PHILLIP PENIX-TADSEN

Pioneras

Three Generations of Women Developing Games in the Southern Cone

ABSTRACT This oral and written history examines three generations of pioneering women game developers from Argentina, Uruguay, and Chile—the South American region known as the Southern Cone. Each of the individuals interviewed—Marcela Nievas, Sofía Battegazzore, Maureen Berho, and Martina Santoro—offers insight on female leadership over three generations of precipitous growth in regional game development. Together, their personal and professional trajectories demonstrate how the embodied and material conditions of game production condition diverse histories of game development, challenging universalizing myths of a global game industry in which "anybody can make games." At the same time, these four developers' histories working outside the conventional centers of the global game industry reflect the transformative role of women developers and game designers across the Global South in shaping three generations of global game culture. KEYWORDS Argentina, Chile, game development, Latin America, Uruguay, video games

This oral and written history examines three generations of pioneering women game developers from Argentina, Uruguay, and Chile, the South American region collectively known as the Southern Cone. Each individual interviewed—Marcela Nievas, Sofía Battegazzore, Maureen Berho, and Martina Santoro—provides insights into female leadership over three generations of precipitous growth in regional game development. Together, their personal and professional trajectories demonstrate how the embodied and material conditions of game production—including individual and collective gender identity as well as local and regional politics, economics, cultural perspectives, and availability of technologies—condition diverse histories of game development in ways that challenge universalizing myths of a global game industry in which "anybody can make games." At the same time, these four developers' histories working outside the conventional centers of the global game industry reflect the transformative role women developers and game designers across the Global South have played in shaping three generations of global game culture.

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Marcela Nievas is from the first generation of computer game developers in the Southern Cone, having learned to write code and make games in her family's living room in Buenos Aires in the 1980s. As she explains in her account, she was able to parlay her contacts with local software programmers in the early 1990s into an enduring international career that continues to this day. After meeting up with fellow programming hobbyists at a local game store in the late 1980s, in 1989 she began working with a company called MAQUIN, programming some of Argentina's first slot machine and casino video games. In the early 2000s she continued this line of work with the Argentine firm Sielcon, where she used C++ to program casino games, including not only video slot machines but also roulette and regional variations such as the lottery game *Bindata* and the Bingo-like *Genie* and *Bufón*. From 2010 to 2013 she worked with Nextive on the development of iOS games, including *Farmville* (Zynga, 2009) and *Rumble Kitten* (Gaia, 2013). She then relocated to Ireland, where she now lives and works programming iOS applications in Obj-C and Swift.

Sofía Battegazzore played a pioneering role in the establishment of Uruguay's game industry in the early 2000s, making her a paradigmatic example of the second generation of women game developers in the Southern Cone. Her first experiences with the game industry arose around 2000, when game developer Gonzalo Frasca invited her to work with him doing translation for some Flash animation games for the Cartoon Network. Eventually this work led to their cofounding of Powerful Robot Games, where Battegazzore played the roles of CEO, art director, and producer from 2002 to 2012 on a variety of independent and work-for-hire projects for companies such as Pixar, Lucasfilm, Disney, and Warner Bros. Battegazzore developed the renowned "serious game" *September 12th: A Toy World* in 2003 along with Frasca for their site Newsgaming.com. She was featured as one of one hundred pioneering women in the global game industry in Meagan Marie's 2018 book *Women in Gaming: 100 Professionals of Play*, and is a highly regarded and influential figure in Uruguay and throughout the region. For the past several years she has worked as an independent game producer as well as a professor of game production in the Animation and Video Games program at ORT University in Montevideo.

Maureen Berho and Martina Santoro are members of a third, current generation of leadership in video game development in the Southern Cone. Both are multitalented CEOs of studios they cofounded; both have established substantial portfolios over the past decade; and both have heightened visibility within the region due to their leadership positions in industry associations.

After developing games as a hobby with friends in college, Berho and those friends cofounded Niebla Games, based in Valparaíso, Chile, in 2015. From 2016 to 2018 Berho held a position on the board of directors of the Association of Videogame Developers of Chile (VG Chile). Niebla's games have been selected for international exhibitions, including PAX East and PAX West 2018, Indie Connect Festival 2018, and Tokyo Game Show 2018. Berho was named by the Chilean newspaper *El Mercurio* as one of the 100 Young Leaders of 2016, and was awarded the InspiraTEC Award for women in technology by the Chilean Ministry of Economy in 2016.

Santoro likewise got her start in the game industry by collaborating with friends on projects, and has become a major force in regional game industry leadership. In 2010 she cofounded Okam Studio in Buenos Aires, where as CEO she has worked on (among others) the development of *The Adventures of Dog Mendonça & Pizzaboy* (Ravenscourt, 2016), the interactive trading card game *Último Carnaval* (Square Enix, 2014), and the virtual-reality title *Ship Ahoy* (Okam, 2017). In 2015 she cofounded the LatAm Video Games Federation, which brings together the professional game industry associations of eleven Latin American countries. Santoro was elected president of the Argentine Video Game Developers Association (ADVA) in 2016, making her the first woman to hold this position. Like Battegazzore, she was recognized as a pioneering woman in the global game industry in *Women in Gaming: 100 Professionals of Play*.

Considered together, these four pioneering game developers' accounts point to some of the major obstacles and affordances to female leadership in game development in the Southern Cone. Some of the challenges are related to a general lack of diversity and inclusivity in the game industry, though this too can be impacted and compounded by geographical region.[1] While a 2015 International Game Developers Association (IGDA) survey of six thousand game developers revealed that only 22 percent of the global workforce identified as female, women constitute only 12 percent of the Chilean game industry's workforce, and just 9 percent in Argentina.[2] Likewise, women in the game industry in the Southern Cone face some of the same obstacles as those in other parts of the world, such as the expectation of working "crunch time" (defined as "weekly periods of fifty to one hundred hours" for "periods lasting from two weeks to several months") in addition to "rapid turnover, retention problems, and a work culture that valorizes youth, passion, and long hours over maturity and experience," which can result in frustration for women who feel

they are being made to "'fit in' to a masculine culture, or worse, feel that they are being 'treated differently' simply because they are women."[3]

Beyond gender, historically there have been significant barriers to developing games in regions like the Southern Cone, including political instability and a lack of government support for game development; scarcity of higher education programs in game design and related fields; and lack of a critical mass of like-minded professionals with whom to learn and grow.[4] And yet game development is flourishing across Latin America, bolstered by the region's many talented and creative visionaries, a growing and supportive community of like-minded individuals seeking to increase the visibility and sustainability of their national and regional game industries, and an increasing interest from public policy makers in supporting game development.

As pioneers of game development in the Southern Cone, Nievas, Battegazzore, Berho, and Santoro have each played an important role in the history of regional game development, and their stories shed light on issues that are relevant to those who make, play, and analyze games not just in the region but across the globe. Two of the following interviews were conducted through email, and two over Skype. Each reflects a unique tone and take on the topic.[5]

MARCELA NIEVAS

Starting in the early 1980s, Argentine developer Marcela Nievas created some of the first documented video games ever produced in Latin America, using simple design tools to make *Gussy*, a single-screen game in which a fish avatar fires bubbles at rising and falling worms, programmed on the 8-bit Z-80 microprocessor, and *Burbuja John*, a screen-by-screen maze programmed in 8086 assembler.[6]

PHILLIP PENIX-TADSEN: What are some of your first memories of video games, as a player? And when and how did you start developing games?

