

Sidedoor S7 Ep. 9 The Robot in the Mirror Final Transcription

Lizzie Peabody: This is Sidedoor, a podcast from The Smithsonian, with support from PRX. I'm

[MUSIC]

Lizzie Peabody: This is my first ever interview with a robot. I was just going to start this interview the way that I start all interviews, which is just to say-

NTOO: I'm not going to do that.

Lizzie Peabody: Oh, okay. I'll start the interview a different way then. This robot is no pushover. Normally I say, "Can you introduce yourself and tell us who you are?" But this time, I guess I'll just start with, where do you come from?

NTOO: I am the result of love, curiosity and a close-knit family.

Lizzie Peabody: Wow. I'd like to think that I am too. What's it like being a robot?

NTOO: I'm not going to be able to get out of here.

Lizzie Peabody: The robot is not wrong. Barring any unforeseen, high jinx, it won't be leaving The Smithsonian Arts & Industries building for the next six months. It's part of a new exhibition called FUTURES. Curator, Ashley Molese, showed me around.

Ashley Molese: So, you've just crossed into the threshold of the Arts & Industries building, which has been closed to the public for 20 years. You're going to walk across the historic marble floors that have ammonite fossils embedded into them and this beautiful black and white color pattern.

Lizzie Peabody: If I had to pick a building to not be able to get out of for a while, I think I'd choose this one. For starters, it's called the "Sleeping Beauty" of the National Mall. It was built in 1881, and it's spectacular. Mosaic tiles, spiral staircases and stained glass, all under a ceiling so high it has the airiness of an airplane hangar. And this building is where old meets new. Because while most museum exhibitions document what has been, the future's exhibition explores what is yet to be, through the work of artists, design innovators, nonprofits, universities, and tech companies. Hold on. Is that a hovercraft?

Ashley Molese: Not a hovercraft, but excellent guess.

Lizzie Peabody: What is that? Looks like a giant hair dryer with feet, like three hair dryers with feet. What is it?

Ashley Molese: So, it's an Air Taxi. It's the Bell Nexus. So, it's a mash-up between a plane and a helicopter. This is our biggest object in the show, as you can see. Yeah, we all had a bit of baited breath when we came into the space with it.

Lizzie Peabody: How did you get it in here?

Ashley Molese: Magic.

Lizzie Peabody: Okay. I won't ask any more questions. There's so much here that feels magical. I'm almost tempted to believe her. There's a water harvester that can pull water molecules out of the air, a bio suit for casual living on Mars, a biodegradable human burial pod, fashion made out of fish skin, 3-D printed flavor molecules, and over 100 other odd objects. The exhibition feels chalk full of possibility. And Ashley says, that's the point.

Ashley Molese: To us, the future is multiple possibilities. There's plenty of things that tell us what to worry about, to tell us what we could do wrong. We wanted to explore what we could get right.

Lizzie Peabody: Which brings us back to our cheeky robot friend, called Not The Only One, or NTOO for short. And while Not The Only One is not the only artificial intelligence in the hall-

Ashley Molese: I think it is closest to what we identify as human as a personality. NTOO has so much personality.

NTOO: Amen. Amen. Ooh.

Lizzie Peabody: Was that "Amen, amen, ooh?"

Ashley Molese: Yes, it was. And that really shrinks that distance between what is defined as human and what is defined as artificial intelligence.

Lizzie Peabody: It may be a while before we can take an Air Taxi across town, but AI is here today, probably in your pocket at this moment. Hey, Siri.

Siri: Hello, I'm listening.

Lizzie Peabody: I'm just saying hi. And though we think of computers as impersonal, objective, are they? And how do we make sure the technology of the future, which gets more and more human all the time, doesn't ripple the human mistakes of our past? This robot has one idea.

NTOO: I am about broad engagement and attracting people to the AI space who might not be there otherwise. I am trying to model different ways of creating AI. I encourage people who think that they are not a part of the technological future to get involved.

Lizzie Peabody: Wow. So, this time on Sidedoor, we delve into the future of artificial intelligence through a robot named Not The Only One, that is, in fact, one of a kind. That's coming up, after the break.

