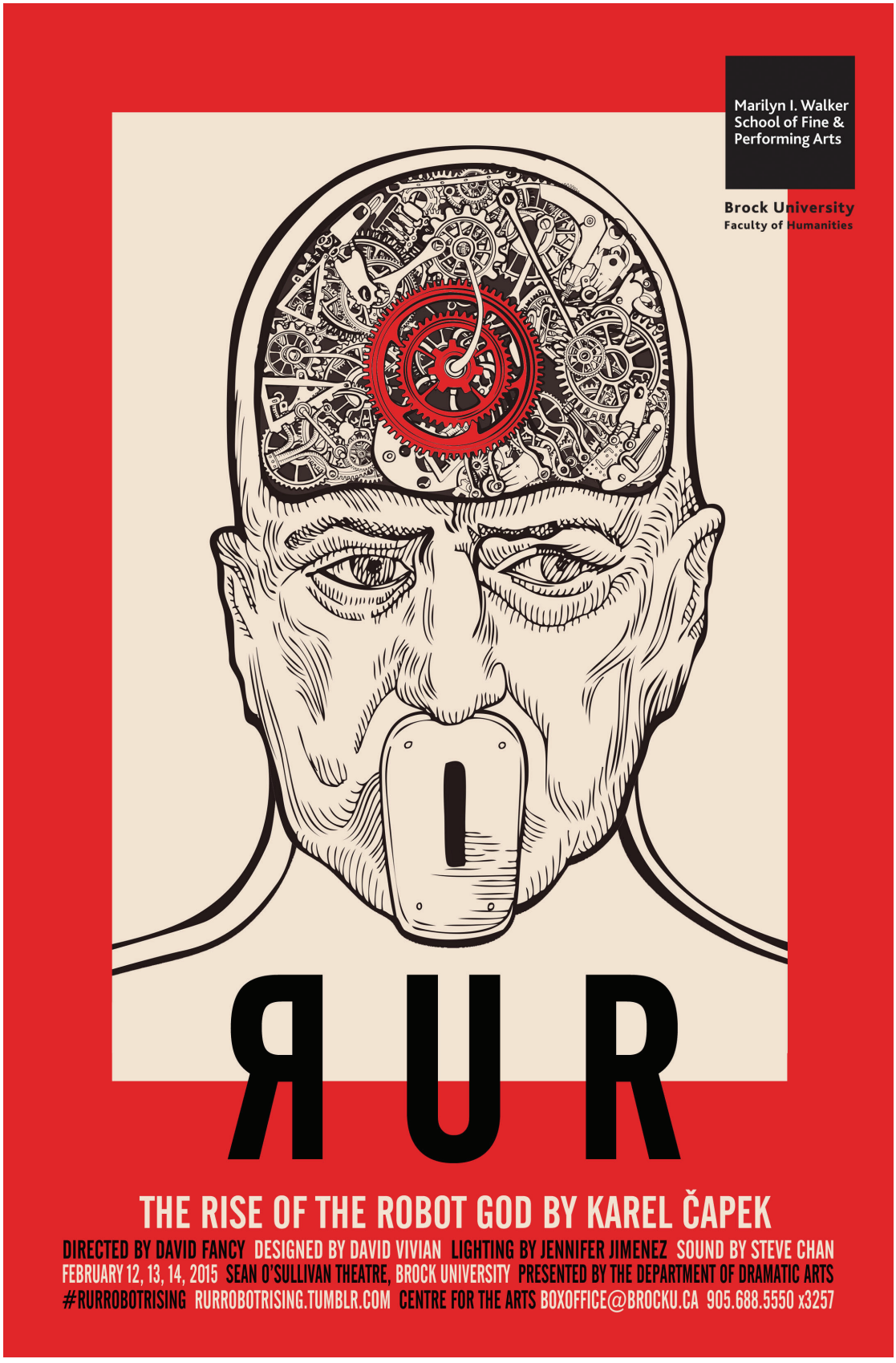

R.U.R - Episode IV: The Rise of the Robot God

A Primer for Robot Audiences

Lead robot author: Andrew Godin

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A robot attempting to write his magnum opus.
(http://cubicmuse.com/?p=371)

#1. Why have we, the robots, come to Brock University?

