Sarah Buckius

*Artist & Educator, based in Santa Cruz, CA. Through my work in video, performance, photography, digital media, interactive-coded games, and fiber-arts, I weave "Intertwined HerStories" that originate from the cross-section of *-gender-*-technology-*-lens-based-media-*-the human body-*-caregiving-*. I work in the space of absurdity that emerges at the point of disconnect between the seemingly coded/structured/ordered/production-based space of technology and the messy/complex/idiosyncratic space of humanity and am interested in uncovering the ways in which working with and creating technology illuminates humanness, including gender biases. Bringing together my perspectives as an artist, mechanical engineer, and mother, I have two underlying goals of my work: 1) supporting DEI in STEM fields by illuminating the ingenuity of diverse groups of people and 2) making visible the invisible labor of women in both the domestic and public spheres.*

An interview by **Francis L. Quettier**
and **Dora S. Tennant**
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Hello Sarah and welcome to *WomenCinemakers*. Before starting to elaborate about your film we would invite our readers to visit *https://sarahbuckius.com* in order to get a wider idea about your artistic production and we would start this interview with a question about your background. Your work explores the intersection of technology and humanity, and your artistic practice spans a wide array of mediums, from fiber arts to interactive-coded games. How do you decide which medium best serves the narrative or

concept you're working on? Additionally, as both an artist and a mechanical engineer, how do these two identities inform each other in your work, particularly when addressing issues like gender bias in technology?

Sarah Buckius: Looking back on my experience in mechanical engineering (from many years of distance), I have a lens by which to see many of the layers of bias in STEM fields. I would like to think that things are much improved now in STEM fields, but I continue to hear similar stories to mine and read about others who are still experiencing similar issues.

I also see (from the distance of time) that I did not experience these things once I began studying and working in the creative design and art fields (or at least to the degree that I did in mechanical engineering). Like the time when I studied and worked in the field, mechanical engineering has a very low number of women to this day (maybe about 10% according to some estimates ***https://swe.org/research/2024/employment/***).

I think that, at that time, much of what I experienced was just normalized. Things are changing and many people care about making positive changes to support diversity in these fields. With more people talking about it and working on it, it is a good time to join this conversation.

I make my recent creative work during a time of reflection about my experiences then and reading about the bias that existed in history and exists to the present day. As a result, my recent work engages with science-fiction framework as a way to expand this conversation using creative means. In the speculative space of science fiction, I can do so many things at once, such as point to issues with technology that need to be reconsidered, speculate about alternative possibilities, highlight the ingenuity of underrepresented groups, and play with different conceptions of reality. I can follow my curiosity as I make connections that are far-reaching and surprising and that also combine so many layers of perspectives and complex ideas.

For years I have been searching for a connection between all of my experiences and interests. It all sort of coalesced in this project.

For this special edition of *WomenCinemakers* we have selected *!!! techn010ffspring !!!*, an extremely interesting video that can be viewed at *https://vimeo.com/763541408*. We really appreciate how your animated creations challenge traditional notions of technology. The absurdist technological beings you've created seem to reflect *a certain vulnerability and*

humanity **despite their surreal nature. When walking our readers through your usual setup and process, would you tell us something about the genesis of *!!! techn010ffspring !!!*?**

Sarah Buckius: I am so delighted that you see the vulnerability in the work. I am drawn to work that reveals human flaws and lays humanity bare in vulnerable ways. When I look at work like this, I feel like it lets me see the artist, see the perspective. I also love dark comedy because it is a way to grapple with life's challenges, but also keeping the piece and the viewer from sinking too deep, without coming back up for air.

Many technologies are designed to hide the human's hand in their creation. This tendency makes it harder for people to be primed to see the bias in the design of the technology. As a result many people forget that there were human designers who designed it, manufactured it, and *different* humans who use it. Yet, we think of technology as separate from humans. And there is a common conception that technology should "work". Yet, it was designed by humans, humans who are flawed and humans who are very different from one another. Not all technology will work for all people because we have different needs, bodies, perspectives, living situations, experiences, etc. Perhaps the elements of vulnerability remind us that technology is designed and made by humans, and that humans, who are flawed, and are also not the same at all.

Also, it is probably about the fragility of humans. As we have all experienced, (but are somehow primed to ignore), technology is not foolproof. It breaks, it fails, it does absurd things. At some level, perhaps, I am making the connection between the fragility of humans and the fact that technology (built by humans) can also be defective, infallible, imperfect, faulty, breakable. As a cancer survivor, and also as a person who has endured other serious medical issues (all related to female reproductive organs), I am no stranger to living in a body that is flawed. And I had to rely on many medical technologies for treatment. So, there is an interesting connection between having a flawed body and relying on technology to fix it, while also being aware of the flaws in technology. Then, add the irony of the fact that my cancers and medial issues related to a gendered body.

The title "*!!! techn010ffspring !!!*" is striking and unconventional. What does it signify, and how does it encapsulate the themes of your video art?

Sarah Buckius: While I know that bias in tech is logical in the sense that it is due to layers of history, it feels illogical and absurd at times (at least to me!!!)

(Did you notice the three exclamation points there? Ha:). When technology fails, it often feels absurd because, like so many of us, we expect it to "work". We forget it that it is actually made by humans, because it seems so unlike the human body and mind in so many ways.

