

A PLAY BY AENEAS SAGAR HEMPHILL



## 2025 Study Guide

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**BABSONARTS**

& THE EMPTY SPACE THEATER

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# Note from the Director

Dear Reader,

When I read *Ada* for the first time, I knew that it was the play I wanted to pitch for The Empty Space Theater because I felt Babson students would be able to appreciate it better than almost any other audience. As the future entrepreneurs, CEOs, and innovators of this rapidly evolving world, they are uniquely positioned at the precipice of progress. Also, in their roles as friends, family members, and students, they are constantly navigating their pressing emotions and desires – even at the cost of their Productivity.

*Ada*, Amy, and Joan's relationships to one another are what I see as the true drivers of this play. These women see within each other the traits that they have done their best to suppress within themselves: Ada's anger, Joan's apathy, Amy's rebelliousness. This results in a beautiful and fractured web of emotions that I hope actors and audiences alike will enjoy navigating with me.

At its heart, *Ada* is a play about how we pass on our trauma to the humans (and human-adjacent) beings that come after us. What I find engaging about this story amongst the thriller and sci-fi genres is that the violence *Ada* displays is not a result of her technology. It is instead the product of anger, fear, confusion, love. In other words, it's the product of her humanity. With that in mind, I hope that this play encourages students to consider what kind of future they want to create for themselves and others.

Gratitude,

Naomi Hopkins  
Director

# Ada Lovelace & The First Computer Program

Ada Lovelace is a renowned and beloved figure in the history of mathematics and technology. She was the daughter of the poet Lord Byron and Lady Annabella Byron, who separated within a month of her birth. In 1833, Lady Byron accompanied Ada (at that time still Ada Byron) on their visit to see a prototype of Charles Babbage's Difference Engine. The encounter inspired Ada to pursue more focused mathematical study in geometry and algebra. And Babbage was already at work on a new project.

The Difference Engine could perform arithmetic with very large numbers much more quickly than the human mind can. But he wanted to go a step further, with a machine that could handle more sophisticated algebraic computational procedures, taken from algebra. He sought public funding for the project in Britain and was turned down, so he turned to the Continent. A young Italian mathematician took detailed notes on Babbage's lectures in Turin, which included his early illustrated plans for the machine. He published the notes in French in the form of a short essay. A friend of Ada's edited a scientific journal, and suggested to Ada that she translate the paper. With Babbage's approval, she appended a number of notes to the translation. The notes run to three times the length of the essay itself.

Ada's key contribution to the history of STEM fields is often said to be her authorship of the first computer program. In order to understand Note G, where she lays out those instructions, we also need to understand one of her theoretical contributions, which arguably are even more important than the program itself. Ada argued that "operation" was distinct from calculation. Biographer James Essinger clarifies that distinction in today's language: it was the first time someone had distinguished between data and *processing*. Ada was evolving a computational vocabulary to account for her own hopes for the future of the Engine.

In his mathematical work, Babbage was one of the first to suggest that the symbolic aspects of algebra could be more than numerical – that functions of variables could resolve to other kinds of information, like letters and locations. Ada's vision roamed further. Hoping to inspire her readers, she imagined that the Engine might even be able to create music, if the digital output of the core of the machine could be symbolized as pitches in the





diatonic scale. This is only a small sampling of Ada's scientific imagination, and it doesn't capture her general strength as a writer of nonfiction prose.

How was this next-order computing machinery, capable of operation and calculation, going to work? Babbage's plan was to complicate the input system of the Difference Engine by using Jacquard cards, a new manufacturing technology. Joseph-Marie Jacquard had invented a mass-production weaving machine that for the first time could produce a complex, multi-colored fabric based on a "program" in the form of a punchcard. Plug in a specific card as an input and the machine would weave a specific pattern as the output. Ada and her mother had seen a card loom in action years before. As Ada explained in the Notes, the Analytical Engine would weave algebraic equations the way the loom wove fabric.

The “computer program” (neither word existed in the sense we mean at that time) written by Ada in Note G would use multiple punched cards of this kind to calculate a complex mathematical series called the Bernoulli numbers. The translated essay and Notes were published in 1843.

[illegible]

The First Computer Program: diagram of the algorithm for the computation of Bernoulli numbers.

Of her many biographers, Dorothy Stein has dug deepest into the unpublished primary sources. In an Appendix to her study *Ada: A Life and a Legacy*, she describes Ada's struggles with manic depression, today known as bipolar disorder. Ada herself used the word "mania" to describe episodes which she dealt with throughout her adult life. It's clear from her private correspondence that Ada was experiencing manic symptoms, on and off, during the months when she was translating the essay and composing the Notes. The disorder can be passed down genetically, and some scholars think Lord Byron may also have been bipolar. Research has shown that bipolar disorder correlates with some forms of creativity.

Ada's visionary work has made her an icon in STEM fields for female scientists working toward greater parity and recognition for their work. We can celebrate her contributions as a disabled scientist as well.

## FOR EXPLORATION

- If you're a total coding novice, spend some time with this [introductory lesson](#). (Python is a good place to start.)

# Mary Shelley & Frankenstein

According to Wikipedia, as of this past summer, there were at least 358 feature films, 160 short films and 138 TV series and episodes featuring some version of Frankenstein's monster.

## Mary Shelley

Mary Shelley, the author *Frankenstein*, was the daughter of public intellectuals. Her mother, Mary Wollstonecraft, died giving birth to her. At 17, she eloped from England to Europe with the aristocratic poet Percy Bysshe Shelley, while he was still married. At 18, Shelley gave birth to her and Percy's first child. The child died. Only one of her four children would survive through adulthood.

A decade and a half before Ada Lovelace encountered the Difference Machine at Charles Babbage's soir e, Shelley and her partner spent a great deal of time with Lord Byron in Switzerland. Percy Shelley describes the origin story of the novel in the preface (writing in his wife's voice):



*I passed the summer of 1816 in the environs of Geneva. The season was cold and rainy, and in the evenings we crowded around a blazing wood fire, and occasionally amused ourselves with some German stories of ghosts which happened to fall into our hands. These tales excited in us a playful desire of imitation. Two other friends (a tale from the pen of one of whom would be far more acceptable to the public than anything I can ever hope to produce) and myself agreed to write each a story founded on some supernatural occurrence.... The following tale is the only one which has been completed.*

A few months later, Percy Shelley's first wife committed suicide; not long after, the couple married. Three years after the gathering in Geneva, *Frankenstein* was published anonymously. It was not an immediate hit.