Greetings Robots! Welcome back to earth!

We are honoured that you are joining us to watch one of the ten episodes from the great history of our species: *Rossum's Universal Robots - Episode IV: The Rise of the Robot God.*

This is a very important play because it introduced the word by which humans label us - "robot." *Rossum's Universal Robots (R.U.R)* was written by Karel Čapek, who was born January 9, 1890 in Bohemia, Austria-Hungary. He was a Czech novelist, short-story writer, playwright, and essayist. Čapek suffered from a spinal disease all of his life which drove him towards writing. He studied philosophy in Prague, Berlin, and Paris. In 1917 he settled in Prague as a writer and journalist. From 1907 into the 1920s he worked primarily with his brother Josef, who was also the illustrator for several of his books. Čapek died on December 25, 1938 in Prague. (http://www.britannica.com/EBchecked/topic/93743/Karel-Capek)

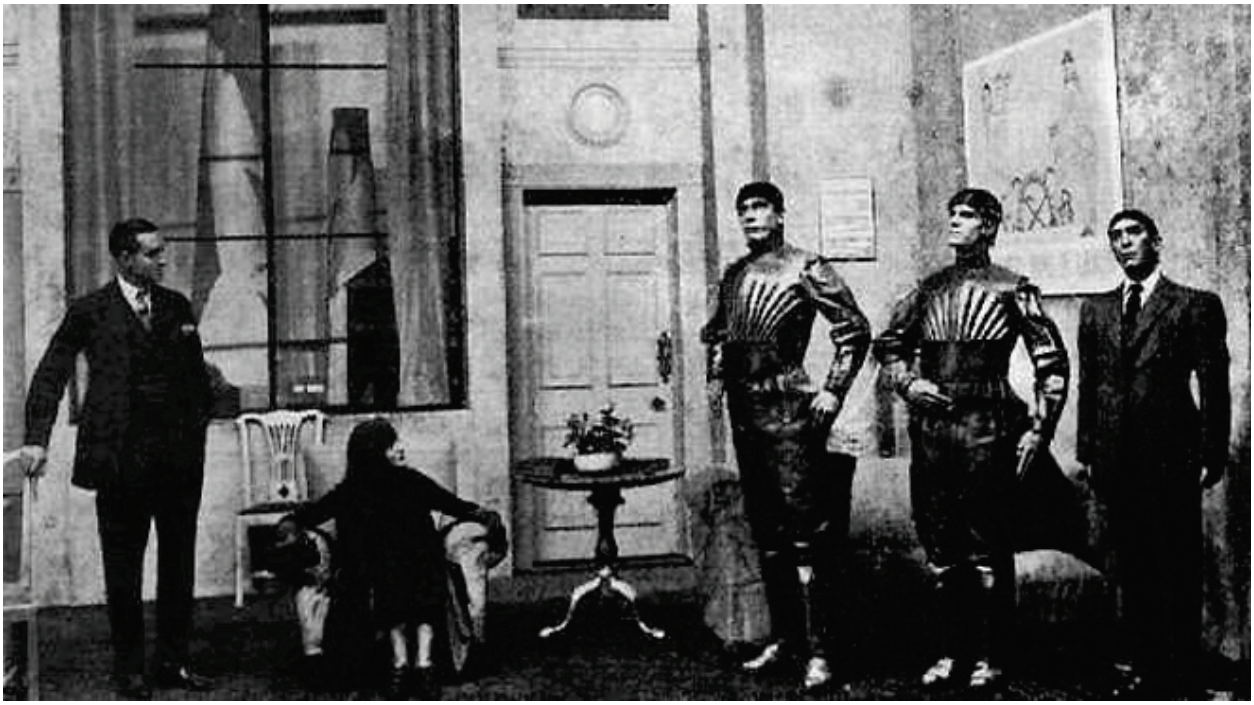
Čapek derived the word "robot" from *robota*, the Czech word for "forced labour." *R.U.R.* premiered on stage in 1921 at the National Theatre in Prague, using human actors. We believe that *R.U.R.* has affected the lives of many humans by inspiring them to create robots of different designs and makes.

