



Studying Robots' Capability in Loving and Being Loved in Science Fiction

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ABSTRACT

Androids have been in our lives for a long time, whether through fiction, cinema or the discussions brought to us by media and scientists. To see them as conscious being has always been thought of as a possibility. In addition, the love life of androids has not escaped the imaginative minds of writers and filmmakers. Android consciousness and the emotional interactions between human and androids are both addressed in many science fiction movies and novels. This article aims to show that androids are exactly like humans in their capability to be conscious and to feel human-like emotions. It draws on Boris Kotchoubey's model of consciousness as a yardstick to explore artificial consciousness in android characters. It also employs David Levy's parameters for love to analyze androids in terms of feelings. In the end, after analyzing the behaviour of some android characters in selected movies and novels, the paper concludes that the androids could be called conscious beings and experience human consciousness. It also demonstrates that androids are able to show human feelings and emotions.

Keywords: Consciousness, Android, Artificial Intelligence, Science Fiction, Boris Kotchoubey's Model of Consciousness, Levy's Parameters For Falling In Love

1. INTRODUCTION: MORE HUMAN THAN HUMAN

There have been numerous answers to the question of android consciousness. Both philosophers and psychologists have dealt with it from their own point of view. This study gives new insights into the significance of Artificial Intelligence in fiction and film. It also examines the possibility of android consciousness in science fiction. Furthermore, one of the main themes of science fiction is the exchange of feelings between human and robots, an issue which has not yet been explored by comparing two science fiction works. This paper tries to explore these themes by studying two works, Ridley Scott's *Blade Runner* (1982) and Ian McEwan's *Machines Like Me* (2019).

Boris Kotchoubey suggests that consciousness of humans is "a result of phylogenetic interaction between three kinds of animal behaviour: play, tool use, and communication" (Kotchoubey, 2018, p.14). He claims that this model can illustrate "most typical characteristics of human conscious awareness" (Kotchoubey, 2018, p.14). During an interview, Scott is asked about the future of androids and the possibility of genetic engineering in his movie and he says: "Out of genetics will obviously come good things and bad things. This is not a warning in any sense of the word. This is purely a dramatic device in the film for the very central story to exist. The fact that we can within forty years create, under laboratory conditions, something that is akin to a human being. I think it's a possibility" (Scott, 1982, 5:36). In a conversation with Stewart Brand as part of Long Now's Seminar series, McEwan talks about how he was attracted to the subject of Artificial Intelligence: "I've had this interest in the AI since the mid-70s when I wrote a film for television called *The Imitation Game* based on Turing's paper and it ends up in Bletchley with characters discussing whether a machine could think" (McEwan, 2019, 18:00). During the same conversation he also reflects on consciousness of humanoids in *Blade Runner* movies (1982 & 2017): "I have to say the first *Blade Runner*, although it's very much like the second, but the first *Blade Runner* [is about] what to do with robots that you don't want around



anymore and what it means if you accept that an artificial human has a consciousness, whether you dare destroy it, or whether in destroying it you're committing a murder if you annihilate a consciousness" (McEwan, 2019, 40:45).

Rhee discovers the relationship between Artificial Intelligence and literature, science fiction, cinema, performance art, video games, philosophies of the human being, the concept of post human, and technology through the lens of "Anthropomorphic Attachments" between human and humanoid (Rhee, 2010, p. iv). The study views Ridley Scott's *Blade Runner* (1982) as "An Expansion of the Cultural Imaginary" (Rhee, 2010, p. 167). Pagan (2014, Chapter 5) discusses studies of empathy and theory of mind as proposed by Wai, Tiliopoulos (2012) and Singer (2013); he examines and compares the feeling of empathy in humans and androids in Philip K. Dick's *Do Androids Dream of Electric Sheep?* (1968), which is adapted in Scott's *Blade Runner* (1982).

