah's feelings are apparent when Sheridan decides to send him back to Earth as his representative: "To Central, sir! You must be joking, surely. You know I cannot go. Sir, who would look after you? Who would see that you—" (Simak, 2015b, loc 950). Hezekiah's initial shock turns into worrying about Sheridan's wellbeing. The swell of feelings culminates in pride as Sheridan expresses his trust in him: "'It's you, Hezekiah. You are my oldest friend.' 'Sir,' said Hezekiah, straightening to attention, 'what do you wish me to do?'" (Simak, 2015b, loc 950).

The previous exchange between Sheridan and Hezekiah depicts the human's unwavering faith in the robot's intellect. Another instance of robotic reasoning is touched on while Sheridan and Maximillian are obviously enjoying themselves reminiscing about how Ebenezer botched up a job on a planet called Carver VII: "Moving the wrong mountain is not a small mistake," says Sheridan (Simak, 2015b, loc 208). The members of the robot team can make humanlike cognitive blunders similar to Richard Daniel from "All the Traps of Earth." The human, Sheridan, is the head of the robot team. However, throughout the story he consults and plans together with the robot team members. Sheridan's own words make this obvious: "'We'll have to plan a course of action'" (Simak, 2015b, loc 494). The pronoun, "we," is all inclusive and once again conveys Sheridan's trust in the robots' ability to reason.

The trust and sense of community which exist between the robots and the human Sheridan is a result of the perfect understanding they have of each other. It is an understanding which can only be forged by an impeccably accurate means of communication.

The robots can communicate perfectly amongst themselves and with the human. Their speech patterns are no different than a human being. They even understand and convey the nuances of jokes and sarcasm correctly:

Sheridan [...] sat down at the desk. He poured a glass of beer.

“I’d offer you some of this,” he told Maximilian, “except I know it would rust your guts.” [...]

“Right as of this moment,” Maximilian said, “I haven’t any guts to speak of. Most of them’s dropped out.” (Simak, 2015b, loc 226)

Unlike Simak’s robot characters in the other narratives, Maximilian and his teammates are better at puns. Their use of nicknames, such as Lem for Lemuel or Abe for Abraham, is another mark of their verbal and communicative skills being used to create and strengthen bonds of friendship and comradeship.

There is another factor which allows the robots to cohere with each other; they are aware of their difference from humans. “We’re plenty tough. It takes a lot to destroy us,” Maximilian says to Sheridan, confident of his people’s sturdiness (Simak, 2015b, loc 187). Napoleon exemplifies the difference by referring to robotic aptitude in games of chance: “[...] We robots, as you know, are quite good at it” (Simak, 2015b, loc 695). The robots seem to use such games to socialize amongst their own kind:

[...] Napoleon and Gideon were squatted down, busily shooting craps.

[...] [T]hey gambled madly.

[...] [A] robot was barred effectively from participating in most of the human vices. But gambling was something he could do as easily and perhaps more efficiently than any human could. (Simak, 2015b, loc 311-26)

Another thing that the robots are as good at as humans is understanding and making moral judgements. When discussing the Garsonians’ refusal to trade, Sheridan explains how the agreement made by the second expedition to the planet lacks a legal basis. He further elaborates on the individual and familial morality of the native Garsonians. Sheridan clearly thinks that his interlocutor, the robot Abraham, understands morality (Simak, 2015b, loc 475-94).

In another instance Maximilian tries to analyze the Garsonian’s idea of “moral obligation” (Simak, 2015b, loc 532). In this case it is the robot Maximilian who comprehends that the native Garsonians might possess a different set of moral rules.

6. 10. Symbiosis in “Installment Plan”

One trope Simak repeats in “Installment Plan” is references to symbiotic relationships. In “All the Traps of Earth,” and “How-2” the symbiotic relationship is between humans and

robots. In *City* one notes an even closer bond and cooperation between the Dogs and their helper robots. There are two instances of symbiosis in “Installment Plan.”