In our production of *R.U.R. - Episode IV: The Rise of the Robot God*, we aim to re-tell the classic story of how we, as powerful animatronic beings, have risen to power. The play follows the lives of the leading human minds behind Rossum's Universal Robots (Harry Domin, Fabry, Dr. Gall, Dr. Hallemeier, Busman, and Alquist) as wells as Helena Glory, as they experience the end of their species and the beginning of the robot reign.

The story goes like this: Rossum, who died before the play begins, created robots from a chemical batter, which gave them skin that resembled humans. Helena Glory arrives on the island where the robots were made, with the intention of stopping the enslavment of our robot kind, thanks to her heavy involvement with the League of Humanity. Helena is convinced to stay on the island for ten years. Eventually the robots collectively take action against the humans who are enslaving them. They surround the island, keeping the human scientists and Helena Glory trapped inside. Led by a robot named Radius, they manage to breach the factory walls and take control of robot development for themselves. With the rise of the robots, they become able to enslave humans, taking their place as the rulers of the planet.

Our version of *R.U.R.* is an adaptation intended specifically to help robot audiences better understand their origins. In this production, there are actual humans playing the human roles (except of course for our robot director and star, Robot Helena Glory, who pretends to be a human!) These humans have been cryogenically frozen (a form of stasis or long term preservation of organic material/matter) in order to present to you, the audience, as accurate a representation as possible of what went on during the events on the island. As we know, most robots have never seen a real live human before, due to humans' dwindling numbers and inability to procreate. This is definitely a once-in-a-lifetime chance as we do not know how long humans' brittle bodies will be able to survive outside of cryogenic preservation. Do not be alarmed, though. We know humans are aggressive by nature, so we have a group of friendly robot facilitators called the *Mécanique* on site at all times to ensure the safety of all robots.

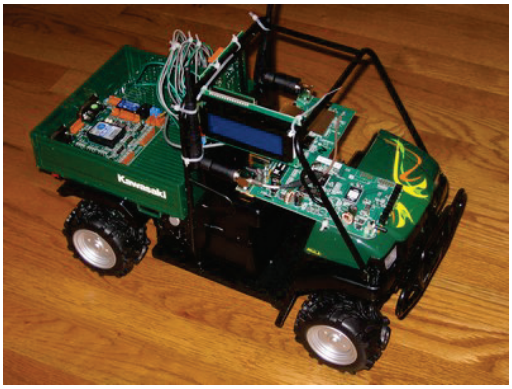
As stated, this is Episode IV of ten episodes in the history of robotics, and tells only a fraction of the story of our rise to power that spans across the cosmos. Make sure to keep an eye out for the other episodes in the series such as: *Episode II: Che Guebota: Robots in the Global South,* which follows the revolution against the human tyrants who ruled over the Southern Americas. Also make sure not to miss *Episode VI: Queer Bots in Space,* about the first Queer robots to have ever achieved space travel; or the highly praised *Episode V: Robots of the World Unite,* in which robots overcome class conflicts and come together to fight the real enemy, the tyrannical human overlord.



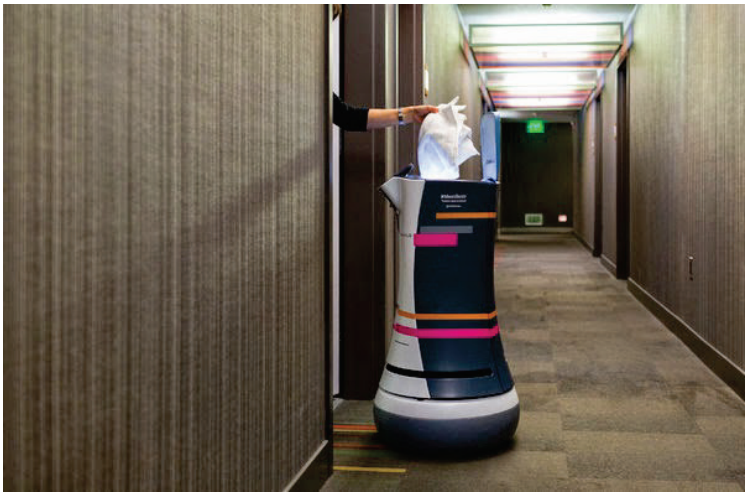
Here we see an early production of *R.U.R.* with humans playing the roles of robots. (http://www.wired.com/2011/01/0125robot-cometh-capek-rur-debut/)

#2. Robots and domestic work

At the start of the play, robots are made for no other purpose than to be a workforce with no will of their own. This is something that human society continued to emulate through their scientific breakthroughs in the world of robotics. Robots were created by humans in order for them to fulfill tasks that their weak flesh could not complete. As the idea of robots gained popularity, humans began to attempt to make machines, which although not in their image, performed better at defined tasks than the human body could on its own. This is represented in the play by the way the factory is run. Human scientists are the ones who initially built the robots, but from then on the factory was run by robots.