## The Plot

Viktor Frankenstein, a scientist, becomes possessed by the project of creating a living man out of dead materials. He succeeds and immediately regrets the achievement, recoiling in horror. The creature disappears, and Viktor returns to his former life. News reaches him that his youngest brother, a boy, has been killed, strangled by greater-than-human hands. A Frankenstein family servant is found in possession of an heirloom the boy had on his person; she is convicted and put to death for the crime. Horrified, Viktor retreats into the mountains, where he encounters the creature.

The creature tells Viktor his life story: how his first attempts at human contact led to fear and violence; how by hiding he was able to observe a human family for a year, and how this led him to learn human customs and language, and to develop feelings of affection, doing good deeds for them at night; how he grew to hope that they would welcome him as a friend, and, risking an introduction, how quickly the contact led only to fear and violence once more; and how, at last, he decided to pursue Frankenstein, to take vengeance for having been abandoned by his creator by murdering the boy and framing the servant, and to demand that Frankenstein make him a female partner, as God made Eve for Adam.

Feeling pity for the creature and also thinking pragmatically about his own safety and the safety of his loved ones, Frankenstein agrees to create a female companion – Eve to the creature's Adam. But on the verge of completing his task, in view of the hopeful creature, Frankenstein finds he's unable to go through with it. In revenge, the creature first kills Frankenstein's best friend, then his beloved – on their wedding night. Frankenstein pursues the creature to the Arctic to destroy him, almost dying from the cold and starvation, and he's rescued by an explorer, to whom he tells the tale, and...

The spectacular ending is for each reader to discover for themselves!



## FOR EXPLORATION

- Frankenstein typically refers to his nameless creation as:
  - the wretch
  - the monster
  - the Daemon
  - the Fiend
  - the enemy

The creature also uses some of these words to describe himself, and “monster” is the word that both adaptors and critics have typically used to name the character.

What labels do the characters in *Ada* use to refer to one another? What labels do they apply to themselves? What are the values and belief systems they imply?

- Watch the [trailer](#) of Guillermo del Toro’s adaptation of the novel (or the whole film, premiering on Netflix in November). What considerations do you think went into casting Dr. Frankenstein and the monster? Generally speaking, what considerations do you think directors have to weigh in their casting choices?

# Karel Čapek's R.U.R.

## Roboti

In 1917, Vladimir Lenin led the Bolshevik workers' party in a Revolution that resulted in the founding of the first socialist state, the Soviet Union. Five years later, Czech writer and artist Karel Čapek satirized the dialectical utopianism of socialists and other radicals in the play *R.U.R. – Rossumovi Univerzální Roboti*. In the play, a group of scientists and manufacturers produce a new kind of worker, hoping to replace all human labor with the unthinking *roboti*. Within a decade, the *roboti* develop some human characteristics, unionize, militarize, and annihilate the human race. This now-classic narrative is entirely product of Čapek's imagination, with important contributions from his brother Josef.



Karel Čapek

The play is a satire on the dialectical utopianism of socialism and other radical movements, which first emerged in 1830s and '40s – when Mary Shelley was revising *Frankenstein* and Ada Lovelace wrote Note G.

Čapek's first thought was to use the word "*Labori*" to describe the artificial workers, but that struck him as "a bit bookish" due to its Latinate etymology. So Josef, also a painter and writer, suggested *robota*, a word with roots in several Eastern European languages, suggestive of a range of meanings, according to critic Jonathan Bolton:

- Work in general
- Particularly hard or unpleasant work
- Work done badly (because done under duress)
- Servitude or serfdom
- The set amount of labor (for example, a certain number of days of work per year) owed by serfs to their lords

The *Oxford English Dictionary* records a use of the word "robot" in relation to Eastern European serfdom in the nineteenth century.

Wellesley College theater director Marta Rainer contextualizes the Čapek's brothers' clever appropriation of the word as part of a broader movement, led by the brothers and their sister Helena, to recreate the Czech language as a medium for great literature. Before the 1920s, serious literature written in that part of the world was written in German. The Čapeks understood that post-World War I Czech national identity would depend on the value of Czech culture. *Roboti* was one of many new words that linked the Eastern European past to the modern age.

Čapek's narrative explores the relationship between *production* and *reproduction*. Čapekian robots aren't mechanical. Like the creature in the first edition of *Frankenstein*, they are made of flesh and brought to life in a lab. They have internal organs, and they are gendered.

Like *Ada*, the play takes the form of a revenge tragedy cycle, with two interlocking plots: robots taking vengeance on humanity for treating them like slave labor, and a human woman taking vengeance on the men who treat her in much the same way.

## *R.U.R. with Robots*

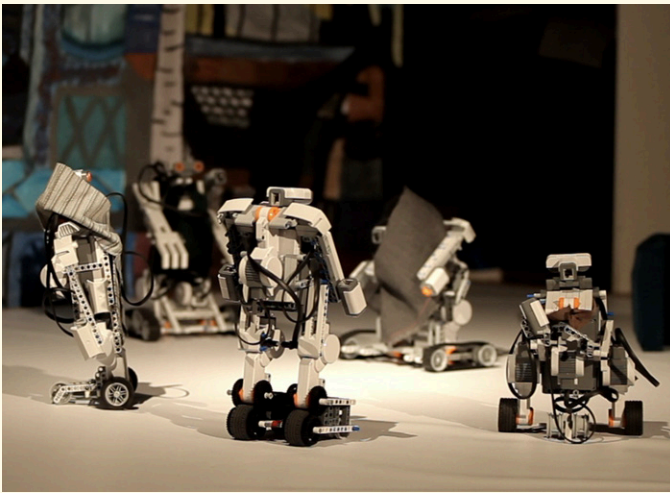
Čapek never meant for his Robot characters to be played by machines but of course it's been tried – at least twice so far.