The absurdity of constructed binary ways of thinking (suggested by the binary of 010) feels nonsensical sometimes. I feel like so few things in the world are exclusively binary; I always see a continuum or complexity or layered connections. The binary of code is a human construction. Binary ways of thinking simplify a complex world for us. But, in the end, the world is still complex, even despite our efforts to binarize it.

I like the idea of taking something like a punctuation mark that has a "strong" meaning and turning it into a visual sort of frame around the title, while also still suggesting the sense of strength and maybe, even shouting. I like to use absurdity to turn things on their head. The 010 and !!! stand for what they stand for in the cultural, language-based sense (strong voice and binary code), while also being turned on their head and made absurd, AND adding a bit of strength (!!!). Sometimes I sort of want to shout:)

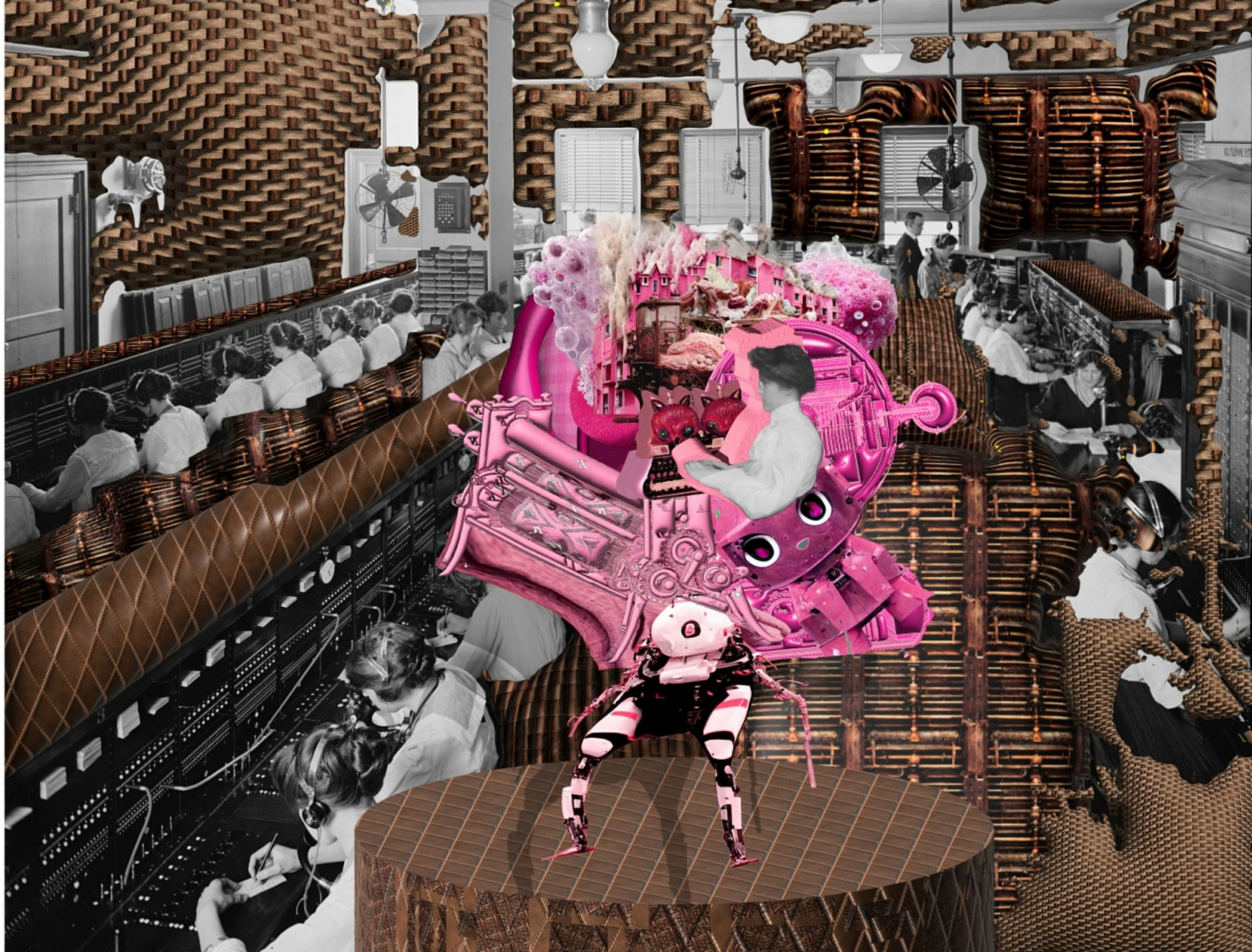
I am also interested in the work of human computers and punch card operators, who were mostly women ***https://www.thenewatlantis.com/publications/the-age-of-female-computers***). As someone who studied advanced mathematics in my engineering undergraduate studies, and looking back on this experience from a distance, having studied art and industrial design, I find that I have an appreciation for the fact that math is a process by which humans use symbols to represent an idea. Writing is also a process by which we use symbols to represent an idea that requires lots

of complex thinking. And then, what happens when you feel that there is absurdity in a system that uses these symbols? You feel frustrated, but also yearn for a way to be freed from the constraints? That is one reason why I find it amusing and enjoyable to render the symbols absurd. While, they also, are still constrained to the system, so they hold part of their meanings.