The first is between the biological and the technological, humans and robots. It might be the human protagonist Steve Sheridan who makes the decisions, gives the orders and finally saves the day. Nevertheless, it is made clear throughout the narrative that humanity could not have achieved its present state of affairs without the assistance of robots:

Without the robots, Man could not have gone as far or fast, or as effectively, out into the Galaxy. Sheer lack of transportation for skilled manpower alone would have held his progress to a crawl.

[...]

Without robots, the cargo sleds would have been impossible; “no human crew could ride a cargo ship and maintain the continuous routine of inspection that was necessary.” (Simak, 2015b, loc 326-60)

Besides the second instance of a symbiotic relationship is between two biological organisms, the “podar” plant and the protozoan making the plant healthier and thus more effective: “[T]he continued potency of the drug relied to a large extent upon the chemical reaction of a protozoan which the podar plants nourished in their roots” (Simak, 2015b, loc 296). By using the word “nourishing” Simak indicates that the podar benefits the protozoan and the “chemical reaction” is the benefit provided to the podar by the protozoan.

6. 11. Transhumanism in Simak’s Robot Fiction

According to Cohen and Spector (2019), transhumanism is “a philosophical and scientific movement,” that advocates “a radical scientific-technological enhancement of human capabilities” (p. 3). Nick Bostrom, a leading figure in the transhumanist movement claims “that the human species in its current form does not represent the end of our development but rather a comparatively early phase” (as cited in Cohen & Spector, 2019, p. 4). Transhumans as “transitional humans” have undergone scientific-technological enhancements and “play a ‘bridging role in evolution.’” Transhumans are in the process of “becoming posthuman” and “[a] posthuman is a being that has completed this transition” (Bendle, 2010, p. 48).

Cohen and Spector (2019) describe two versions of transhumanism: *moderate transhumanism* and *extreme transhumanism*. *Moderate transhumanism*’s focus is to “overcome human biological limitations and enhance human capacities with the aim to bring about the prolongation of human life, more robust health, higher intelligence, and the eventual evolution

of transhumans into posthumans” (p. 4). In Simak’s *City* both humans and dogs show, to paraphrase M. F. Bendle (2019), signs of a moderate transhumanity (p. 48). The Dogs start passing on Bruce Webster’s surgical alterations. In Simak’s words: “[T]here are hereditary evidences of the surgical alterations” (Simak, 2015b, p. 72). Hence over thousands of years they become “transitional dogs” whose abilities evolve incrementally. They slowly get better at using human language. They develop their psychic skills to a degree at which they can sense trans-dimensional beings called cobbles. Eventually, they use their psychic skills to educate and behaviorally change the other animals in order to eliminate killing through creating a “brotherhood of beasts.”

One finds another instance of *moderate transhumanism* in the fifth tale, “Desertion,” and the sixth tale, “Paradise,” of *City*. Humans are converted into other lifeforms to live on planets other than Earth in the solar system. Kent Fowler and his pet dog Towser step into a machine called a “conversion unit” as man and dog and step out of it into the Jovian environment as Lopers which are “living” organisms “based upon ammonia and hydrogen rather than upon water and oxygen” (Simak, 2015b, p. 107). After the conversion they can communicate telepathically on a much more intimate level than they could before. They discover that all of their senses are heightened by magnitudes. They can see and smell things that were inconceivable before their conversion.

Simak continues to describe the state of being in transition from the human characters’ point of view. Kent Fowler gives up his blissful existence as a Loper and converts back to human form. He returns to Earth because he feels morally obligated to inform everyone of the euphoric paradise that awaits humanity on Jupiter. After his return Fowler is clearly in a transitional state that is transhuman. He is human in form but recalls some of his experiences in Loper-form. Interestingly, it is the dog Towser who fully transitions. Due to his advanced age converting back to dog-form could be lethal. Thus in “Paradise” the dog accomplishes what the human cannot and achieves posthumanity; or rather a postanimality. Eventually, the humans that do not undergo such a change become near extinct.

