

## Brains On (APM) | Video Games: A Tale of Two Pongs 1R2RYSQ7V2Y7SHWD3SKKMKHZQ8

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[ELECTRONIC MUSIC]

**JOY DOLO:** Quick, jump!

[SNAP]

**KAI:** Whoa.

**JOY DOLO:** That barrel came out of nowhere.

**KAI:** Grab those coins!

[ELECTRONIC COIN SOUND EFFECT]

**JOY DOLO:** Heck. Yes!

**KAI:** Nice.

**JOY DOLO:** Look out! That turtle is coming in for an attack.

**KAI:** Uh--

**JOY DOLO:** Kai, come on. You've got to stop him before he gets to you.

**KAI:** You mean Humphrey?

**JOY DOLO:** Yeah, whatever his name is. You only have one life left. Jump on his shell!

**KAI:** Or we could just say, what's up? Hey, Humphrey. How's it going?

**HUMPHREY:** Oh, you know, same old, same old. Happy hump day, Kai. Stay cool.

**JOY DOLO:** Oh, wow. I didn't realize that was an option.

**HUMPHREY:** You can't just go around stomping people out of their shells. Gee, whiz. I live in here, and I'm still paying this thing off.

**KAI:** Yeah, I usually just introduce myself to people.

**JOY DOLO:** That's good thinking. And with that in mind, hello!

[UPBEAT MUSIC]

I'm Joy Dolo, and this is "Forever Ago," the show where we start at the beginning.

**KAI:** [SCOFFS] Starting at the beginning is for newbies who forgot to save their last game.

**JOY DOLO:** Oh. [LAUGHS] And this is my co-host, Kai.

**KAI:** Hello!

**JOY DOLO:** Every episode, we dive deep into the history of one cool thing. Today we're going bouncing around history on an epic quest to find out where video games come from. Kai, I've heard that you are not a video-game newbie. So what's your favorite?

**KAI:** Well, my favorite games are like the older games, like Tetris and Mario.

**JOY DOLO:** You know, Tetris and Mario is of my generation. That's what I usually play.

**KAI:** Mm-hmm.

**JOY DOLO:** And that was kind of what I played with with my sisters. We would be together, and we'd have the controllers, and you could only go as far as the wiring goes. [LAUGHS]

**KAI:** Oh, yeah.

**JOY DOLO:** You know, that kind of stuff. Do you think of yourself as competitive? Do you really like to win?

**KAI:** Oh, yeah, like compete with my high scores with my cousin a lot.

**JOY DOLO:** Yeah.

**KAI:** I play with him a lot.

**JOY DOLO:** Do you usually win?

**KAI:** No. He's way better at like everything.

**JOY DOLO:** Oh, yeah?

**KAI:** Like we do Tetris competitions where I have my iPad and he has his phone. And he always wins by like 300,000. I'm like, are you kidding me?

**JOY DOLO:** [LAUGHS] That is not real. You must be cheating. [LAUGHS]

**KAI:** Yeah. I'm like, how are you this good at this? You must have some cheat code or something.

**JOY DOLO:** Yeah. 300,000, that's a big jump. Has playing video games ever taught you a valuable life lesson?

**KAI:** Well, this is a hard question. But it teaches me a lot of things, like you can't spend too much time playing video games. Because I'm like, I'm going to play this for like five minutes. And I look at the clock, and it's already been like five hours. I'm like, well, shoot.

**JOY DOLO:** [LAUGHS] There goes my whole day.

**KAI:** Yeah. That's five hours that I'll never get back. But that's the problem.

**JOY DOLO:** But it sounds like you have really healthy boundaries with video games, just realizing that you can't spend five hours doing it, and just do a little bit of it at a time. I love the old-school-- I still have a Super Nintendo at home. And I have Donkey Kong, Super Mario World, all of those '90s games. And I still play them in 2D. And I've tried to get into the 3D Wiis and the 3D kind of world, but it just confuses me. Like, I don't know how to go backwards. I don't know how to go forward. I don't know how to jump. I just don't get it.