R. M. P. and Peter Fitting (1987) compare hunting of violent human criminals by cops, sheriffs, and soldiers with "termination" of rebellious Replicants in *Blade Runner*. By this comparison, they give the robots in *Blade Runner* human-like characteristics (R. M. P., & Fitting, 1987, p. 344). As Williams observes, unlike Dick's novel, Scott's screen adaptation focuses more directly on the relationship between commerce and technology and the narrowing gap between humans and machines (1988, p. 384). Super intelligent Replicants have further narrowed this gap, so much so that distinguishing androids from humans is very difficult (Williams, 1988, p. 384). He further notices that while in several science fiction movies like *Invasion of the Body Snatchers* (1956), *2001: A Space Odyssey* (1968), and *E.T. the Extra-Terrestrial* (1982) the robots either do not possess a human body or human emotion, the Replicants in Scott's *Blade Runner* (1982) have both the body and the full range of human emotions (Williams, 1988, p. 388). Abbot (1993) considers Roy as a human being and calls him a romantic hero for his actions in the confrontation with Deckard since he "cannot achieve the status of romantic hero without first being seen as human" (p. 347). He mentions that for robots in *Blade Runner* (1982) the mind is a tabula rasa, burdened with some prefabricated and organized memories (Abbot, 1993, p. 348). Giles (2019) believes that McEwan in *Machines Like Me* deals with questions about what constitutes consciousness, a question that many science fiction writers have already asked and answered. Julian Lucas (2019) in discussing human-robot relationship in Ian McEwan's *Machines Like Me* (2019) proposes that establishing a "meaningful" relationship between a human and an artificial being is a very significant question in this field. He mentions that the idea of humanoid android has already been touched upon a century ago when the term "android" was introduced by Auguste Villiers de l'Isle-Adam in his *The Future Eve* (1886) (Lucas, 2019). He believes that although the subject of the lifelike androids is the main theme of many fictional and cinematic works such as HBO series *Westworld* (2016), it is still a popular subject because the consumers of this genre are affected by commercial repetition of the realistic androids (Lucas, 2019).

While the movie *Blade Runner* (1982) which as expressed by McEwan himself has, at least in parts, a direct effect on the process of writing of *Machines Like Me* (2019) (Kirtley, 2019; McEwan, 2019), to date, no academic study has been done on Ian McEwan's *Machines Like Me* except for book reviews (Theroux, 2019; Preston, 2019; McAlpin, 2019; Libman, 2019; Greenblatt, 2019; Garner, 2019; Charles, 2019; Phillips, 2019; Kidd, 2019; Forbes, 2019; Publishers Weekly, 2019; Kirkus Reviews, 2019; Thomas-Corr, 2019; Saleem, 2019). In order to fill this gap, this paper uses Kotchoubey's model of human consciousness as a criterion to explore artificial consciousness in android characters of the aforementioned works. Also borrowing from Gamez's ideas in *Human and Machine Consciousness* (2018) we discover a comprehensive idea of artificial consciousness and the differences between human and androids in experiencing consciousness. We can see how human mind is not so different to what we see in intelligent androids of sci-fi movies. Scott's 'Replicants' for instance, are so smart they can easily deceive humans. In certain cases, like the character of Roy, they even outsmart highly intelligent men like the special agent Rick Deckard.

Timo Järvillehto's "Feeling as Knowing—Part II: Emotion, Consciousness, and Brain Activity" (2001) investigates about human emotions, its relationship to consciousness and the possibility of the existence of emotions in robots. According to Järvillehto conscious emotions originate from reorganizational changes in primitive co-operative organizations. Further, in discussing the human-robot emotional relationship David Levy with his controversial *Love and Sex with Robots* (2008) paved the way for numerous researches on the subject of human-robot relationship, particularly about the feasibility of humans' passions for robots and vice versa. In *Machines Like Me*, the android character, Adam, falls in love with Miranda, the young neighbor of Charlie, the narrator of the story, thus forming some sort of love triangle. Although Adam's love for Miranda is an unrequited one, he is so passionate about his feelings that he arouses jealousy of Charlie. Adam even writes haikus for Miranda in an attempt to attract her love.



In a discussion about his book McEwan notes that in his novel he uses the idea of “an artificial being aware of its own mortality” from Scott’s *Blade Runner* and reflects on this idea through Adam’s character (McEwan, 2019).