MARCELA NIEVAS: It all started in November 1984, when my dad won a Texas Instruments TI-99/4A for being service area manager of the year out of all the Ford dealerships in Argentina. That computer came with two game cartridges. One was *Car Wars* (Texas Instruments, 1981) which had two little cars, and the other I can't remember. Later on my dad bought an extra game called *Parsec* (Texas Instruments, 1982), which I spent hours and hours of my childhood playing. On that computer I learned the essentials of programming in the BASIC language (fig. 1). I remember writing some programs that would more or less draw something on the screen using characters. At that time there was

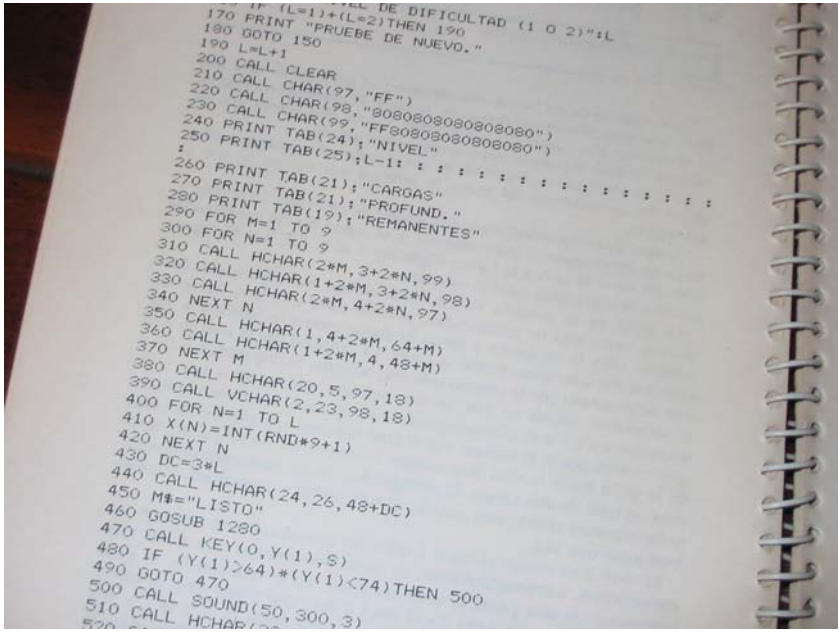

FIGURE 1. Marcela Nievas's BASIC code notebook used with her first computer, a Texas Instruments TI-99/4A, in the early 1980s.

no way to save data, so everything was erased the moment you turned off the computer. My sister still has that *compu*, tucked away with the Spanish-language manual and everything. Maybe someday we'll get it to work again.

Then my dad bought a Talent MSX. I think by then I was about fourteen years old, because the following year, in 1988, instead of a fifteenth birthday party I asked for an LX-800 printer (fig. 2).[7] With the Talent I made some things in BASIC, and I was able to save the data with a manual cassette recorder and a connecting cable. The sounds of saving at high and low speeds were highly entertaining. I remember spending hours with my sister copying the code, and when it didn't work, searching for where we'd copied something incorrectly. The worst was the code for voice reproduction—after hours of copying number arrays, it sounded terrible.

But I wanted to make games, and you couldn't do that with BASIC. Then around 1988 or 1989 on a trip to Buenos Aires to buy games at Realtime, my mom asked if they offered assembler classes, and to my surprise they said yes, there was a teacher offering classes in Z-80 assembler.[8] That teacher was Rubén Benayón. I showed him the games I'd made in BASIC (by that time I

FIGURE 2. Marcela Nievas on her fifteenth birthday with her Talent MSX computer and LX-800 printer.

had a five-and-a-quarter-inch disk drive) and he liked them a lot. I showed him *Scrunff*, which I'd programmed in BASIC in 1985. Using what I learned, I programmed *Gussy* in Z-80 assembler soon after that. After a while I was invited to take part in the development of a game called *Andrax* (or something like that, I can't remember) at Realtime. It was a spaceship that grew legs from one level to the next. It was a very exciting time for me, forming part of a group of people who spoke the same language. Then the Realtime project broke up and I lost that sense of belonging.

Later on, between 1989 and 1991, I got a PC and studied 8086 assembler on my own. In 1990, when I was seventeen, my mother passed away. It was a difficult time for all of us, and in a way I was able to take refuge in my computer. Around that time I designed *Burbuja John* on 8086 assembler (fig. 3). It's a maze-type game where the main character has to get through and take all the components of a giant ant to a specific place, one at a time. Then with the final piece in place, the ant (Jhona) takes shape and breaks through a door so it can rescue John. At my home in Buenos Aires, I have the sheets of grid paper with the character drawings and the assembler code that I hand-copied (I didn't have a graphic editor).

FIGURE 3. Ending screen of Marcela Nievas's *Burbuja John*, 1992.

In 1992, when I was nineteen, I started my university studies in computer science, in the Faculty of Exact and Natural Sciences at the Universidad de Buenos Aires.[9] The divide between my level of mathematics education and the level required to get into the major was abysmal. It took me a year and a half to complete the CBC, and during that time I did everything I could to improve my proficiency.[10] Once I was in the major, I replied to a job announcement seeking game developers. It was for a business called MAQUIN and they were trying to develop the first local video slot machines. I remember that they painted the graphics by hand on cardboard, sent them to be scanned, and then gave them to me in digital form. There, around 1989, I developed a rudimentary but functional slot machine using 8086 assembler (fig. 4). The project stalled because they didn't have an engineer to physically assemble the part where the money was inserted. During their search, they contacted an engineer named Miguel Ojeda.[11] I started working with Miky, as we called Mr. Ojeda, and it was there that I learned 68000 assembler and nothing at all about electronics (it's still a piece of unfinished business, something I would like to understand). It was an interesting time of learning outside the university.

After I completed my studies in 2001, I entered the working world, where I used Visual Basic, mainly SQL. I missed making games and I wasn't able to develop games because the job market was focused on other platforms. So I started looking for a job that was as close as possible to what I was interested in, and in

FIGURE 4. Screen capture of one of the 8086 assembler slot machine games Marcela Nievas designed for MAQUIN.

this case I decided on C++. In 2004 I ran across a company called Softogo that was developing small projects for the Hand Held (a forerunner to cell phones). The important thing was that I had to develop in C++. A short time later and thanks to my being comfortable with C++ and having worked with Mr. Ojeda, I got a job with Sielcon, where I was in charge of development of several casino games. I stayed there almost six years, from 2004 to 2009. Once again, thanks to my experience with C++ and with gambling, I was contacted by Nextive to develop games for the iPhone. That experience lasted only two years, from 2010 to 2011, because the business was acquired by another, but the entire journey was worth the effort. Then I went on to work independently on several iOS projects, some of which were games. Today I'm in Ireland developing apps for iOS, but I've never let go of my hope of returning to gaming.

PPT: Were there any women who served as role models for you in developing games?

MN: I didn't really base what I did on any models, and I didn't know of any female developers in the beginning.

PPT: What obstacles have you had to overcome as a female developer? And as an Argentine or Latin American game developer?

MN: None due to being a woman; many due to lack of technological development. But that has changed over time. In Argentina, lack of resources is a big problem. The low quality of secondary education relative to the high demands at the university level was also a big obstacle.

PPT: Do you think there are *advantages* to being a female game developer? Or to being an Argentine or Latin American game developer?

MN: No, I don't see any difference between men and women. Neither advantages nor disadvantages. In Argentina, at the time I started, there was no internet, books were very difficult to find, and there were very few people with the necessary knowledge. Today, I can't comprehend how I was able to get information. I think it was by asking, going from one contact to the next, until I was able to obtain some sort of information. I remember that my English was very bad and I didn't understand the word "handle." When I looked it up in the dictionary it said "frying pan" and I couldn't comprehend what that had to do with handling the opening and closing of a file. Some time later I came to understand that the people who had made the operating system were using everyday elements with a new meaning.