The robot Richard Daniel from “All the Traps of Earth” undergoes a transformation similar to that of Fowler and Towser as he travels through hyperspace. However, when Richard Daniel achieves posthumanity, his abilities advance further than either the humans or the dogs in the short stories included in *City*. He develops telekinetic, in addition to telepathic, skills. He

is able to cure human ailments or fix malfunctioning machines by manipulating a body's organs or a machine's components from afar. He perceives human thoughts as symbols. Curiously, one thing he lacks the capacity for is perceiving the thoughts and comprehending the internal mental states of other robots.

The second version of transhumanism is *extreme transhumanism*, which “does not seek to enhance the biological human body, but instead to dispense of it in a ‘process of transferring of an intellect from a biological brain to a computer’” (Cohen & Spector, 2019, p. 4). Simak's human characters never upload their consciousness into a computer. However, his robot characters do, at least, dispense of their bodies or utilize devices which can be installed into their brains to endow them with new knowledge and know-how. In “Installment Plan,” there are devices called “transmogs”¹¹ that the robots insert into their brains during numerous settings and incidences. The personalities of the robots do not change when transmogs are inserted into their brains. Transmogs amplify one of the six personhood criteria; *reason*. There are transmogs for many occupations which allow the team to go on missions ranging from engineering and health to diplomacy (Simak, 2015b, loc 215).

In “All the Traps of Earth” Richard Daniel takes over the robot Hubert's recently refurbished body. In the seventh tale “Aesop,” the Dogs with the assistance of the wild robots design Jenkins a new robotic body as a birthday gift. Once Jenkins divests of his old body and dons the newfangled one, he acquires the power to read all animals' minds and mental states. Similar to Richard Daniel, there is no mention of Jenkins being able to read the minds of other robots. Robots' inability to penetrate other robots' minds indicates that Simak's robots are recognizably one step ahead of biological beings even before they reach posthumanity.

One important aspect of Simak's short robot stories that makes them posthumanist is the many different types of people who inhabit them. Other than humans, there are robots, the Dogs, a miscellany of other animals and even the silent but technologically advanced ants. These are all people (natural persons) since they exhibit all of the six personhood criteria formulated by Warren and Anderson. Simak's narratives start to expand the boundaries of posthumanism by bestowing personhood onto disembodied artificial intelligences and drift into what some critics such as Cohen and Spector (2019) refer to as extreme transhumanism by describing humans,

¹¹ Simak clearly coined transmog as a back-formation from transmogrify.

and even one dog, transforming their carbon-based bodies reliant on “water and oxygen” into gaseous Jovian life forms “based upon ammonia and hydrogen” (Simak, 2015a, p.107).

Another recurring posthumanist theme is that of symbiosis and the synergism which accompanies it. Even though Simak touches on one of the most common symbiotic relationships in nature, i.e. that between plant and microorganism, his focus is more on a manmade type of symbiosis between the biological and the technological. These symbioses between machine and organism are exemplified by how Simak’s robots make life easier and better for both humans and nonhuman animals. The cooperation reaches a degree which one could almost call cyborgian with the helper robots serving as appendages for the nonhuman animals. However, the biological and technological never commingle to the degree of merging and thus the organism is not infiltrated by the machine. The process never gives rise to a biomechanical chimera.

One cannot help but recall the robots’ organic components mentioned by Anson Lee in “How-2.” Yet Simak clearly indicates his robots are metallic when Richard Daniel is advised to “plasticate” himself in order to prevent rusting, for instance (Simak, 2015b, loc 4376). Simak inverts what is expected: the organic has infiltrated the mechanic, not vice versa.

Conclusion

Throughout their robot stories Isaac Asimov's and Clifford D. Simak's robot characters display attributes that conform with preconceptions of what it is like to be a human because they correspond with the six criteria of personhood—sentience, emotionality, reason, the capacity to communicate, self-awareness and moral agency—as outlined and formulated by Mary Anne Warren and Susan Leigh Anderson. A closer analysis of how these six personhood criteria are represented through the robot characters reveals a divergence in the viewpoints of the two authors, with respect to the centrality of humans and the interplay between human (biology) and machine (technology). Asimov's stories suggest a mostly humanist perspective, whereas, Simak's stories point towards a posthumanist one.