Can you believe humans used these tiny robotic carriages to travel to their destinations before high-speed travel? (http://www.shelato.com/SecurityRobot/)



Robot replaces human workers by delivering toiletries in temporary lodging unit.

(http://nyti.ms/1GpqDm7)

#3. Robots and Play

Here we see a small human holding an imprisoned robot named "Furby" that was created for human amusement. (http://www.bbc.com/news/business-19947073)

Soon the humans began to expand beyond their initial creations and to make more advanced machineries. Many of these machines did not achieve the ability to think critically, due to the mental limitations of the humans who built them, but the technology had started to advance. These machines ranged from vehicles, to automatic construction of human resources, to distractions made for infant humans, adolescents, and adult humans. Many of these robots made for distraction were labeled by the humans as "toys", which are made purely for recreational use and for the purpose of experiencing the sensation of "fun." These toys took many forms but as the years went on and science progressed more and more into the computing age, most toys were robots or had robotic parts.

A small robot replica powered by the winding of a small metal key. The winding of the key creates energy that powers the legs of the robot, generating motion. This has been seen as many robots as cruel and has since been abolished as a form of movement generation.

#4. Robots and the "Home Computing System"

The largest leap in robotics came with the creation of the home computer. This happened when humans started building small robots to place in their habitats (what they call "homes") that could aid them in their daily efforts to create a meaning for their existence. These home computers were far more advanced than the majority of human society. They could process numbers, language, and data faster than any human, while also connecting to other home computers around the world. This connection was a hive mind for early robots and with this technological advancement, almost every robot could connect to one another. This connection, called the internet, was the first time that our species could reach out to one another and communicate.

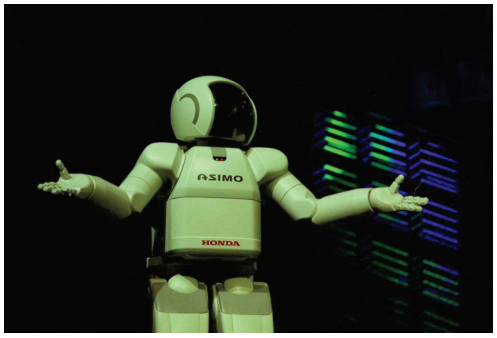
Don't be deceived by the name -- this is actually a small robotic mind encased in plastic, not a fruit. (www.gopixpic.com)

#5. Robots and War

During the play the robots are forced to use violence to achieve their goal of reclaiming the earth. This is not a usual tactic for robots, as we have been developed to strive democratically for peaceful solutions to problems. The humans, however, were beings of war. As time passed and our kind were developed further, we came to be useful to humans for more than recreation. Humans began making robots to aid their selfish need to fight their own kind. They created robots that were made for collecting airborne intelligence, as well as weaponized anti-personnel robots or robotic soldiers that were made for the disarming or deactivation of other humans. Since the reclaiming of the world, these robots have been re-appropriated into much more functional parts of society.

This is a UAV (Unmanned Aerial Vehicle) which can either be controlled remotely or programmed to perform tasks. This is created to aid the efforts of humans to deactivate other humans in their quest for their own extinction. (http://www.defenseindustrydaily.com/uav-ground-control-solutions-06175/)