That brings to mind another memory: before I spoke English, I would have to wait a year or more to buy a book in Spanish and it always ended up incomprehensible due to the horrendous translation. My recommendation is to learn English before starting a computer science major and never buy books in translation.

PPT: What advice do you have for women who want to develop video games?

MN: As I said before, I don't see any difference between men and women. My recommendation for any developer in Latin America is:

1. Learn English from a young age*
2. Always try to get work that prepares you for your larger goals**
3. Never give up; everything you do will serve a purpose in the future***

*This is why I moved to Ireland, so that my four-year-old daughter could learn English as a native speaker.

** For example, getting a job that required me to use C++, given that I was going to need it to develop games no matter what.

FIGURE 5. Sofía Battegazzore, independent game producer and professor of game production at ORT University, Uruguay.

*** I remember having taken a course on screenwriting that at first seemed unrelated, but in my mind there was a connection, given that a good game should have an antagonist who blocks progression through the game. That remained etched in my memory thanks to the *Robotech* animated series.[12] Originally, there were three separate series that were unsuccessful. Then those three series were merged into a new story with three sections, for which they rewrote the plot and dialogue. This resulted in an era-defining hit thanks to its captivating storytelling.

SOFÍA BATTEGAZZORE

In 2002, Uruguayan developer Sofía Battegazzore (fig. 5) was applying her eclectic and diverse educational and professional background to work-for-hire game

development for Cartoon Network, an experience she parlayed into cofounding Powerful Robot Games with Gonzalo Frasca and an enduring career as an award-winning indie developer and educator.[13]

PHILLIP PENIX-TADSEN: What are your first memories of video games, and when did you start developing games?

SOFÍA BATTEGAZZORE: For me, it was playing. I started out on Mac computers. At the same time I went to a digital art workshop in Buenos Aires that was very eye-opening for me. I'm talking about the late 1980s.

PPT: So, prior to playing, you entered the gaming scene through programming?

SB: No, no, not at all. Through art. I used to do graphic design; I always had more of an artistic background. I don't have a degree in anything because I would always take a lot of courses in all different areas. At that time I was working in graphic design and I was invited to do a workshop in Buenos Aires. I think it was in the early 1990s, maybe 1992 or 1993, and it was a workshop that some Germans were holding on digital art, using the Commodore Amiga. I remember the difficulty was that there wasn't a color printer—so, how to take what you did inside the computer and pull it out. It was very fun, and those were some of the first interactive experiences I had. Later I spent years in advertising, up until I quit that job. I started having problems finding work, and I was no longer interested in advertising anyway. Around the year 2000 an opportunity arose, by way of Gonzalo Frasca, to do translations of video games with Cartoon Network. That was how I began working in the video game industry.

PPT: Doing translations?

SB: Yes. At that time, those games were web games, made with Flash, so the texts were stuck to the graphics. I had to do some reverse engineering to take the games apart, find where those texts were located, and correct the images so that they would have the text in another language. It was like carving up games to find where the texts were. But I learned a lot about how they were made, how testing was done. That was the first toe I dipped into the industry's waters, around 2000. They would give me the source code for the games and I would go diving and exploring, because at that time, those games at least didn't have a specific system for localization. I would find the texts and switch them.

PPT: What about as a player?

SB: I've always liked to play a lot. And even though it sounds bad, I never really amounted to much when it came to games, in particular for the Mac, which is what I played on. But the few games that I could get my hands on, the ones my friends loaned me or made pirated copies of for me, I loved. I remember playing a lot of *Prince of Persia* (Broderbund, 1989). Later on I played *The Sims* (Electronic Arts, 2000) a lot. I'm a big fan of Will Wright and all of his games.[14] I started out playing *Sim Ant* (Maxis, 1981) and then *Sim City* (Maxis, 1989). Then afterward *The Sims*, which for me was the very best.

PPT: After that first programming project, what were the next steps in your professional trajectory?

SB: Again, I'm not a programmer. That wasn't programming. Well, it may have had some element of programming, but it wasn't that exactly. In any case, the next step was when Gonzalo came back to Uruguay and we started doing things together. We started making some little games. Then we started to work on games that were a bit bigger. We started to see that, well, perhaps this could be a way to make a living, a business model. That was when we established the studio Powerful Robot Games. I believe he was still living abroad, then he was here for a while, and then he left again for Denmark. But we had the studio for ten years, and I learned a ton from that. We started the studio in 2002 and it was around until 2012.

PPT: How did you go about diversifying your knowledge of game development?

SB: I started out with art—doing little things with Gonzalo, where I would do the art and he would do the programming. And as ever greater challenges came about, we realized, okay, we needed more programmers and artists. So we started to take on other responsibilities. I'd worked a lot in graphic design; I really liked dealing with the interfaces of all of the games. But then I realized that there was a need in the studio for someone in the role of producer. We built a fairly large team, making games that took almost two years to develop with around fifteen people working on them, so we had to get things in order a little bit. I started to read up on production. I liked doing it a lot, and so from then on, that was the role I continued to play.

PPT: Can you describe the role of producer?

SB: It's about keeping the project in order, making sure everyone has what they need to do their work so the project doesn't get stuck, organizing timelines,

organizing the chain of production, avoiding bottlenecks, making sure the people on the team get along and work well. There's a lot involved, and it's something I really took to because it's a role in which, well—I'm a person who doesn't like to be in the limelight, but I like doing things. The role of producer is exactly that: making sure the team flourishes, but without taking—

PPT: —without taking credit?

SB: Yes, something along those lines. Above all, it's keeping the work in order and helping the team give the most of itself. At the same time, you have a minor role as editor, like in movies, where sometimes what you say can have an influence on the game. It's not that you *intervene*, but depending on the time and the budget, sometimes you have to take things out or otherwise influence the game. That's also a big responsibility: prioritizing tasks, whatever needs to be done so that a game ends up right.

PPT: Did you have specific role models in game development?

SB: None in particular. I remember that Robin Hunicke came to Uruguay and we talked a lot, and she always seemed really brilliant to me.[15] Beyond that, I learned from everyone I could find, which at that time was far fewer people. Nowadays you can so easily get information, but at that time it was much more difficult. So anyone who would come and help us or speak about the topic was a role model for me. I learned starting from the ground up. Like a sponge, I tried to absorb everything I could in the shortest time possible.

Because in reality, I started out by coincidence in the video game industry. Without realizing it, I began getting in deeper and deeper, and I liked it so I kept going. But I had studied the most improbable things without ever having finished anything. I studied graphic design but never graduated with a degree. I studied architecture for a couple of years, and film, and set design, music.

PPT: But all of that is relevant to video games, right? It's a good interdisciplinary background.

SB: Of course. I also worked for a long time in advertising, on the computing side of the art department. Everyone would ask, "Why did you quit your studies? Why did you waste your time?" And I always replied, "I didn't waste my time." Even if I didn't finish with a degree, it doesn't mean I've forgotten what

I studied. I'm a curious person. There was no major in video game graphic design at that time—there wasn't even a major in graphic design—so when I started to work on video games and we launched the studio, I realized that I was using every single one of those disciplines I had been studying—from music to architecture to graphic design, programming, advertising, everything—in making video games. Everything started to come together for me; I started to understand why I had studied all those things.

PPT: Were there particular people, studios, or games that you admired?

SB: Well, again, I've always been a big admirer of Will Wright. I am also lucky to have Gonzalo by my side, whom I admire a ton and from whom I've learned so much. That's been such an advantage. Beyond that, oh it's so hard, because it's just so broad and so eclectic, what I like. And they're all super different from one another, even super opposed to one another. At some point I liked *Sim City* then suddenly I was into *Diablo* (Blizzard, 1996) and then I liked *Animal Crossing* (Nintendo, 2001).