**KAI:** That's the thing with people that were growing up in the '90s or the '80s or the '70s.

**JOY DOLO:** Yeah.

**KAI:** They're like, yeah, video games are fun. Let's see what they have now. And they're like, whoa, there's so many buttons. What do I do?

**JOY DOLO:** [LAUGHS]

**KAI:** And then I'm always like, no, it's so easy. But then I realize, wait, these people grew up with just like three buttons and maybe a D-pad.

**JOY DOLO:** Maybe one day I'll venture into the world of Wii and that kind of stuff. Who knows? Video games don't seem very old to me, but I couldn't say exactly when they got started.

**KAI:** Yeah, I don't know. How long do you think they've been around?

**JOY DOLO:** I would say 60 years, I think. What do you think?

**KAI:** I think further back.

**JOY DOLO:** Farther back? All right, Kai. Let's A, A, B, arrow up, and jump to our pal Cari Spivack to find out.

**CARI SPIVACK:** Hello.

**JOY DOLO:** Hi.

**KAI:** Hi.

**JOY DOLO:** Cari is a reporter who we sent out on a mission to find out where video games come from.

**CARI SPIVACK:** Right. Today it seems like video games are everywhere, especially Fortnite.

**JOY DOLO:** Mm-hmm.

**CARI SPIVACK:** In 2018, over 125 million people played it. And even if you're not a video game fan, you've probably seen baseball and soccer stars imitating Fortnite victory dances on TV. And memes about the game are all over the internet.

**JOY DOLO:** Oh, yeah.

**CARI SPIVACK:** But it wasn't always like this. Video games have come a long way, and it took a lot of tries for them to catch on in the first place. It all began when dinosaurs roamed the Earth.

[ROARING]

**JOY DOLO:** Whoa, whoa, whoa, whoa. Dinosaurs? Isn't that kind of far back for the first video game?

**CARI SPIVACK:** I'm talking about dinosaurs of the computer age.

[MUSIC PLAYING]

Back in the 1950s, when a brand-new fast-food restaurant called McDonald's--

**JOY DOLO:** Oh, yeah.

**CARI SPIVACK:** --sold hamburgers for \$0.15, radios played a loud new type of music called rock and roll, and people got a peek at the first color televisions, computers of that age--

[FOOTSTEPS]

**TOUR GUIDE:** Next stop on the silicon safari tour is mainframe habitat. That loud roar you hear is in fact the fans. In their natural habitat, fans kept these beastly computers from overheating.

**CROWD:** (IN UNISON) Ooh.

**TOUR GUIDE:** Observe the computer's bunk. It's made of several metal cabinets, each as big as a refrigerator. They can weigh almost 30,000 pounds and eat as much electricity in an hour as 3,000 homes used in a day in the 1950s.

**WOMAN:** Excuse me, but where did people put these in their homes?

**TOUR GUIDE:** They didn't. In fact, these giants were never domesticated. They lived only in places like research institutions, colleges, or government buildings.

**MAN:** So how did people play Minecraft, then?

**TOUR GUIDE:** You're very funny, but there was no Minecraft back then.

**MAN:** [GASPS]

**TOUR GUIDE:** These behemoths have less memory than most thumb drives. The only games they ran were simple demonstrations like tic-tac-toe or checkers.

**MAN:** [VOCALIZES IN PAIN]

**TOUR GUIDE:** Excuse me, sir. No touching, please. These spinning tape drives could take a bite out of you. Now, where was I? Oh, yes. The games weren't made for public entertainment or consumption. They were just to show what a computer could do. All right, moving along. This way, everyone. The lorry on your--

**CARI SPIVACK:** So these early games went the way of the dinosaurs-- extinct.

**JOY DOLO:** Goodness. Those old games like tic-tac-toe and checkers and stuff, they're fun. Would you still play those games, Kai?

**KAI:** Yeah, I play them a lot, usually at restaurants.

**JOY DOLO:** Yeah.

**KAI:** Because they give you paper, and they're going to expect you to wait for your food?

**JOY DOLO:** [LAUGHS]

**CARI SPIVACK:** The first modern computer game came along in 1962. It was inspired by real-world events.

[MUSIC PLAYING]

At the time, the United States and the USSR were in the middle of what was called the space race, a competition between the two countries for total space domination.