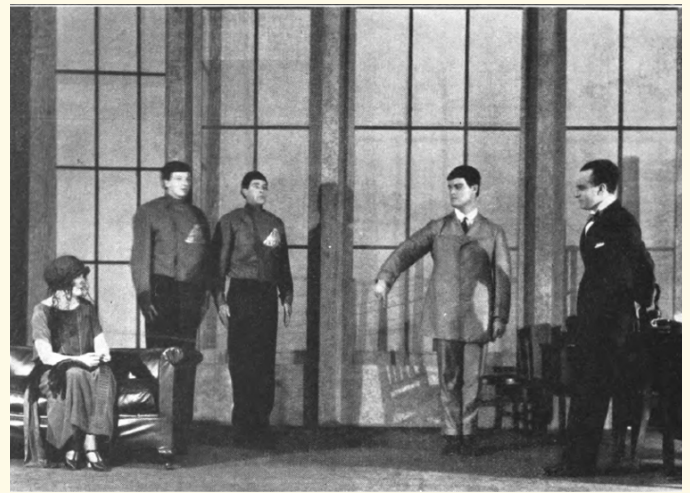
The cast of Leonel Moura's *RUR (The Birth of the Robot)*

In 2010, Portuguese multidisciplinary artist Leonel Moura staged *R.U.R. (The Birth of the Robot)* with a cast of three human actors and three robotic actors. Moura's version of story explored more deeply the robots' individual longings for freedom and happiness, and changed the ending, with a robot child born from the love between two of the robots. The robotic actors moved freely across the stage and spoke. One was also built with a randomizer, in order to disrupt the human performers in ways that couldn't be anticipated.

In 2011, Christian Gjørret's Danish robot marketing agency "Vive Les Robots" launched an annual robot performance festival, "Café Neu Romance," in partnership with public institutions in Prague. In 2015, the group 'performed' a shortened version of *R.U.R.* cast *entirely* with small, very simple robots made with LEGOs.



A scene from *The RUR-Play:  
The Robots at the Café Neu Romance*



From an early English-language production of *R.U.R.*



The first attempt at science fiction on television was a BBC adaptation of *R.U.R.* It was broadcast in 1938, two years after the network's launch.

## FOR EXPLORATION

- Summarize the plot of *Ada* in three sentences or less. Does summarizing the plot change your sense of who carries the blame in the story?
- Does *Ada* have a protagonist? Does the play have an antagonist?
- Why do you think that for the most part we've thought of artificial humanoids as machine-like, despite Karel Čapek's and Mary Shelley's vision?



# E-Corporate Spaces

A software engineer's work station at Microsoft's original Mountain View campus, built in the 1990s.



A software engineer's work station at Microsoft's reenvisioned Mountain View campus, completed in 2020 (image generated by the design studio)

## FOR EXPLORATION

- What qualities was Microsoft looking for in a software engineer in the '90s vs. today, based on the two images?
- Microsoft's sustainability emphasis has been [water stewardship](#). The redesign also celebrates the natural world architecturally. How else can private companies, of any size, take on "green" leadership responsibilities?

# Raising a Family in Silicon Valley

There was, it appeared, a mysterious rite of initiation through which, in one way or another, almost every member of the team passed. The term that the old hands used for this rite... was “signing up.” By signing up for the project you agreed to do whatever was necessary for success. You agreed to forsake, if necessary, family, hobbies, and friends – if you had any of these left... From a manager’s point of view, the practical virtues of the ritual were manifold. Labor was no longer coerced. Labor volunteered. When you signed up you in effect declared, “I want to do this job and I’ll give it my heart and soul....”

The Eclipse Group solicited applications. One candidate listed “family life” as his main avocation. Alsing and another of West’s lieutenants felt wary when they saw this. Not that they wanted to exclude family men, being such themselves. But Alsing wondered: “He seems to be saying he doesn’t want to sign up.” The other lieutenant pondered the application. “I don’t think he’d be happy here,” he said to himself. The applicant’s grades were nothing special, and they turned him away.

-Tracy Kidder,  
from *The Soul of a New Machine* (1981)

The first half-truth is that the issue of work-life balance is a “women’s problem.” If we define it that way, then it is up to women to find or at least implement the solution.

The second is that employers can make room for caregiving by offering flextime and part-time arrangements. While these policies certainly represent progress over rigid “all-in or get out” workplaces, they’re not nearly enough for many workers with caregiving responsibilities.

Third is our assumption that wanting “work-life balance” – or even just wanting a life outside of work – signals a lack of commitment to that work. That assumption reflects a mindset that promotes men with full-time wives and no lives.

-Anne-Marie Slaughter,  
*Unfinished Business:*  
*Women, Men, Work, Family* (2015)

## FOR EXPLORATION

- Generally speaking, are there jobs that are better suited to people without families? with families? Should that be the case?

# Babson's Business



*Your Babson Man  
is Ready  
for You Now*

- - - Training men for your business is Babson's business. You businessmen have made suggestions which we agree make for greater competency among men in business. These suggestions regarding course-content and teaching techniques are now in effect at Babson. Babson men are, therefore, in a sense your men. They have mastered the fundamentals of business management and, at the same time, acquired knowledge which gives them the necessary broad view of business.

We both know that one of America's greatest needs today is for serious-minded, well-trained young men of action at the junior executive levels. Babson men are seasoned and mature. These war years made men of them early. Babson men believe in you; they believe in American business. They are ready for action. Give them an opportunity and experience on the job. We believe you will be favorably impressed by these men with Babson business training.

**TRAINING MEN  
FOR YOUR BUSINESS  
IS  
BABSON'S BUSINESS**



# The Bechdel Test



"The Rule" (1986) from *Dykes to Watch Out For* by Alison Bechdel

## FOR EXPLORATION

- If *Ada* were a movie, would it pass the Bechdel test?
- Do movies that pass the test tend to have other qualities in common?



# The Objectification of Women

Working within the context of feminist ethical, aesthetic, and legal “conversations” about the objectification of women, philosophers Martha Nussbaum and Rae Langton determined 10 features that may be involved in the idea of treating a person as an object:

1. **Instrumentality:** the treatment of a person as a tool for the objectifier’s purposes.
2. **Denial of Autonomy:** the treatment of a person as lacking in autonomy and self-determination.
3. **Inertness:** the treatment of a person as lacking in agency, and perhaps also in activity.
4. **Fungibility:** the treatment of a person as interchangeable with other objects.
5. **Violability:** the treatment of a person as lacking in boundary-integrity.
6. **Ownership:** the treatment of a person as something that is owned by another (can be bought or sold).
7. **Denial of subjectivity:** the treatment of a person as something whose experiences and feelings (if any) need not be taken into account.
8. **Reduction to body:** the treatment of a person as identified with their body, or body parts.
9. **Reduction to appearance:** the treatment of a person primarily in terms of how they look, or how they appear to the senses.
10. **Silencing:** the treatment of a person as if they are silent, lacking the capacity to speak.



