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Don Daglow

Transcript of an interview
conducted by

Christopher Weaver

at

Computer History Museum
Mountain View, California, USA

on

9 January 2017

with subsequent additions and corrections

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Preferred citation:

Don Daglow, "Interview with Don Daglow," conducted by Christopher Weaver, January 9, 2017, Video Game Pioneers Oral History Collection, Archives Center, National Museum of American History, Smithsonian Institution, Washington, DC.

Acknowledgement:

The Smithsonian's Lemelson Center for the Study of Invention and Innovation gratefully acknowledges financial support from the Entertainment Software Association for this oral history project.

Abstract

Don Daglow begins the oral history by discussing his early family life and education prior to recounting his work on mainframe computer games at Pomona College. He follows with time on Mattel's Intellivision Development Group and Electronic Arts, recalling various games developed and produced during that period. Daglow's narrative then describes experience with Stormfront and work on the video game *Lord of the Rings: The Two Towers*. Daglow closes with his personal viewpoint of preserving video game history and final thoughts on personal motivation and success.

About the Interviewer

Christopher Weaver is a Distinguished Research Scholar at the Smithsonian's Lemelson Center for the Study of Invention and Innovation, Distinguished Professor of Computational Media at Wesleyan University and Director of Interactive Simulation for MIT's AIM Photonics Academy. He has contributed to over twenty-five books and publications and holds patents in telecommunications, software methods, device security, and 3D graphics. The former Director of Technology Forecasting for ABC and Chief Engineer to the Subcommittee on Communications for the US Congress, he also founded the video game company Bethesda Softworks. Weaver is co-director of the Videogame Pioneers Initiative at the National Museum of American History, recording oral histories and developing new applications for interactive media and public education.

About the Editor

Justin S. Barber provided transcript audit-editing, emendations, and supplementary footnotes to this oral history as part of his broader work into video game history and digital museology.

Table of Contents

9 January 2019

Early years: Family and Education	1
Programming <i>Ecala</i> , <i>Baseball</i> , <i>Star Trek</i> , and <i>Dungeon</i>	6
Hobby to career: Mattel Electronics and <i>Utopia</i>	12
Heading Intellivision Development Group and <i>Intellivision Baseball</i>	25
Christmas 1982 to the video game crash of 1983	30
The Blue Sky Rangers	37
Electronic Arts and Bill Budge	39
Mentoring developers and Stormfront	49
Strategic Simulations, Inc. and <i>Lord of the Rings: The Two Towers</i>	54
Closing Stormfront, Game industry consultation and trajectory thoughts	65
Preserving game history and final thoughts	70

Video Game Pioneers Oral History Collection

Interviewee: Don Daglow

Interviewer: Christopher Weaver

Date: 9 January 2017

Location: Computer History Museum, Mountain View, California, USA

Weaver: Would you please tell us your name and the date?

Daglow: I am Don Daglow, and it is January 9th, 2017.

Weaver: Thank you. Don, would you tell us something about your early life both growing up as a child, some of your interests, and some of the influences on you, please?

Daglow: When I was growing up, I was in a family that was cut off from the world, because, just by chance, we didn't have family members nearby. My mom had been an Olympic-level athlete who was blocked from going to the Olympics because she was a woman. She had been an extraordinary businessperson who was blocked from many avenues in business because she was a woman, even though she was an executive in business in the late 1940s. And she had gone through a series of terrible experiences as a kid which had left her with some demons. When some medical processes were botched for her, it left her in a situation where she was first addicted to drugs by her own doctors and ended up as an alcoholic. I grew up in an isolated alcoholic home with an incredibly brilliant creative professional artist and business executive as my mom. That created some pretty unique situations that I came from.

My dad was trained as an anthropologist. He loved anthropology. It was his passion. But he finished school right before the Depression. In the Depression, he was forced to go back, get a second degree in business. He worked in finance and accounting, which was all right, but was not his passion. With him, I grew up around someone who, if you talked to him about business or his career, he would say, "Oh, here is what I am talking about." If you started to talk to him

about the Maori of New Zealand or the Plains Indians, then he would absolutely light up.

I think the way all this adds up to have given me certain advantages and certain issues in life. Both of my parents said to me very strongly from the time I was really young, “Find your dream, believe in your dream, and do what *you* want to do. Do not be like us. Do not copy anybody. Be what *you* want to be, because you want to be happy and that is what you want to do.” And that message, that support I had, whatever issues we had as being this withdrawn family, was something I think was not coincidental in some of the great things that have happened to me.

I was an only child. My brother died, basically stillborn or just a tiny baby. That plus being an only child meant that I was very often, in many ways, on my own, which meant that inventing games to entertain yourself became a very natural thing. I think that part of my childhood, looking back now, I see these logical patterns of the kinds of support I had. I look at the career I have had and see in retrospect, it kind of makes some sense.

I think that I was very lucky too. I went through a time when the American school system, specifically the school system I was in north of San Francisco, was superb. When I was going to high school, I was getting a college education in some of my classes. I just didn’t realize it until I got to college. Again, reinforcement of the power of education and how lucky I was there. It’s interesting to have grown up feeling very isolated from the world, then to turn around and be so focused on online games, looking to connect. To me, it all makes sense.

Weaver: In terms of your early life, where did this love of board games and then baseball come from?

Daglow: As a lonely kid by myself, playing by myself a lot, any kind of game became interesting. The idea that a kid could design a game was something that never crossed your mind. Games were designed by grownups very far away in big cities, in big companies. They wore suits and ties and they were in this impossible Emerald City that was far away from being what a little kid was. But at one point I took some of my dad’s cardboard stiffeners from his dress shirts that came back from the laundry. I taped them to a checkerboard, and I made my own game. I loved *Peanuts*. I would read *Peanuts* a lot. There was something about Charles Schulz’s philosophy that was very consoling. [My game] was kind of like

between a Parcheesi and something like Snoopy stealing Linus' blanket and him having to chase around to try and get it.

I recognize now that one concept was “fog of war,” where you weren't allowed to know, in theory, what was around corners. You only had sight lines, which is funny. I remember thinking about that when I did *Dungeon* on the mainframe, the PDP-10, in the mid-1970s. I implemented sight lines. I was thinking, “Oh, this is exactly what I did with Snoopy and the board game on my dad's old cardboard shirt stiffeners.” Again, game designer as career didn't exist, as far as I knew. It was just a way to entertain myself, keep from getting bored, and do something with characters I loved.

Baseball for me, first of all, I was raised with baseball fans. Both my parents were baseball fans very strongly. The Giants came to San Francisco when I was a little boy. Avid Giants fans. We had been Seals fans back when Joe DiMaggio was playing for the San Francisco Seals. First of all, I was raised in a family where that was just part of the culture. We watched the games and lived and died on how things went.

And for whatever reason, I loved the math of baseball. When I was a kid, one of my friends had a game called *All-Star Baseball*, which is a board game. You would do little spinners on wheels and then there'd be a round game card. It would tell you what happened. My friend and I, and then I am playing *Solitaire* a lot, we got to where we had rubber bands. If you spin a spinner with your fingernail a lot, after a while, it hurts, so you get a rubber band and you could go [demonstrates] like that.¹ You use the rubber band to spin the spinner. I still start to do that gesture and I just feel the rubber band in my hand spinning the things. But I would just spend hours a day sometimes playing the games. I would keep track of all the baseball statistics.

Part of the game was it was designed to be simple, not complicated. There was no pitching. It was just how does everybody hit. If you had Sandy Koufax pitching against you or if you had Joe Bum against you, you had the same mathematical likelihood of pitching. At one point when I was about fifteen, I went through and figured out the math for how to have a second set of cards for pitchers that said, “Okay, we can reverse that effect.” It would not be mathematically perfect, but we can get a pretty good effect of it with the second set of cards.

¹ Daglow demonstrates this gesture with his right hand by flicking the middle finger with his thumb horizontally while motioning his whole hand to his right, starting from his left hand, making a light snapping sound.

I have talked a lot about the idea of at that moment—now, if I had an idea like that now for a board game, I would think, “Okay, who could I send that idea to? Who would I pitch to?”

But as a fifteen-year-old, you think, “Okay, there is a big company in Chicago that makes this game. Fifteen-year-olds do not send game ideas to big companies in Chicago, because they are grownups. They’re not going to listen to some kid. The best you get is you get a polite, ‘Ah, you are a precocious kid. Thank you very much. Thanks for writing to us. Here’s a coupon for a dollar off your next game.’” That is the best you can hope for.

I look back now, and the mathematical basis for how I did those cards was also the mathematical basis for how the algorithm worked inside the first interactive baseball game when I wrote it on the PDP-10 starting in 1971. It was still the same math, was this idea of how you have the batter and pitcher interact. It’s interesting how when you are doing things you think you are just doing for fun, sometimes it turns into something later.

Weaver: You mentioned that you did this around fifteen, and it was the same thing that you were doing in 1971. Taking into account that there were probably some other small things in between, let’s jump from high school to college. You went to Pomona, didn’t you?

Daglow: I went to Pomona College in Claremont, California. Part of a cluster of colleges and a grad school called the Claremont Colleges, which turned out to be very fortunate. At that time, mainframe computers, to the degree they were on college campuses, were being used by faculty members and graduate students primarily for math, physics, the sciences. If you were a liberal arts student, you weren’t going to have access to a computer anywhere. I know that at Dartmouth, by reading history, I know they had early access. But at that time, a professor named Dr. Paul Yale and a student named Jim Cowherd went to the Sloan Foundation. They got a grant to say, “Hey, computers should be something everybody gets access to,” and so they put a terminal in a dormitory at Pomona.

One day I am walking into my dorm—the dorm where I happen to be living is where this [computer] goes—and I am hearing this “clackety-clack, clack, clack” sound in what is normally like a closed-off storage room. I walked in and there were two terminals in there. There was a student on duty, and they said, “Hello.”