[RADIO CHIRPING]

**WOMAN WITH RUSSIAN ACCENT:** Ha. We just sent satellite into Earth's orbit-- first!

**MAN WITH AMERICAN ACCENT:** Oh, well, we just did that, too.

**WOMAN WITH RUSSIAN ACCENT:** We just sent man into Earth's orbit-- first!

**MAN WITH AMERICAN ACCENT:** Earth's orbit is so yesterday. We just landed a person on a little old place called the Moon-- [CHUCKLES] first.

**CARI SPIVACK:** The space-race-inspired video game was called Space War. It ran on a computer roughly the size of two refrigerators, with a large, circular display and a typewriter console. The guy who programmed it was named Steve Russell. He wanted to teach people how to fly actual spaceships. And he wanted it to be fun, because people learn faster when they're having fun.

**SHANNON SYMONDS:** Space War is really the first time that people take gaming to I guess what we would consider sort of a next level.

**CARI SPIVACK:** Shannon Symonds is the curator of electronic games at the Strong Museum.

**SHANNON SYMONDS:** It gets that idea of, we didn't make this just for us; we made it for other people as well, which is certainly a huge part of what impacts the gaming industry.

**CARI SPIVACK:** Other programmers loved playing Space War. The game was even copied to other computers at universities and research facilities.

**JOY DOLO:** The first viral video game!

**CARI SPIVACK:** Well, not quite. Space War was a hit, but only with techies who had access to these giant computers, which was a very small group of people. What do you think was missing? What did video games need to go viral?

**KAI:** You still need to have it be accessible to the community. Otherwise, it's not going to be able to go viral.

**JOY DOLO:** That's a really good point.

**CARI SPIVACK:** Yeah. So far, video games were only played on expensive computers at universities. In the end, it took two competing engineers to bring them to the masses. But only one of them got the credit he deserved. The first is a television engineer named Ralph Baer.

[RADIO CHIRPING]

By the 1960s, almost every American home had a TV. But TV was still primitive. Broadcasts were limited to certain hours. There was no streaming services like YouTube or Netflix. Instead of just sitting and watching TV, Ralph Baer thought TV could be interactive.

[ELECTRONIC MUSIC]

He built an electronic box called a console that you hooked up to the TV so you could play electronic games. It came with thin sheets of plastic that stuck to the TV screen, and these sheets were printed with colorful settings for the games. One looked like a soccer field; another made a baseball diamond; and one was for a haunted house maze, because the console's graphics were basic, but innovative-- moving dots on the TV screen, all controlled by the players.

**JOY DOLO:** What an interesting change, from just watching TV between the hours of like 3 and 5, when there was a show on, to being able to actually interact with your TV and play with it.

**KAI:** Yeah. Because they're like, yeah, I can watch TV, but there's so little on. They're like, and this is all you can see. And then they get ahold of this, and they're like, whoa. I am in control of this.

**JOY DOLO:** It's all about choices.

**RALPH BAER:** Well, here we are, playing ping-pong when we ought to be working.

**CARI SPIVACK:** That's actually Ralph in 1969, demonstrating the ping-pong game on the home gaming console. The TV behind him is black, with a thick, white line down the middle-- the net. On each side of the line is a paddle, made of a short line of white dots. Bouncing between them is the ball, just one small dot. Ralph and his colleague each hold a controller with buttons and knobs to move the paddles up and down the sides of the screen. Just like in real ping-pong, when their paddles connect with the ball, it sails from one side of the TV screen to the other.

**RALPH BAER:** Ready? Here we go. 1, 2, 3. And down I go. And up I go. And down I go. And watch me take him up. Ah, didn't do it.

**CARI SPIVACK:** After six years of work, in 1972, Ralph Baer's home gaming system went on sale for \$99.

**SPEAKER:** That's a lot.

[ELECTRONIC MUSIC]

**ANNOUNCER:** Odyssey, the electronic game of the future that lets you do your own thing on television.

[ELECTRONIC MUSIC]

**CARI SPIVACK:** It was called the Magnavox Odyssey, and it was all set to kick off the video-game revolution. Soon, Ralph Baer there would be rich and famous, a household name. Only, that's not what happened.