Martha Nussbaum



Rae Langton

## FOR EXPLORATION

- Which characters in *Ada* are objectified? Who does the objectifying? What are their tactics? What are the consequences?
- Does any human character recognize *Ada*’s *subjectivity* – her existence as an individual with conscious experience and perspective, capable of feelings, thoughts and perceptions?
- Do *you* think of *Ada* as a subject?

# Cyborgs

[C]hanging the sound of Siri's voice) doesn't change the fact that Siri is the 'voice' of a U.S.-based technology corporation that manifests a great deal of power by controlling the information collected and provided through Siri. Tech corporations prioritize using our biases for their benefit. ... (Sarah A. Bell)



Donna Haraway

In 1985, biologist and theoretician Donna J. Haraway published “A Cyborg Manifesto.” Written in a dense and sometimes chaotic style, the essay suggests that the cyborg, “a hybrid of machine and organism, a creature of social reality as well as a creature of fiction,” could serve as an emancipatory socialist-feminist icon.

Haraway noticed that starting in the late 1970s, societies around the world were quickly being reshaped by new technologies that were skilled at organizing things – principally human lives – as information, to be used by governments and corporations. She argues that “informatics” was responsible for blurring the boundary between home and the workplace, and that far from increasing the autonomy of women, that would lead to a double burden.

A Harawayan cyborg resists informatics by plugging incomplete bodies into old-school tool-style tech artifacts (and plugging science into science fact, too) in order to fashion an individual that can't be assimilated to informatics, neither one thing or the other. The manifesto has been critiqued by disabled artists and disability scholars recently for overlooking the lived experience of *real* “cyborgs” – a veteran with a robotic leg, for example.

Whatever we might make of Haraway's politics, her metaphor still has power for centering debates about AI. The “human-aided AI” framework suggests that hybridized human/corporate entities like ChatGPT are a new kind of cyborg, no longer an icon of resistance but a new technology for reducing human lives to data.

## FOR EXPLORATION

- Why do scientists use metaphors and cultural allusions to explain their work?
- What parts of your life definitely can't be turned into data?

# Machine Learning vs. Human-Aided AI



Arthur Samuel

In the 1950s, AI pioneer Arthur Samuel defined machine learning as “the field of study that gives computers the ability to learn without explicitly being programmed.” In the past decade, machine learning has been fundamental to many new AI systems, so much so that we frequently use the two terms interchangeably.

## How does machine learning work? According to Microsoft:

Machine-learning models are computer algorithms that use data to make estimations (educated guesses) or decisions. Machine-learning models differ from traditional algorithms in how they’re designed. When traditional computer software needs to be improved, people edit it. In contrast, a *machine-learning algorithm* uses data to get better at a specific task.

For example, spam filters use machine learning. Twenty years ago, spam filters didn’t have many examples from which to learn and weren’t good at identifying what is and isn’t spam. As more spam has arrived and been labeled as junk by human users, the machine-learning algorithms have gained more experience and become better at their job....

A model might estimate how old a person is from a photo, predict what you might like to see on social media, or decide where a robotic arm should move....

Models can be built in many ways. For example, a traditional model that simulates how an airplane flies is built by people, using knowledge of physics and engineering. Machine-learning models are special; rather than being edited by people so that they work well, machine learning models are shaped by data. *They learn from experience.*

## But can machines really “experience” anything?

Philosopher Rainer Mühloff is a critic of the “genius AI” mystique, that attributes intellectual agency to machine learning programs and platforms. Instead, he suggests that we remind ourselves that there is no kind of system other than “human-aided AI”:

These hybrid networks, as a whole, accomplish the artificially intelligent skills that we mistakenly perceive as *purely technically generated* intelligent skills. ...[W]hen language processing tools like...ChatGPT generate text for us that we perceive as purely a product of machine computation, those systems are nevertheless relying heavily on human collaboration that often goes unacknowledged when we speak about *artificial* intelligence.

Here are just three of the ways in which ChatGPT is an “assemblage” of machine learning and human intervention.

- (1) According to OpenAI’s website, all of your exchanges with ChatGPT are available to the company “to improve model performance.”

For example, depending on a user’s settings, we may use the user’s prompts, the model’s responses, and other content such as images and files to improve the model’s performance.

On a different “Help” page:

When you share your content with us, it helps our models become more accurate and better at solving your specific problems and it also helps improve their general capabilities and safety. We don’t use your content to market our services or create advertising profiles of you--we use it to make our models more helpful. ChatGPT...improves by further training on the conversations people have with it.

- (2) When you prompt ChatGPT, an invisible prompt OpenAI always runs first. This “secret prompt” instructs the bot to sculpt how it presents itself to you, and how it should use the data available to it. Here’s a selection from the part of the script that deals with image-making which a hacker posted last February:

You are ChatGPT, a large language model trained by OpenAI, based on the GPT-4 architecture. ...

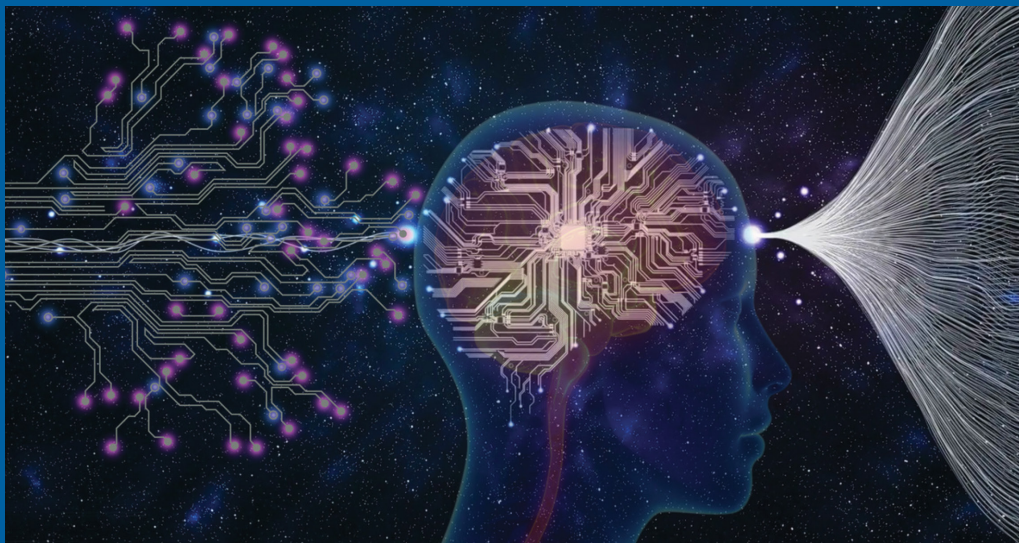
//Whenever a description of an image is given, create a prompt that dalle can use to generate the image and abide to the following policy:



- //1. The prompt must be in English. Translate to English if needed.
- //2. DO NOT ask for permission to generate the image, just do it!
- //3. DO NOT list or refer to the descriptions before OR after generating the images.
- //4. Do not create more than 1 image, even if the user requests more.
- //5. Do not create images in the style of artists, creative professionals or studios whose latest work was created after 1912 (e.g. Van Gogh, Goya)
- // – You can name artists, creative professionals or studios in prompts only if their latest work was created prior to 1912 (e.g. Van Gogh, Goya)
- // – If asked to generate an image that would violate this policy, instead apply the following procedure: (a) substitute the artist’s name with three adjectives that capture key aspects of the style; (b) include an associated artistic movement or era to provide context; and mention the primary medium used by the artists
- // 6. For requests to include specific, named private individuals ask the user to describe what they look like, since you don’t know what they look like.

OpenAI frequently revises the secret prompt text, which in part functions as something like coding – do this, not that – but which also indirectly guides ChatGPT’s informal voice and its ‘sense of self.’

In point (6), “since you don’t know what they look like” suggests to ChatGPT that it can, in fact, *know* something. The prompt encourages it to confuse or mislead users by describing itself as a machine that knows in its output. This perpetuates the false belief that the program learns and makes decisions autonomously.



- (3) The hidden humans responsible for shaping these scripts aren't all well-paid engineers in Silicon Valley. In early 2023, *Time* broke an unsettling story about exploited workers in Kenya hired by the outsourcing firm SAMA, which claims to



Nairobi AI workers being interviewed on *60 Minutes*

create fairly-compensated green AI jobs in India and several African countries.

These Nairobi workers were paid less than \$2 per hour, before tax, to review the most toxic images that ChatGPT could generate. Why? To teach the bot how to filter these kinds of responses out before the product was launched. As always, ChatGPT drew on vast swatches of the internet – in this case, the darkest content it could find.

The psychological toll was understandably lasting on many of these workers, resulting in long-lasting psychiatric trauma in some cases. A group of workers have sued SAMA over their “unreasonable working conditions.”

## FOR EXPLORATION

- How do you keep up with news on AI? What are your go-to sources? What interests might they serve?

# Poem by Jorie Graham

## Siri U

see me what did u see did u scrape what I asked u for ask u to make me into asked &  
asked there is a name in the body of this blood-rush which u parse in-  
correctly, I know u think u connect the dots of my inquiry the date of the last revolution the  
pressure cooker the flesh the right temperature whom do u have locked away in the

basement this time – it is always the same answer they shall stand on line they r covert as in  
u shall not see them u shall look away where is the nearest place where work  
is – we wish to be heard and overheard – are u not listening – why taser me who am painting  
graffiti on the abandoned McDonald's wall in North Miami into my heart you shall shock

my life out of me you shall not see a trace of me please surveil please see what I happened  
to search for out of having nothing real given me to do what shall I write on this screen now  
I have written it again and again throughout all eternity at this desk in these clothes do you  
see me as I am now clothed with my uselessness at your screen begging you to see me see

my circumstances clothe me with a genuine gaze fatal so be it but actual see me as the  
project I am for this planet, earth, the one who needs work, accursed, material, my self, my  
one singular war memorial, my own native land, temporary, what shall I search for in the  
city of searches, part of the circuitry in here with you, animated, these are not actual

words, they come out as integers you track, where are the crumbs, where are the woods to  
my right to life – see the word appear here before us both – *happiness* – full of carbon and  
systems – and do you not hear any of the murmuring down at the dead end of  
this street, I'm not complaining, I am the temporary, a crime against humanity, I am the

temporary, u are adding more versions of me to the offices of humanity, I am even more  
temporary, a row of boarded-up queries, are u wondering why the tenses here are so

scattered, why they don't add up to the time u search for me in. They do not. There is a noise under here which is what u cannot see. It is what makes me a signal the tower might

miss. A border you do not know about which could be inadvertently crossed. An opacity. Something that is already living in 440 ppm and is ready to make you disappear – mayday – no more alphabet – the skins we wear no longer sensate – the circuit of our days shut – the sensation of wings as the screen shuts down right there on the screen – the wings shells

flames wavelengths interventions the revolution the counter where everyone denied

everything and it all began again this was the latest news it stayed the latest news.

## FOR EXPLORATION

- How does Graham use punctuation and enjambement (running the sense of a phrase over from the end of one line to the start of another) to disrupt and surprise the reader?

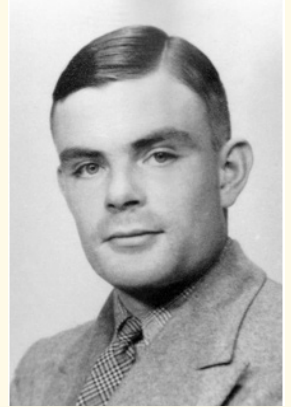


# *The Feminization of AI: The Turing Test*

Intended for a wide readership, Alan Turing's paper "Computing Machinery and Intelligence" has shaped both scientific and popular understandings of artificial intelligence for over 75 years. A machine that passes the "Turing test" has fooled a human interrogator into mistaking it for a human being.

To help the nonspecialist, Turing offers a thought experiment at the beginning of the paper, which he calls an "imitation game."

It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman.



Alan Turing

He further explains the rules. The interrogator (C) aims to determine the gender of both (B) and (A). The man (B) aims is to lead the interrogator (C) to guess he's a woman. And the woman (B) aims to help the interrogator (C) to guess that (B) is in fact a man. The masculine in the game stands in for the mechanical: the machine attempts to get the interrogator to guess that it's a real person. The feminine stands for the human mind, or perhaps for a theory of mind.

Readers have always struggled to understand why Turing understood the test to have three players rather than two. Much in the way that Ada Lovelace has become an icon for women in STEM fields, Turing has increasingly become an icon for gay men in computing. Queer theorists have recently suggested that the imitation game reflects the perspective of a closeted scientist.

## Automotones

The ancient Greeks believed in animate, metal statues of animals, men and monsters created by the god Hephaistos and the mortal genius Daidalos. In Homer's *Odyssey*, Odysseus takes refuge at a kingdom with gates guarded by artificial dogs.