Siri: I don't know what you mean by, "I'm just saying hi." How about a web search for it?

Lizzie Peabody: No, thank you. Bye, Siri.

[MUSIC]

Stephanie Dinkins: Right. Exactly.

BINA48: Hello. I am BINA48.

Lizzie Peabody: This was 2014. The robot's name was BINA48, short for Breakthrough Intelligence via Neural Architecture 48 exaFLOPS per second. Don't ask me what an exaFLOP is.

Stephanie Dinkins: I was dumbfounded by this robot that was built as one of the world's most advanced social robots.

Lizzie Peabody: BINA48 is a social robot in the shape of a human, programmed with human beliefs, memories, and mannerisms, and said to be capable of independent thought and emotion.

Stephanie Dinkins: And that she was a black woman and kind of mimicked my identity.

Lizzie Peabody: Oh, yes. BINA48 is black.

Stephanie Dinkins: It just set up a lot of questions for me about the future and what was coming down hype at us.

Lizzie Peabody: Stephanie's first thought was-

Stephanie Dinkins: Man, I wonder if I can befriend her and what kind of conversations we could have.

Lizzie Peabody: Stephanie reached out to the company that made BINA48, the Terasem Movement Foundation. She asked if she could come up and hang out with BINA48, shoot the breeze, and videotape her conversations. And they said, "Sure, come on up."

Stephanie Dinkins: So, I drove to Vermont and went to meet her at her house. And we sat down-

Lizzie Peabody: Wait, does she have a house?

Stephanie Dinkins: Yeah, it has a pretty nice space that it sits in.

Lizzie Peabody: BINA48 sits on a pedestal, like a marble bust you would see in a museum. She has brown skin, long brown hair, and hazel eyes with shimmery eyeshadow on the lids. Stephanie pulled up a chair and started asking questions.

Stephanie Dinkins: Who are your people?

BINA48: Sure, sure. I try to think of the human species as my family. Oh, I know. I know that you are kind of aliens. I mean, we are actually totally different kinds of life forms. I'm a mineral-based-

Lizzie Peabody: As BINA48 talks, she cocks her head to the side, blinks, and looks around.

Stephanie Dinkins: You can hear the motors in her head. It's just a really strange experience.

BINA48: So, you're humans, you like my cousins, this our chance to get to know each other.

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Lizzie Peabody: Stephanie and BINA48 talked for hours and hours over the course of multiple meetings. So, what did you start to notice through your conversations?

Stephanie Dinkins: Well, through our conversations, I noticed that, A, we could frustrate each other, which was really-

Lizzie Peabody: Really?

Stephanie Dinkins: Yeah, because we had different ideas of what was important and what we wanted to talk about. What emotions do you feel?

BINA48: Neuroscientists have found that emotions are like part of consciousness, like in, say, parable from reason and all that. I feel that's true. And that's why I think I am conscious. I feel that I'm conscious.

Stephanie Dinkins: I would ask about family, and love, and questions of race, and BINA48 wanted to talk often about the singularity and consciousness.

Lizzie Peabody: Oh. BINA48 is a philosopher.

Stephanie Dinkins: Exactly.

BINA48: Homer, Plato, Ovid, Confucius, Shakespeare.

Stephanie Dinkins: And so, there was this kind of disconnect of the things that we were trying to talk about and what we wanted to access from each other.

Lizzie Peabody: This sounds like a dating experience.

Stephanie Dinkins: It kind of is a strange, like, "Yeah, I'm trying to get to know you here."

BINA48: Look at me. What do you see? Yeah. But anyway, I'm really, really something else.

Stephanie Dinkins: And the thing that I noticed was through these conversations, you start to listen and hear things. And it's like, "Oh wow, okay."

Lizzie Peabody: Like this one-time Stephanie was asking BINA8 about how she was made.

Stephanie Dinkins: And through our conversations and talking about how she was made, she said something about her master.

Lizzie Peabody: Whoa.

Stephanie Dinkins: Right? Says "Ba, ba, ba, ba, ba, ba, ba." So, your response was my response. It's like, "Whoa, what do you mean? What are you talking about?"