I said, “What is this?”

They said, “These are computer terminals. Would you like to learn more? Just step this way.”

And it was incredible. Here was something that was printing out text based on what you put into it. I was a playwriting major. I thought that my future—I wanted to be a great voice of the American theatre. [Laughs.] I thought that was going to be my career. That was what I was aspiring to. I was realistic. I knew the odds that I was the next Edward Albee were not that high, but that was what I was trying to be. And I looked at this machine and I thought, “Oh, wait a second. This machine prints out text based on what you put into it. Text I understand.”

At that moment, they are saying, “Well, would you like to learn how to control the machine? Would you like to learn how to program?”

“Oh, I could never learn how to program.”

“Oh, no. It is much easier than you think. Here, I’ll just show you for a minute how easy it is,” which, of course, is what you needed to do. Everybody walked into that door thinking they couldn’t do it. Step one is to convince people it is possible.

Pretty soon, you are actually creating something. It was using BASIC language, very, very simple. And I just know that at that moment, my life changed. Amongst other things, my study habits changed because I was always in the terminal room trying to learn more and do something on the computer when I was supposed to be studying for class or doing other things. That was a moment where I thought I had acquired this great new hobby. I didn’t realize I had just found my calling. I thought I had acquired a great new hobby.

Weaver: Did having the access to the computers and the calling that you found lead you to start demonstrating, what was for all intents and purposes, a hobby from the time that you were a kid making games, a specific output where you were testing your mettle?

Daglow: In the early seventies, the game community, we thought, was solely within our school. I imagined that maybe some other schools had something like this, but the idea of sharing things between computers we never thought about. You wrote games for your friends. Then if a game got picked up and put on the system, then you wrote games for all the people who played games on the computer within our college cluster. The problem was they were using games, [which was] not the vision for our study group.

The Pomona College Computer Science Study Group, which was our Sloan Foundation-backed group, had a very open definition of what is the appropriate use of a computer. In fact, what I did got a lot of publicity in the school papers and stuff like that back in the day. But for the community at large that controlled the Computer Center, games were, in effect, the angler on the anglerfish. That was to make you come in and get interested, but once you became interested in the computer and you realized it had potential, then you would immediately drop all thought of games, which were, of course, frivolous and useless. You would immediately begin using it for very serious uses. If you were not a science major, then maybe SPSS, which was a statistical package for the social sciences. Because computer time was precious—it was an overloaded timesharing system—if you were caught doing a game, you would be kicked off by the sysop, the system operator. The only time you could do games openly was late at night. You had a dispensation if it was one or two little games that were the anglerfish angler, but anything else would be pushed off. Any sizeable game would be pushed off.

Those of us who were creating games became nocturnal because that was the one time we couldn't get kicked off. There were different terminals around campus. That is why I say it was a great benefit to have multiple schools to go to. We had our own terminal, which other people had the bad habit of wanting to use late at night, both of our terminals. We had a very slow one that printed on toilet paper, and then we had a faster one, which printed all of thirty characters a second. We got to where the denizens knew each other, and we knew where in the different campuses there were terminals and which were the ones that were least likely to be occupied. It turned out I remember at one point, the ones in the grad school were less occupied, so we had been sneaking there. Sometimes at Pitzer College, they'd be less occupied, and so we were sneaking in—it just all depended. Scripps College was an all-female college, so, as guys, we couldn't go find their terminals because we were cut off. But there was a lot of late-night skulking involved at that point.

Weaver: And out of that skulking came what first game?

Daglow: The first game I wrote was actually my learning project. I had seen ELIZA, an experiment with natural language. It is the first, still very well-known [program] which simulated a psychologist talking to you. It would ask you why you wanted to talk to it, and you would try and describe a problem. It was a very simple program. It would take language and turn it around. If you said, "I am deeply afraid of cats," very often it would be able to parse the text and recognize it well enough to go, "Why do you say you are deeply afraid of cats?" Of course, the

computer, especially in those days, had no idea what you were talking about. It was trying to disguise its lack of understanding as long as it could.

Weaver: Let me just interject and ask you a question. *ELIZA* came from MIT [Massachusetts Institute of Technology] and Joe Weizenbaum. It's probably useful, given that you were at Pomona, to talk about that a little bit from the standpoint of which colleges got what and just how popular *ELIZA* was. This wasn't something accidental that you just picked up.

Daglow: Yeah.

Weaver: This was the number-one, cult, text interrogatory kind of program. I think it is important to set the stage that you took on what was, in fact, a cult following of Joe Weizenbaum. And, by the way, who was Weizenbaum? Where did it come from?

Daglow: I have read about it, but I know paper-thin as opposed to in depth. *ELIZA*, as I understand it, at that time was pretty universally available in universities. It was such a great introduction to the power of the machine, and as a playwriting major, I looked at it, "This is dialogue. This is what we do for a living. This is it. We know what to do with this."

I thought in *ELIZA*, so much of it was about the transformation of language. Taking words you used and then using those as a feeder to try to get you to say something else. I thought, "Well, wait a second. What if you built a real vocabulary around it and you tried to actually give it content as well as showing how parsing and the structuring of language can work?"

And so, I started programming *Ecala*, which was my tribute to *ELIZA*, and, of course, with the typical college sophomore bravado, saying, "I want to do even more. I want to do better." I worked on that.

Once I was about two weeks into *Ecala* and it was already working, I thought, "Wait a second. I already know enough." I was learning how to program in BASIC through that system, and at that point I said, "Wait. I know enough, I could do a baseball game in this. Oh, I could do a baseball game." I knew how to do a baseball game in this. You just had that moment of, "Oh, wait. I have learned enough. I can do this."

I worked on them in parallel for a while, but the *Baseball* [video game]—at a certain point, I stopped further work on *Ecala*. I would go back maybe a year later, tweak it and add something fun, but then *Baseball* kind of gradually started

to take over my life. Late 1971 is when I first started working on *Ecala*, and before Christmas break, I was already working on *Baseball*.

Weaver: So, what happened with *Baseball*? Was it a hit?

Daglow: I worked on *Baseball* for almost nine years just because I had the good fortune. When I graduated from Pomona, I got a full-ride fellowship. I went through school almost entirely on scholarships, and I got a full fellowship to Claremont Graduate University, which was attached to the same computers. I still had my DECtape [Digital Equipment Corporation], I still had everything there, I still had access. When I got my master's degree and started teaching, four days after I got my master's, I was hired as adjunct faculty at the grad school as a part-time instructor in the education department training teachers, so I still had my access to the machine. I ended up having nine years of access, which nobody got. It was just pure going from student to grad student to instructor. Until the video game industry began, I left teaching, and went into the games business, there was actually contiguity. I gave up my account when I resigned as an instructor in order to go full-time as a game designer. I worked on *Baseball* steadily really all the time I was in school, adding features to it and so on.

There was a point where we had 36K [kilobytes] that we could write what today we would call 'apps'. You had to fit in 36K. At one point, they went back and said, "You are slowing down the machine too much. Anything that doesn't run on 32K we are not going to allow to be run on the system." I had written a derivative *Star Trek* that was a derivative of another game that already existed. *Star Trek* had to get cut back. Later, when I was working on *Dungeon*, I kept going up and out of that range and having to cut it back into 32K, but I just worked on it. But we always thought of it as something we were doing. It's a passion, because you love doing it. There were a few people you could share it with who would like it. And then some things would get put on the system for a while or get put on the system for a long time.

Ironically, my derivative *Star Trek* got put on the system. It was the first thing I ever had put on the system where it wasn't just friends who could play it. That led to a case where probably towards the end of my sophomore college, I would probably been writing games for nine months. I went to my mailbox in the dorm one day and opened it up and I had a snail-mail letter—what today we think of as snail mail—to me at Pomona College. And the school had figured out which dorm I was in and actually put the address, because it was just to me at Pomona College. And I opened it up and it was a fan letter from somebody in Boston. I do not actually remember which school it was, but somebody in Boston who

had been playing the *Star Trek* game that had been inspired by a game that already existed. They had been playing it. It had been on our system more than any of my other games. Apparently, through official or unofficial means, it had gotten shared between schools and they were playing it. It was basically, “I love your *Star Trek*. Thank you so much.” My first fan letter I ever got in my life for a game.

But the game sharing in that era, a lot of it was informal. Things that you were just playing with your friends would turn up somewhere else. You would find out later somebody played a game before I ever thought I had seen it on the system, so it even had a chance to be shared. I do not know all the ways that things got shared, but they obviously traveled.

Weaver: Don, you mentioned that you were working on a DEC computer. Do you remember what model it was of the computer?

Daglow: I’ll never forget what that computer was. It was a PDP-10 [Programmable Digital Processor Ten]². Even back then, it was like if you tried to picture Dorothy in *The Wizard of Oz* and you described the Emerald City to her, that was what the PDP-10 felt like to me. It was this completely impossibly wonderful device that did things that should be impossible, yet magically happened. When you were working, you felt like you had been transported there and you were in this special place. And when you had to get off the terminal to let somebody else on, it was kind of like getting kicked out of the Emerald City. So, it is funny, I haven’t thought about it in years, but that emotion comes back to that sense of connection. That PDP-10 wasn’t a model number or a machine to me; it was a place that was a state of mind. It was a magical—what today we would think of as a Harry Potter location, is what it felt like.

Weaver: And yet because it was a terminal, you really were disembodied from the actual machine itself, right?