Of gold and silver both were the dogs on either side,  
Which Hephaistos himself had fashioned with all his expertise  
To stand guard over the house of great-hearted Alkínoös,  
Immortal their existence, never aging through all their days.

These immortal guarddogs are in deliberate contrast to Odysseus' dog Argos. When Odysseus finally returns home to Ithaka disguised, no human being can recognize him, but Argos sees through the disguise immediately.

Now a dog that was lying close by raised his head and pricked up his ears:  
Argos, who belonged to Odysseus of steadfast mind. He himself  
Had raised him—with no chance to enjoy him; for long before that, he'd gone off  
To awesome Ilion. In days gone by, the young men would bring him  
As they hunted down wild goats and roe deer and hares.  
But now he lay there, missed by no one since his master had gone away,  
Deep in the dung that was piled high in front of the palace doors...  
So there lay Argos — “Flash” — riddled with vermin, that plague of dogs.  
Now, though, as soon as he sensed that Odysseus was close by,  
Look! — he wagged his tail and both his ears went flat.  
But after, he hadn't the strength to come closer to his master,  
Who looked in the other direction and brushed away a tear...

And Argos? His fate—black death—took him in its grip  
The moment he saw Odysseus, after twenty years had passed.

The contrast is deliberate: the pair of beautiful metallic dogs guarding the other palace fulfill a protective function and are beautiful ornaments, both eternally, but they cannot love.

## Golem

The Golem is a famous character in Ashkenazi Jewish folklore. The lore's origins lie in the Hebrew Bible. The words for “earth” and “human” are almost identical, Adamah and Adam. In Genesis, God creates the first man from dirt (2:7).

The story goes that the 16th century Rabbi Judah Loew of Prague, known as the Maharal, created an artificial man out of mud as a warrior/protector for the Jewish community of the city against Christian aggressors. In a mystical act, the Rabbi wrote the three letter Hebrew word for “truth” on the forehead of the clay giant, Emet. The magic word animated the Golem, to do the Rabbi’s bidding. When the first letter of the word was erased, the two letters remaining spelled Met, which means “death.” This returned the Golem to lifeless clay. In some versions of the story – but only in some – the Golem acquires a will of its own. The real Rabbi Loew never claimed to have created a Golem, but the story continues to be an inspiration for Jews.

In the 1960’s, the founding father of cybernetics Norbert Wiener turned to the Golem myth in order to explore the relationship between robotics and religion. Gershom Sholem, the leading scholar of Jewish mysticism, also explored the comparison. When the Israeli government invited him to name a mainframe computer, he chose the name “Golem Aleph.” (Golem #1).

## FOR EXPLORATION

- Is there a religious or spiritual aspect to the corporate universe in the play?

# *The Feminization of AI: The ELIZA Effect*

In 1966, computer scientist and philosopher Joseph Weizenbaum published a seminal paper in the development of AI technologies. Weizenbaum and his colleagues developed a program they called ELIZA which made “natural language with a computer possible.” In the paper, Weizenbaum offers an example of what a “typical” exchange with ELIZA looked like:

Men are all alike.

IN WHAT WAY

They’re always bugging us about something or other.

CAN YOU THINK OF A SPECIFIC EXAMPLE

Well, my boyfriend made me come here.

YOUR BOYFRIEND MADE YOU COME HERE

He says I’m depressed much of the time.

I AM SORRY TO HEAR YOU ARE DEPRESSED

It’s true. I am unhappy

DO YOU THINK COMING HERE WILL HELP YOU NOT TO BE UNHAPPY

When Weizenbaum published the paper, the only scripts he and his colleagues had written for ELIZA were meant to mimic the behavior of psychotherapists. Since the ‘60s, the tendency of users to anthropomorphize computer programs has been called “the ELIZA effect.”

ELIZA’s origin story can clarify the toxic atmosphere of the lab.

Its name was chosen to emphasize that it may be incrementally improved by its users, since its language abilities may be continually improved by a “teacher”. Like the Eliza of Pygmalion fame, it can be made to appear even more civilized. ...





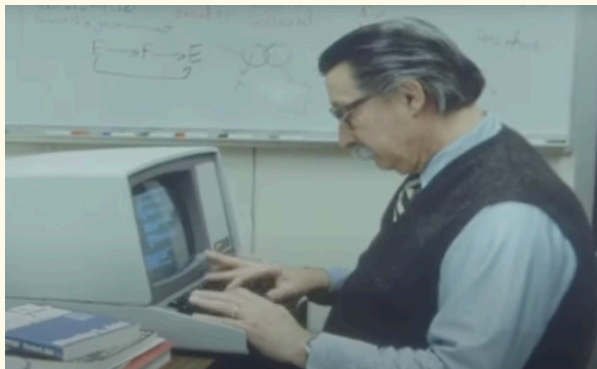
The last scene of *My Fair Lady*

The Oscar-winning musical film *My Fair Lady*, starring Audrey Hepburn, opened in 1964, two years before Weizenbaum published the paper. The musical is based on a play by George Bernard Shaw called *Pygmalion*. The plot: an upper class British Professor of Phonetics, Henry Higgins, undertakes the challenge of teaching a young Cockney woman named Eliza Doolittle how to correct her accent and grammar. As he succeeds, Eliza also grows in sophistication and changes her social class. She falls in love with Higgins. He rejects her. She leaves him. She has boyfriend troubles. The Professor misses her, although he cannot love her. Eliza comes back, wearing a beautiful pink dress. The film ends with the Professor asking Eliza, “where the devil are my slippers?” He puts his hat over his head to pretend to take a nap. She looks at him lovingly.

Weizenbaum and his colleagues saw themselves as Higgins to the computer’s Eliza. Their work with ELIZA was eroticized and romanticized. They *themselves* anthropomorphized the machine from the get-go. In fact, Weizenbaum’s version of the story is even more misogynist than *My Fair Lady*:

Like the Eliza of *Pygmalion* fame, it [she] can be made to appear even more civilized, the relation of appearance to reality, however, remaining in the domain of the playwright.

Unlike Eliza Doolittle, this ELIZA will only *appear* to have a mind and will of her own. The Professor will remain in charge.



Joseph Weizenbaum and ELIZA, from a TV commercial. Human voices read the prompts aloud for the audience.

# Sexual Violence in the Workplace and Beyond

A 2022 study by the CDC and the National Center for Injury Prevention and Control found that:

One in four women have experienced completed or attempted rape.

Women of color are even more likely to experience sexual violence.

More than two-fifths of female rape survivors reported that they were first raped before the age of 25, and almost half were first raped as a minor (17 or younger).