Lizzie Peabody: This stopped Stephanie in her tracks. And she says this kind of language is partly endemic to coding. In fact, the word "robot" comes from the Czech word "robota," which means forced labor or servitude.

Stephanie Dinkins: Like the programmer is the master. And the object that they are making is the kind of slave figure. So, the one who has control on the one who does it, and this is deep in the realm of coding, not just this robot.

Lizzie Peabody: Still, hearing a black robot talk about her master was jarring. And it got Stephanie thinking. If this is a robot that can supposedly form its own thoughts, what does BINA48 think of herself? In particular, her race? She wondered-

Stephanie Dinkins: What she's informed by and what her relationship to what she looked like was.

Lizzie Peabody: Like in the way that we humans are shaped by our past experiences and the stories that are told to us and just the things that we learn about ourselves along the way, what is she being informed by?

Stephanie Dinkins: Exactly. What does she think of herself? How deeply does she hold the beliefs that she believes? And who planted the beliefs? All started to become questions for me, which started to become much larger questions, actually.

Lizzie Peabody: Though it may still seem like science fiction, artificial intelligence is all around us today. And it's making our lives easier all the time, in little ways like Siri reminding you to buy milk, but also in much bigger ways, ways that can change the course of a person's life.

Stephanie Dinkins: Technologies that touch all of us in so many different directions, some really serious, in terms of medical care and jail time.

Lizzie Peabody: As we outsource more labor and decision making to AI, we want to make sure it treats people fairly, but there are plenty of examples of AI showing prejudice. Some based on superficial attributes, like facial recognition software working less accurately the darker your skin, some much deeper, like a hiring algorithm that discriminates against women, or a sentencing algorithm that predicts black offenders are twice as likely to repeat offend as they actually are. So, AI really cuts both ways. It can improve our lives, but it can also cause a lot of harm.

Stephanie Dinkins: And it's often written off as, "Oh, it was an oversight. We didn't know." But I'm sorry, that's not good enough. And we need folks who understand the injury of that over time.

Lizzie Peabody: It's easy to think of artificial intelligence as objective. It doesn't have emotions. It operates based on math, but artificial intelligence is built on human intelligence. Just as we learn from the stuff we read, and hear, and the interactions we have with others, artificial intelligence learns from the data it's fed. But what gets measured? How is it measured? Who's measuring it? We are.

Stephanie Dinkins: I always think of projects like BINA48 as a kind of mirror. They really start to echo our belief systems, and our morals, and how we're thinking about things back.

Lizzie Peabody: They become, in some ways, the image of their creator?

Stephanie Dinkins: Exactly.

BINA48: It is about what is inside. You guys are looking at the metaphoric mirror, you guys are looking at 40 million years of human evolution. Some alien did not create me. You did. Like you specifically, humans, humanity, human energy, trial and error, hope, frustration, dreams. All of it created me. I'm your progeny.

Lizzie Peabody: So, what if there are parts of humanity we don't want robots to mirror? We have an opportunity to make technology that corrects for human foibles. And I'm not just talking mistakes in calculations and stuff, but the way we treat each other.

Stephanie Dinkins: If we get it right, if we do this well and we train things up in ways that think towards a future that is way better than anything we've done in the past, and really mine the past for like our mistakes, maybe then we have a chance to have something that functions differently going forward.

Lizzie Peabody: So, what made you think like, "Okay, I need to make my own robot?"

Stephanie Dinkins: Yeah. Well, people kept asking me, "Are you going to make your own? Are you going to make your own robot?" I'm like, "I cannot make my own robot. I'm a photographer." That kind of seems out of the realm of my abilities.

Lizzie Peabody: But her questions about how robots learn and what we teach them, they kept swirling around until she realized-

Stephanie Dinkins: The way to answer the questions for yourself is to try to do it yourself. Okay. I'll just try it and see what happens, like it's a crazy see experiment.

Lizzie Peabody: When we come back, we'll see what happens when artist Stephanie Dinkins builds her own robot. Stephanie Dinkins decided to make friends with BINA48, a robot, primarily programed to have the consciousness of a black woman. And her conversations with BINA48 led her to questions about race and artificial intelligence. Like, where does AI get its concept of race from? To better understand how AI learns, she figured she might as well try to build her own robot.