**JOY DOLO:** OK, Cari. Before we get to what did happen, I think it's time for a little break.

**KAI:** Good idea. All this talk of games makes me want to play a game.

**JOY DOLO:** Here's one for you. It's called First Things First. It's the game where we take three things and try to put them in order.

[MUSICAL RINGING]

I have a list of three things, and we have to decide which came first, which came second, and then which came most recently in history.

**KAI:** Like, did Xbox come first, or did PlayStation?

**JOY DOLO:** Exactly. And the answers are sealed in an envelope here in the studio. So I'm in the dark, too.

**KAI:** No cheat codes.

**JOY DOLO:** I would never. OK, Kai, do you want to read today's three things?

**KAI:** Yep. Here they are-- playing cards, chess, and dominoes.

**JOY DOLO:** Hmm. All very low-tech. What do you think?

**KAI:** I really don't know. Because I mean, playing cards-- I'm not going to say playing cards, because you think, how long have they had kings? How long have they had queens--

**JOY DOLO:** That's a really good point.

**KAI:** --jokers, and jacks? Is that even a thing, a jack?

**JOY DOLO:** Yeah.

**KAI:** Yeah. I'm going to go dominoes, chess, and then playing cards.

**JOY DOLO:** And I'm going to say playing cards, chess, and dominoes. We'll see if that works out. Write down your guesses at home if you need to, and we'll have the answers after a short break.

**KAI:** "Forever Ago," we'll be right back.

[MUSIC PLAYING]

**NARRATOR:** Did you know that video games may be headed to the Olympic Games? That's right. Expert button-mashers the world over may well have the chance to represent their countries on the world stage, as Olympian Gamers.

**GAMER:** Button-mashing? Are you kidding me? That's for total amateurs.

**NARRATOR:** Uh, right, then. Meticulous and highly trained button manipulators the world over might compete in the 2024 Olympics.

**GAMER:** Much better.

**NARRATOR:** The International Olympic Committee is still mulling it over. Can video games be considered a sport? Plenty of people say yes.

**GAMER:** We have professional teams, and we compete all over the world.

**NARRATOR:** But will the Olympic bigwigs let them level up? Only time will tell.

[MUSIC PLAYING]

**JOY DOLO:** And we're back. This is "Forever Ago," and I'm your host, Joy Dolo. I'm here with today's co-host, Kai.

**KAI:** Hello.

**JOY DOLO:** Ooh, a coin.

**KAI:** Focus, Joy. We have a game to finish.

**JOY DOLO:** Oh, right, right. Those things are just so shiny. Anyways, it's time to finish First Things First.

**KAI:** Yep. Today's three things were playing cards, chess, and dominoes. And I guessed that dominoes was first, chess was second, and cards were last.

**JOY DOLO:** And I guessed playing cards first, chess second, and dominoes last. Kai, do you have the top-secret-answers envelope?

**KAI:** Yep.

**JOY DOLO:** All right. I'm going to rip this open now. [VOCALIZES]

**KAI:** Don't rip the answers.

**JOY DOLO:** Oh, no, I didn't. And the first thing was-- chess! [LAUGHS] We were both wrong. Chess started in the sixth century, and most historians believe the game started in India. That was around 1,500 years ago. What?

**KAI:** That's old.

**JOY DOLO:** So second up is playing cards. The first known cards come from China, and some historians think as early as the ninth century. They were made using woodblock prints during the Tang dynasty. And then last but not least is dominoes. And that was China again, for the win. The earliest records date back to the 12th century.

**KAI:** I should have thought that that was made in China, because it's kind of like the mahjong pieces.

**JOY DOLO:** Oh, mahjong. I know exactly what you mean. I think there might be a connection there. Good thinking.

[MUSIC PLAYING]

Before the break, Cari Spivack was telling us about Ralph Baer's invention, the Magnavox Odyssey, and how it was about to completely change the world. Right, Cari?