Daglow: You knew that somewhere in the Emerald City was this fantastic machine and you were just connected to it. Later, I actually got to be one of the student volunteers who became one of the system operators on the system. I was actually working in this incredibly cold room and it felt like cold air being fanned on you from every direction constantly. You would put on a winter jacket in July to walk into this room and operate the machine. We had raised floors so cables could go underneath it. I remember the first time walking in and seeing it and thinking,

² Digital Equipment Corporation [DEC]’s PDP-10, later marketed as the DECsystem-10, is a mainframe computer family manufactured beginning in 1966 and discontinued in 1983.

“Okay. This is it. This is the actual computer. I am right next to the actual computer. There aren’t telephone lines with telephone receivers being stuck into acoustic couplers to be able to get to this thing and connect. No, I am directly connected to the real computer.”

The shame that came with it is early in my career as a computer operator. The guy who supervised all of us said, “Oh, you know what? I need to punch an address into the machine in octal. Okay. Would you go ahead, punch 2,056 into the machine in octal.”

I said, “I am sorry. I can’t do octal in my head.”

He said, “Okay. No. It is going to be one, three, four, five,” just to press those switches.

And I am thinking, “I do not like this.” But he said, “One, three, four, five.” He gave me a direct instruction and he turned and walked away. I press “One, three, four, five,” the whole system goes down. I still feel just so embarrassed about that. I crashed the system because I couldn’t obey, apparently, the instructions correctly on which of these [to flip]—and these are like light switches. They were light blue molded plastic shaped like airplane wings; A very sexy design. I never touched one of those switches again. And how a binary switch even translated to octal I never bothered to learn because I didn’t want to have anything to do with those switches after I crashed the system.

Weaver: Would it be fair to say that you arguably had one of the longest periods of time utilizing a computer almost as a personal computer in days when no one had personal computers?

Daglow: I do not know what I did right to be able to have access to a mainframe computer for nine consecutive years in the 1970s. Just the coincidence of being at a college cluster instead of the single college, so I could go from being an undergrad to a grad student. Then the coincidence of being hired as an instructor immediately upon getting my master’s and staying there. For almost all of that time, I just thought it was, “Hey, I get to keep doing my hobby. This is what I love to do. This is kind of my little weird technology literature view of twists on playwriting, and that is great.” And later at that time, I would start to work at being a professional writer, but it still felt like a dream situation that existed in another world away from the real world. It never seemed like, “Oh, yeah, this is part of the continuum, and *A* will lead to *B*.” It seemed like this bizarre fantasy sort of

side world that the straight world never knew about. Only those of us in the gaming hobby even knew or cared about it.

Weaver: And when you talk about gaming hobbies, one of the very popular games at the time on college campuses was *Dungeons & Dragons*.³ Did you have anything to do with *Dungeons & Dragons* on your campus?

Daglow: *D&D* [*Dungeons & Dragons*] hit our campus just as I graduated Pomona and was entering Claremont Graduate University. Somewhere early in my career as a grad student, some of the theatre types who were my friends and stuff who were still around town got into *D&D*. And so, I get invited into this game, “Oh, you have to see this great new game, and you have to do this.” We start playing *D&D* and get drawn in, and, of course, it is this fun thing. “Okay, we are pretending. We are playing these characters,” and, “Okay, what happens next?” and, “Oh, you didn’t say you were very careful as you walked around that corner. It turns out there are six monsters bearing down upon you, and there is already an arrow sticking in your arm.” And that was just exciting fun. We didn’t have games like that before.

First I fell in love with it. I couldn’t play enough. Then I started thinking, “Oh, wait a second. I know how to teach the machine to do this. Yeah, that would be pretty cool.” And so, I started writing a game I simply called *Dungeon*, which was unabashedly *Dungeons & Dragons* taken to the machine. It was incredibly slow to play, because I was trying to faithfully recreate the game. A wandering monster encounter with six orcs could take you half an hour to resolve if the machine was slow, because the machine was always overloaded. They had paying clients to pay the bills, and so we, as students, were sharing. And, of course, by this time, I am a grad student. But I meticulously made it so all the melee combat, every piece of the game I faithfully recreated, no matter how much it slowed down play. I look back now, and I just go, “Oh, that was bad judgment.” But that is what I did.

Weaver: When did you transition from your hobby to something that was more professional in terms of what ultimately became your career?

Daglow: Well, through the late 1970s, I was going through the teacher training program and then working for it. I was preparing to live as a schoolteacher for a couple reasons. First of all, I knew that writers starved. If I wanted to be a professional, I would better have a way to put a roof over my head. And secondly, I liked

³ *Dungeons & Dragons* is a fantasy tabletop role-playing game originally designed by Gary Gygax and Dave Arneson. It was first published in 1974 by Tactical Studies Rules, Inc.

teaching. I come from a long line of preachers and teachers, as my dad would say. It turns out it goes back a long way, so for whatever reason, that was something that came naturally. I loved doing it. And so right when I went into the master's program, was able to get an internship, and start teaching, I got a job in a barrio school district in Southern California as a bilingual teacher. I had studied Spanish in school, but I had never had to use it fluently. Suddenly, I was thrust into this situation where almost half my kids did not speak English. I pretty quickly had to learn Spanish in terms of real Spanish. I really enjoyed that.

I was teaching at the grad school. I was trying to write professionally during the summers. I was teaching middle school as a bilingual teacher. A typical teacher with the mortgage. I got married and we had a baby, and so I am holding down three jobs. I am teaching night-school Spanish two nights a week. And meanwhile, the video game business for coin-op has started. *Pong* has come along, and the different coin-op hits of the seventies start to happen, but, again, that seems impossibly far away. And then we get the Magnavox video game console and then the Atari. All these people were starting to do stuff, but they had graphics. We only had text. In *Dungeon*, I drew the dungeon maps with dashes in vertical lines and slash lines and asterisks. They had real pictures. "Well, that must be real engineers doing some kind of fancy stuff. I do not do that. I am in text."

And so, in late 1979, beginning of 1980, I get promoted into administration at my school district as an assistant superintendent. I was actually running non-instructional services. I had a very fiery Mexican superintendent who was determined that we were going to provide quality education, even in isolated Spanish-speaking districts. He wanted a teacher to be in charge of even non-instructional services. Very quickly, I found out how politicized this process was. And our district was going through cultural change. Our district had been created to segregate Mexican kids away from the white ranchers who ran the ranches. They wanted the Mexican fieldworkers to be in different schools in the late 1800s. That district 100 years later was now changing and being filled with subdivisions. The moment when the political power went from sleepy little district by itself to being "No, we do not want it to be that way. We want this to be a standard middle-class tract-home school," that moment happened right then. And so, they immediately went after my fiery educator boss. Very political.

I am driving home from work one day in the middle of all this, miserable, because, you know, we are about teaching kids, we are about helping kids. On the radio, I am listening to a jazz and R&B station and a voice comes on the radio. The voice says, "Would you like to work in the exciting world of video

games?” And I am driving along thinking, why, yeah, that sounds pretty good. And “Would you like to help shape the future of this new entertainment medium?” And I always joke about the fact that the announcer voice sounded like the voice of God. I didn’t know whether to look at the radio or look up. “Then you need to call 213-978-JOBS. That is right, 213-978-JOBS. Mattel Electronics is looking for you.” And what had happened was they were recruiting for diversity for minorities on this jazz and R&B station. They got me by accident. I’ll never forget 213-978-JOBS. If something changes your life and you immediately realize it has changed your life, you never forget that number.

And so, I called them up in response to the ad and said, “Hey, I have been writing games for nine years.”

You know when you hear somebody, they are being polite to you, but you know that in the back of their mind they are thinking, “Oh, god. The things people say. He is been writing games for nine years. These things haven’t been around [that long.] The Atari was only prototyped like three, four years ago. What’s with this?” Then I explained. They went, “Oh, maybe.” You could tell kind of like, “Well, maybe there has been computer stuff I didn’t know about. Okay. Well, let’s interview him.”

I came in, interviewed, and I got offered the job. By chance, it was just that moment where Mattel had said, “We’ve done some test marketing. The Intellivision [game system] is something we want to do. We are going to build our own in-house Intellivision team.” They had done some test games with outside consultants to start it off. I was one of the original five programmers hired on day one of the Intellivision in-house at Mattel.

Weaver: And so that started the professional career. Then what ensued at Mattel? What was the chapter on Mattel and the influencers there as well?

Daglow: Mattel Electronics, which was the home of the Intellivision, if I thought I had encountered politics inside school districts, once I got into corporation America, the big corporation, I discovered I knew nothing of politics. They had a very well-established toy company built around Barbie and Hot Wheels. The current new thing was He-Man and Skeletor. That branch of the company had been one of the top companies in the world for a number of years. They knew what they were doing, they knew how to do it. They had started doing these little handheld football games and other games where you had blinking lights. You would hold it in your hands, and the patterns of the blinking lights would stand for a football field or a baseball field. You could play these little handheld games. Those things

had taken off and they had been so successful, they created their own new division, Mattel Electronics, for those handheld games. They had about thirty-five people in that division. When they started doing the Intellivision project, it came out of Electronics, but it was a different engineer than the engineer who had led the handheld games. The project goes ahead.

We get there and we are employees thirty-six through forty in the electronics group, but we are very different because we are not doing this. We were all in this big open space. They had just put cubicles in. We are in an old converted warehouse next to the Mattel Toy tower. Mattel Toys is in a six-story building, traditional office building, very nice. We are in a converted warehouse, which is still much of it being used as a warehouse. Part of it was the toy test facility where they would smash toys and beat them to death just to make sure that they were safe. They were across the hall from us. When we walked down the hall, there would be the big forklifts coming down with things. Your job was to get out of their way, because to them, this was still a warehouse. We'd go into the facility, go through the armed guards who guarded the entry, because toys are an industry full of espionage. We'd go get everything validated, have our nametags and everything. We had be going down the hallway, "meep-beep," okay, pin yourself back against the wall because the forklifts are coming, and then go into our area, which was basically in the middle of a big warehouse, but defined by tilt-up walls made out of probably plywood; Basically tilt-up walls. We'd go in and we had cubes in there.