Your work combines altered and found imagery into digital assemblages that create intricate, layered visuals. Could you walk us through your process for selecting and transforming these visual elements? How do you decide what to include, and what role does each element play in conveying the themes of gender, caregiving, and technology? Additionally, how do you balance the tension between the familiarity of found imagery and the innovation of your creative transformations?

Sarah Buckius: The process is so fun. I feel like I am investigating and following my curiosity while also transforming the found patents and articles into a new thing. Like stitching together remnants of fabric and making a quilt, something new with a new purpose that still holds the essence or parts of the original. Like being a mechanical engineer or industrial designer of the absurd, instead of having a clear plan, I follow my discoveries and weave them together like a patchwork quilt or quilts of the Gee's Bend quilters.

There is logic and structure with elements of randomness and chaos that sits inside of the framework of order. I intentionally, purposefully build in chance (by following connections between images and articles and patents in a sort of meandering way like following untreated paths in the forest as they connect to my personal everyday life, which connects to



the world around me) as a way to resist and question and challenge dominant paradigms of 1) the inevitable march of technological progress, 2) technological utopianism, 3) technological optimism, and 4) the unfettered belief in technological determinism.

I gather the patents, articles, and other bits of visual imagery and media articles and improvise as I bring them together. Sometimes they connect to each other visually and sometimes I make a connection conceptually.

Many times the connections happen by chance, which I invite as a way to bring unexpected imagery and primary sources together. Chance can feel absurd. As I grow older, I see how life is riddled with chance occurrences and unexpected outcomes. As a caregiver, especially, you must deal with the unexpected every minute and you must be nimble and be able to improvise. Engineers are trained to attempt to eliminate the possibility of chance occurrences or design to make sure technology can prevail under chance occurrences. But, because we are human, we can't account for every possible unexpected outcome and the process ends up feeling a bit absurd and impossible.

One part of the process of my most recent projects that I love is the beginning where I devise the structure of the project. Once I develop the structure, I can play with how the pieces fit together in the larger puzzle.

!!! techn010ffspring !!! **draws upon historical and contemporary contributions by women in technological and scientific fields. How did you choose the figures and stories you wanted to highlight, and what role does their legacy play in your work?**

Sarah Buckius: I hope to highlight the ingenuity of these women. From the creative inventions of women, as evidenced by their patents, to the work of women with technological devices from typewriters to manufacturing equipment, I hope that these aspects of the work challenge traditional assumptions about gender and technology. At the same time, collaging various elements together allows me to also highlight bias where I discover it.

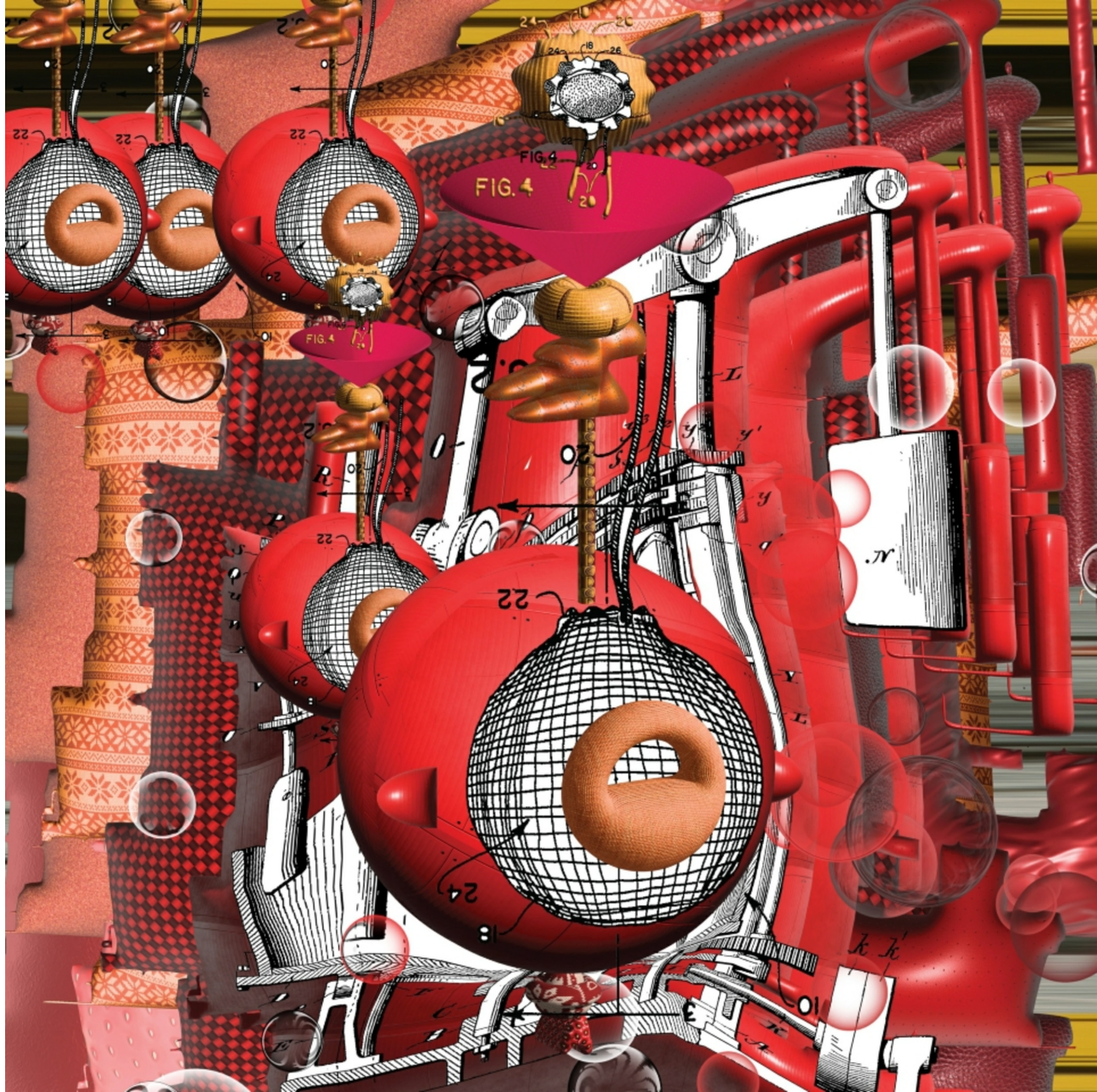
I spend hours searching for patents by women from the late 1800s to early 1900s. I also have scoured the Library of Congress image database to find images that show women working with technology, especially mechanical technology. And I also read so many current articles and books on technology. When one looks at all of the images that I have gathered, one after another, as I have designed into my website