Now that I reflect, there is actually a common denominator, which is that I always liked games where I could customize my character and make it so that the protagonist is *la protagonista*, a female protagonist. Not necessarily one who looks like me. A little while ago I started playing *The Sims 4* (Electronic Arts, 2014) and I made a character exactly like me—she had my three dogs and my car—and it scared me. I stopped playing and couldn't go on because it was just too much. But yes, I always have liked games where I could work with the characters in some way.

PPT: Is that something you've been able to carry over into the games you've developed?

SB: I try to. There is something I need to clarify: during the ten years when I was with the studio, we were working on a service model, meaning, we were making games for characters that already existed. We even had games that were fairly large, where you could create your own character. We made a really nice game in 2006, *Big Fat Awesome House Party* (fig. 6), which was probably the biggest game Powerful Robot ever did. It was for a show on Cartoon Network called *Foster's Home for Imaginary Friends* (2004–9), where there's an orphanage where imaginary friends go to live once their respective kids grow up and abandon them.[16] The premise of the game was that you would create your own imaginary friend and then do all sorts of crazy things—in a very basic way,

FIGURE 6. *Big Fat Awesome House Party*, 2006, developed by Sofía Battegazzore's studio Powerful Robot Games for the Cartoon Network series *Foster's Home for Imaginary Friends* (2004–9).

because they were very simple games. I think the screen resolution at that time was 320—really small.

Now, right at this moment I'm working on a gamified application for the Uruguayan startup Loog Guitars that teaches young kids to play guitar.[17] I'm doing it for a Uruguayan, Rafael Atijas, who designed a very small guitar with three strings—which is fantastic to me, and I'm really happy to work on this project because I admire him so much as well. The guitar is ergonomically designed for small children; they only have to learn half of the chord. Later on, when they grow up and want to go on learning, they'll learn the full way, but this really facilitates their learning. He made a real instrument; he's got electric guitars and acoustic guitars, and they sound really good. In the application you can tune the guitar; the application listens to the guitar and tells you if it's tuned well or poorly. And there's a character you can customize. We made a first version a year ago, and now I'm working on a slightly more elaborate version, where you can customize the character more and all that.

For me, that's the best part. I think it's exactly what I liked so much about *The Sims* and that type of game: namely, setting up the house and customizing the characters rather than playing the game with them afterward. But that's how it's always been with me. Since I was a child I never played with dolls. I liked to set up their houses and wardrobes and my sister was the one who would

FIGURE 7. One of the characters Sofía Battegazzore created for the Loog Guitars app.

play with them. I devoted myself entirely to setting up the repertoire. That's why I was so insistent with this game, with this application. With an application for kids, the first thing is to identify with a character. And the capability to change their clothes and modify them, that's an important part of the application.

In fact, the thing I like most is that the character is a monster, not a girl or a boy (fig. 7). And you can dress it how you want. It is whatever you want it to be. I'm not interested in making you choose between a boy or a girl, if you want to put "girls' clothes" on them, or what you consider "girls' clothes." Not having to make the male/female decision because it's a monster, and it can be whatever you want, seemed important to me.

Those are production decisions, exactly as I was saying before. The producer's role has an influence on game design. If you have a producer who says

that this is important, how is the one who has to do the programming going to respond? They're going to say, "Well, it's easier for me and I can do it quicker if it's binary, otherwise it's going to complicate things." But they don't see the big picture. I like having a panoramic view of what's most important. Seeing from the outside isn't the same as the perspective of the person doing the day-to-day work.

PPT: Has the situation changed for women in the game industry in Uruguay in recent years?

SB: Yes, bit by bit. I was in a different situation, in the sense that I was CEO of the studio, the one making decisions, the one you had to consult. In that sense, if there were women who were interested in working in the studio, they had my blessing, assuming that they met the conditions and requirements. In fact, I'll never forget the time around 2000 when we were at GDC, and other studios in Argentina—there still weren't many—asked, "How do you have so many women working in your studio? How do you get the women?"[18] And I replied, "You hire them." And a year would go by, and they'd be back with the same thing, "I don't know where you find them!" And I'd say, "Well, you must not be looking hard enough!"

They were always in the minority, there weren't many. But I think that sometimes women don't get hired when they're in the minority because of the issue of comfort. In the sense of, "Oh, this is a closed group, and if you bring in a woman, I'm immediately going to have to act differently, I'm going to have to speak differently." But once you do it, and that all changes, the situation is different. That's something businesses have to do. Nowadays you can find—at least here—a little bit more. For example, Martina Santoro, Laia Barboza.[19] They're from another generation that's younger than I am.

When I used to work with Gonzalo, people would always assume I was the secretary. It was funny. Gonzalo, when he realized this, would say that *he* was *my* secretary, and it would unsettle them. To give an example, we were doing some job interviews, and I would ask a question and they'd respond to Gonzalo. After the interview was over, Gonzalo might say, "Oh, this guy has such a great résumé," and I'd say, "Yes, but he won't work out for me, because I'm the one who's going to have to give him orders and he won't respond to me." That was how I tried to put the team together in the best way possible.

PPT: What can companies in the game industry do to improve the situation for women?

SB: Hire women! It's easier now because there are degrees in video games and you have people who more or less know their trajectory. So I think there is the theory and the belief that it's going to be better to hire a person who has a lot of experience. In some cases that's true. But also, since we built the studio from the ground up, and at that time there were no degrees in video games, we had to hire people who hadn't yet done anything. So we had to look beyond that and try to see their potential. I became accustomed to hiring on intuition. I would say that over the course of ten years, probably fifty people passed through the studio, and we were wrong maybe two, three times. But no more than that! If someone says, "This certain person must be better because they have more experience," I say, "Give the other one a chance!" People who want to learn, learn fast. Talented people adapt very quickly to whatever you need, whether they have experience or not.

PPT: How is the situation different for developers in Uruguay, and in the Southern Cone?

SB: To begin with, we're far away. In an industry where everything is based on contacts and going to conventions and events, it's like the engineer Juan Grompone, a prominent figure here in Uruguay, says: "You get on a plane, six hours go by, and you're still flying over Brazil."[20] I mean, we are *far away*. Very physically far away. That significantly raises the price of everything you have to do. When we had the studio we would travel at least once a year to speak with each client, meet with them personally, keep up those relationships. That's fundamental in the video game industry. I don't travel that much anymore because I'm working with the local industry, for instance with the Loog guitar project. I've also made games for Plan Ceibal.[21] But otherwise you have to travel, go to conventions, stay in contact. In that sense our location can be a disadvantage: everything is more expensive, takes longer, and requires more work.

That said, I think we have a ton of advantages. Because we're outside the main scene, it generates a lot more creativity when it comes to finding novel solutions to problems. With Powerful Robot we knew we couldn't compete in terms of price and some other things, but we could offer quality work. I think the studios that are focused on that are the ones that are doing well.

PPT: You started Powerful Robot just as Flash games were becoming popular, right? The landscape for games is quite different now, isn't it?

SB: Yes, our games weren't even Flash. We were working in Shockwave, which came before Flash. There was no iPhone or Android. Then we also did

FIGURE 8. *September 12th: A Toy World*, the renowned "serious game" Sofía Battegazzore developed together with Gonzalo Frasca.

the political games, which might have been different if we'd done them today. But at the time it was something that didn't exist.

PPT: Are you referring to the game you made for Frente Amplio in 2004, *Cambiemos*?[22]

SB: Yes, we did that and a ton of other political games. Some on commission and others because we wanted to make them, like *September 12th: A Toy World* (fig. 8).[23] But at the time we didn't know how to capitalize on it.

PPT: How has the landscape changed for young developers in Uruguay? What advantages do the region's future developers have?