We had industrial designers around it who designed the plastic moldings for things. We had the engineers who designed the circuit boards for those. We had artists who would do the concept design for the housings for these. And these were all great guys. They all welcomed us. They all treated us as really interesting new adds to the team. We were made to feel really welcome by all the people who worked on the handheld games. There was not any sense of, "What the hell you doin' here?" on our team. It was more, "Oh, this is cool. Hey, this is good. We are getting bigger, more success. You guys are doing different things than we do. That'll be fun to talk about at lunch." That part was all cool.

We just started saying, "Okay. We are under the gun. We have to create games for Intellivision, which clearly seems like it is going to be a success from the test markets. We have this computer component into which the Intellivision rests that turns the Intellivision video game system into a complete home computer system, useful for education and business in your home." But we had the pressure that that machine had not shipped yet. They were still working out the bugs. We had to provide software for it as well.

We got divvied up. I got initially put on the computer system, because it was a case of “What can we do fast?”

And I said, “Well, I can write a simple game in one or two days.” That system ran in BASIC [Beginner's All-purpose Symbolic Instruction Code].⁴ I had programmed games in BASIC, and so that is what we were doing on the Intellivision keyboard.

So, they said, “Okay. What would you—?”

“Well, I taught social studies in middle school. I know that.”

They said, “What’s a common thing that gets taught with flashcards or gets taught—?”

“Oh, the states of the United States flashcards. Recognize the state. Let’s do that for the Intellivision keyboard. That’d be a good initial product that shows how educational it is.”

I sat down and I wrote a program with fake graphics. The Apple II had been introduced, so we had ASCII [American Standard Code for Information Interchange] characters, which were this set of numbers that produced a certain character on the screen, a letter or one of a very limited number of shapes. Using those ASCII characters, I built maps of the fifty states and built a game that would show one and say, “Okay, what’s the state?” You typed in your answer, and, oh, “Right,” “Wrong,” “Here is your score.” I worked on that for probably the first three months that I was there to get that going in the system and to get it to fit in the [limited] keyboard RAM [Random-access memory]. Finished that game. The keyboard was still not shipping. It still had problems with its tape drive. These games were sold on cassette tapes, that was how they kept the price down. The cassette tape would then load into the computer.

And I found out later that everybody at Atari was terrified, because, of course, Atari at this time is our mortal enemy. Television commercials every night on TV, we are tearing each other to pieces. “No, our system’s better.” “Our games are better.” Now those guys, we are all friends. Now we know that Atari was terrified that we were actually going to ship our computer, because they didn’t have anything like that that could match it at the time. But it was held up.

⁴ BASIC is a family of general-purpose, high-level programming languages whose design philosophy emphasizes ease of use. In 1964, John G. Kemeny and Thomas E. Kurtz designed the original BASIC language at Dartmouth College.

I finished that. They came back and said, “Look. The Intellivision’s where the money is. We are not shipping the computer yet. We are going to switch you over to the Intellivision and we are going to have you learn GI-1610 assembly language, which is what we code in there. We’ll have you do a pure game cartridge.”

A guy named John Sohl, who was also one of the original five, and a very professional, very thoughtful guy, was assigned to teach me GI-1610, which he did. I knew the basics of how assembly language worked. I had seen 6502, but I had never coded professionally in assembly. He brought me up to speed and got me going. And we had a dialogue about, “Okay. What games should I do?”

In the very early days when you were just trying to fill those first categories, we looked at it and said, “Okay. We’ve already got a bunch of people working on sports games. We already have a baseball game. We do not need you to do baseball.” Crestfallen. “And we also have lots of arcade games trying to compete with Atari,” because they had the arcades brands where they controlled the name machines. We didn’t own any arcade titles, so we didn’t have famous machines from the arcades to replicate for the home. We had to invent things from scratch. We had people working on that tack.

So, they said, “What can we do that is counter? What’s different?”

I thought back. Well, on mainframe games, one of the big categories we had was sims, because you would do all these little— “Well, what would happen if—?” I watched the movie called *The Killer Shrews*, which is a terrible 1960s horror film. Back when I was in school, I had done a simulation based on that. Well, if you had an island and radioactive killer shrews grow to monstrous sizes and are eating everybody and you have to decide when to make a break to the boat to get off this island, how long would it take the shrews to eat the rabbits and the deer and then decide they had to eat your house and come eat you? And when would be the moment of maximum distraction for them eating rabbits and deer when the population would still be low enough that you had a chance to get out?

I took a weekend and wrote this simulation. I played with it more later, but those kind of simulation games were just a fun thing you would do. I thought, “People do not have things like that kind of simulation game we used to write.”⁵

And as a teacher teaching in the *barrio*, you do not teach from the book because a lot of the kids are way behind in traditional reading skills. Kids are very

⁵ Daglow would complete his game *Killer Shrews* in 1978.

intelligent, but if you are in a foreign environment like that, you do home visits. There are no books in many of the homes. I did home visits for kids with dirt floors living in corrugated steel shacks. You are doing a home visit and you are going, “Oh, I think I may have had some tough times growing up?” I had a cake walk compared to what my students are going through. Other kids had a little better.

When you are teaching kids, many of whom have had very little life outside of a sixteen-square-block area, you have to teach differently. Do a lot of oral theatre and stuff to make it interesting. And I kept being frustrated in how to teach the sense of how big the world is in social studies. Then one day I am in the cafeteria and I look down at the school floor. Of course, it is squares of linoleum. I instantly go, “Oh, anytime it is squares, you can get it into the computer. You just overlay the squares in the map and code what it is. You can get it on the computer. But doing it on the computer is useless because the computer is at my school. It fills an entire room and there is no connection for my kids. But wait a second.”

I went to the store that afternoon, got electrical tape, went back into the cafeteria, and stayed there till I do not know when. I created a world map on the cafeteria floor out of electrical tape. And I figured, “When the principal sees it in the morning, I am either going to be a hero or I am going to be in trouble.” But I could do games on that to teach the kids the sense of how far the world is. How the oceans create these things. Why cultures grow up differently and why it is all different. And, fortunately, it turned out I was a hero. The superintendent called the paper and did a newspaper article about this big world map on the school floor. I am still Facebook friends with one of the kids who got her picture in the paper standing on the map.

I am thinking about what game do I do. I thought, “Okay, well, if I think about some of those games I designed for the classroom, and if I think about killer shrews on an island and I think about the sims-style of games we used to write in school, you put that all together. Okay, two islands, each player is running one of the islands. It’s a sim, and your goal is the happiness of your people. And there was a text game with very simple graphics called *Santa Paravia* that I knew of that I had played on the TRS-80 at a friend’s house.⁶ I thought, “That is the kind of thing, except now we can put graphics to it. We can have action. We can escape text, because now do you realize we can actually do pictures. We can

⁶ *Santa Paravia en Fiumaccio* is a video game in which each player becomes the ruler of a fledgling Italian city-state around the year 1400. The goal of the game is to become king or queen. The game, by George Blank, first appeared in the December 1978 issue of SoftSide magazine.

actually control moving objects.” And there was a sense of excitement. We are not trapped in text anymore. And I felt like, “Oh, boy, I get to play with the big boys now. I am actually doing a *real* video game. I am not programming for a computer now. I am really going for a real video game.”

All those different routes are going through my head. I pitched the idea of *Utopia*. They said, “That is an exception. That is going to be a nice line-filler. It is an add-on to our line. We’ve got these other games in play. Do not add one more bat just like our other bat. Add a different kind of bat.” You know, it is not going to be a big thing.

I write the game and do it as a straight sim [simulation]. We are looking for more action, so we add fishing boats, pirate ships, and things to give you things to do so it isn’t just a turn-based game. It starts out just as turn-based and that felt too slow, so we add the action elements of it.

I finished it in November of 1980, right around my wife’s birthday, I remember. But in those days, when you finished a game, it wasn’t like now, where it is time for closed beta, push the button, and instantly we have live players from a sign-up list of people who signed up. It got sent off to a manufacturing facility in Hong Kong. They would create a sample version of the manufactured computer-code cartridge reduced into cards inside this plastic casing that got plugged into your video game system. After they went through the process of manufacturing the silicon cards that contained your game with the chips on them, they would then send that back to Mattel in Southern California, where it would be tested. Sometimes in that process something would go wrong in the silicon and it wouldn’t play. They would test and they’d say, “Okay. It plays correctly. It is good.” This was the fastest version when it worked right. They would then take those same samples that had been tested to have version control. They would then send those exact samples back to Hong Kong. They would replicate those samples for the production of the cartridge. The cartridge would then be produced inside the factories. It would then be put back into ships and then the project would be shipped to Southern California. This process took about five months.

You would finish your game in this era as a game designer. You would finish your coding, go through tests, kill the last bugs, and instead of what we have now of, “Okay. We are going to close beta. We are ready,” instead it would be, “Okay. I am going to start my next project.” You would know it would be five months before you got any feedback, before anything would really happen. You would always have this sensation of at about the point where you just stopped

waiting. You completely forgot about your last project. You would come into work one day and there sitting on your chair or sitting next to your terminal on your desk would be a shrink-wrapped boxed copy of your game. Suddenly this impossible dream is real. And you would look at it, and it is like the golden ticket in Willy Wonka and you've won it, but now you have this real thing.

Very quickly after that, you could go to stores and start to see your game on the shelf. You could watch somebody walk up and pick up your game, look at it, look at the back, and then take it to the cash register. I admit to watching people, and then just kind of, "I am just shopping. No, I am just shopping here." What I am really doing is following them to watch them carry—and we all end up doing this—my game to the cash register and pay real money for your game.