**CARI SPIVACK:** Well, about that-- Ralph Baer did have a brilliant idea. He created the first home gaming console. And he was all set to reap the rewards. But as Shannon Symonds from the Strong Museum says, it just didn't stick.

**SHANNON SYMONDS:** The Odyssey is a great example of something that, when you look back at it, you realize how incredibly sophisticated and innovative it was at the time. But it wasn't the right time to capture people, for whatever reason.

**CARI SPIVACK:** Enter Nolan Bushnell. In college, he loved playing that space-race game, Space War. A few months before the Odyssey went on sale, he played the ping-pong game at a preview event.

**AL ALCORN:** Nolan was a real entrepreneur. He liked to take risk. He was young. He just had all this energy and drive, and these crazy ideas.

**CARI SPIVACK:** This is Al Alcorn, who worked at Atari, the gaming company that Bushnell co-founded in 1972.

**AL ALCORN:** My first assignment at Atari was to design the very simplest thing that could be called a video game. Nolan said he wanted me to make a game like tennis, with a net in the center and a ball that would bounce off the paddles. And that was pretty much it.

**CARI SPIVACK:** Does this sound familiar?

**JOY AND KAI:** (IN UNISON) The Magnavox Odyssey.

**CARI SPIVACK:** Exactly. The game Nolan described to Al was just like the Odyssey's ping-pong game. After three months of work, Al's game turned out better than Nolan expected. It was addictively fun. But was the public finally ready to play?

Nolan and Al built a wood cabinet, added a coin slot, and installed it in a bar nearby.

[ELECTRONIC MUSIC]

After a couple of weeks, they got a call.

**AL ALCORN:** The bartender, who was very friendly with us, told us about people that were waiting at the door when he opened up in the morning. And they weren't there to buy a drink; they were there to play the video game. And he hadn't ever seen that before.

**CARI SPIVACK:** The game was called pong, and it was a hit. Arcades started ordering machines faster than Atari could make them. Nolan Bushnell became famous for starting the video-game industry. And because of pong's widespread popularity, people often think pong is the very first video game. How do you think you'd feel if you were Ralph, and no one gave you any credit for your great idea?

**KAI:** I'd be kind of upset. Because, I mean, everyone is like, yeah, Nolan Bushnell, he's so awesome. He started video games, and he made them popular. Yeah, he made them popular. But that doesn't mean that he made them.

**JOY DOLO:** I think I'd feel the same way. I'd feel kind of hurt and mad.

**KAI:** It's like plagiarism.

**JOY DOLO:** Yeah.

**KAI:** Like, you don't just take it from someone and not give them credit for it.

**JOY DOLO:** Yeah. Well, Baer didn't get the credit, but he did have the satisfaction of knowing he was right-- video games were the future. Adults and kids were hooked on dropping quarters into arcade games, like Space Invaders, Galaxian, Asteroids, Centipede, Donkey Kong, Pac-Man, and Ms. Pac-Man.

[ELECTRONIC MUSIC]

[SPIRALING SOUND EFFECT]

**MAN:** Ah! Curse you little pixelated ghosts.

**WOMAN:** Too bad. I guess you'll never nab that high score.

**MAN:** Oh, I will get that high score. Time for my secret stash of quarters.

**WOMAN:** Isn't that your laundry money?

**MAN:** I don't need clean clothes. I'll cover up that stench with the sweet smell of victory. Fear me, ghosts! The Pac-Man cometh.

[ELECTRONIC SOUND EFFECTS]

**CARI SPIVACK:** It got to the point when in 1978, Japan experienced a coin shortage.

**KAI:** What?

**CARI SPIVACK:** And a popular urban legend suggested the missing coins could be found inside all the Space Invaders machines.

**KAI:** That sounds accurate.

**CARI SPIVACK:** In 1982, Pac-Man was on the cover of *Time* magazine, and even had its own hit song.

[MUSIC PLAYING]

**MALE SINGER:** (SINGING) 'Cause I got Pac-Man fever.

**SINGERS:** (IN UNISON) Pac-Man fever.

**MALE SINGER:** It's driving me crazy.

**SINGERS:** (IN UNISON) Driving me crazy.

**MALE SINGER:** (IN UNISON) I got Pac-Man fever.

**CARI SPIVACK:** Just when it seemed video games were unstoppable, the industry suddenly crashed. By 1983, there were too many competitors making too many games. And too many were duds.