1.1 Creators of Replicants, Adams and Eves

Ian Russell McEwan (1948-) is an English novelist and playwright. In a list published by The Times in 2008, he was placed among the 50 greatest British authors since 1945. In another list by The Daily Telegraph he was ranked 19th among 100 most powerful people in British culture in the same year. He has won numerous awards including a Somerset Maugham Award, a Whitbread Novel Award, a Man Booker prize, and a National Book Critics Circle Award for. Ian McEwan’s *Machines Like Me* (2019) discusses concepts of Artificial Consciousness, humanoid love for human beings, machine ethics and moral dilemmas by describing the confrontation of an intelligent humanoid called Adam, with two human beings, Charlie and Miranda. It is an alternate history novel set in 1980s in which to types of androids are being sold: Adams and Eves. Sir Ridley Scott (born 30 November 1937) is an English filmmaker, known mostly for his science fiction movies, including *Alien* (1979), *Blade Runner* (1982), and *The Martian* (2015) among others. He has won several significant awards including two BAFTA awards and a Cannes Film Festival awards. Ridley Scott’s *Blade Runner* (1982) which is based on Philip K. Dick’s *Do Androids Dream of Electric Sheep?* (1968) is about sentient androids known as Replicants, set in Los Angeles in 2019. It explores the familiar theme of androids’ rebellion against their creator, where an ex-policeman is hired to hunt down the rebels.

2. ADAM THE INTELLECTUAL, ROY THE REBEL: CLOSING THE PANDORA’S BOX

Highly intelligent androids and their fictional worlds often involve a riot by robots against humanity. The creatures who were created to take a burden off our shoulders eventually end up being our greatest enemy. Both works are about the stories in which human made creatures go awry. In *Blade Runner*, replicants are designs and sold by Eldon Tyrell and his company as human slaves. The sole purpose of creating them is to serve people. Tyrell manufactures Nexus-6 replicants in a way that they look so much like humans, it is almost impossible to discern them from normal people. In order to find the rebel replicants special agents called ‘blade runners’ are employed. These agents use a test called The Voight-Kampff test to see whether an individual is a replicant or not. It measures bodily functions such as respiration, heart rate, blushing and eye movement in response to emotionally provocative questions. It typically takes twenty to thirty cross-referenced questions to distinguish a Nexus-6 replicant. However, this test is outmaneuvered by some of the replicants. At the end of the movie *Roy*, the replicants’ boss who is followed by Deckard, has the opportunity to kill Deckard and was not for his limited life-span he could have survived.

As for *Machines Like Me*, it is said that twelve male and thirteen female versions of “The first truly viable manufactured human with plausible intelligence and looks, believable motion and shifts of expression” are produced. They are called Adams and Eves. They are so much like humans sometimes they are mistaken for real people. People fall in love with them and make them their life partners. But again, not everything turns out right. Some of the androids kill themselves out of ethical and social paradoxes they face. Most of them eventually refuse to perform what they are told to do. Charlie’s Adam for example, gives away Charlie and Miranda’s money for charity works. So Charlie has to terminate him in the end with an hammer.

2.1 Human and Robot Consciousness

Boris Kotchoubey (2018) in his article “Human Consciousness: Where Is It From and What Is It For” lays the groundwork for a neurological definition of human consciousness, referring to human consciousness as a natural (biological) phenomenon. He says that “human consciousness is emerged out of the interaction of three units of animal behaviour: communication, play, and the use of tools” (p.14). Green (2010) in “Consciousness and Ian McEwan’s *Saturday*: “What henry knows”” talks about the portrayal of consciousness in Ian McEwan’s *Saturday* (2005) and the strategies with which McEwan deals with the complicated issues involved in processes of the mind by “the joined effects of characterization, focalization and conceptual metaphors” (p. 58). In *Human and Machine Consciousness* (2018), David Gamez uses mathematical theories in order to make credible predictions about machine consciousness. It gives us a comprehensive idea of artificial consciousness and the differences between human and machine in



experiencing consciousness. *Robot Sex: Social and Ethical Implications* (2017) looks at human-robot sexual relationship from different aspects. It explores the nature of such an act and asks if it is possible to have sex with robots at all. In chapter 12, “From Sex Robots to Love Robots: Is Mutual Love with a Robot Possible?” Lily Frank and Sven Nyholm investigate the possibility of establishing a loving relationship between human and robots, consider ethical objections facing such a relationship, and present several criteria for that matter. Building on the importance of emotion in the making of reason, in *The Feeling of What Happens* (2000) Antonio Damasio shows how consciousness is created. In his theory of consciousness, he uses, among other tools, Positron Emission Tomography scans and connect mind, consciousness and behaviour as inseparable phenomena for defining consciousness. In “Feeling as Knowing” (2001) Järvillehto investigates human emotions, their relationship to consciousness, and how conscious emotions originate from reorganizational changes in primitive co-operative organizations.