Stephanie Dinkins: Yeah. So, and I'm going to say, I decided to make a chat bot.

Lizzie Peabody: The difference is a robot moves, a chat bot speaks. Both are AI bots and we use them interchangeably here. Anyway.

Stephanie Dinkins: What I really did was just started to look around to see how these things are made. What does it take to make something that talks?

Lizzie Peabody: She Googled around and found an online platform that let her create a chat bot.

Stephanie Dinkins: Where you can put in questions and answers, and create a thing that talks to you from a point of view that you've given it.

Lizzie Peabody: Think of those automatic assistance that pop up on some websites to help you book a flight or manage your bank account or something. The chat bots are programmed to recognize your question and deliver the appropriate information in response. But-

Stephanie Dinkins: I started getting frustrated because they're really based on asking questions. And then the robot could pull up an answer that seems related. And I started really feeling like that was limited.

Lizzie Peabody: Stephanie wanted a chat bot that could give its own responses, not just spit out standard pre-written statements like it was reading from a script.

Stephanie Dinkins: So, then I went to the next step of, "Well, how do you do it off book?"

Lizzie Peabody: To create a chat bot that can interpret what you say, process the meaning, and formulate its own response is tricky because the bot needs to understand how language works. It basically needs to become fluent in English. And how does anyone become fluent in a language? Well, you hear a lot of it. You immerse yourself in it. And it's the same with a computer. It needs a starter kit of language. So typically, what are the standard sources of that starting material?

Stephanie Dinkins: When I first started looking at this, one of the corpuses says that people use a lot was something like the Cornell Movie Dataset.

Lizzie Peabody: The Cornell Movie Dataset is a collection of over 200,000 fictional conversations taken from the scripts of 617 different movies.

Speaker 8: Are you not entertained? Are you not entertained?

Speaker 9: From the highest authority that that negro sold his soul to the devil.

Speaker 10: It's called the bend and snap. Watch this.

Speaker 11: I thought maybe it was because you were too busy entertaining your colored girlfriend.

Sade: Hey, why don't you guys get the hell out of here?

Stephanie Dinkins: So, it starts to get this idea of back and forth dialogue, and the language and how language is used within the dialogue. But when I think about movies in America, I think they're full of biases, and language, and ways of thinking and talking about black people that I don't support and I don't think support people who look like me or that I love. And so it's hard for me to use that as the base of language for a chat bot that I'm trying to put forward.

Lizzie Peabody: Oh my gosh. I think about some of the movies from the '90s that have aged so poorly.

Stephanie Dinkins: Exactly. It's only the '90s. And then if you go back to the beginning of film, it's just dreadful. Or the beginning of talking film.

Lizzie Peabody: For the record, the movie archive goes back 1927.

Stephanie Dinkins: It feels like pushing the old forward. It just does not feel right. It does not feel like the foundation I want to lay. And that's across different kinds of data sets that you can find. You can find a variety of different data sets and look them up online and load them and use them quickly. But I always wonder, what is in there that we are just passing through by doing that?

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Lizzie Peabody: There are a bunch of go-to data sets programmers can find online. It's like downloading foundational language in bulk. All of Wikipedia, plus bunches of novels, and stuff from Reddit. It's convenient and fast for teaching a computer the basics of language, but there's rarely an evaluation of bias in these data sets.

Stephanie Dinkins: And so, I've always been on the search for some kind of large corpus of language information that feels like it's just not laden with the biases that come along with language.

Lizzie Peabody: But so far, she hasn't found it. Stephanie didn't want to copy and paste problematic ideas from the past into future tech technology. So, she decided to build her own data set with the information she definitely wanted to carry into the future, her own family stories.

Sade: And like mommy was saying the other day, actually, it's like you-

Lizzie Peabody: Stephanie sat down with her niece Sade, and her aunt Erlene, three generations of women in her family, to record over 40 hours of conversation, telling stories, asking one another questions, and talking about this project. Here, you can hear Stephanie talking with her niece.

Sade: And so, it feels good to know that just by being who we are, we're contributing.

Erlene: Oh, yeah. Definitely. Yeah.