[SPIRALING SOUND EFFECT]

But once they had a taste, the public wanted more.

**SHANNON SYMONDS:** Out of those ashes comes the Nintendo Entertainment System in 1985. Clearly, it has staying power, because Nintendo is still around today.

**CARI SPIVACK:** And soon, Nintendo had competition. There was Sega, Xbox, PlayStation. The rise of home computers spawned games like World of Warcraft. And as soon as smartphones became a thing, games for phones quickly followed.

Today, a lot of people think the future is in virtual reality-- machines where you feel like your whole body is in the game. It's very exciting, but not new. Almost 30 years ago, Nintendo released something called the Power Glove-- basically, a wearable cyborg-looking glove that allowed you to control on-screen characters with hand movements. It was an utter failure.

**SHANNON SYMONDS:** We weren't ready for it yet. It was too clunky, and people didn't see the value of it. Now we've got full-on virtual reality. So they had the right idea, just at the wrong time.

**CARI SPIVACK:** And that's the thing about success. It's not just about the right technology or even the right idea; you need the right timing, too. It's impossible to predict. But when it does happen, one thing is certain-- there will be good ideas that failed before it. So what do you guys think? Who deserves the credit for making video games take off?

**KAI:** I think that Nolan guy that made pong-- I think he does deserve the credit for making video games take off. But that doesn't mean that he deserves the credit for the actual game that he supposedly made.

**JOY DOLO:** I agree with you. I think that he didn't really make it. But each of them kind of-- there was the idea, and then he added on to that idea. And the other person added, and people just kept adding to it to make--

**KAI:** And that's what's happening now.

**JOY DOLO:** Exactly. And people just keep adding. So I mean, yeah, we can give one person credit. But really, it's really--

**JOY AND KAI:** (IN UNISON) --everyone's.

[MUSIC PLAYING]

**JOY DOLO:** Well, thanks for taking us on a tour of video game history.

**KAI:** Yeah, that was awesome.

**CARI SPIVACK:** Sure thing. I've got to run, though. I saw a bunch of coins right outside the studio.

**KAI:** Wow. You, too?

**CARI SPIVACK:** See ya.

[ELECTRONIC COIN SOUND EFFECT]

Yes!

**JOY DOLO:** The sound is just so satisfying.

**KAI:** Can't argue with that.

[ELECTRONIC COIN SOUND EFFECT]

I know that this is a show about the past and all, but you know what I've been thinking about a lot lately?

**JOY DOLO:** Oh. I have a feeling we're really on the same page with this one. You were about to say--

**KAI:** --the future!

**JOY DOLO:** --coins!

**KAI:** Sheesh. You really have a one-track mind today.

**JOY DOLO:** I'm sorry. Sorry. The future was definitely the second thing I was going to say, right after coins. It was the runner-up.

**KAI:** Right.

**JOY DOLO:** It was. Because who knows what the future will be?

**KAI:** Exactly. The possibilities are endless.

**JOY DOLO:** We asked our listeners what they think video games will be like in the future.

**KAI:** And here's what they had to say.

[ELECTRONIC MUSIC]

**LISTENER 1:** When I think of future video games, I think of open-world games. You can just go wherever you want. You can explore as much as you want.

**LISTENER 2:** The player will be surrounded by the screen, and the control will be the person's body.

**LISTENER 3:** If you eat something in the game, you can actually feel full.

**LISTENER 4:** I would have a mix of Minecraft and Fortnite.

**LISTENER 5:** I feel where there's clues, and then you have to find the treasures. And then there's like lakes and rivers you go through.

**LISTENER 6:** A creative-mode Minecraft, but 3D.

**LISTENER 7:** Put a headset on, and it turns your house into a haunted house.

**LISTENER 8:** Say the person is in a swamp or some place that has a certain smell. A smell will then be emitted into the atmosphere of where the player is standing.