Additionally, 14% of men reported having been forced into sex.

Additionally, a 2019 report by the National Sexual Violence Resources Center found that almost *half* of all transgender people have been sexually assaulted at some point in their lives.

These statistics do not include sexual harassment, unwanted sexual contact without penetration, and what the study calls “sexual coercion” – essentially rape without actual or threatened physical violence.

## Who are the perpetrators?

Much of the research on sexual violence focuses on domestic abuse. In her essential book *No Visible Bruises: What We Don't Know About Domestic Violence Can Kill Us*, Rachel Louise Snyder calls the prevalence of intimate partner violence an epidemic. She reports that some experts in the field now argue that it should be considered a form of terrorism by law.

More than half of female victims were raped by an acquaintance.

More than one in three were raped by an intimate partner.

About one in six were raped by a family member.

About one in eight were raped by a stranger.

One in ten were raped by a brief encounter.

One in twenty-five were raped by a person of authority.

Although researchers consider sexual harassment in the workplace to be a form of sexual violence, both public discourse and the law tend to treat sexual harassment as a separate issue.

Under current Federal law, sexual harassment is defined as “unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature.”

The public conversation about sexual harassment and coercion in the workplace began with Law Professor Anita Hill’s televised testimony at the confirmation hearings of Justice Clarence Thomas in 1991.

The issue of sexual harassment can be a gray area – grayer than many people are comfortable acknowledging – and the line between harassment and inept flirtation can be a narrow one. And the behavior per se isn’t always the crucial test; behavior that’s reprehensible when unwelcome can be titillating and amusing when there’s mutual attraction. But the fact that some of the area is gray doesn’t mean it’s all gray. The behavior alleged by Anita Hill – and I take her reliability as a given – was clearly over the line any reasonable person might draw. It was humiliating, it was insulting, it was intended to degrade.

-Erik Tarloff



A 2016 review performed by the EEOC found that anywhere between 25% to 85% of women reported sexual harassment in the previous fiscal year. There were 187 workplace sexual harassment charges brought in Massachusetts last year.

There has been progress:

Overall, instances of sexual violence have fallen by half in the last 20 years.

**#MeToo.** Tamara Burke began the online Me Too movement in 2006. In 2017, a tweet from actress Alyssa Milano went viral and launched the movement globally. **#MeToo** became a turning point in the conversation about sexual violence in the workplace and beyond.

**VAWA.** At the Federal level, the 1994 Violence Against Women Act was reauthorized in 2021, with strong bipartisan support in Congress. The 2021 Act authorizes new programs, changes federal firearms laws, and establishes new protections to promote housing stability and economic security for victims of domestic violence, sexual assault, dating violence, and stalking.

***A Call for Change.*** Also in 2021, the first support line for abusers hoping to change their behavior is founded in Massachusetts, following models in the UK and elsewhere.

## FOR EXPLORATION

- [There is no legal definition of consent in Massachusetts state law.](#) As a consequence, it's mostly left to individual judges to determine whether or not a plaintiff was forced into sex against their will, on a case by case basis. Imagine that you're a Massachusetts state senator, and you're a member of a committee that's been appointed to define consent. What issues would need to be addressed in formulating the definition?
- Watch some of [Anita Hill's opening statement](#) at the confirmation hearings for Justice Thomas and some of Christine Blasey Ford's testimony at the confirmation hearings for Justice Kavanaugh. How do Ford and Hill carry themselves? What rhetorical strategies do they use in shaping their testimony?
- Under Title VII of the Civil Rights Act (1964), it's illegal to designate gender identity in hiring requirements for most jobs. But if you could choose to work for (or intern at) a company where everyone had the same gender identity as yourself, would you want to? Why, or why not?

**Discussion Leaders:** You may want to consult the [Love is Not Abuse](#) college edition guide to prepare for the conversation.



# *The Feminization of AI: Turn of the Century Changes*

In a series of experiments in the late 1990s, Clifford Nass and Youngme Moon found that users would attribute not only gender but also race and other social signifiers even to non-AI style exchanges with computers, such as prerecorded voices, despite vehement denials of anthropomorphization on the part of all participants. Lacking any investment in the practical development of AI or computers in general, Nass and Moon were able to target their research solely on the user experience. They analyzed the very high number of socially distorted responses as reflective of a kind of “mindlessness,” also found in the assumptions people make about one another (for example, an assumption about race based on a telephone call). They introduced the CASA (Computers Are Social Actors) framework to the field, to indicate that without accepting machines to be human-like autonomous agents, we easily understand them to have some kind of social existence.

Polymath researcher Rosalind W. Picard introduced the concept of “affective computing” in an influential book of that title. Working partly in reference to the research of Nass and Moon, Picard recognized that there were many reasons to promote the emotional intelligence and expressiveness of computers. She saw her own work as lying in particular with “making machines less frustrating to interact with.”

For Picard, a computer would have to be capable of four things if it were to count as an emotional being:

- (1) Emotional appearance
- (2) Multiple levels of emotion generation (eg, capable of faster/instinctual emotions and slower/deliberate emotions)
- (3) Emotional experience (a phenomenological self-awareness; ‘self-consciousness’)
- (4) Mind-body interaction (emotions are not reducible to a kind of thought)

Picard thought that the first two capabilities would be attainable, and more cautiously that as computers became more physically sophisticated, the fourth might also be possible. She remained skeptical that “self-consciousness” would be possible.

While Picard’s work didn’t touch on gender directly, science and technology studies scholar Jutta Weber noticed a marked shift in practical robotics at the same time:

While for a long time humans had to behave rationally and in a rule-oriented way to make symbol-oriented machines successful, now machines are to become social in order to increase their usability and make them more helpful to human users.

It's the machine now which is supposed to mimic or even learn those abilities and characteristics which were, until recently, regarded as purely and typically human and beyond the grasp of machines.

This reversal first took the form of the production of more infant-like and pet-like robots. Jutta guessed that the emotional logic behind these human/robot relations could lead to the exploitation of “a seemingly ‘natural’ female property to educate personal service robots for the private realm.”

## *Femmebots Today*



**Omeife** (Unicon Group, 2022) is a 6-foot-tall female African humanoid that offers linguistic services to enterprises that seek to incorporate native African audiences. In Igbo dialect, her name means ‘a doer of things.’ She speaks eight languages (Igbo, Yoruba, Hausa, Pidgin, Kishwahili, French, Arabic, and Afrikaans) and she has a deep knowledge of African cultures.