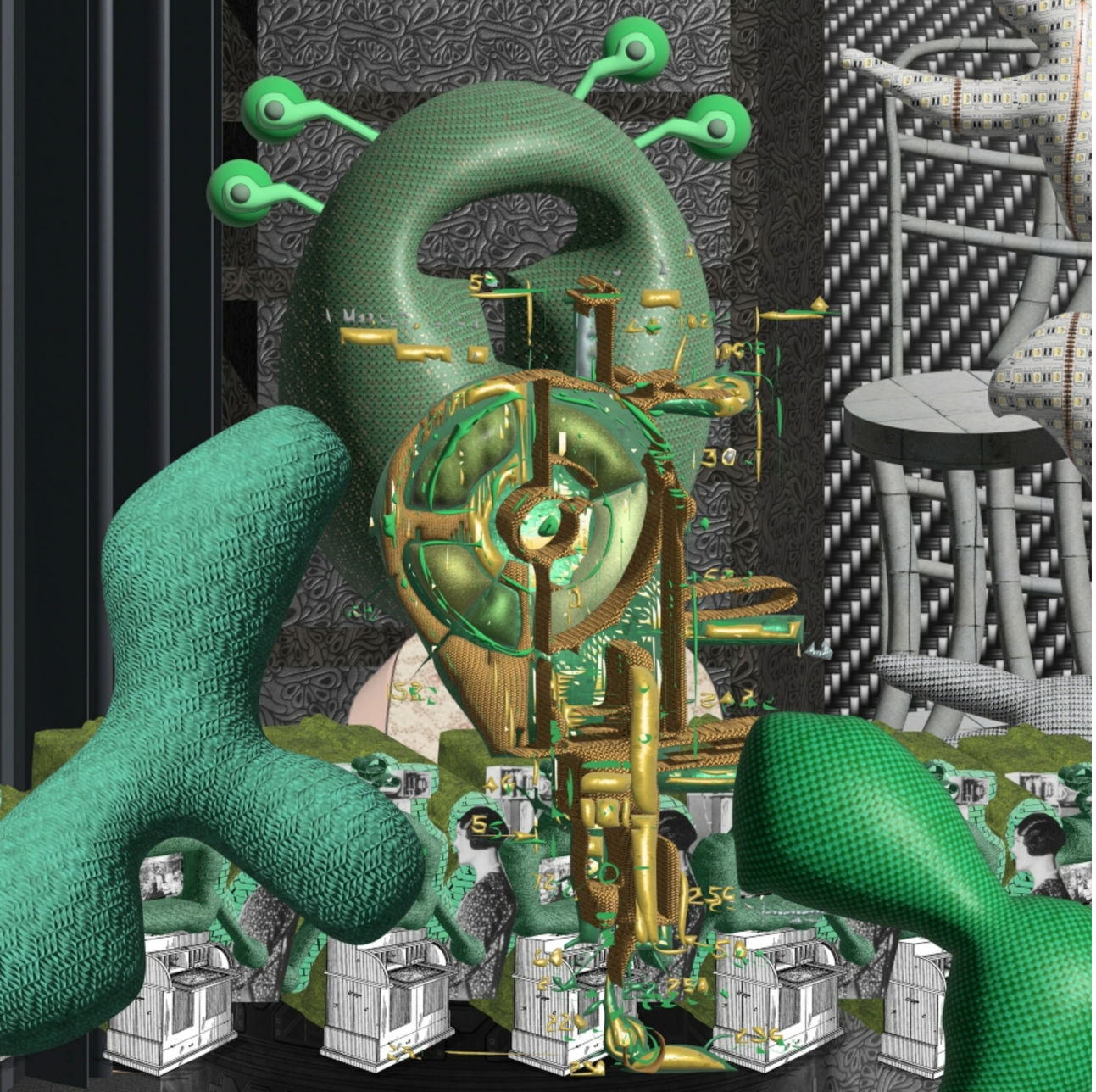
(*https://techn010ffspring.com/techn010ffspring-v-4-1-and-v-4-2-and-v-4-3/* or *https://techn010ffspring.com/techn010ffspring-pp-5/*), I think it sort of does the same thing that viewing negative stereotyped images might do. But, in this case, It tells a different story, a BETTER story. It changes what we see. It changes how we see. It tells a new story about gender and technology and ingenuity. People might start to see the world in a new way.