In his very first robot story “Robbie,” Asimov juxtaposes two machines: a sentient robot, Robbie and an inanimate machine, the Talking Robot. Asimov describes the Talking Robot as a large, immobile machine with wires and gears incapable of answering any question unless programmed or inputted by an operating engineer. Its immotility, lack of humanlike features and failure at the Turing Test (i.e. not being able to answer even the simplest questions posed by a human) makes it seem as inorganic and inhuman as possible. By emphasizing the Talking Robot's lifelessness, Asimov ensures that his readers recognize Robbie and every other subsequent Asimovian robot as sentient. Even the simplest, most subservient ones, such as the two antiquated robots in “Runaround,” can move, reply to questions and commands, and most importantly have a humanlike appearance. These are all qualities which one associates with sentience. By placing so much significance on the human form, Asimov also betrays his anthropocentrism.

Sentient beings experience pleasure and pain which entails the capacity to respond to other stimuli. However, it can also be construed as the capacity to have at least some feelings. Feelings include (conscious) sensations such as pain—where ‘pain’ refers to something felt and not merely the nervous system's detection of noxious stimuli—and emotional states such as fear (Recarte, 2016, p. 107). The mind-reading robot Herbie's shrieks at the end of “Liar!” prove that Asimov's robots feel pain and fear. They also feel other emotions. Andrew Martin's affection for various members of the Martin family and his love for Little Miss are proofs of his emotionality.

The next criterion many Asimovian robots demonstrate is reason. Andrew Martin becomes a paragon of logic and reason. Andrew utilizes his capacity to reason while working his way towards being “human.” Every single step Andrew takes, every decision Andrew makes on his journey is well thought out. Andrew constantly attempts to navigate his way around the constrictions imposed on him by his programming, “The Three Laws of Robotics,” with precision. Andrew Martin’s desire to become human and the hurdles put in his way by the Three Laws once again emphasize Asimov’s human-centered world view.

In Asimov’s short story “Reason” the robot Cutie’s excessive reasoning results in a potentially dangerous situation when he upends the hierarchical social structure of the space station. Reason prompts him to construct his own warped mental view of the world of the space station he inhabits and its place in the larger scheme of things. His analytical thinking skills are clearly deficient in comparison to the human characters, Donovan and Powell. Despite his claims, Cutie is unskilled at intuiting as well.

Cutie’s incapacity to reason properly is aided by his unwillingness to listen to his human colleagues. Even though Asimov’s robots are proficient users of human language, there are times when humans cannot make them understand instructions or ideas. Interestingly, Asimov highlights human-to-robot communication in lieu of robot-to-robot communication in order to accentuate human preeminence. Robot to robot dialogues are alluded to but the reader is not privy to them. Conversations between robots are only reported to humans by one of the robot interlocutors as exemplified by the exchange between Dr. Calvin and Robot Number Twenty Seven in “Little Lost Robot.” Robbie is the only mute robot but he can still convey his moods and desires to Gloria through gestures and body language.

Some of Asimov’s robots, like Andrew Martin, display the criterion of self-awareness. Frustrated by the limitations imposed on him by the Three Laws, he tries to free himself by circumventing them. Andrew yearns to be a free robot because he knows that his freedom is the first step on a long journey towards becoming human. In Asimov’s robot narratives to look and behave as human as possible is the most effective means of being accepted as a person by society.

The next important quality one needs to possess for societal acceptance is a sense of morality. This morality is provided by the Three Laws of Robotics that are the moral code with which all Asimovian robots are programmed. The main purpose of the Three Laws is to protect

humans in their dealings with robots. The Three Laws diminish robot independence because “often the robot is still seen as fully content and achieving its highest good in the service of men” (Lyall, 2020, loc 2020). In circumscribing a robot’s interaction with humans, the Three Laws limit the robot’s behavioral expression, in turn making it seem more inhuman and machine-like. This once again emphasizes human superiority.

As mentioned above, another humanist aspect of Asimov’s robot stories is the importance he places on the human form. “Asimovian robotics [...] does not physically alter human beings” (Idier, 2000, p. 266). Thus, the integrity of the biological human body is never compromised by or radically transformed through the use of technology.