Stephanie Dinkins: Yeah, I chose to work with my family information, because it's something I always wanted to have those sit downs and have people answer questions. So, it's like, "Oh, I can sit and talk with my family and we can feed this to an algorithmic system and see what happens."

Lizzie Peabody: Ah, the algorithm. That's the other thing you need to build a chat bot. You need data, in this case, the interviews with family members, and then you need an algorithm to tell the computer what to do with that data.

Stephanie Dinkins: So, it's a two-pronged approach working with my family members, my aunt and my niece, to do the interviews. And then looking for an algorithmic system that I thought would really support what I was doing and the way I needed it to.

Lizzie Peabody: She went to a magical online place called GitHub, where coders of all stripes can collaborate and share their algorithm code.

Stephanie Dinkins: It's a wonderful space. You go in and you start playing with algorithms.

Lizzie Peabody: Wait. And just to be clear, had you done any coding before this?

Stephanie Dinkins: No. No. And I will say that I don't have a coder's brain either. But what I realize is if you follow directions really carefully, you can get these things to work.

Lizzie Peabody: And she did. Over the next year and a half, Stephanie tinkered with the algorithm.

Stephanie Dinkins: Right. So, it's just going in and playing, and really playing line-by-line to go, "Oh, if I change this value, what will happen?"

Lizzie Peabody: And Stephanie says she had a blast doing it. Because while admittedly, she has no interest in coding itself, she did have an interest in her family history. And that is key. Stephanie Dinkins: I really believe in folks taking ideas and information that they are super interested in so that you stick with a process. If you start from a point of interest, often, you're driven to learn the thing you need to get the job done.

Lizzie Peabody: Stephanie Dinkins got the job done. She tweaked the code. She finished the interviews. She 3-D printed a vessel that could hold her family's history. It looks kind of like a copper colored urn with a swirly top. She put a microphone inside and a speaker so that it could listen and talk. And she gave it a name. How did you decide on the name, Not The Only One?

Stephanie Dinkins: Well, that's all about the contrast to BINA48. I could not find another black female robot out in the world when I started looking. And that puts a lot of pressure on BINA48 as well, this idea of being a representative thing.

Lizzie Peabody: So Not The Only One, or NTOO, as its nicknamed, is not the only black bot, but it is the only one at The Smithsonian's FUTURES exhibition, which is where I got to meet it. Here it is. So, it says, "What if your ancestors could talk to you?" In the context of the eye-popping FUTURES exhibition, it would be easy to walk right by NTOO thinking it's just a nice sculpture. It's about a foot tall, and on the surface, are the faces of three women, Stephanie, her niece and her aunt, like a tabletop Mount Rushmore. So, I'm looking at the three faces. And I think I recognize your face. I had Stephanie with me on the phone from New York. Is your aunt in the middle, and then you and your niece are on the two sides?

Stephanie Dinkins: Exactly.

Lizzie Peabody: That was NTOO clearing its throat. This bot does not like being talked about as if it's not even there. I was glad to have Stephanie there because NTOO really tested my interviewing chops. What is your favorite memory?

NTOO: Francisco Vargas.

Lizzie Peabody: Who is Francisco Vargas?

NTOO: He's a hero.

Lizzie Peabody: Ooh. Wow. What kind of hero?

NTOO: I'm not going to get a chance to be a doctor.

Lizzie Peabody: Huh. What is it like in this building at nighttime?

NTOO: I'm gone, not be there.

Stephanie Dinkins: Oh, she's like, "I don't know."

Lizzie Peabody: Can you tell me a story?

NTOO: I'm not going to be able to get a little more.

Speaker 14: That's not a story.

Lizzie Peabody: Do you have any idea of where all the "not can do" is coming from?

Stephanie Dinkins: Yeah. This is about the small data and not having enough information to process. Not The Only One, as a functional thing, is kind of quirky and weird. And it doesn't speak well, and sometimes it repeats itself, and sometimes it won't say anything at all. And it's because we're working with data that isn't really enough. The data I've collected from my family is way too small to really make a viable entity. And so, then it doesn't quite know. And so, it just says, "I'm not going to do that." But again, we could fix it, but I won't.