This was all 1981. It was not 1980. November of 1981 is actually when that came out. We go to CES [Consumer Electronics Show] for January of 1982. We have all our new games there and we are showing them at CES. The five of us who had come in as the original five, we have all of our games there. Several of them did well and they were all reasonably well received. I am getting ready to get up and go to the show the next morning and my wife calls me. She said, "Have you seen the paper?"

I said, "No."

And she said, "*Utopia's* on the front page of the Entertainment section of the *Los Angeles Times*," because of CES previews and everything.

It turned out that, for whatever reason, the idea of a sim and this cross between an educational game and a fun game just connected for people. What was supposed to be just a nice little line-balancer for the catalog turned out to be the biggest hit of CES for Intellivision at that show. And it was just kind of like, again, walking around in this surreal world, because in two years, I had gone from being this hobbyist game designer doing stuff on a machine that almost nobody ever got to, to where I was now part of this professional game design team. People could buy it in stores and now the front page of the newspaper has my game.

Weaver: What was your thinking when *Utopia* came out and it became so popular? How did it affect you from a practical standpoint at Mattel? What did it do to you? How did it change your life?

Daglow: It is funny, because after *Utopia* shipped, there were a whole series of things that happened that changed both how I felt about my career, my life, and opportunities. Just so many things changed, because, first of all, I had actually

shipped something that sold and was a hit and people had played. You think about yourself differently when you are part of this little group that does stuff that doesn't matter to the world off on the side of everything. You are not used to taking it all that seriously. Here, I build the same kind of game that would have been my next game if the mainframe had started to grow these capabilities, but now millions of people have the chance to consider buying it and hundreds of thousands of people do buy it. It just changed how I felt about myself. It was like becoming a published author. For a playwright, it is like being produced. I would be produced in small theaters professionally, but I would never be produced in anyplace prominent. It was like, "Oh, wait. This is like a little off-Broadway thing in New York." That same feeling. And so, my whole view of myself changed of, "Maybe I really do know how to do this stuff. Maybe this actually matters. I am on a real stage. I am not on some imaginary 'It doesn't matter, we are pretending here' stage. I am on a real stage."

Shortly after that, I got promoted to manager. The Intellivision group kept growing. I would be part of the group interviewing people and helping with that process. And we got big enough that our leader, who was an Englishman named Gabriel Baum. Gabriel was an incredible guy, very calm, which was really what was called for. If you picture the film about the blitz in World War II and everybody's going mad, then there is some Englishman who very calmly says, "Well, it appears the bombs are falling. I would suggest that we go down into the tube. Let's go, everyone." Gabriel had this tremendous calm about him. I am this fiery, "We are going to build the world's greatest games that anybody's ever seen, and we are going to pass Atari as the biggest company," and we are going to do this. And I am all fired up and Gabriel's very calm.

The other wild thing was that we both spoke Spanish, because he had worked in Spain in the computer software business, but he spoke Spanish with a Castilian accent. I spoke Mexican Spanish with more of a street accent. Here is this calm Englishman who speaks proper Spanish and English, and here is this wild, sometimes much too much over-the-top, young guy that just wants to go conquer the world and is all excitable. And it is almost like our languages mirrored our personalities. Of course, Gabriel was exactly what we needed. Gabriel was exactly what I needed.

As the team grew, I then [moved on] from directly writing my own games. I started just the first layout for *TRON: Solar Sailer* [before it] was passed off to another programmer. And from that moment on, I was still doing game design, but I was no longer coding. There is now a modern movement where they'll take classic video games and they'll reverse-engineer them and go look at the code.

On some of those games you'll see these magazine articles. They will say, "Oh, they were doing this mystical thing where they were doing—," this or that. "As a modern programmer, I have so much respect for this engineer."

A guy writes an article about reverse-engineering *Utopia*, and under the code or that heading, he goes, "Nothing special here." Three words is all he writes. [Laughs.] "Nothing special here." And I was very hurt by that a few years ago, but it also probably explains why I got promoted. They said, "No, you do not need to code anymore."

I had the chance to still design games, but my role really changed to one where I am working with the recruiters, hiring, selecting the team, and helping to build the team. A great engineer named Mike Minkoff was the other guy who got promoted. I see a lot of logic in it, because I was kind of the crazy game-designer guy. Mike was this rock-solid, sensible, hard-to-move engineer who was just calmly looking at problems. And I would look at Mike and I can go, "I barely deserve to be in the same row of cubicles with Mike as an engineer." I really came from all this self-taught, "Oh, we'll teach you assembly language. Okay. We'll go do that." I had learned a little LISP [LISt Processor], FORTRAN [Formula Translation], a little Pascal, and a little SNOBOL, so I had an idea of structure of high-level languages. I would be exposed to [MOS Technology] 6502.⁷ I would never really done it before, but I was not a trained engineer. Mike was a real engineer. Him running one group, me running the other. I can see the common sense of *really* solid engineer and crazy game designer as a check and balance. Makes a lot of sense.

As time went on, of course, now we are competing more and more for resources. The company keeps getting bigger. We are bringing in hundreds of millions of dollars. In competing for resources with other groups, I would be writing the fiery, fiery memos to Gabriel saying, "Gabriel, we can't allow this to happen. We have to get the resources. We are not getting the dev systems we need. We are working on PDP-1s where we have four programmers to each machine. Each machine is tied to—," I think it was eight-inch floppy disk. And there'd be four programmers per, and I think four artists or audio people. We had eight people per machine, four of them engineers, typically, once we really got going.

⁷ The MOS Technology 6502 is an 8-bit microprocessor that was designed by a small team led by Chuck Peddle for MOS Technology, introduced in 1975. Popular home video game consoles and computers, such as the Atari 2600, Atari 8-bit family, Apple II, Nintendo Entertainment System, Commodore 64, Atari Lynx, BBC Micro and others, used the 6502 or variations of the basic design.

Weaver: You said PDP-1s, but the machines you were working on at the time are probably PDP-11.

Daglow: Yes, I will back up to that.

Weaver: Yeah, okay.

Daglow: So, our team is working off of PDP-11s. I had worked on the 10, so I thought, "Oh, the 11 will be more powerful." But, of course, the 11 was a minicomputer. We had eight people hooked to each of these 11s. They were tied into eight-inch floppy disk drives as their storage, which introduced a lot of interesting opportunities to lose your work.

And it turns out, they were slow, too. They had come from a special engineering firm which said, "Oh, Mattel, we won't make these *any* PDP-11s. These are going to be *special* PDP-11s. These'll be rockin'. These'll be so fast." They had been customized with all these special cards and special firmware, which made them slower, less reliable, and prone to overheat and break down.

We were constantly fighting to get enough of these. It turns out that our debugging stations, which help you find the bugs in your code, we can't get enough of those. In each case, all the special hardware makers who are making this hardware for Mattel are one-off companies who have sold them the idea of these custom things. There is no second source. There is no way to get things faster. There is no way to get things cheaper. In fact, the prices, for some reason, keep rising for every one of these. Here we are in this war with Atari where at night George Plimpton is saying, "Intellivision, clearly superior," and Atari shipping their new games, "Here is the great new console hit."

And here we are having to share debug stations. We are having to sit and do nothing waiting for our machines to cool down because they've overheated. I am writing these fiery memorandums, because we didn't have email in these days. I am writing these fiery memorandums to Gabriel saying, "We *must* have more of our hardware, and we must do this. The future of Western civilization rides on the creativity of this game!" And, of course, I am over the top. We have this opportunity and want to seize it. And the technology is just fighting us every day, and we are still in converted warehouses.

And so, every so often, calm Gabriel, I later learned, would take one of my completely over-the-top memorandums up to senior management and say, "Perhaps it is time to give us higher priority on this. I am concerned that

Activision and Atari are recruiting away our people now. You know, if we allow this kind of morale problem to continue—.”

And I do not know that this is happening, but I do see how some of the senior managers at Mattel Electronics if they pass me in the hall, and I am sure they are looking at me and going, “There is the hothead.”

But in any event, they still promoted me to director the next year. I was director of Intellivision, and Mike became the head of all programming for all non-Intellivision formats. So, I guess I didn’t blow it completely.

Weaver: And as head of the Intellivision development group, did you bring on any people to help you with games that you knew from before who you thought could be useful to you in your endeavors?

Daglow: It was as manager of the group that I first had the chance to start thinking about what’s a game I might not be able to program, but a game we can now do? Now that I have written an Intellivision game and I know what the system can do, what could we do? One day I was watching baseball on television, of course, because I am fanatical about baseball. They showed the inset of the runner on first dancing off first in the upper corner. You are watching the camera from behind the pitcher throwing to the batter with this inset image of the runner jumping off first. I had this moment of going, “Oh. I know how to make the Intellivision do that. Wait a second. I know how to make the Intellivision do that! I know how to code that. Yeah, okay. We just do this.” And your mind starts going. All of our early games had to be in 4K-size cartridges. By then, we had been allowed to actually start to do 8K cartridges, so we had doubled our size. I thought, “Wait a second. Oh, yeah. If we do memory that way, you could do it.” So, I start scribbling things down.

I came in the next day, went to Gabriel, and said, “I figured out how to do this.” I said, “If you do x , y , and z , this would work.”

He said, “Now, that looks good.”

I go out to start recruiting for the actual engineer to do this. One of the places I called and said, “By the way, here is this opportunity,” was, of course, Pomona College where I had gone to school.