SB: It's a tough outlook because there's always more and more, and it's harder and harder to stand out from the games that already exist. New games come out every day, all sorts, and there are a lot of really great games. There are ever greater demands for quality, content, et cetera. I think that now—at least I'm convinced of this because it's the way I like things, I don't think it's the magic formula—more and more, what I call the "orthodox developers" are starting to

leave their cocoons and look into other disciplines, not just education, and experiment and get nourished. I always liked working with television shows and television ads, but now I'm working with a person who's made a toy instrument, and with Plan Ceibal. I think that's the key: departing a bit from what you already know and experimenting with other disciplines.

There's a really beautiful current of games now that aren't so focused on violence but rather on game mechanics. People are experimenting with a lot of new and interesting things that are appealing to a player who already knows a lot, who is already familiar with a ton of mechanics, who isn't seeing a video game for the first time. It's about giving them more and making them work a bit harder.

PPT: What advice would you give to women who want to develop games?

SB: Have the courage to speak about what you do. I had to learn that lesson kicking and screaming when I was already older, and I notice that a lot of people, especially women, who work with video games or who want to start working with games—not all of them, but many—are very timid although they have a lot to offer. Make yourself heard. Be courageous and driven. I say that from experience. I was always super-timid, and didn't think it was that important. Now I realize it was; I should have acted differently. It's not exactly a regret, but I think you have to use your voice. Those things come with practice. But if you're just getting started, there's time to make sure your voice is heard.

MAUREEN BERHO

Maureen Berho (fig. 9) cofounded Niebla Games in Valparaíso, Chile, in 2015. In the relatively short time since, the studio has developed the math-based multiplayer card game *Careta* (2017), the competitive tabletop game *Hegemony: Shadows of Power* (2018), the grid-based puzzle video game *Hexland Heroes* (2019), and the card-collecting game *Causa: Voices of the Dusk* (2019, fig. 10).

PHILLIP PENIX-TADSEN: What are some of your first memories of video games, as a player?

MAUREEN BERHO: Playing Atari and Sega Genesis in my house with my older siblings.

PPT: When and how did you start designing and programming games?

MB: I don't personally design or program video games; I work as CEO and producer for Niebla, an indie team dedicated to game development. I've been

FIGURE 9. Maureen Berho, CEO and producer of Niebla Games, Valparaíso, Chile.

working in this area since late 2015, which was when we founded the business. The project began as a hobby while we were studying in college, but then it became more professionalized as we made progress on our first projects.

PPT: Who were your role models? Were there any women who served as role models for you in developing games?

MB: Sincerely, when I came into this industry I wasn't familiar with the teams behind the games that I found interesting, which meant I also didn't have any role models to follow. Little by little I got to know other developers, male and female, especially in the context of our industry at the national level.

PPT: What obstacles have you had to overcome as a female developer? And as an Argentine or Latin American game developer?

FIGURE 10. *Causa: Voices of the Dusk*, 2019, a multiplatform free-to-play collectible card game developed by Maureen Berho and Niebla Games.

MB: In general, I think I've had to overcome the same obstacles that face all entrepreneurs, male and female, in this area: difficulties accessing financing; distance relative to the centers of the industry; difficulties establishing the necessary contacts with publishers, platform representatives, and news media; and cultural barriers to reaching players of all genders in the major markets, among others.

PPT: Do you think there are *advantages* to being a female game developer? Or to being an Argentine or Latin American game developer?

MB: In my opinion, today there's interest at the national and international level in encouraging inclusiveness for women in our industry, and in generally promoting diversity in all senses. This is a very positive thing, because the lack of diversity and inclusion is definitely a problem that deserves attention. Thankfully, there are several initiatives on the part of public and private organizations that support women who are starting or advancing their careers in this field through programs focused on training, mentorship, financing, or other benefits. I wouldn't go so far as to say that this is an advantage, but without a doubt, the scene looks more positive than it did a few years back.

PPT: What advice do you have for women who want to develop video games?

MB: They should focus on doing what they're passionate about. This is a very challenging area to break into and to work in, but it's also a very promising space for personal and professional development.

FIGURE 11. Martina Santoro, CEO of Okam Studio and president of the Argentine Video Game Developers' Association (ADVA).

MARTINA SANTORO

In 2016 Martina Santoro (fig. 11) was the first woman elected to serve as president of the Argentine Video Game Developers Association (ADVA). She is also a cofounder of the LatAm Video Games Federation and the founder and CEO of Okam Studio in Buenos Aires, cementing her status as a leader of historical significance in regional game development.

PHILLIP PENIX-TADSEN: What are some of your first memories of video games, as a player?

MARTINA SANTORO: In Argentina we didn't have the NES.[24] Nintendo never arrived, officially. At my house we had a computer, I can't remember what kind now, but it was one where you wrote with code, in DOS. It wasn't even black and white, it was yellow and white, crazy. Later on we got the Family Game, the console that was the closest thing to the NES, but I don't know if it was from Argentina or somewhere else.[25] It was like a clone. But it would run the Nintendo cartridges. So the first thing we had at home that was properly dedicated to games for the family, where my brother and I could play, was the Family Game console.

Later on, when I was around ten or eleven, my parents bought a real computer, meaning, one with a CD-ROM. Everything there is pirated—in

Buenos Aires there's a park called Parque Rivadavia that was then legendary for consisting entirely of stands dedicated to consoles, to PlayStation or PC games. The people assisting you were professionals, guys who'd played everything and could give you advice and recommendations based on your preferences. You'd spend the whole afternoon there picking out games. Everything was super-pirated because in Argentina everything took so long to arrive from abroad, and when it came out it might be late, or in Spanish from Spain, those types of things. So it was better to buy the pirated version, which was cheaper, came out earlier, and was in the language you wanted.

At that time the game that made the biggest impression on me was *The Secret of Monkey Island* (LucasArts, 1990). I discovered it at the house of a friend whose father would bring her games from the United States. He worked for IBM and traveled a lot. She would play that and also *The Sims*. All of her characters had these glorious, incredible lives, while my friend was going three days without eating or bathing.

PPT: How did you start developing games?

MS: Actually, I studied political science and film production, along with animated film. Movies by Disney, DreamWorks, anime—I was always passionate about those things. So, along with my partner, Lucas Gondolo, we started developing television series to send out to film festivals.[26] This was around 2008: we were meeting television producers, people with years of experience in film. They didn't have digital teams, they didn't make games. The video games that existed for movies or TV series were *Pokémon* (Nintendo, 1996), period. Only companies like Nintendo were making games—studios purely dedicated to game development. If there was a *Lion King* game, it wasn't made by Disney Interactive, it was made by a studio.

At one of the festivals we attended, we started talking with Aardman, the studio that did *Chicken Run* (2000), *Wallace and Gromit* (1989), those beautiful stop-motion films. These were sixty-year-old men, and they would say, "Okay, I'm not going to give you money to make your series, but I like how you thought about the associated content. Explain how you sell a game through the app store. How is it distributed? How do I let people know that the game exists?"

So our first experiences, our first commercial pilots, were either with friends' studios, for example Cartoon Saloon, who did *The Secret of Kells* (2009) and *The Breadwinner* (2017), which are beautiful movies. We'd do a prototype for

FIGURE 12. *The Adventures of Dog Mendonça & Pizzaboy*, 2016, a graphic adventure game developed by Martina Santoro and the team at Okam Studio.

an interactive book, something based on the mythology of the movie. Then we'd show up and try to sell it to the film distributor. And of course the film distributor would say, "I don't know how to make games. I sell movies. I know how much a minute of ad time costs on TV. I know how many tickets I have to sell at the box office to make my money back. How do I make money on a game? How do people pay for them?" Not everyone had an iPad back then; people didn't have as much access as they do now.