Your project challenges conventional definitions of technology by presenting it through the lens of caregiving, gender, and absurdism. In this context, what do you hope audiences take away from your reimagining of what technology could be? Do you see this as an invitation to rethink the relationship between humans and the tools we create, especially in terms of empathy, care, and societal roles? How might this new definition of technology reshape our understanding of its potential in everyday life, both now and in the future?

Sarah Buckius: Right now, I am thinking a lot about the role of empathy in our technological landscape. Caregiving requires empathy. I think that the world of technological design could benefit from more empathy. It could benefit from humility and admitting when mistakes are made and when there are more questions than answers. The motto of "move fast and break things" can yield innovation and encourage risk-taking, no doubt, but I wonder at what cost, when this space of risk-taking doesn't take into account empathy and consideration of people is not part of the discussion? What if every time a technology was designed or built, the creators worked from a perspective of caregiving? From a desire to really help people and the earth? I just see a disconnect between so much of the technological advancements and the underlying goal of ingenuity to improve people's lives. It feels absurd that technology is supposed to improve our lives, but so much of it today does the opposite. It doesn't Care.

If there are not financial or cultural incentives to make technology that supports underrepresented people and not the mainstream capitalist goals, then designs will not be created in those directions to meet needs of these populations. When the dominate goals are for financial gain, technology will tend in these directions to support the goal of making money for the companies designing the technology. The ideas that make money are the ones that make it to market. Ideas that might be hard to manufacture, help a small percentage of people, or which do not show capacity to make companies money will not make it to the stage of





production. As a result, lots of interesting and potentially helpful ideas will not be realized. And we will never experience the benefit of these things. There are many problems in society that would not be financially profitable for companies, especially those that support underrepresented groups or challenges experienced by people who are not in cultural power. These will never be built.

Your animated beings simultaneously evoke humor and discomfort. How do you use this juxtaposition of the grotesque and the poetic to engage the viewer on a deeper level?

Sarah Buckius: I love the fact that you mention the grotesque and poetic. To me, the human body is both grotesque and poetic. The bodies of living things are both grotesque and poetic. Caregiving is grotesque and poetic. Maybe things in the world, that I find to be most profound are complex in this way; they are never just one thing. They are always 100 different things at once. Things that I find inspiring and awe-inspiring and thought-provoking are always grotesque and poetic.

Grotesqueness can signify the things we find alarming or disturbing. While I can at once marvel over technological advancement and human ingenuity, I feel disgusted at certain issues related to bias in tech. Who gets access to life-improving technology? Whose hands are part of the design (and thus their perspective is baked in)? Whose voices are left out of the design and manufacturing of technology? This results in designs that are biased. These things are not readily apparent, but when you experience the absurdity of technology not working or failing, they emerge from the grotesque depths.

Building this grotesqueness into the piece, similar to how I take glitches and mistakes and broken tech and build them in, and then even exaggerating it, can render the whole system absurd in a sort of resistance to it or calling attention to it.

Horror and abject things can do something similar. There is a push away but also a pull into these things. Like you have to look away but are so curious and want to look back at them.

But then I like to add in the cuteness, the endearing quality to show the complexity. The endearing, cuteness factor is something that I am also interested in.

In one of the classes that I am teaching, we discuss the fact that technology is not ever neutral even though there is a perception that it is. The extreme