And we get a call in to recruiting and an appointment gets set up with a guy from Pomona named Eddie Dombrower. I meet Eddie, and it turns out Eddie, on the Apple II, has designed the first dance notation system for a computer ever

created. He is this brilliant guy. He is also this fabulous dancer. He walks in the room and you know you are in the room with an athlete. Then you figure out that his athleticism goes to dance. But he also played baseball in high school. Loves baseball and he had taught the Apple II how to replicate dance moves from this encoding. I thought, we have certain ways we've always showed running figures on a screen. We are making our figures twice as big as they have ever been. The finesse of doing that with these blocky shapes where now you look at it—you look at the graphics of that era, you want to laugh now. They are just so blocky.

And I thought, "I need a different kind of engineer. Here is a guy who loves baseball, clearly is a really solid programmer, and he understands the movement of the human body the way we are going to have to understand it if we are going to make these blocky figures turn into something you believe are baseball players." And so, the old thing, when you find the perfect person to work with. We brought him in, trained him in the Intellivision, and the ideas of how the game could work did work. It was the first use of camera angles in video games with this idea of being able to switch the camera angle and do the insets and imitate television coverage. But without Eddie's understanding of the human form and his engineering ability, it would have been a lovely theory, but we never could have made it look as good as it needed to look. It wasn't just a matter of having animators who could do it. We had Connie Goldman, who's superb at bringing things to life. You had to have the engineer [like Connie] as well to understand how to take that animation and bring it to life.

I designed the baseball simulation underneath it. We made an actual statistical simulation. But, as happens with many things, as we got later in the stage, the video game business was starting to cool. Our budget got cut. Instead of being able to have the baseball game ship with real Major League stars and real Major League teams, at the last minute, they cut all the licenses. [Instead,] members of our team became the baseball players.

I thought, "Okay. I am head of the team." I think at this point I was Director of Intellivision Game Development. I thought, "If I make myself the cleanup hitter or something, that is just not right for the team." I said, "Here is what we are going to do. We are going to take everybody who's on the team, we are going to put our names in a hat, and we are going to say, 'Okay. We are now pulling out the leadoff hitter.' Pull it out. Okay, this person is leadoff—," I think Vickie Dahlgren. We made her Babe Dahlgren, I think. There was a famous baseball player from baseball history. She became the leadoff hitter. We pulled them out.

I ended up on the bench on the game because of this system, which is just the way it goes sometimes when you leave it to chance.

But the other funny thing that happened at this time with this game was we had always had a problem with Intellivision. We had these moving figures we could control really well, but they were each limited to being one color. Well, you could trick it. You could put a colored background underneath them, leave blank spaces, and you could make them look like they are two colors by moving the background around behind them in a way that people didn't see. You could fake that. If you made them very big, you could magnify their size, but then the pixels would get so big that it looked like you were trying to use playing cards as pixels on a TV screen. It was impossible.

We tried stacking images, but we couldn't stack them because the computer updated the moving objects at different times. It would be updating thirty times a second, but what would happen is it wouldn't do them all at just at once. It would do them in little batches, and so sometimes it would tear. And you had two things together, and, oh, it looks like a dinosaur. It is big. But then the top half of the dinosaur would move an instant before the bottom half of the dinosaur moved. That prevented us. We started figuring out how to steal interrupts from the machine so we could control what got updated in each of these little interrupt cycles. We could then start gluing things together. By layering them, we could take multiple objects. We could have multicolored objects, we could have higher definition, because our dinosaur, in this case, our big baseball pitcher who was now way larger than any other character we had ever had, we could have him be built out of more sprites.

We're doing all this and there were two great lies that came out of this project in the marketing that was done. The first lie was in late 1982. Eddie [Dombrower] has come in. We have built a prototype of the game where we were showing the camera angles, the pitcher will pitch a pitch, runner dances off first, hitter will swing, but we do not have our game yet. We've proven out that we can fake doing this on the Intellivision. We take it to Marketing to show it to them. We walk in, we demo it and say, "We can mimic television coverage."

We finish the meeting, and they go, "Oh, this is wonderful. This is great. We love it. Oh, this is fantastic. We love it. Hey, Joe. How long would it take us to have a TV commercial about this on the air?"

And Joe said, "Ah, five weeks."

“No, no, no, no. You do not understand. No, this is just like a prototype. It is a demo. It is going to take us several months to do it, then five months to manufacture. This is next year. We are fighting to get in maybe by the end of baseball season next year.”

“Do not worry, kid. Do not worry, kid. It is okay. We’ll take care of it.”

They take our demo and they start preparing a television commercial, and we keep saying, “But—.”

They said, “Look. Here is what you have to understand. We are at war with Atari. We are not just selling games; we are selling systems. We are selling a system that people commit to, where people buy games for that system. This is a long-term war. If we show this for Christmas of 1982, even though we do not ship it until 1983, we convince people that we are the best system because we can do stuff no one else can do. That means they will not buy other people’s systems. They will wait for us to do this.”

“But shouldn’t we tell them it is far away?”

“That is not how it works. We show them the technology now, and then we’ll ship it when it is ready.”

Five weeks after the meeting, during the Christmas season of 1982, on this TV ad, George Plimpton comes up on this dark stage. He’s been doing all these ads comparing *Atari Baseball* to *Intellivision Baseball*, because we had a newer machine, so our technology’s better. Our game looks much better. He pulls a velvet cloth off a screen, and it is showing *Atari Baseball*. This was the incredibly primitive machine that you used to think produced games. He steps forward through darkness into another circle of light. He pulls off another velvet cloth and shows *Intellivision Baseball*, our first one. He says, “This is what Intellivision did to bring light into a dark world.” And then he steps forward through darkness into another light circle with a big monitor in the foreground and goes, “And now we show you the future.”

Now he steps forward through another patch of darkness into another circle of light and he pulls another velvet cloth off of a monitor. This monitor’s very large, and he says, “Now I am showing you the future.” And it is our little demo of our batter and our pitcher. Our little runner dancing off and the pitch being thrown. “This is the future of video games.”

And I am sitting here watching this on television and I am thinking, “First of all, what bizarre world have I gone through that now I come up with an idea and within weeks, it is a television commercial? And this is surreal, and do not pinch me. I do not want to wake up.” I am also thinking we are months away from shipping this thing, and we have more battles to face to get this into 8K. “What do we do here? Now we’ve told the world we are going to do this.” And all of these emotions sweep over us. We ultimately shipped the game, but, boy, the pressure of building that was tremendous.

The other great lie that came out of that era of Intellivision comes from this ability to stitch together these images and make them look large and detailed in multicolor. When we first showed this and introduced that idea into games when we had figured out how to stop the characters from breaking apart, we showed that to marketing. Marketing looks at it and they said, “Oh, the games look so much better. It is just great.” And we are all happy. You know, we are very proud, and we felt great. And they said, “Now it is like super graphics.”

Pretty soon, the cartridges start coming out and they have a triangular label on the box for these new games. It says, “Now with SuperGraphics.” They implied that the cartridges were being manufactured differently and they could do different things because of this capability. And they first started acting like this and we are saying, “No, it is nothing different in the hardware. It is just we figured out some tricks in the software.”

They go, “No, we know. We know.” They do not *say* it is new hardware. They do not tell you anything’s different. They only implied it. But, again, we are at war with Atari. We’ve made our hardware better. It isn’t just that you want our games because our games our better, you want our hardware because our hardware’s better. That was the spirit of the age.

Weaver: You alluded to the fact that with the [Intellivision] baseball game you had lost the ability to use licensed player names and other things because money was becoming tighter. Briefly, would you just go through that in terms of you are now head of development in Intellivision? What’s going on with Mattel that is affecting Mattel and all the others?

Daglow: As we went through 1982, the games business just keeps growing and growing. So, you figure from 1979, 1980, 1981, 1982, the video game business keeps growing and goes from being a nice little line of toys being sold in toy stores to a multibillion-dollar business. In 1980s dollars, it is a multibillion-dollar business. Everybody’s getting drawn into this business. We’re at war with Atari, and then

Coleco comes in. Activision springs up when Atari programmers who feel they haven't been treated properly go off and start their own software company without their own hardware. You have all these competitors. More companies come in. Quaker Oats starts a Video Game Division. *Everybody* wanted to do video games. Of course, the market becomes very crowded. All of us are constantly being recruited every day by all these different companies. "Come do Intellivision games for us. We'll build games for the Intellivision. You'll have complete freedom. Think of it." All the companies are recruiting each other. The market keeps growing.

I remember I kept thinking, my parents went through the Depression, and I remember my dad's old phrase of whenever anything's going great. He would say, "Trees do not grow to the sky." My mother always saying, "Pendulums always swing back." I was thinking, "Okay. Just be aware of that." I was running the Intellivision team but keep that in mind.

And by Christmas of 1982, we actually got to the point where there was leftover product after Christmas. Everything didn't sell through. You had a lot of these little fly-by-night competitors who had produced very quick, very poor games for all the systems and their games didn't sell. And we were still part of the toys business at this point. The toy stores said, "Okay. Well, the business of toys sells on consignment. All of you little companies, sorry your game didn't sell. We are sending it back. Either send us new product or send us a check for the money."

And all the little companies go, "Uh, send you new—well, we haven't finished our new product yet. That was our first wave. The second wave's not ready yet."

"Well, then send us a check."

"Uh, we can't send you a check. We already spent the money."

All of these little companies gradually go bankrupt very quickly, and suddenly you have lots of leftover product. Atari and, to some degree, Intellivision over-manufactured some products. They've got some extra volume. The toy stores start going, "We've got too much stuff in the back. Atari and Intellivision will ship us new product for old, but these guys, they are not shipping us anything."

They start having bargain bins and bargain tables. If a typical game in that era is \$34.95 in those dollars, at first, they are \$24.95, \$19.95, \$14.95, \$9.95. Pretty soon, you get to where little Johnny and Suzy go into the toy store with Mom and Dad to buy the thirty-five-dollar game they saw advertised on television, and

Mom and Dad go, “Well, you could have that game or you could have two of these \$9.95 games.”