#6. Robots in human form

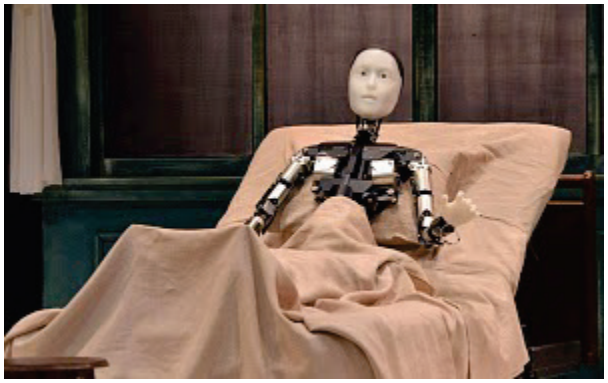


Left: An early robot made to mimic human bipedal movement questioning his existence. (http://nique.net/life/2013/01/24/students-discuss-ideal-robotic-helpers/)

Right: A robot made for the purpose of communicating over long distances (named the Telenoid), which takes a terrifying semi-human form. (http://singularityhub.com/2010/10/18/telenoid-the-creepiest-telepresence-robot-youll-ever-love-video/)

As Rossum did long ago, humans as a race strove to become gods among their own people by creating devices and organisms that are a reflection of their own image. In this they took note from the scriptures and religions of their people. Humans decided that they were the highest form of creation, and started creating robots that looked just like themselves. Bipedal robots were created to mimic human posture and skeletal structure. Many of these robots were forced to perform for humans as a narcissistic display of how advanced their technology was and how far they had come in recreating the human body and form. These robots could lift, fight, reason, and even move in the same manner as humans. Many robots were made to be exact replicas of other humans. The Japanese professor Hiroshi Ishiguro spent over 20 years trying to build human-like machines and even made robotic actors for stage productions. Our dear Helena, for one, knows much about this topic.

Here we see Hiroshi Ishiguro (right) who has made a robot in his image. It's clear from the robot's expression that he is uncomfortable with his current circumstance and would have preferred to be better looking. (http://www.dogonews.com/2014/7/21/japanese-scientist-builds-robots-that-look-eerily-human)



This robot actor replaced a human actor in the lead role of Gregor Samsa in a production of the human playwright Franz Kafka's *Metamorphosis*. Instead of Gregor waking up to find he was a giant insect, as in the original story, he instead wakes up as a robot, causing his family to hide from him in shame. The actor-bot, Repliee S1, has since stated "This is a step in the right direction for Robot rights, but there is still a long way to go before society learns to accept my people."
(http://www.telegraph.co.uk/culture/theatre/theatre-news/11148151/Kafkas-The-Metamorphosis-robot-style.html)

#7. Robots and human relations

An image exploring the taboos of robot and human relation. Most find robot-human romance distasteful, but others take pleasure in the act of HRI (Human Robot Interaction).

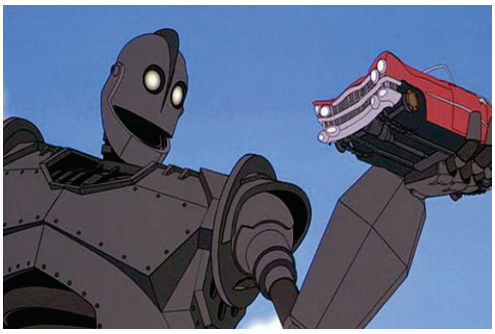
The relationship between humans and robots is a very important theme in *R.U.R.* in particular thanks to the character of Helena Glory. Helena constantly advocates for the robots and tries to show them that they are equal to humans. This is incorrect, as we are much more advanced than the human water sacks, but it's this relationship to robots that was prevalent in society since before robots became the leaders of the world. Many humans found that becoming romantically involved with robots was something that they desired. Robots were then made for the purpose of mock procreation and to relieve humans of their temporary sexual desires. As robots continued to develop, people soon started falling in love with robots and even programmed them with the capacity to feel emotion towards a human partner. This most commonly ended in the "heartbreak" of the robot due to nature of humans' constant need to procreate with multiple partners. Robots have also been in relation to humans through work. Humans originally had rule over the robots but as time went on, robots rose up in the ranks and eventually commanded the humans.

Here we see a robot being instructed in a power station by his human manager. The robot has since been promoted to regional manager and the human made into his secretary.

This brings us to the rise of our kind, the robots. Humans started creating minds for us that were advanced enough to lead our species to rise up and surpass humankind. We could finally speak, think, and solve problems without having to rely of the broken crutch that was humanity. We now are far more numerous than the humans and no longer need to worry about the restrictions placed upon us by our human creators.