2.2 Artificial Intelligence and the Relationship between Human and Robot

Emotional connection between human and androids and computers is the main concern of sci-fi romances. Spike Jonze’s *Her* (2013) depicts a lonely introverted man who falls in love with his computer. Rhee’s *Anthropomorphic Attachments in U.S. Literature, Robotics, and Artificial Intelligence* (2010) discovers the particular “anthropomorphic relationalities between android robot technology and human being, focusing essentially on present-day American technologies and cultural forms” (Rhee, 2010, p. iv). The researcher also sees how Ridley Scott’s *Blade Runner* (1982) has extended Philip K. Dick’s cultural presence in cinema (Rhee, 2010, p. 167). Pagan in the fifth chapter of his *Theory of Mind and Science Fiction* (2014), entitled as “Dick’s Do Androids Dream of Electric Sheep?: What Happened to Affective Empathy?” analyses the feeling of empathy in humans and androids in Dick’s *Do Androids Dream of Electric Sheep?* (1968), which is the source for Scott’s *Blade Runner* (1982), by considering the studies of Wai, Tiliopoulos (2012) and Singer (2013) on human mind and empathy. David Levy with this controversial *Love and sex with robots: The Evolution of Human-Robot Relationships* (2008) heralded many future researches on the subject of human-robot relationship, particularly about the possibility of humans’ passions for robots. This book explains the ways in which a human and a robot can fall in love and have feelings for each other. It also considers ethical aspects of having sex with a robot.

2.3 Ian McEwan’s *Machines Like Me*

In Episode 359 of the Geek’s Guide to the Galaxy podcast, which was presented by David Barr Kirtley, Ian McEwan says that he is an avid reader of science fiction and also a great fan of the movie *Blade Runner* (1982) and the new version of it, *Blade Runner 2049* (2017) and he has watched them more than twice (McEwan, 2019). He has even used some parts of the movie (Ridley Scott’s *Blade Runner*) in his novel *Machines Like Me* (2019): “I actually put a nod towards *Blade Runner* in Adam’s final speeches, after he’s been attacked by Charlie. There’s a very self-conscious nod to that famous farewell in the rain in *Blade Runner*” (McEwan, 2019). In an interview hosted by EdgeCast as the “Possible Minds Project”, McEwan talks about how he has been thinking of a future in which we have to live alongside a fully embodied artificial consciousness. He also hints on the movie *Blade Runner* (1982), saying it “specifically addresses the notion of what it would be to have an artificial being aware of its own mortality” (McEwan, 2019). During conversation with Stewart Brand as part of Long Now’s Seminar series McEwan opens up his views on how he writes his novels, what approaches we must take in case a conscious AI becomes a reality, how different works, including *Blade Runner* movies, have dealt with this issue, and whether we should consider future androids as sentient beings. Jeff Giles of *The New York Times* in “Love, Sex and Robots Collide in a New Ian McEwan Novel” (2019) discusses how McEwan in *Machines Like Me* (2019) deals with questions about what constitutes consciousness, a questions that many science fiction writers have already asked and answered (2019). While discussing human-robot relationship in Ian McEwan’s *Machines Like Me*, Julian Lucas in “Man, Woman, and Robot in Ian McEwan’s New Novel” (2019) suggests that a critical question is whether a human being is ever able to form a “meaningful” relationship with an artificial consciousness (Lucas, 2019).