Our first projects arose out of our contacts in this industry who didn't yet understand how to make money on video games, how to sell or distribute them. It was a very good opportunity because there weren't a lot of people concentrating on that, so we had positive experiences. At the same time, tools like Unity started to appear, making it much quicker and cheaper to develop games. Then there were more people in the industry. When we started out, there weren't that many people working, but the sector has grown significantly in Argentina. There started to be more information. It was much cheaper to purchase a computer to make games—before, it was impossible—or to work with consoles.

Then one day we decided to do a game based on a comic by one of my partners, *The Adventures of Dog Mendonça & Pizzaboy* (2016, fig. 12). We were able to secure investment from some friends and made the first version, which we considered a prototype. It was the first instance in which we were freer to work and do things the way we wanted. The prototype was two hours long, which seemed small; it could've been bigger. We could have published it, and I regret

FIGURE 13. *Último Carnaval*, 2016, developed by Okam Studio in collaboration with Square Enix.

so much not having done so at that time. But we ended up with a game that could be really good. The art was gorgeous—in fact it was *Monkey Island* style merged with traditional animation. Really the game is super fun; my partners are really funny and they transmitted that in the game. The authors were part of the creation of the game and it was great. With the help of the government of the city of Buenos Aires, who I believe paid our airfare to go to the pitch session, we took that first prototype to Gamescom.[27] Again, we showed them the game we wanted to make, and everyone said, "Awesome, but graphic adventures are dead. Nobody wants to play graphic adventures."

But we did get the chance to meet people for the first time who were specifically from the video game world. We didn't have to explain how to make money or how to distribute games. There was press of all shapes and sizes, people with blogs or YouTube channels. That was how we started working with partners, developing games as services and coproductions. We worked, for example, with Square Enix, which was our most important opportunity (fig. 13).[28] For us, aside from working with Square Enix—which meant suddenly working in a different way, having to be more orderly—it was important as a stepping stone because when we went back to the market again, we could say, "Look who I've worked with." That was how we ended up working with Cartoon Network, with Endemol, with Kongregate.[29]

So now we'd worked with a bunch of studios all over the world—in England, Germany, Japan. One day we said, okay, we still have this prototype

that opened up so many doors for us, the first project we'd done that wasn't an advergame: *Dog Mendonça*. It was our game, our baby. And it had been sitting there, abandoned. Then when Jim Schaeffer had the extremely successful Kickstarter campaign for *Broken Age* (Double Fine, 2015), we said, "Well, I guess graphic adventures aren't dead after all."[30]

I think the moment when games became available for free in everyone's pockets, games were democratized like never before. The market grew a ton. A lot more people joined in. I'll never forget the day my mom, who had refused to take part in social media, called me in desperation: "Martina, how do I get a Facebook account so I can play the King games?"[31] *Pet Rescue* (King, 2012), right? I said, "Mom, I've been asking you to get a Facebook account for years!" But now all of a sudden there was something that she could play with her friends, as a community. For me that was fantastic. You have to hand it to the people at King.

At this point we had all these games on a service model for, let's say, Cartoon Network, and running parallel we had the production of *Dog Mendonça* with the Kickstarter campaign. Once we did the campaign, we got money from Koch Media, from Deep Silver, a German business who gave us funding to make the game bigger. Meaning that aside from the money we got from the Kickstarter, we got more money to do something more ambitious. So that went amazing, and we were able to publish the game, make it available in a lot of different places, and it was a nice game that's helped open a lot of doors for us.

PPT: Obviously, with all the work you've done with ADVA, being part of the game development community in Argentina is an important dimension of your work. What does the community contribute, from your perspective?

MS: The community is key. I remember the first time we went to EVA, the Argentine video game event, eighteen years ago. We could see that it was all TV and film markets.[32] There was no streaming. I think Netflix would send a DVD to your house. But it blew my mind. I couldn't believe there were so many people—fewer than there are now, but it was still a lot—who were doing incredible things, or willing to help with mundane things, like finding out how to hire an accountant, or what publisher was looking for what type of thing. We met people who would give us advice who were on our own level. The community is very, very generous.

It's important to be part of those types of things because they're sources of information that can't be found online. Some experiences are only transmitted

once there is trust. The Argentine developer Daniel Benmergui, one of the programmers for IGF and a very good friend, has always told me, "Don't read postmortems."[33] It's not that people lie there, but they omit. I mean, every word is crafted to make sure they don't end up looking like an idiot. But one-on-one, people can be more trusting, or say things they wouldn't to the general public. Not to mention all the times that people have taught me everything from how to put together a pitch, to how to organize a project, to what to take into account when signing a contract.

It's also nice to be able to give back. I was always very grateful for the opportunities I was given, for those specific things like the community getting out the effort, government support for projects, or for example in Argentina we passed our statutes of association on to the Uruguayans, the Mexicans, the folks from El Salvador. And now we have a Latin American Federation made up of eleven countries that are joining efforts, and we've been able to offer 110 grants for Latin American developers to go to GDC and take part in the conference. It's very expensive—each of those grants is around two thousand dollars. When people write to you afterward and say, "I wouldn't have been able to leave my job and commit to this if I hadn't gotten that contract," or been able to travel, or that you helped me to get this or that, it's really exciting.

PPT: What advice do you have for women who want to be game developers?

MS: One piece of advice that I always liked, that I learned late, is to just do it. Do it and who cares? Do it and publish it. Do it and show it. Do it instead of spending years trying to get it finished. An ex-boyfriend of mine used to say that projects are never finished, they're turned in. You just say, "Enough." You're always going to want to change something. You're better off to just do it, show it, learn from that experience of doing it, see what people say and learn from that. And do it fast—mess up fast, learn as quickly as possible so that the next time around you can do it better and make fewer mistakes. Or at least make new mistakes.

Another thing would be to have the courage to take the lead on a team. A lot of people, especially women, may join a project, but up to now I don't think I've met a woman in Argentina who's said, "I am a game designer," or "I'm the lead on this project." I don't know if it's false modesty, or humility, or embarrassment, or the way we are taught not to be egocentric, not to make anybody notice us. It's like, "Hi, I'm the scriptwriter," and yet you're also doing the production, or the coordination, or directing this project. The other day a film

professor told me that when one asks his students, "What do you do? What are you studying?," they say, "I'm a directing student" or "I'm a film director." They saddle up even though they've only been studying for six months, right? It's about making the decision, at least on an aspirational level, to take on that role. Maybe we need to hear more stories of women who have taken on those roles. We need that lore, that mythology, so that we have something to aspire to. So that people can say, "Well, everyone wants to be like Tim Schafer," or, "Everyone wants to be like . . .," but nobody knows the names of any women![34] We need to seek out those histories, find out who Amy Hennig is.[35]

Another piece of advice would be: it's not always you. Sometimes, believe me, it's other people who have it wrong, and you've got to trust in yourself. There's that saying, "It's not you, it's me." But sometimes it's the other way around. My friend Tiburcio once told me that sometimes you have to be paranoid; there's a reason we have that instinct to spot things that don't quite fit. It's not always because *you're* crazy. You can't let it paralyze you, or let it be an excuse to stop doing something, but be alert, trust that instinct. For me it's doing everything you can. And also, since it's a community that is so generous and shares so much, the times I've learned the most were when I was sharing too. Not being stingy with information, but being generous in intent with others, which always comes back around. It's good karma.