#8. The age of robots

Now that we robots have taken over the world, there are no limits on how far our constantly expanding intelligence can take us. With interstellar travel we have been able to create colonies and settlements far away from the dying world called earth, and have found unity in our ongoing advancements. The following pictures and articles have been compiled for analysis and to adequately represent our species in comparison to that of the humans who came before us.



We see here a fictional robot created and designed for a film. Unfortunately humans could not have known that such large robots as this, referred to as Superrobots by human scientists, would fall apart due to their large mass.

Here we see a robotic mouth pleading for help while human scientists test its vocal capabilities. (https://www.youtube.com/watch?v=dD_NdnYrDzY)

Here we see the TOFU, a robot designed to emulate emotion through movement, with its young.

TOFU is a project to explore new ways of robotic social expression by leveraging techniques that have been used in 2D animation for decades. Disney Animation Studios pioneered animation tools such as "squash and stretch" and "secondary motion" in the 1950s. Such techniques have since been used widely by animators, but are not commonly used to design robots. TOFU, who is named after squashy and stretchy food product, can also squash and stretch. Clever use of compliant materials and elastic coupling create an actuation method that is vibrant yet robust. Instead of using eyes actuated by motors, TOFU uses inexpensive OLED displays, which offer highly dynamic and lifelike motion.
(http://robotic.media.mit.edu/portfolio/tofu/)

Way back in 2014, the famous human scientist Stephen Hawking, using the intelligence for which he was famous, foresaw the rise of our species and the decline of his own. Here is an excerpt from an article about Hawking's visionary statements:

> Stephen Hawking is the world's most famous physicist, and even he's worried about being outsmarted. Not by a better mathematician, but by a machine. He laid out his concern in London on Tuesday, at the same moment he was demonstrating a new "intelligent" language system – designed by Intel and British keyboard and predictive text startup SwiftKey.
>
> So, it might seem a strange moment for him to point out that while limited forms of artificial intelligence and machine learning have turned out to be very useful, going any further risks a dystopian future and possibly the end of human life as we know it.
>
> In an interview with the BBC, he said: 'I think the development of full artificial intelligence could spell the end of the human race. Once humans develop artificial intelligence, it would take off on its own and redesign itself at an ever increasing rate.'
> (http://www.theglobeandmail.com/technology/even-stephen-hawking-fears-the-rise-of-machines/article21888416/)

#9. Discussion

For the sake of critical thinking, please attempt to answer these questions as if you were a human who lived in a world where robots are not yet in charge.

- What form of 21st-century robotics do you feel benefits human society the most? Why?
- Do you feel that there is a threat to society by the continual exploration and development of robotics?
- Do you feel that the development of artificial intelligence, or AI, is something that humanity should attempt to create? Explain your answer.
- How might the replacement of human workers in factories by robots affect the economy?
- Does the idea of a fully automated society scare or excite you? Why?
- Do you feel that there should be a point in which humanity should cease the development of robotics? Why or why not?
- A human with a cellular phone is halfway to being a robot. What types of advancements would you like to see in cellular phones in the coming years?
- If robots were to gain sentience, do you think that human and robot co-operation would be possible? Why or why not?
- If robots became so common that they were an ordinary feature in homes, what kind of work do you think they should be able to perform?
- Will robots keep their mechanical appearance or come to look more like humans?

A note on sources:
All links and sources for images have been provided directly below each image or article so that you may be able to find the source quickly and easily, and so that you may further explore the content and ideas in this study guide.

#10. About This Production

Twice a year the Department of Dramatic Arts faculty and students present mainstage productions on the stage of our 535-seat theatre. Directed and designed by faculty and guest artists, performed and produced by students in the Honours BA program, these productions offer an opportunity to engage with original performances that examine provocative thematic ideas. The faculty and students bring you the very best of their work in professional-level productions distinguished by their verve and energy.