Within a period of months from early 1983 to mid-1983, it went to where a good game could sell very, very well—maybe not as well as in the heart of 1982— to where full-priced product became almost impossible to sell. We went from hiring to having layoffs. Literally within weeks [we were] at the point where we got told, “You have to have your first layoff on the Intellivision team.”

We still had open recruitments for new hires. The last guy we had hired, who was actually for the non-Intellivision parallel team, had not even reported for work yet. The senior managers in the group, “We made that guy a job offer. We are not going to lay him off before he starts. His job we are going to preserve. It is a matter of ethics. But we are going to have to do a round of layoffs.”

We go from furiously recruiting to layoffs. In the summer there is another round of layoffs, and then in the fall there is another round of layoffs. And it is getting back to where, “Which hit game do I want to lay off the programmer from?”

At that point, the word comes down informally through executives, by the way, they think the whole thing is going to go. The tone in early 1983 is things are bad. We have management changes. We get a new president of the Electronics Division. The new president calls all of the managers and executives into the room, and says, “These are tough times. When it is tough is when tough people get going. I want to have an oath of loyalty from everyone in this room that you are going to stick with us. That you are going to stick it out, that we are going to fight this out, and we are going to change it.”

And we are going, “Okay. Tough new CEO,” and so on and so forth.

A few months later, the word comes down through the executives from this same guy, “Your oath of loyalty is released. You are permitted to look. The whole thing’s going to go. But do not tell your teams.”

Gabriel [Baum], Mike [Minkoff], and I look at each other and kind of go, “Well, we got a direct order not to tell our teams.”

We fashion it in different ways. What I did with the Intellivision team is I called a meeting, which we periodically do to talk about strategy and stuff in the industry. I think how we did it was some kind of talk about things and how at one time we could sell a plate of spaghetti on a screen, which still gets talked about as the “Spaghetti Speech.” Now it is hard to sell even good product.

“Naturally, it is going to make you guys worry. I want to have a meeting, because it is natural for it to make you guys worry where are we going. Could the industry go terribly wrong? Could even more jobs be lost? Could things go very badly? Because we are having a hard time selling things now. Could things go *really, really* badly?”

I think what we did at that point is I have Vickie [Dahlgren] walk in and say, “Oh, there is a call for you.” I stepped out of the room, and at that point I was hoping that my hyperbole had gotten across. And apparently it worked, because inside the room after that people figured out that they were being given a hint that things were really, really bad, that we couldn’t tell them, but they were still being told. Mike did something similar, Gabriel. We all kind of reinforced it. We each implemented some form of, “Yes, we obeyed the commandment not to tell anybody, but we’ve been through hell with these guys.” We made sure that we shared it. That was when we knew it was all going to go.

Weaver: And at that time, were you working on Intellivision III or IV?

Daglow: Now what people think of is they look at Intellivision I as our original, and that Intellivision II was a cost-reduced disaster that was done without ever talking to us. Without our knowledge and by another rival wing of the company trying to prove that they were the great guys. What we were actually working on at that time in 1983 was an unannounced new second-generation Intellivision, which at that time was seen as the real Intellivision II. Now we have to think of it as Intellivision III because of the cost-reduced version. Ironically, it had many of the qualities that were like an Amiga. The Amiga didn’t come out, I think, until, what, four years later in 1987? Maybe 1986?⁸

Weaver: Yeah.

Daglow: Here we are looking at a machine we are working on in 1983. It has features of a machine that wouldn’t ship for several years. It was a wonderful machine. We had a closed-off team behind locked doors. Everybody who didn’t need to know didn’t even know the secret project was there. Our team, many people only knew that there was a locked-off section where new hardware was being worked on. That certain programmers had keys to go there and others did not. There were projects that some people knew about and other people didn’t know about. I had written a document saying, “Okay, these are the first games I think we ought

⁸ Commodore International’s first Amiga personal computer, Amiga 1000, was released in July 1985, though not widely distributed until 1986. The Amiga 500, its best-selling model, was introduced into the US during October 1987.

to ship on next-gen [generation] hardware,” although we didn’t use the term “next-gen” at that time.

Out of that document, another amazing moment was [realizing], “Oh, wait a second. I built that list of what we ought to do.” With a couple of small changes, that is the list that we set out to build. And again, I am sitting there going, you know, “Three years ago, I am a schoolteacher sneaking in to use terminals late at night. Now I write this and then one of the biggest toy companies in the world is following what I wrote. It is just surreal.”

We had other secret projects on top of secret projects. Other branches of the company have secret projects we do not know about, like the cost-reduced Intellivision, which won’t play our games. Engineer walks into my office one day and says, “Oh, we have this new version of the Intellivision. We are almost ready to ship it. We wanted to show it to you.”

And I thought, “Oh. Well, okay.” We didn’t know anything about this, and we are the guys who do the games.

He shows it to me. Our hand controller on the Intellivision had raised bumps, little bubbles. You could feel them with your hand to know which button you were pressing. And I immediately look at the hand controllers and it is just a flat plastic surface with tiny little plastic lines on it. If you really try and feel it with your index finger, you might feel it. And I said, “Well, this won’t work with a lot of our games because you can’t feel where the buttons are.” It would be like learning to play the trombone instead of being able to feel the buttons, where you just have to know where everything is.

He said, “Oh, that saved us sixty cents per controller. We have to cut cost.”

“Yeah, but you can’t play the games.” And, of course, this is a very junior engineer who has been sent to tell the Intellivision team that they have redesigned the Intellivision without consulting us. Nobody had the courage to have anybody of rank come, so this poor guy has been sent as the sacrificial lamb. I said, “Well, you can’t play many of our games, because people play by feel.”

“Well, you have the overlays that go on the hand controller.”

“Yes, but everybody uses the overlays to learn the games. They take them off once you learn them. Any good player doesn’t play with overlays. That is what our customers do.”

“Well, no, it is too late to change that.”

I am thinking, “Wait. A lot of our games are designed to play by feel and now you can’t play them. What are we going to do?”

“Oh, it saves money.”

The side buttons on the controller, what you would press for anything fast-action, you would press them a lot. I press it and my thumb hurts. I look at it and there is an impression on my thumb, because to save rubber, they’ve turned it into hard plastic. It has a hard rim, but it is hollowed out to make it lighter and cost less. I think there is something about the injection molding. Now instead of pushing a soft rubber button 1,000 times to shoot at aliens, now you are pressing a hard plastic button that digs into your skin. I said, “Well, that won’t work.”

“Well, I am sorry. It is too late to change it. But that saved us two cents.” It turns out everything was “That won’t work. It is too late to change it.”

We were being presented a *fait accompli*. That was part of the politics of the corporation, because all these groups, once the layoffs start, nobody wants *their* group to be cut. How do you do it? You do something important for the company. Well, you create a new cost-controlled version of the Intellivision. That will help us. Or you kill off the old Intellivision keyboard, that computer that was so promised. We were really coming under tremendous pressure for not having shipped it because it had problems. Well, we will do a cheap little thing. We will source a cheap one in Hong Kong and we’ll call that our computer. By early 1980s standards, it was a weak, primitive, cheap machine that wasn’t useful for much. But, no, then we can say this is the computer. Our team will be the heroes of the company because we solved this problem. With all the teams being heroes, I am sure with the best of intentions, it is the executives who are fighting for resources. The team members are just trying to do the right thing, but you have all these secret missions going on of all these secret things. Of course, the whole thing is falling apart.

About two days after I hinted to the team that everything was in trouble, my phone rings. It was Trip Hawkins of Electronic Arts [EA], whom I had met at a conference. Early in 1983, there’d been a conference where Bill Gates, Trip Hawkins, and a number of other people were speakers, so we got a chance to meet them all. And Trip had called me. He didn’t know how bad things were, but he is calling, and we start talking about things. Before we get off the call, we are talking about scheduling an interview for me at Electronic Arts. And so, I go

up, interview, and get a job as a producer at EA, being one of the first handful of producers at Electronic Arts. Again, pure luck. Right place at the right time. This time it is not a radio commercial. This time it is a phone call from nowhere just at the right time. I got hired there. I was able to put my name on the next layoff list, which was the most disastrous list of all for Mattel, and go up to EA. The rest of the team, after I left, was told, "Okay. All the layoffs are done. Now we are going to go through this Christmas season. Then we'll rebuild from here." They were all told, "Do not worry about your job now. You are okay."

Well, it turns out in the toy business you ship at Christmas, if your product sells, you get paid in January. You get paid in the thirty days after Christmas. I think it was around January 28th everybody in that team got called in and told, "Oh, sorry. It is been worse than we thought. We are laying you off." What we all figured out later was if they laid off the entire Intellivision team, the toy stores would know that Mattel was getting completely out of video games and the toy stores would never have paid for the product for Christmas of 1983. They lied to everybody to keep the team working through so they would look like they were still in the space until they collected the money. The minute they had collected all the money, they laid everybody off. It was another unfortunate cynical thing.

The good part about it was when that happened, I was able to go back and some of the old Intellivision team I was able to bring into projects at Electronic Arts. Out of that, Rick Koenig, brilliant programmer, came in and worked on *Racing Destruction Set*. He had done *Motocross* at Intellivision. Connie Goldman, with her fabulous graphics, I was able to bring in to do the same thing on other systems working on projects externally for EA. And ultimately, I was able to bring Eddie Dombrower across into the EA system. We did *Earl Weaver Baseball* together at a point where now we really knew how to work together as a team. We had more powerful systems and we were able to tackle that as a team.

Weaver: Don, would you tell us a little bit about the Blue Sky Rangers at Intellivision?

Daglow: Blue Sky Rangers is a series of inside jokes layered on inside jokes, but it is now what we still get called as the Intellivision game designers all these years later. Really collectively covers all the game creators at Mattel, whatever platform we were working on. Early in the explosion of video games, *TV Guide* calls up Mattel and says, "We want to do a piece, an article, on the people who create these games."