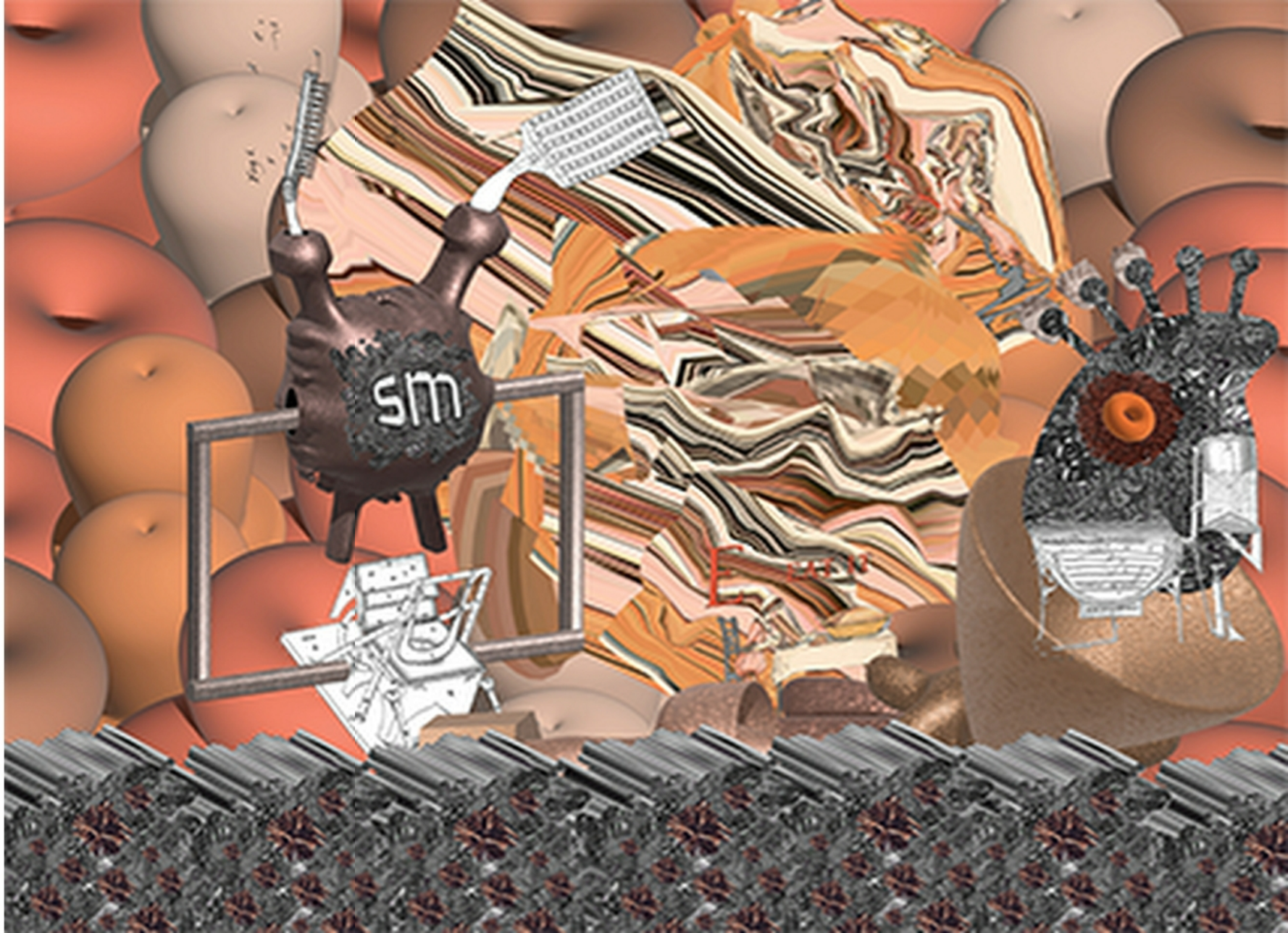
is that so much of technology is not designed for people with differences from a pretty narrow definition of "normal".

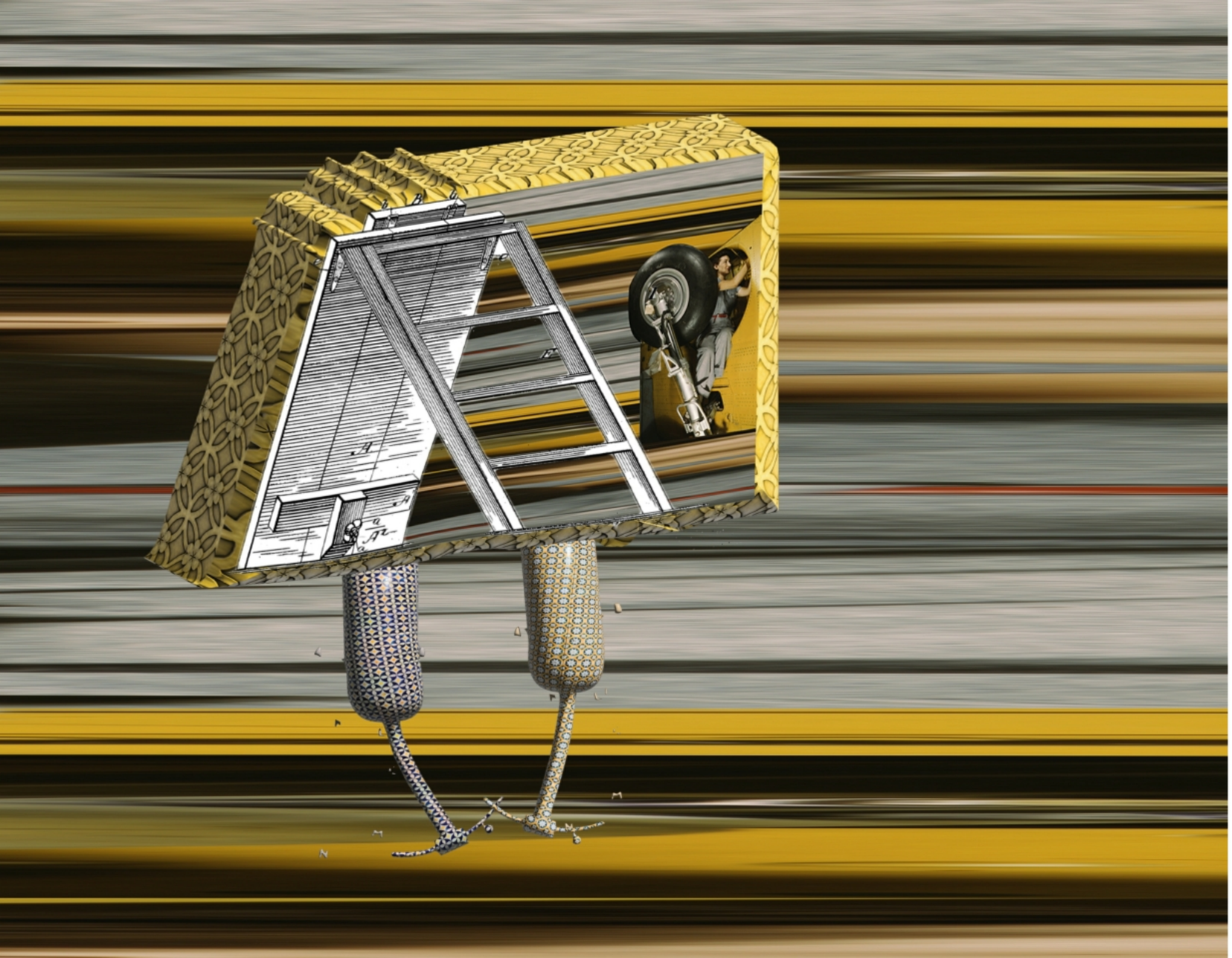
Some of the sounds in "*!!! techn010ffspring !!! — that seem to mirror the behavior of machines and technological beings* — while tied to technology, also carry a somewhat playful and humorous quality. How did you approach integrating these playful sounds, and what effect do you hope they have on the audience in relation to the serious themes explored?

