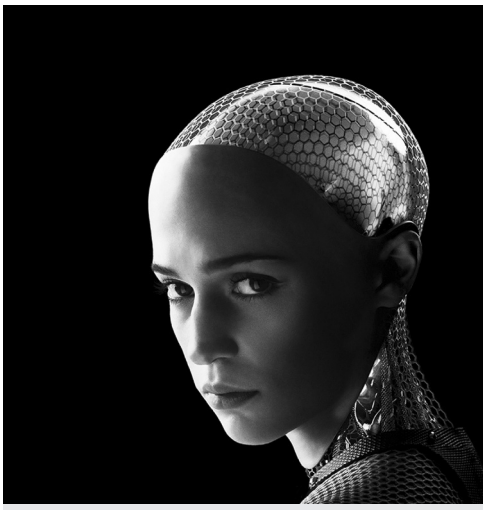
Ex Machina

A Movie Review by Christopher DiCarlo

Ex Machina is a movie marking the directing debut of British writer Alex Garland. The central theme of the movie involves the investigation of various aspects of Artificial Intelligence – particularly, when is a machine conscious? The title, taken from the Latin saying: 'Deus ex machina' or 'God from the machine' translates, literally, to 'from the machine'. The idea of artificially intelligent systems like computers, androids, or robots developing such a property as consciousness – from the machine – has been around in the public consciousness since the early 1950s with Alan Turing's proposal of an 'Imitation Game.' This 'game' eventually evolved into what came to be called: The Turing Test. Turing developed a thought experiment which involved a person, a computer, and a judge who each sit in different rooms and only have access to each other through computer monitors. In Turing's Test, the judge is to determine whether or not he/she is conversing with a human or a machine. If the judge cannot determine in which room the computer resides, it has passed the test. In more recent science fiction (*Do Androids Dream of Electric Sheep?,* which was later made into the movie *Blade Runner*), we see the development of AI in the form of Nexus 6 replicants or cybernetic androids. The device used to make the determination between humans and cyborgs was called the Voight-Kampff Test. A series of questions is asked to the android and the machine measures its responses. In *Blade Runner*, it becomes increasingly more difficult to make this determination. In Ex Machina, a similar idea is developed in which a young man – Caleb (played by Domhnall Gleeson) – is invited to a lavish secluded compound in Alaska owned by the creator of Blue Book (named after one of philosopher Ludwig Wittgenstein's works) – the world's leading search engine and yes, a fictional account of Google. The eccentric, reclusive, genius – Nathan (played by Oscar Isaac) – has been working away on the development of various androids. His latest is called Ava (played by the Swedish actress Alicia Vikander). And through a company-wide test for the 'best' programmer, Caleb has been invited to observe, ask

questions, and interact with Ava in order to apply a sort of personal Turing Test to determine if she is, indeed, conscious.

From a purely aesthetic viewpoint, as an android, the design of Ava is refreshing and impressive; she is made up of acrylic transparent tubing through which we can see her inner workings of wires and microchips, but her chest and waist are wrapped in metallic meshing. Her face, though, is quite human. There is nothing even suggestive of an uncanny valley with Ava. She is beautiful, warm, engaging, and highly manipulative. In fact, the majority of the movie hinges on the degree to which Ava is capable of manipulation. This becomes the central aspect of humanity that reveals itself in many different ways throughout the movie and becomes the defining factor in Caleb's determination that Ava is, in fact, conscious.



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Although the CGI effects are quite good, most of the movie builds on the dramatic tension which emerges from various conversations between Ava and Caleb, as well as between Caleb and Nathan. The conversations revolve around the difficulties involved in making determinations involving the consciousness status of Ava. Without giving too much away, it is safe to say that the movie is not a disappointment on a number of counts. The imagery is vividly portrayed through the contrast of a rugged wilderness in drastic juxtaposition with the amazing architecture of Nathan's compound.

The framing of the relationships between the characters is quite natural but palpable. This is witnessed in Ava's submissive coyness, Nathan's type-A personality, and Caleb's inquisitive but often confused nature. And there were plenty of relevant references to act as analogies for discussing the often conflicted but inspired aspects of the human condition. These were explored with explicit reference to the paintings of Jackson Pollock, the philosophical ideas of Ludwig Wittgenstein, and the troubled genius of Robert Oppenheimer.

I would recommend this movie if only because it gives us more food for thought on the emerging development of AI. On a personal and cerebral level, however, I found the movie to be fairly light and I was left hoping the actors would have spent more time exploring what I believe to be the more essential questions. My understanding and representation of AI tends to lurk in darker places. The questions I would like to have seen explored in this movie – and I believe all people working in the field of AI should consider – will appear in a upcoming paper in a future issue of *HP* called: "How to Avoid a Robotic Apocalypse: A Visit from the Future to Discuss AI, Consciousness, and the Frankenstein Effect."•

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