2.4 Ridley Scott’s *Blade Runner*



R. M. P. and Peter Fitting in their “Futurecop: The Neutralization of Revolt in Blade Runner” (1987) analogize hunting of violent human criminals by cops, sheriffs and soldiers with “termination” of rebellious Replicants in *Blade Runner* (1982) and in so doing they present the Replicants with human-like features (1987). In an interview with Reelin’ In The Years Productions Ridley Scott talks about different aspects of his movie, from the advancements in cinematic special affects in comparison with other well-known science fiction movies, to whether we should consider *Blade Runner* as a science fiction movie or not (1982). He also shares his idea about creating an artificial being who is like human being, saying it is possible in the future, under laboratory conditions. Douglas E. Williams in “Ideology as Dystopia: An Interpretation of Blade Runner” (1988) argues that the similarities of super intelligent androids of *Blade Runner* (1982) to human beings are more evident than what we have read in Dick’s novel (1988, p. 384). He further compares *Blade Runner* (1982) with several science fiction movies like *E.T. the Extra-Terrestrial* (1982) and *2001: A Space Odyssey* (1968) and concludes that androids in *Blade Runner* are more fully developed in terms of bodily and emotional resemblance to human beings (Williams, 1988, p. 388). He notices that the Replicants are not as heartless as they seem to be. At the end of the movie we see how the Replicants boss, Roy, which is apparently the cruelest of them all saves Deckard’s life in “an act of mercy and compassion” (Williams, 1988, p. 385). Joe Abbot analyses Roy Batty’s actions and interactions with other characters in the movie in “The “Monster” Reconsidered: Blade Runner’s Replicant as Romantic Hero” (1993). Relating Roy’s final speeches and actions in the movie, Abbott considers him as a romantic hero and therefore attributes human characteristics to him (Abbott, 1993, p. 347).

3. DELVING INTO THEORY

In order to find out about the differences between human and android consciousness the paper will use the model proposed by Boris Kotchoubey in his “Human Consciousness: Where Is It From and What Is It for” (2018). According to this model, which was proposed by Kotchoubey in 2018, consciousness is a behaviour that is in control of the brain. It is “a natural (biological) phenomenon that is materialized through the interaction between three parts of animal behaviour: communication, play, and the use of tools”. These parts affect each other based on anticipatory behavioural control. All of the animal life forms share such a nature. The model suggests several characteristics for human consciousness including “recursive character, seriality, objectivity, close relation to semantic and episodic memory” (Kotchoubey, 2018, pp. 1-14).

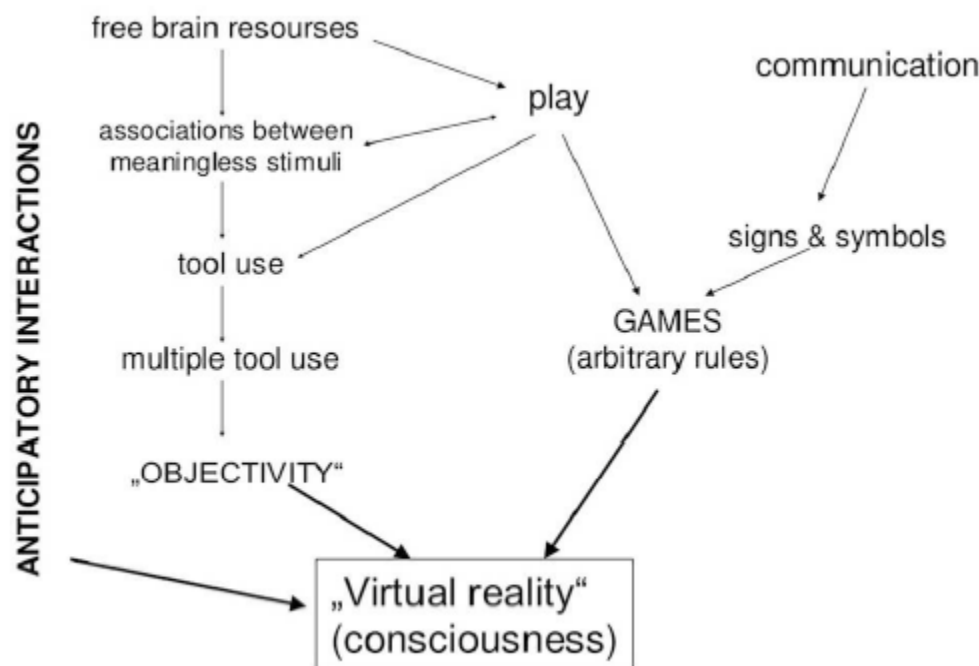
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Fig. 1. Main sources of human consciousness, according to Kotchoubey's model

Kotchoubey looks at consciousness as a behaviour controlled by the brain. The paper will study *Machines Like Me* (2019) and *Blade Runner* (1982) to explore Kotchoubey's features of human consciousness in android characters of both the novel and the movie.