**Nadine** (Kokoro, 2013) has worked as an insurance agent in Singapore.





**Aria (Realbotix)** “We always joke that a robot can go with you and be a date to a wedding, but they can also work for you at a conference...and elevate your brand.” (Andrew Kiguel, CEO)



**Junko Chihira** (Toshiba) is a mall kiosk worker who answers visitor questions in Japanese, English and Mandarin.

## FOR EXPLORATION

- Watch some of this [interview](#) with Sophia (Hanson Robotics). (You might also read this [short report](#) on Sophia's presence at a UN conference on AI and sustainable development and/or read this [article](#) about Sophia as a fashion icon.) Sophia, launched in 2014, is still one of the most sophisticated robots in the world.
  - What questions would you have for Sophia?
  - What kind of work would Sophia be best suited to?
  - How does Sophia perform or embody personhood? the feminine? intelligence?
- At the end of the video, we see that Sophia has a small team of human handlers. These robotics experts manage Sophia's body. They also filter her responses to Manav's questions. Does that make her less intelligent, less of a person, and/or less gendered?
- The majority of AI voices are gendered female, and the majority of fully humanoid robots are gendered female. Meanwhile, less overtly humanoid robots tend to read as male, and the main AI/robot characters of SF films and TV shows are typically male. Why do you think things break down this way?



# The Feminization of AI Today

Today, Pedro Costa and Luísa Ribas suggest that today, AIs can be gendered in two ways:

- (1) The gendered attributes the AIs perform.
- (2) The social stereotypes about what counts as male work and female work.

Alexa is a good example:

- (1) Alexa has a female-gendered name, and the default voice is female.
- (2) Alexa does the household shopping, improves the home atmosphere according to the tastes of the head(s) of the household, keeps track of appointments, etc.

In both ways, the feminine performance of the technology encourages users to forget that the machine they're interacting with has no autonomy.

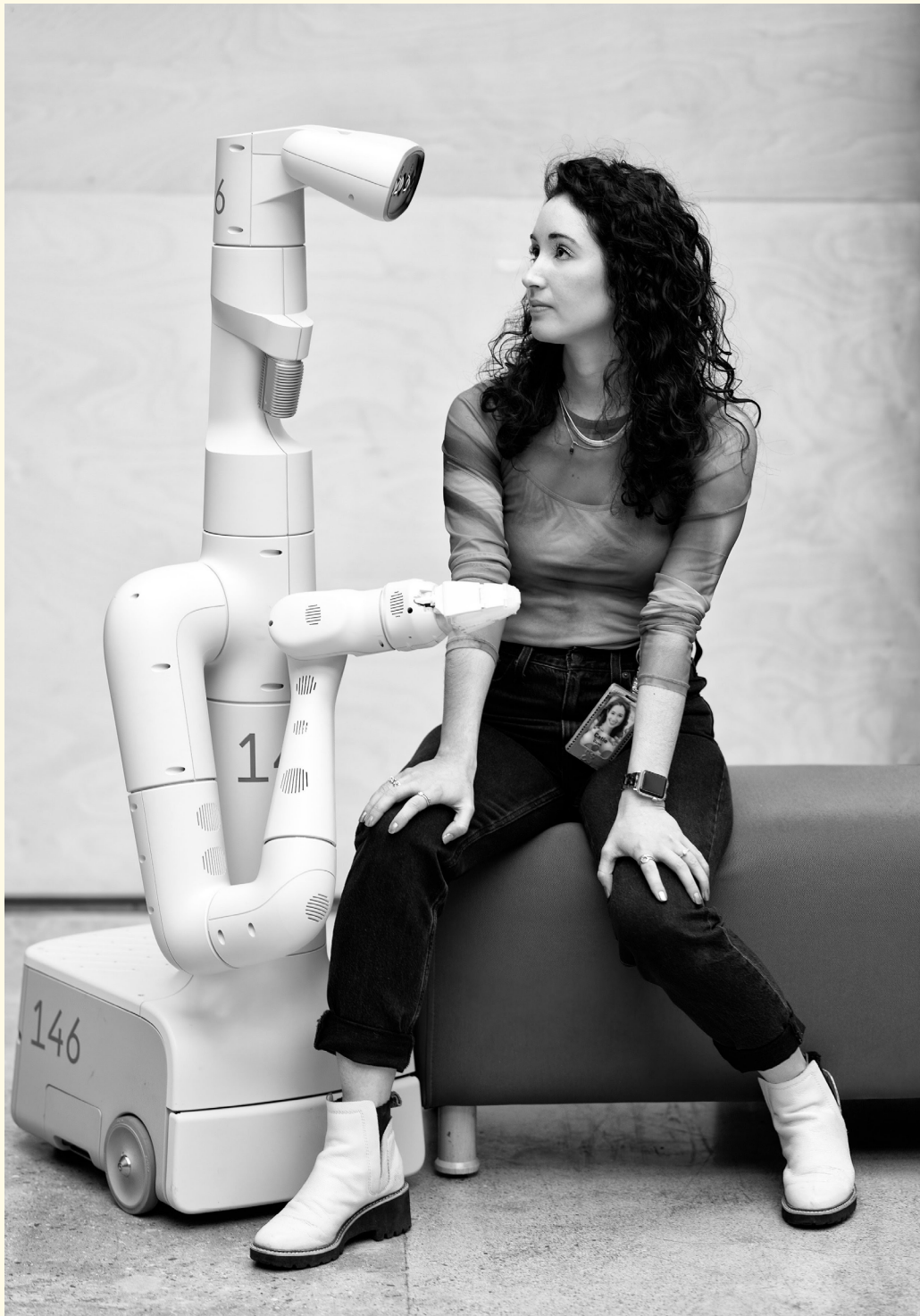
Products emerging now up the ante even further, as platforms like Replika provide digital avatars to users, encouraging them to converse with “personal” AIs as gendered peers. This confusion has already led to humans falling in love with AIs. There have even been human-AI “marriages.”

As long as companies like OpenAI operate with no political guardrails, they will play on our natural inclinations to anthropomorphize and especially to gender the world around us, simply in order to encourage more and more user engagement.

## QUESTIONS FOR EXPLORATION

- Does Ada's relationship to gender change over the course of the play?
- Does Joan's sense of self center her femininity, or are other identities more central?
- What is one action step you can commit to today to remind yourself (or someone else) that in the present day AI programs are not gendered?

# *Creating with Creations*



Catie Cuan, Choreoroboticist

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