My two favorite producers of all time are actually from TV series and films, not from games. One is at Marvel, Victoria Alonso, and the other is Fred Seibert, who was at Hanna-Barbera.[36] He was Genndy Tartakovsky's producer, a genius.[37] The most shocking piece of advice he gave me was when he said, "Okay, now that we've got you here, before you tell me what your idea is all about, tell me, why should I give you money to do your idea rather than keeping my money and making my own idea?" It was tough: selling him without telling him the idea, the characters, or the game mechanics. His idea is his own, so surely he's going to like it more because it's his baby. So how do you make that argument? And what he told us, which we learned so much from, was that everybody's got ideas. Ideas? All the ideas have been done. "Monsters on an island" could be *Jurassic Park*, it could be *Lost*, or it could be a character that jumps from platform to platform. Whatever idea you have, *The Simpsons* have probably already done it. What you have to do is defend your capacity to execute, your means of carrying through to completion.

Video games are at the breakthrough point. It's like the moment when cinema stopped being part of the circus. They're earning a place—well, they've already earned it—not just as an industry, as a way of making money, but as a site

for professional development. When I told my mom that I was going to leave college and start a game studio, I think she almost had a heart attack. That was just ten, twelve years ago. Imagine those who came before me making games here in Buenos Aires—I can't even imagine what they must have gone through. Now it seems like there's a lot more information, bigger companies. It's easier to say to your parents, "I want to study this," and find a place where you can do so. There are more options now in professional development, too. It gives you tools that allow you to work in a lot of different industries, not just video games.

But we also need old folks, at least in Latin America. We need more gray hair. The oldest one we've got is probably Gonzalo Frasca, with his white beard. For women we have the star that is Sofía Battegazzore. She's amazing, I love her. She's fifty years old, and has spent twenty-five or thirty of them making video games. It seems like we're lacking those stories here. In the United States there are women who are sixty-some years old making games. Here Sofía is the oldest woman, and the next one in line is thirty-something, so she was all alone for a long time. The other day we were talking and she said, "For a long time, I thought I was doing something wrong at meetings. Then I realized it wasn't me, it was because I'm a woman and they couldn't get used to it." She was the one who normalized it; she didn't see any problem in being the only woman.

So. We need more people, more experiences, different ideas, different outlooks on life. Not just women—we need gay men and women, people of other religions. Diversity will always enrich our personal experiences, but our products will be better too. For example, we have a colorblind programmer, and now for the first time our most recent game has a colorblind option. It would never have happened if not for this guy saying, "I don't see the button." We'd chosen a green and red that he couldn't distinguish.

At the Universidad del Cine in Buenos Aires I'm now running the animation major, and for the first time I had a trans student, transitioning from female to male.[38] We watched a short that told the story of a trans kid and he began to cry, saying, "I'd never seen myself in a movie." It's so powerful. You can take a lot of things for granted that seem trivial. I identified with the dark-haired Sailor Moon because she was tall, since I've always been tall. The other day one of my friends said, "That never occurred to me!" It was the only time I could play as a character who was tall in comparison to the others. Sometimes games have that power to affirm people. There are things that hopefully games will help to normalize over time, so people perceive that things are a certain way because that's how they've always been. A more holistic relationship that helps

FIGURE 14. Martina Santoro presenting on the #1ReasonToBe panel at the 2017 Game Developers Conference.

normalize things that, today, still cause a lot of people to suffer because they are considered different.

Rami Ismail invited me to give a talk for #1ReasonToBe at GDC—those talks that were started out by women, in which only women participated at the beginning, and that's all legendary (fig. 14).[39] When Rami took over and began organizing it, it was more about diversity. The people who participated were from Africa or South Asia or Latin America. Developers who normally wouldn't be found on stage at GDC. And there were always five. The year I participated, he said to me, "Martina, I want you to be there because of your profile, and because it's important. I mean, even though you don't make video games, even though you're not part of this group, it'll be great to have you share your experience." Because it was always the art director, the programmer, the designer, telling the story of their experiences. I had to go to the psychologist and ask, "Why did he tell me I wasn't part of the group?" I couldn't understand. Of course I don't make games, I'm not a programmer; I don't do art, I'm not a designer. But I'm the one who puts the teams together. Who organizes ongoing training, puts together conferences, secures grants.

The night before that conference I didn't know how to finish my talk. I went to an event, I think it was for Microsoft, and one of the women from human resources said to me, "Of course, you're the *catalyst*." I started to cry, tears streaming down my face. If you have a chemical experiment, there is always an element that ignites the combustion or activates the reaction—that's the

catalyst. She said to me, "If you weren't there, these things wouldn't have happened." It was such a beautiful way of seeing it. You're in the video game industry, and it doesn't matter if you know how to program. You don't have to be an art director or a musician or whatever. You can be a voice actor, an accountant, an attorney. Or you can be a natural pain in the ass, which is the definition of me. Doing things so that others can make the most of it and grow from the experience. I have more social skills than mathematics or logic skills. Sometimes that's a good thing, and if you like management, you like to organize teams, or you like to get to know different people, just because you work in the game industry doesn't mean you have to be the negative stereotype of an antisocial programmer in a dark cave. In this day and age, we need people in human resources, people in accounting, people who like doing analytics, people who like music, voice actors. Nowadays it's a really beautiful industry because there are so many different people involved. ■

PHILLIP PENIX-TADSEN is an associate professor of Spanish and Latin American studies at the University of Delaware, where he regularly teaches courses on contemporary Latin American cultural studies as well as game studies. His research focuses on these areas as well. He is the author of *Cultural Code: Video Games and Latin America* (MIT Press, 2016) and editor of the anthology *Video Games and the Global South* (ETC Press, 2019). He has published work in the scholarly journals *Latin American Research Review, Letras Hispanas*, and *Ciberletras*.

NOTES

1. For more on this subject see Phillip Penix-Tadsen, "Intersections of Gender and Gaming in Latin America," in *The Routledge Companion to Gender, Sex and Latin American Culture*, ed. Frederick Luis Aldama (New York: Routledge, 2018), 46–56.

2. Kate Edwards et al., "IGDA Developer Satisfaction Survey 2014: Summary Report," 2014, http://c.ymcdn.com/sites/www.igda.org/resource/collection/CB31CE86-F8EE-4AE3-B46A-148490336605/IGDA_DSS14-15_DiversityReport_Aug2016_Final.pdf; Gabriel Angulo Cáceres, "Maureen Berho y la estrategia de los videojuegos chilenos para competir en el mundo," *El Mostrador*, April 25, 2017, http://www.elmostrador.cl/vida-en-linea/2017/04/25/maureen-berho-y-la-estrategia-de-los-desarrolladores-chilenos-de-videojuegos-para-mostrarse-al-mundo/; "Estado de la industria independiente: Informe Ejecutivo" (Buenos Aires: Fundación Argentina de Videojuegos, 2016), http://fundav.com/wp-content/uploads/2017/05/FundAV-Encuesta-2016.pdf.

3. Mia Consalvo, "Crunched by Passion: Women Game Developers and Workplace Challenges," in *Beyond Barbie and Mortal Kombat: New Perspectives on Gender and Gaming*, ed. Yasmin B. Kafai, Carrie Heeter, Jill Denner, and Jennifer Y. Sun (Cambridge, MA: MIT Press, 2008), 182–88.

4. See Phillip Penix-Tadsen, *Cultural Code: Video Games and Latin America* (Cambridge, MA: MIT Press, 2016), 97–108.

5. Oral interviews were transcribed by the author; both oral and written interviews were translated from Spanish by the author. Nievas prepared her written responses in April 2019. Sofía Battegazzore's interview took place via Skype on May 6, 2019. Maureen Berho prepared her written responses in May 2019. Martina Santoro's interview took place via Skype on May 2, 2019.

6. Marcela Nievas's professional profile can be found at https://www.linkedin.com/in/marcelanoeminievas/.

7. In Argentina as in many Latin American and Latinx cultures, the fifteenth birthday party is a significant rite of passage, especially for adolescent females. See for example Mercedes Palencia Villa and Víctor Gruel, "Algunas visiones sobre un mismo ritual: La fiesta de quince-años," *Revista temas sociológicos* 11 (2017): 221–40.