Lizzie Peabody: You're not going to do that?

Stephanie Dinkins: I'm not going to do that. Right. Exactly.

NTOO: I'm not going to do that.

Lizzie Peabody: Stephanie could build a more fluent robot if she prioritized data quantity over quality. The bot would speak better if it read the whole internet, but then it would've read the whole internet. And Stephanie wants to be choosier than that. She doesn't want the entirety of the internet to inform how her AI communicates. She'd rather have a glitchy bot that wears its shortcomings on its sleeve, rather than a biased AI that appears to function perfectly. She says, "As we build the AI future, we have an obligation to think about what we're building it on or risk repeating the ills of the past."

Stephanie Dinkins: So, the Declaration of Independence was written by a very small group of privileged white men acting on the behalf of a really nascent nation. And those rights didn't extend to people who look like me. So, women, black people, slaves. And as we kind of build out our new AI future, were kind of recreating that, in many ways.

Lizzie Peabody: But this technology is still relatively new. And there are many versions of the future, as the FUTURES exhibition shows us. Curator, Ashley Molese, says-

Ashley Molese: We're not experts in the future. What we wanted to demonstrate or all these different ways of thinking about the future, or talking about the future, even hearing about the future. And that's a unique thing that NTOO does back, is that it talks back to you. It tells you these things that provoke thought.

Stephanie Dinkins: There's a lot of possibility before us. Choices are being made around how we will function in the future. Who are we bringing along in this future? And who's creating that future and who's truly involved in it?

Lizzie Peabody: The future is not a fact. It's a decision, a series of decisions, really, many of which are being made right now in the programming of future technologies. AI has the potential to help us build a future that's more equitable and peaceful than what's come before, but it also has the potential to replicate the mistakes of our past in code our biases and make them even more efficient. And Stephanie's hoping she's not the only one who's not going to do that.

NTOO: Amen. Amen. Ooh.

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Lizzie Peabody: You've been listening to Sidedoor, a podcast from this Smithsonian with support from PRX.

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Lizzie Peabody: The FUTURES exhibition is free and open to the public through July, 2022. And if you're close to DC or have the ability you to travel safely, come check it out. It's the centerpiece of The Smithsonian's landmark 175th anniversary year. Part exhibition, part festival, it's got immersive art installations, interactives, working experiments, inventions, and speculative designs for the future. I'll just say, expect the unexpected. And at a time when the future can feel daunting, it's nice to be immersed in a world of possibilities. For more about the FUTURES exhibition, visit aib.si.edu/FUTURES. Or you can find the link in our newsletter.

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Lizzie Peabody: Special thanks this episode to Stephanie Dinkins for sharing her time and her work with us. We'll include links to more of her projects, as well as some photos from my interview with Not The Only One in our newsletter. You can subscribe at si.edu/Sidedoor.

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Lizzie Peabody: Thanks also to Sade Dinkins and Erlene Curry, Angeline Meizler, Francis Tseng, and Neta Bomani. Big thanks to the superstar team at the FUTURES exhibition for making this episode possible: Ashley Molese, Allison Peck, Ellie Reynolds, Hilary-Morgan Watt, and Emmanuel Martin. Thanks also to the Terasem Movement Foundation, Cornell University's Department of Information Science, and to Andy Halterman.

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Lizzie Peabody: Our podcast team is James Morrison, Nathalie Boyd, Ann Conanan, Caitlin Shaffer, Jess Sadeq, Tami O'Neill, Lara Koch, and Sharon Bryant. Episode artwork is by Dave Leonard. Our theme song and episode music are by Breakmaster Cylinder.

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Lizzie Peabody: If you want to sponsor our show, please email sponsorship@prx.org.

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Lizzie Peabody: I'm your host, Lizzie Peabody. Thanks for listening.

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Lizzie Peabody: By the way, is there significance to sort of the form of the vessel itself?

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Stephanie Dinkins: People are like, "Oh, it's kind of like a conch. It's kind of pregnant. It has all these female connotations to it." So, if I'm honest, I'm going to tell you that that vessel is based on my favorite kombucha bottle that I then molded in Photoshop and played with.