Asimov’s humanism starts evolving into something similar to posthumanism when he claims to have no problem with humans being replaced by another “sufficiently intelligent” species. Even if humanity is replaced by its intelligent technological offspring, this is no different from one human species being supplanted by another. According to Asimov, such change is merely the natural course of human evolution (Ingersoll et al., 1987, p. 69).

Simak, on the other hand, makes the leap into posthumanism that Asimov cannot complete. Simak’s robots are in almost every sense men wearing metalface. They qualify for every single one of the six personhood criteria formulated by Warren and Anderson. Even though Simak was influenced by Asimov’s Three Laws of Robotics, he never explicitly mentions them and they never limit the behavior of Simak’s robot characters (Lyall, 2020, loc 2103-11).

Since Simak’s robots are sentient, they have experiences that mold their personality. They also feel pain and pleasure. They have emotional attachments to people and other robots. The robot Albert in “How-2” displays affection towards his human owner. Moreover, he clearly loves his robot offspring and fears losing them.

The emotional state of Simak’s robots can affect their reasoning and decision-making abilities much like humans. Richard Daniel panics twice during his escape and is, at least momentarily, confused about which course of action to take. Simak’s robots are similar to humans especially because they are capable of both analytical thinking and intuition. The manner in which Richard Daniel realizes he understands things that were previously unknown to him is, in essence, intuition. When Jenkins thinks about his own humanity, his erstwhile

position in human society and how he has become a repository for the memory of humanity, he is analyzing himself. Jenkins's self-analysis is an indication of his self-awareness.

Above all, Simak's robots are moral beings since they understand the possible negative consequences of their actions. Richard Daniel does his utmost not to injure other robots and help humans when necessary. Jenkins is averse to killing and does his best to eradicate violence from the Earth.

In "How-2" Simak comes one step closer to posthumanism. The human character Anson Lee argues over the immorality of denying robots personhood. Lee formulates his own set of three personhood criteria: 1. Robots have free will, 2. Robots can reason and 3. Robots can reproduce (Simak, 2015b, loc 2877-92). The first and second criteria echo Warren and Anderson's criteria of reason and moral agency. Lee's third criterion ties personhood to biology by claiming that only entities with the capacity to reproduce, that is living beings, can be natural persons. Their organic components bring Simak's robots even closer to the biological as opposed to the completely technological Asimovian robots. Simak's philosophical opinions on the matter are best expressed in his novel *A Choice of Gods* (2015): a robot is not a machine. "It is a biological concept expressed mechanically" (p. 230). Yet another significant move towards posthumanism that Simak's makes in "How-2" is by having his robots deviate from the human form. He bestows personhood on disembodied artificially intelligent systems.

The aforementioned robots are not the only posthumans who inhabit Simak's narratives. There are the surgically enhanced Dogs, technologically advanced ants and other intelligent animals in the short stories which were compiled in *City*. True to posthumanism, the human mind has been replaced with other intelligences. These different minds work together symbiotically to create a more peaceful Earth.

In all the Simak robot narratives under consideration, advanced human civilization is only possible because of the collaboration between humans and robots. As indicated earlier, the interactions between the biological and the technological is symbiosis in the sense of close cooperation for the benefit of both parties involved. However, it never becomes truly cyborgian. The machine never fuses with the organic either resulting in an enhanced organism or generating a novel chimeric techno-biological life form divergent enough to be a category unto itself. Simak describes a commonplace, synergistic symbiotic event, not a rare, transformative

endosymbiotic¹² incident which gives rise to a hitherto unknown domain of life. The synergetic symbiotic relationships Simak creates are not only between technology and biology. There is also the instance of the one between the podar plant and the protozoan native to Garson IV. The protozoan allows the podar to produce a more potent drug through a symbiotic relationship that is exclusively biological.