**JOY DOLO:** Wow. Those are some really interesting ideas. Kai, what do you think video games will be like in the future?

**KAI:** Well, I think that they are going to be-- they're probably going to have really good graphics, if you still use screens or something. But if not, it's probably going to be like you don't even need controllers. You just need to do it with your hands or something, where it's invisible or it just knows. Like you could put on a headset, and then it knows what you're doing because it has brain sensors or something.

**JOY DOLO:** Oh, yeah, brain sensors. I love that idea. Totally hands-free video-gaming. When I think about super-futuristic video games, I mostly think about fancy technology like that. But now we're going to talk to someone who spends her days thinking about a totally different side of video games. Sarah Baylus is a video-game writer.

**SARAH BAYLUS:** Hello.

[ELECTRONIC SOUND EFFECT]

**JOY AND KAI:** (IN UNISON) Hi, Sarah.

**JOY DOLO:** Hi.

**SARAH** Hey, guys.

**BAYLUS:**

**JOY DOLO:** So what exactly does it mean to be a video-game writer, Sarah?

**SARAH** So for our team, this means that we are responsible not just for the text in the game, but the stories as well. So

**BAYLUS:** the text is anything that's written, from the little button that says "Click here to start" to the conversations the characters have together. And the stories are everything that the game is about, from the location-- whether it's on Earth, whether it's in the past or the future on another planet-- to what kind of problems the characters face and what kind of world they live in.

**KAI:** So when I'm playing a video game and I talk to other characters, or as I'm playing the game and I go along with the story, you write the story and the dialogue?

**SARAH** Yeah, exactly. Both of those. Why don't I show you?

**BAYLUS:**

**JOY DOLO:** OK, so you're going to walk us through part of the game wrote and have us make choices like we're actually playing.

**SARAH** Yeah, exactly.

**BAYLUS:**

**KAI:** Wait, so this is like a choose-your-own-adventure.

**SARAH** Yeah, a choose-your-own-adventure interview.

**BAYLUS:**

**KAI:** Ooh, sounds fun.

**JOY DOLO:** Awesome. I'm so ready.

**SARAH** So in this scenario, which was written by one of our writers named Devin, we are an adventurer. We've been

**BAYLUS:** exploring this huge land that's full of monsters to fight and friends that you can recruit and get to know, people to talk to, secrets to find. And while we've been traveling, we come upon two cows.

[MOOING]

So if we're just kind of normal people, we might talk to the cows, and they're going to say moo back. And we carry on with our adventure. But it could be that you have this particular talent where you can actually speak to animals. So I go up to the cows, and I talk to them. And I can find out that these are not just any cows, they're actually humans that have been transformed.

**GERALDINE:** You won't believe it. She won't believe it, Mabel. She'll think we're mad cows.

**MABEL:** Truth is that we are not, in fact, cows.

**GERALDINE:** We're people-- captives, to be exact. So will you help us?

**SARAH**  
**BAYLUS:** So now you've met these cows, Geraldine and Mabel, and you have a decision to make. In the game, you're presented with three options. The first option, you can ask how you can help them. The second option, you can ask them for milk. And the third option, you just take your leave and walk away. So what do you guys think?

**KAI:** I think we should do the first option.

**SARAH**  
**BAYLUS:** You want to ask them how you can help?

**KAI:** Yeah, because the second one is just weird. Because, I mean, they're humans.

[LAUGHTER]

**SARAH**  
**BAYLUS:** That's a good point.

**JOY DOLO:** I guess so. So you don't want that milk.

[LAUGHTER]

I would definitely see if they want some help.

**GERALDINE:** Just get us something to drink.

**MABEL:** What my friend here means to say is that there's a cure for our condition. If we could drink it, we could regain our former forms, as it were, and steal away.

**SARAH**  
**BAYLUS:** OK, so what do you guys think? Should we do as they ask and help them, and go find those magic potions?