Sarah Buckius: Some of the sounds suggest bodily fluids and messiness of the human body, especially when you are a caregiver. Other sounds are technological in nature, pointing to the various inventions referenced in the piece.

This piece was created around the time that AI was emerging in culture. I experimented with an AI story generator at the time and every story that I asked the AI to write about women and technology was grotesquely gender-biased. In addition, there was lots of gobbledygook in silly, absurd output. And the interesting thing was, that given my honed gender-bias lens, everything that was output seemed like gobbledygook, even if it technically had some logic. Also, I began experimenting with prompts related to women and technology in AI image generators and the output was also deeply gender-biased and also ridiculously absurdly illogical.

All of these observations and experiences are woven together in the final piece. The voice is an AI voice generator in which I





input parts of text from the AI story generator when I asked it to write a story that intertwined elements of my personal life and experiences along with text from patents by women and also contemporary articles about women and technology.

For my related piece (***https://vimeo.com/user3811880***), I turned language into letters to play with like collage. Taking them out of context and deleting letters to make a new string of nonsensical letters that I fed into AI voice generators.

I turn the letters (that have specific meanings) into meaninglessness as way to suggest the absurdity of bias that is also completely logical due to the cultural context from which it originates.

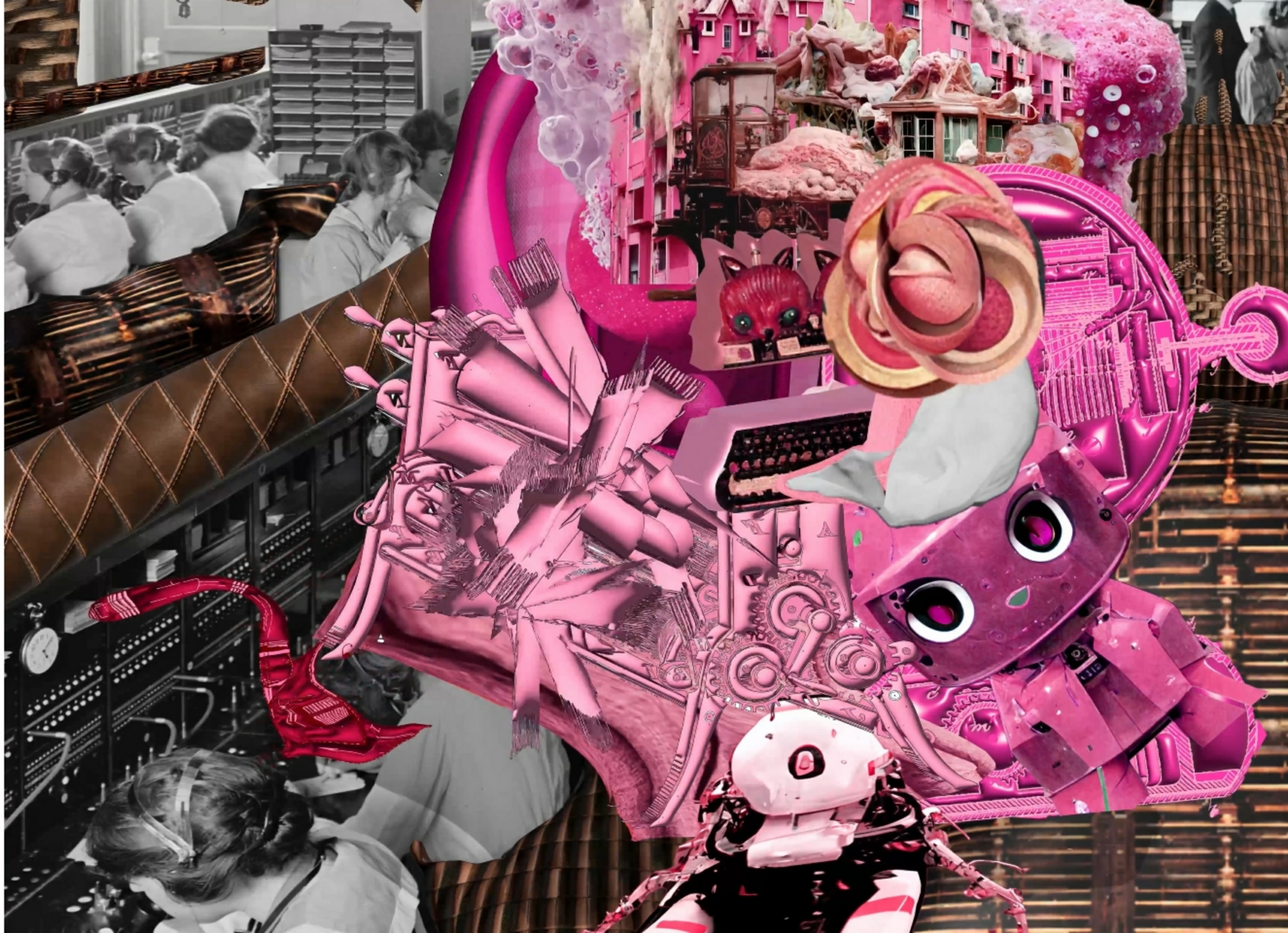
Also, playing with language by using letters like they are used in algebraic mathematics (as a stand in to represent something else), also suggests the ways in which computer technology is built on underlying framework of code. With code, the programer specifies what a letter corresponds to. And, this sort of links back to the absurdity of trying to simplify our lives and world into binaries.