In *Human and Machine Consciousness* (2018), David Gamez uses mathematical theories in order to make credible predictions about machine consciousness. It gives us a comprehensive idea of artificial consciousness and the differences between human and machine in experiencing consciousness. Building on the importance of emotion in the making of reason, in *The Feeling of What Happens* (2000) Antonio Damasio shows how consciousness is created. In his theory of consciousness, he uses, among other tools, Positron Emission Tomography scans and connect mind, consciousness and behaviour as inseparable phenomena for defining consciousness.

There are several processes that define the notion of android consciousness. David Gamez's *Human and Machine Consciousness* (2018) and Antonio Damasio's *The Feeling of What Happens: Body, Emotion and the Making of Consciousness* (2000) give us a comprehensive idea of artificial consciousness, the related processes and the differences between human and machine in experiencing consciousness. Using Kotchoubey's definition of consciousness, human consciousness is compared with robot consciousness. In both *Machines Like Me* and *Blade Runner* we can see that androids' power of thinking and decision-making is the same as humans'.

3.1 Levy's Parameters for Falling in Love

Levy assumes five reasons for falling in love: proximity, repeated exposure, attachment, similarity and attraction. He explains that the distance between two people plays a major role in their love life. According to a MIT study, he continues, the most important factor in creating emotionally close couples was the distance between their apartments—the closer they lived, the more likely they were to become friends. Repeated exposure is defined by psychologists as “seeing someone frequently” (Levy, 2008). Naturally, when two people live next to each other they are more likely to meet and to develop emotional relationships. This is the case for Adam, who is living in the same apartment as Miranda, therefore is more susceptible to build up feelings. The next parameter is attachment. As Levy



states, “attachment is a feeling of affection, usually for a person but sometimes for an object or even for an institution such as a school or corporation” (Levy, 2008). When we are frequently in touch with someone or something usually, we develop a form of affection towards them. Getting used to someone makes it often difficult for us to let them go. The longer the relationship, the harder the detachment. We see this in Deckard and Rachel’s case, where the two meet each other now and then and form a romantic connection. The fourth parameter is similarity. Levy says that it is empirical evidence proving that people tend to like other people who are similar to themselves in one or more important aspect (Levy, p. 38, 2008). Similarity in level of education, for instance, would affect a relationship positively. Other factors could be a similarity in interests, attitudes or religious background. Deckard falls for Rachel because he thinks she is not like other replicants, he somehow feels Rachel is just like other normal people, far from her vicious peers. Her good-heartedness attracts Deckard and cause them to form a bond. The last parameter is attraction, which is affected by proximity and repeated exposure. The extent to which we are attracted to someone has been found to depend on the number of positive and negative feelings we have toward that person which is also known as “Byrne’s Law of Attraction” (Levy, p. 33, 2008). Further, for Levy personality and appearance are two of the most important factors in engendering a feeling of attraction (Levy, p. 38, 2008). These same factors are those which make Miranda attractive for Adam. He tries to protect her and also writes haikus for her.

Consequently drawing on David Levy’s (2008) parameters for falling in love (proximity, repeated exposure, attachment, similarity and attraction), we examined the behaviour of androids in *Machines Like Me* (2019) and *Blade Runner* (1982) and their emotional experiences. It was revealed that the androids in the aforementioned works meet Levy’s criteria; therefore, they are eligible to be considered emotional beings.

4. CONCLUSION

Despite the popularity and plethora of human-android relationship in literature, cinema, and adaptation the focus has been on the artificiality of androids. They have been mostly perceived as mere mechanical robots. This study however, perceives androids as creatures who can be identified as humans. The research also explicates the effects that Ridley Scott’s concept of android has had on Ian McEwan in the process of the writing of *Machines Like Me* (2019). In addition, studying love affairs between human and androids has not been accomplished in an academic framework before. This paper also elaborates on the benefits of having highly advanced androids who can love humans in our life. With the help of Kotchoubey’s model of consciousness, the paper explores the consciousness in android characters of the two studied works. It was concluded that the androids in *Blade Runner* (1982) and *Machines Like Me* (2019) experience human consciousness. As for the emotional characteristics, employing David Levy’s (2008) parameters for falling in love (proximity, repeated exposure, attachment, similarity and attraction) the paper concludes that the androids characters are both capable of falling in love with humans and being loved by them.

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