**JOY DOLO:** Yeah, we have to. Right, Kai?

**KAI:** Yeah. I just don't want to turn into a cow, actually. I'll do whatever I can.

**JOY DOLO:** [LAUGHS]

**SARAH**  
**BAYLUS:** So if you guys decide to help the cows, they are going to tell you that you need to go find this magic potion in the cellar of this witch. You've got to face some exploding rats that are kind of swarming the place.

**JOY DOLO:** Oh my god.

**KAI:** Oh boy, exploding rats.

**SARAH**  
**BAYLUS:** And eventually, after all that's done, you're going to retrieve the potion for the cows. So you take it back to Geraldine and Mabel, and they are very happy.

**GERALDINE:** Great.

**MABEL:** These will take effect any moment now. I can't thank you enough.

**GERALDINE:** I don't think a thank-you is enough, Mabel.

**SARAH** So the cows decide to repay you for helping them out. And they mark your map with the location of something  
**BAYLUS:** special.

**KAI:** I mean, that's better than a normal thank-you.

**SARAH** Meanwhile, the potion is starting to work on these poor cows that have been through so much.  
**BAYLUS:**

**GERALDINE:** My potion is starting to work, Mabel.

**MABEL:** Here we go.

**SARAH** And they're turned back into humans.  
**BAYLUS:**

**JOY DOLO:** We did it.

**SARAH** Well done, team.  
**BAYLUS:**

**JOY DOLO:** I'm happy we didn't just walk away and leave them there, or just take their milk for the nourishment and just leave.

**SARAH** Give me it!  
**BAYLUS:**

[LAUGHTER]

**JOY DOLO:** We did the right thing.

**SARAH** You really did.  
**BAYLUS:**

**KAI:** How do you write a story like that?

**SARAH** So the core of our job, and what we spend the most time doing, is making sure that no matter what the player  
**BAYLUS:** decides to do, the game will react.

**JOY DOLO:** Yeah. It seems like you'd have to write a bunch of different versions of the same story.

**SARAH** Yeah, exactly. You know how a movie is linear, which means it's got a beginning, a middle, and an end, and  
**BAYLUS:** there's just one version you can see? A game is like the branches of a tree or like a spider web. You have the same beginning that you share, and the middle will be different depending on which choices you make in the beginning, and the ending will be different depending on which choices you make in the middle. So what we want is not that there's one way to play the game and one way we hope everyone will play. What we want to do is give everyone the chance to pretty much do whatever they want and know that the game is going to react to it.

[MUSIC PLAYING]

**JOY DOLO:** Well, thanks for coming on the show, Sarah.

**KAI:** Yeah, thanks.

**SARAH**  
**BAYLUS:** Thank you, guys, and I'll see you later.

**JOY DOLO:** Well, Kai, this has been a wild ride.

**KAI:** No kidding.

**JOY DOLO:** We've been to the age of dinosaur computers--

**KAI:** --to a time when you needed spare change to game at all.

**JOY DOLO:** And we traveled to the future of video-game storytelling.

**KAI:** Do you have a crazy-good idea for a video game?

**JOY DOLO:** Head to [ForeverAgo.org](http://ForeverAgo.org) and tell us about it.

**KAI:** "Forever Ago" has been brought to you by Brains On! and American Public Media.

**JOY DOLO:** It's produced by Elyssa Dudley, Molly Bloom, Marc Sanchez, and Sanden Totten.

**KAI:** We had engineering help from Evan Clark and [INAUDIBLE].

**JOY DOLO:** Production help comes courtesy of Lauren Dee. Our fact-checker is Ryan Katz. Special thanks to John Rabe, Monica Bushman, Jonathan [? Shifflett, ?] Taylor Kaufman, Ned Leebrick-Stryker, Gordon Henderson, Eric Ringham, and Christina Lopez. Is there anyone you want to thank today, Kai?

**KAI:** I'd like to thank you guys for having me being here, and I'd like to thank my mother for bringing me here and bringing me into this world.

**JOY DOLO:** Awesome. Well, I think it's time to say good--

**KAI:** Wait. Right above your head.

**JOY DOLO:** [VOCALIZES]

[ELECTRONIC COIN SOUND EFFECT]

Yes!

**KAI:** Bye.

**JOY DOLO:** Bye.