In an absurdist framework, caregiving can take on a surreal or even nonsensical quality. How do you balance the potentially comedic or unsettling aspects of absurdism with the underlying human need for connection and care? Is this tension intentional, and if so, how does it reflect the complexities of caregiving in modern society?

Sarah Buckius: Definitely! In the US, there is a caregiving crisis. Supports for caregivers are basically nonexistent in American culture. While caregivers care deeply for their children (and the elderly), they also could be better carers if our culture supported them. Due to the social fabric of today's society,

caregivers often labor alone without the side-by-side support of other caregivers. Families might live far from their familial support networks. Childcare is so expensive and hard to secure as the number of childcare workers is dwindling. Parents are not guaranteed paid leave from work to have children. College is more and more expensive and can be unattainable for many people. Many jobs do not have flexible hours to support caregiving. Jobs might be far from a place where parents can afford to live. Home prices are high so families struggle to afford rent and might never own a home. Reproductive health care is being threatened. We don't have universal healthcare. There are no school buses where we live. My community is designed for two parent families with one parent who doesn't work. Every week (in certain places in California) there is a half day of public school once a week on Wednesday. There is no public preschool. The list goes on. Coordinating and managing the lives of children often falls to the mother, taking time out of the already limited time that parents have. Children don't just play freely anymore with other children in the neighborhood due to the design of neighborhoods, schools, busy lives of families, responsibilities of caregivers in their professional lives. There is no childcare in the summers unless you can afford to pay tons of money to do camps.

On a totally different note, I have been thinking a lot about the cultural phenomenon of cuteness. There are theories that some people are drawn to cute things because it evokes a sense of joy and makes people want to care for things; it builds attachment.



And cuteness is considered a combination of smallness, awkwardness, clumsiness, vulnerability, silliness.

I have been theorizing that maybe in today's technological world, this feeling might be even more pronounced because, with so much artificial technology in our lives (all around us all the time), we have yearning for something that is alive. Maybe we are craving something to nurture and, hence, our technology has more and more of a sense of needing to be nurtured. It could of course be used as a way to entice us to buy the technology. On the other hand, as technology often does, it reveals things about human nature, in this case it points to the human tendency to want to care for things that are vulnerable. Cuteness (in living things like babies, kittens, puppies, etc) has been thought to inspire people to want to care for diminutive, vulnerable, awkward, endearing things. In this case, I propose that it extends to our technology.

If caregiving support is so nonexistent in our culture, perhaps we throw up our hands (decide not to have children) and instead care for technology? Yikes! But, also, gesh I get it!

Thank you, Sarah, for taking the time to discuss your work with us today. As we conclude our conversation, we're particularly interested in the trajectory of your artistic journey. Could you share with our readers a glimpse into your upcoming projects? We're eager to understand how you envision your artistic practice evolving. Are there emerging themes you're passionate about exploring, or innovative techniques you're considering incorporating into your creative process?

Sarah Buckius: I am working on a new project that is also in the science-fiction space and will involve a performance that interweaves various issues such as time travel and human computers, punch card operators, and The

Matilda Effect. I will be working in 3D modeling to create imagery and moving collage. It will also have interactive elements like my previous performance (***https://techn010ffspring.com/if-x-robot-then-y-move-fast-and-break-things-in-the-z-self-cleaning-house-of-n-coherent-nonsense-while-m-being-mechanical-turk/***) that invite the audience to participate.

The work has a working title of " If (x = AI Robot Coach Jennie Johnson is Tireless), Then (y = battle contraband AI girlfriends, z = popup adds, a = abandonment emails); and (p = marketing onslaught); In the (z = uterus of plushie cat mother); of (n = Coherent Nonsense); While (m = moving my desk, t = typing on a typewriter, h = punch card punching, r = ReplaceAnything); For (h = human computer); In (s = Santa Cruz); with (ballot box); Because of (Matilda Effect); While (being tardigrade);"

The biggest new element in this project will be creating spaces and technologies using 3D modeling. I have already gathered over 50 patents, articles, photographs, and other items to weave into the piece. Many of these items come from The Computer History Museum in Silicon Valley. I am really interested in how women are represented in photographs while working with technology in the imagery from this museum. There are so many photographs in the Computer History Museum. ***https://computerhistory.org/***

As in my previous performance, there will be audience interaction built in.