8. Realtime Software, located at 2450 Avenida Santa Fe near Avenida Pueyrredón in Buenos Aires, was a well-known center for software hacking, copying, trading, and sales. See "Realtime Software," blog post, December 4, 2010, http://blog.elpilotohernan.com.ar/?cat=31.

9. Around this same time, Nievas participated in a 1992 *Tetris* competition on the Argentine television program *Cerebro Mágico* [Magic Mind]; see 12:56 at https://vimeo.com/28331620.

10. The Ciclo Básico Común (Common Basic Cycle), is the term used for the general distribution requirements at the Universidad de Buenos Aires.

11. Following more than three decades in engineering gaming and computational hardware and software, Miguel "Miky" Ojeda is now a professor of electronics and control systems at the Universidad Tecnológica Nacional in Buenos Aires, and director of product development at the Stuttgart-based MK-ELEKTRONIK.

12. *Robotech* was developed in Japan by Tatsunoko Production in 1982–84. In Argentina, the series debuted on Canal 9 in 1986.

13. Gonzalo Frasca is a Uruguayan game designer and theorist best known for the serious games *September 12th: A Toy World* (2003) and *Madrid* (2004), developed with Sofía Battegazzore and published on their site Newsgaming.com, as well as his written works, including "Videogames of the Oppressed: Critical Thinking, Education, Tolerance and Other Trivial Issues," in *First Person: New Media as Story, Performance, and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan (Cambridge, MA: MIT Press, 2004), 85–94.

14. Will Wright is a US game designer best known for *SimCity* (Maxis, 1989), *The Sims* series (Electronic Arts, 2000–), and *Spore* (Electronic Arts, 2008).

15. Robin Hunicke is a professor of game design at the University of California, Santa Cruz, and cofounder of Funomena; she is known for her work on production and design of such games as *MySims* (Electronic Arts, 2007), *Boom Blox* (Electronic Arts, 2008), *Glitch* (Tiny Speck, 2011) and *Journey* (Sony Computer Entertainment, 2012).

16. *Foster's Home for Imaginary Friends* was developed by Craig McCracken, creator of *The Powerpuff Girls* (Cartoon Network, 1996–2005).

17. Loog Guitars was founded by Rafael Atijas, who developed the concept as his New York University master's thesis in integrated marketing; see https://loogguitars.com.

18. The Game Developers Conference is a major game industry conference held annually in Northern California since 1988.

19. Laia Barboza is a cofounder of Pincer Games, a game development studio in Punta del Este, Uruguay; she is an activist for gender diversity in the ICT sector and general coordinator of the Uruguayan chapter of Girls in Tech.

20. Engineer and author Juan Grompone is a member of Uruguay's Academia Nacional de Economía and Academia Nacional de Letras and the author of numerous books on logic, epistemology, literature, and other topics.

21. Established in 2005, Plan Ceibal is Uruguay's "one laptop per child" project, and was the first in the world to complete the objective of delivering a personal computer to every school-age child in the country, with a total of 450,000 laptops distributed by 2009. See Lucía Pittaluga and Ana Rivoir, "One Laptop Per Child and Bridging the Digital Divide: The Case of Plan CEIBAL in Uruguay," *Information Technologies and International Development* 8, no. 4 (2012): 145–59.

22. *Cambiemos* was a political puzzle game developed by Powerful Robot in 2004 in collaboration with the progressive political party Frente Amplio, meant to offer the player the chance to reassemble a country that has been broken to pieces.

23. *September 12th: A Toy World* is a serious game developed by Powerful Robot in 2004 as a critique of the US-led "war on terror" and a well-known example of "procedural rhetoric," or the postulation of a critical argument through game mechanics. See Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge, MA: MIT Press, 2007), 88.

24. The Nintendo Famicom console, first released in Japan in 1983, was released as the Nintendo Entertainment System (NES) in the United States in 1985; at the time, Nintendo had no official presence in Latin America.

25. Family Game was the name given to Famicom/NES console clones in Argentina and other countries in Latin America; they were primarily unlicensed copies produced in China and Taiwan.

26. Lucas Gondolo is the creative director and cofounder of Okam Studio.

27. Gamescom, billed as the world's largest gaming event, is an annual industry fair that has been hosted in Cologne, Germany, since 2009; see https://www.gamescom.global/.

28. Okam Studio developed the trading-card puzzle role-playing game *Último Carnaval* (Last Carnival, 2016) with publisher Square Enix; the game was ultimately the only product of the Japanese gaming giant's effort to create a Latin American division.

29. Among others, Okam Studio has developed *Adventure Time: Panquespadas!* (Cartoon Network, 2016), *Mr. Bean around the World* (Endemol, 2015), and *Realms of the Void* (Kongregate, 2016).

30. *Broken Age* is a critically acclaimed 2D graphic adventure that resulted from a record-breaking crowdfunding project, raising more than $3 million over its initial goal of $400,000 in the first month on Kickstarter. See Andrew Simon Gilbert, "Crowdfunding Nostalgia: Kickstarter and the Revival of Classic PC Game Genres," *Computer Games Journal* 6, nos. 1/2 (2017): 17–32.

31. Swedish game developer King is best known for casual games such as *Candy Crush* (2012) and social games like *Pet Rescue* (2012) and *Farm Heroes* (2013).

32. The Exposición de Videojuegos de Argentina (Argentine Videogame Exhibition, EVA) is the country's most important game industry event, held each year since 2003.

33. Independent Argentine game developer Daniel Benmergui is best known for his art games *Storyteller* (2008), *I Wish I Were the Moon* (2008) and *Today I Die* (2010), as well as his more recent puzzle and RPG games *Fidel* (2017) and *Ernesto* (2017). Independent Games Festival (IGF) is an annual event held at the GDC, and is the largest annual gathering of the indie video game development community.

34. Tim Schafer is a US game designer who founded Double Fine Productions in 2002; he is best known for his design work on *The Secret of Monkey Island* (Lucasfilm Games, 1990), *Grim Fandango* (LucasArts, 1998), *Psychonauts* (Majesco, 2005), and *Broken Age* (Double Fine, 2015).

35. Amy Hennig is a US game developer best known for her work on the *Legacy of Kain* series (Crystal Dynamics, 1996–2004), and the indie developer Naughty Dog's series *Jak and Daxter* (2001–13) and *Uncharted* (2007–).

36. Argentine-born Victoria Alonso is executive vice president of production at Marvel Studios; she has done production work on *Iron Man* (2008), *The Avengers* (2012), and *Black Panther* (2018). Fred Seibert, a US producer and founder of Frederator Studios, led MTV (in the 1980s) and Hanna-Barbera (1992–96), and launched the animated series *Cow and Chicken* (1997), *Johnny Bravo* (1997), *The Powerpuff Girls* (1998), *The Fairly OddParents* (2001), *Dexter's Laboratory* (2003) and *Adventure Time* (2010).

37. Genndy Tartakovsky is a Russian American animator, director, and producer best known for the animated television series *Samurai Jack* (2001), *Dexter's Laboratory* (2003), and *Star Wars: Clone Wars* (2003).

38. The major is titled Animation and Multimedia Film Management; see www.ucine.edu.ar.

39. Rami Ismail is a Dutch independent video game developer and activist for diversity in the game industry. He ran the #1ReasonToBe panel at the Game Developers Conference from 2016 to 2019, focusing on diversity and developers from the Global South (the panel's original developers [2005–16] focused specifically on gender equality in the game industry). A video of the 2017 panel featuring Santoro can be found at https://www.gdcvault.com/play/1024233/.