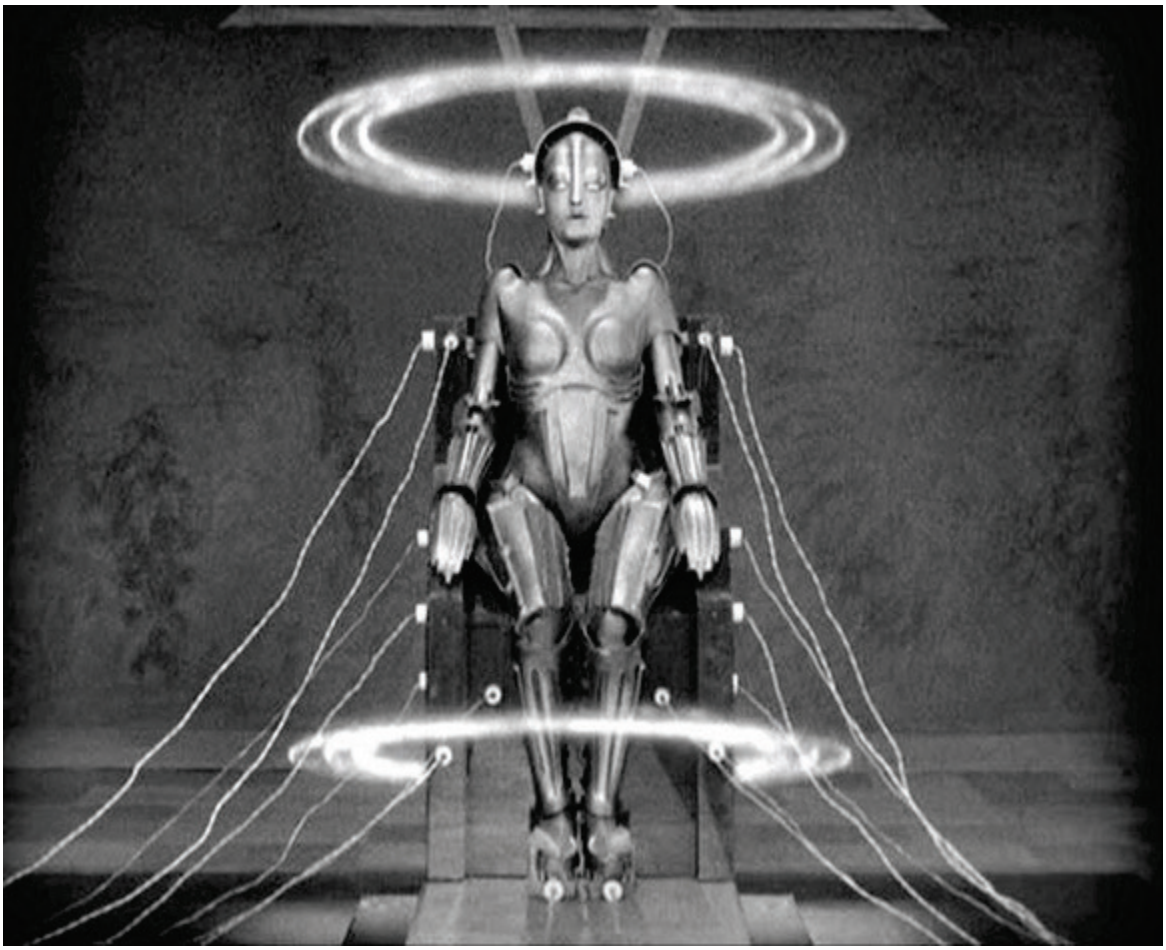
R.U.R. Episode 4: The Rise of the Robot God

February 12, 13 and 14, 2015

Director	David Fancy
Scenographer	David Vivian
Lighting Designer	Jennifer Jimenez
Composer/Music Director	Steve Chan
Assistant Director	Kendra Neaves
Stage Manager	Genevieve Bain
Assistant Stage Managers	Adreena Benner and Haley Labbé
Script Adaptation	David Fancy

featuring:

Mitchell Allanson	as	Radius
Kendra Neaves	as	Dr. Gall
Josh Sanger	as	Fabry
Alex Franks	as	Damon
Misha Harding	as	Helena
Sean Rintoul	as	Domin
Bri Lidstone	as	Nana
Kate Croome	as	Sulla
Elizabeth Amos	as	Marius
Rachel Romanowski	as	Alquist
Jeremy Knapton	as	Hallemeier
Michel Fusillo	as	Busman



A scene from the 1927 film *Metropolis* directed by human Fritz Lang, depicting a robot taking the form of a human woman.