Many of the previously discussed examples of posthumanism in Simak focus on the replacement of humanity by other species or races. Another way the author approaches posthumanism is through transhumanism. In “Aesop,” the seventh tale in *City*, humans are transformed into alien lifeforms in a process which can be reversed. When Kent Fowler, the protagonist of “Paradise,” transforms back into a human being, he feels different. He is in-between, a transhuman who has not yet achieved posthumanity.

Though Asimov and Simak touch on similar themes in their short robot fiction such as the personhood of nonhuman beings and the synergism of the technological and the biological, Asimov cannot disengage from the humanist mindset. Humans and their well-being are the main focus of his robot stories. Asimov’s influence is discernible in Simak’s robot stories. Simak’s robots do not have a constant desire to please people. However, they do endeavor to make human life better and save it whenever possible which reveals the pervasiveness of the Three Laws in Simak’s science fiction. Nevertheless, Simak does not permit his short stories to be bound by the conventions of the robot story as established by Asimov. Infractions of the Three Laws of Robotics allow Simak’s robots to be something more than mere machines. Asimovian robots may attempt to transgress the Three Laws of Robotics but they never succeed. However, in marked contrast to their Asimovian counterparts, Simak’s robots express their personhood by breaking the Three Laws when the occasion demands it. In “All the Traps of Earth,” Richard Daniel knowingly violates the decorum established by the Three Laws when he refuses to disclose personal information even though the human captain of the *Rambler* commands it. His refusal sets him up as an equal to humans. Simak’s robots’ adeptness at forming societies and becoming integral members of mixed social groups of humans and robots is additional validation of their parity with human beings. Unlike Simak’s robots, Asimov’s robots never

¹² Endosymbiotic theory, also known as Symbiogenesis, is biologist Lynn Margulis’s proposal that cellular evolution occurs through the incorporation of bacteria by archaea. For instance, mitochondria, the powerplants of eukaryotic cells, used to be free living bacteria which were enveloped by another unicellular organism, an archaeon, and became an inseparable part of its host (Bollinger, 2010, p. 34).

fully integrate into human society or form long-term social groupings amongst themselves isolated from humans. They are mechanical men that malfunction easily, always needing human repair or support.

Asimov's anthropocentric point of view, buttressed by the Three Laws of Robotics, rarely allows his robot characters to display all six personhood criteria as formulated and defined by Warren and Anderson. Therefore, only a few robot characters in his short fiction create an impression of personhood. Asimov's rigid rules do not permit him to complete the leap from humanism towards posthumanism in his science fiction. Whilst being influenced by Asimov's Three Laws, Simak's robot characters transgress them regularly. This breach of propriety and deference expected from robots towards humans gives Simak's robots the freedom to express their innate personhood criteria. What enables Simak to take a decisive step towards posthumanism is his depiction of robots as people of a nonhuman race. In stark contrast, most robots in Asimov's short stories remain humanlike mechanical puzzles whose personhood is a matter of debate.

As previously elaborated on, the purpose of narratives about artificial people is to shed light on the human condition and life itself. These science fictional narratives attempt to elucidate the afore-stated issues through dismantling ontological distinctions such as "organic and inorganic, masculine and feminine, original and copy, natural and artificial, human and nonhuman" into their component parts and thereby permitting a reassembly of them (Herbrechter, 2013, p. 117). This is exactly what Asimov accomplishes by turning his robots' personhood into a conundrum. The strictly anthropocentric humanism is a byproduct of this approach adopted by Asimov.

Simak, on the other hand, does not break down his robots as literally, or as figuratively, as Asimov does. Simak's robots have no missing pieces. There are no strict rules they must abide by. There are also no rules (tools) one can use to fix or cobble together the broken pieces—if indeed there are any—in order to understand the manner in which these persons tick. Such laxity allows Simak to transcend boundaries and prefigure various notions of post- or trans-humanisms through the use of his nonhuman characters, whether they be animal or robot. However, when his characters are never truly broken down, one is not allowed to see their constituent parts. There are no gears and cogs to tinker with or organs to examine in order to figure out how they function. Therefore, as progressive as Simak's short robot stories may seem,

they never become as comprehensive and as instructive as Asimov's in terms of defining and clarifying personhood.



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