Mattel, like Atari, says, “Oh, no. Their identities are secret,” because they didn’t want anybody hiring us away. Activision had already started to give credit to game designers and the companies were very afraid of this, so, “We can’t release their names. I am sorry. You can’t know who they are.”

The *TV Guide* reporter says, “Well, we had love to interview these people. What if we give you veto power in anything confidential?”

Under those terms, the writer is allowed to meet with us. There is a couple of meetings. He meets with different subgroups of us. And the article comes out, and, of course, all of our names have been changed. With a couple of exceptions, we do not even know who we were, because you are sitting with four or five people in a room with a guy, we are all talking. By the time the quote is boiled down, it is, “Oh, yeah, that was Arnold, a young engineer.” Well, it could be any of four people. We do not even know who is being quoted. The only person you could really figure out was Hal [Finney], the bearded, very professor-like leader of the entire Intellivision and Mattel software group.

First of all, it is so frustrating. Everybody on the team is furious with this whole thing of keeping our names secret. The recruiters are calling everybody on the team every day. Obviously, every recruiter in the toy industry knows who we are and is constantly calling us. If we intended to be disloyal, it would be very easy, so why do you have to take our names and make them secret? I have been on the crusade that I was on for years about saying, “Give people bonuses for games that are hit. Give them named credit on the boxes. It does not have to be a headline. Just put their names on the boxes. Say, “This game by this person.”

“No. We would never do that.”

Here *TV Guide* comes out. I call up my parents and I say, “You want to get the current *TV Guide*. There is an article about our team in it and about our games. But, by the way, you won’t see me in it. I do not even know which one is me. But it is our team, really it is, Mom and Dad.”

That article burned on us so badly, and all the parallel things. We now know it burned on all the other people in the industry. Activision kept picking off people from all these teams because Activision gave people bonuses for hit games and Activision put your name on the box in big letters. There was this incredibly frustrating thing.

The reporter asks, “Okay. What do you call these people?”

“Well, they are the application software development team.” And my official title was Director of Application Software Development, Intellivision. Well, that didn’t sound very cool to normal people.

He is talking about, “Well, how do you come up with ideas?”

“Well, we have blue-sky sessions. We just sit and kick around ideas and we have blue-sky sessions. That is where our best ideas come from.”

When the article comes out, we are the Blue Sky Rangers in *TV Guide*, and it is the story of the Blue Sky Rangers. We had never called ourselves the Blue Sky Rangers, but now—well, it was kind of cool. We are going, well, this whole thing sucked, but Blue Sky Rangers sounds pretty good, so we kind of took to that. Once everything fell apart in that first wave of video games, when people called us the Blue Sky Rangers, it still felt pretty good. Here we are thirty-plus years later and we still get called the Blue Sky Rangers, but we never named ourselves that. It came out of an article and hiding what our real names were.

Weaver: That is very funny.

Smith⁹: That story you told earlier about *Utopia* being mentioned in the *L.A. Times*, were you the Blue Sky Rangers then or did you get proper credit in that story?

Daglow: Oh, my name was nowhere near that story. When it was on the front page of the *Times*, it was Mattel Intellivision’s *Utopia*. My name was nowhere near it. I do not believe the interview—no, the interview had not happened. We were not yet the Blue Sky Rangers. The fact that we were anything other than anonymous people laboring away inside Mattel for the greater glory of the video gaming public—yeah, there was no image. We were Mattel toy company, Mattel Electronics. That is who we were. We were not individuals in any way.

Weaver: Right.

Smith: Shrouded in secrecy the whole time.

Daglow: Oh, we were shrouded in secrecy. The one time we got to come out was when we were at CES [Consumer Electronics Show] demoing. I just went to CES this year, just came back from speaking at the conference. Every time I walk into that building, I remember that feeling of the one time you ever got to stand by your

⁹ Alexander Smith is a librarian and video game industry historian, whose research is supporting the Lemelson Center’s Video Game Initiative. He earned his B.A. in History at the Ohio Wesleyan University, his JD in Law at Ohio State University, and his MLIS at Kent State University.

game and say it was your game. “I built this, I designed it, I came up with the idea.” For the early guys, “I did the artwork,” in most cases, was at CES, because the buyers would be brought to you. You would demonstrate the game, and typically you would demonstrate your own game. For the toy store buyers, you were allowed to say, “Yes, I created this game. This is how it plays,” and they would ask you questions. It was the *only* time the curtain was parted. Only in a controlled environment where only the industry people were allowed to go.

Weaver: We now know how you ended up at Electronics Arts. How was the producer group organized there, and who did you report to? And how many of the originals were you?

Daglow: The producer group at EA was different sizes at different times. At the very beginning, the producers all reported directly to Trip. Then as the company grew a little bit, once we got up to about forty people it changed. This was about the time I was joined by Dave Evans, who had also come out of Stanford and known Trip from Apple. He took over the group. Very thoughtful, very considerate, kind of quiet, calm guy as well.

What I did not know when I was hired was that there were going to be layoffs the week before I came. I think three producers were laid off a week, week and a half before I showed up. I showed up all happy to be joining the team and then found out that everybody was looking at me and saying, “Okay. We lost three good people we really liked. Now you are here, and you are filling one of those jobs. So exactly who the hell are you and why are you here?” But I didn’t know that that was going to happen, because EA, like everybody else at that point, was being buffeted by those same winds of, “hey, this is no longer cool.” The idea of being a game company was not seen as cool at that moment. At that point, Dave had three producers reporting to him at Electronic Arts.

Weaver: And who did you report to?

Daglow: I initially was going to be reporting to Trip, and then that change was made just as I came in and so I reported to Dave. Joey Bara [phonetic], Stewart Bomm, and I reported to him. In the early days of EA, there had never been a producer in the games industry before. It was a title that wasn’t used, but the guys at A&M [Alpert and Moss] Records were early investors in Electronic Arts. EA had turned to them and said, “What can we learn from the record business? We are shipping games in packages that look like record albums. We are naming our creatives. We are proclaiming the creativity; we call our game designers artists

the way you would in the music business. What else can we do? If we have producers like in the music business, how can we do that?”

They sent producers from A&M Records, off and on. When they were coming through town, they would come to EA to train us in what being a producer was. There were no producers in the games business, so we were inventing it as we went along. There are still things I use from that training. I came in towards the latter parts of it, but the idea that all hits are flukes. You must understand that hits are flukes. The only hits that are not flukes are sequels and copycats. Making copycats is a terrible way to make a living and is not sustainable.

What do all creative businesses tend to have? You have fluke hits, you have people feeling around for fluke hits, you have people on the periphery being copycats, and then you are doing the art of production. Well, what is the art of production? And they taught us it is called A&R, artist and repertoire. “Artist” is finding people who are gifted and who are talented and working with them because you believe they are the ones who are more likely to have a fluke hit than somebody else because they have talent. “Repertoire” is helping them pick the right kinds of things to create that you are trying to get money for to develop their careers and develop them as artists. And then the idea is everybody had better be thinking that you are growing all the time, that you are not just doing the same thing endlessly. Whatever you are doing, if it is successful, it may get sequeled. It will certainly get copycatted. You have to keep going. You have to be a moving target creatively.

You talk about being given a gift of training. That attitude, everything that had happened to me at Mattel, being part of this thriving business that had then crashed, where the whole industry had crashed, well, what do you have to do? You have to keep moving. You have to keep reinventing. We owe a massive debt of gratitude to the guys at A&M for starting us out with that philosophy. Focus on talent, go for the flukes intelligently, but keep moving and growing. Your talent has to grow. You have to challenge and push your talent to grow.

What was weird for me was that as they were teaching us the art of production. One of the rules was producers at EA could not design games because we were not [designers]. It was exactly what we asked for at Mattel. We wanted to be able to be the game designers and not have people who didn’t know the craft telling us what to do. We wanted to get credit for what we did. Well, that was the vision at EA. Give people credit, let the creatives do their thing, and produce them so somebody is helping them the way you would in the record business. But you

do not try and do it yourself. Tell them what to do. They are the talent. That is what they are for.

I had to take the game-designer side of my head and put it aside for a while and just focus on the producer. Fortunately, I was teamed with really good people that made that a lot easier to do. Part of being a producer and doing that was to challenge with ideas. Sitting with somebody and, “Okay. Here is a problem we are trying to think of a solution for.”

“Okay. You could do *a*, you could do *b*, you could do *c* running through it. I could do this.” Being a feedback loop. We did all of that.

There were a lot of people who were just great team players. It was just all of us, but the credit we got on the package was always “Producer.” I think in many of those cases, when you are trying to be a foil to somebody, that is the way it should be. It really was their design.

Stuart Smith, who is a phenomenal, wonderful designer, engineer, early game designer, initially on Atari and Apple, I think, and then came to us and we had him on other platforms, we did *Adventure Construction Set* together. He did a big adventure game for it, which is what EA originally hired him to do. Stuart kept saying, “But I want to do an adventure construction set.” We already had *Pinball Construction Set* from Bill Budge. He said, “I want to do Adventure Construction Set.”

They said, “It is too dangerous. It is too big. It is too ambitious.”

I got teamed up with Stuart, and Stuart told me that, he said, “This is what I really want to do.” And this is a very cautious, conservative, careful engineer. This is not some wild-eyed guy.

And I said, “How would you bound the world?” That is the eternal problem when you do open systems like that. And we had done one game-builder set at Intellivision, so I understood some of the issues.

He said, “I would bound the world this way, this way, and this way.”

There were two or three problems he had not figured out how to solve. From the experience I had at Mattel, I knew how to solve those problems. I said, “Wait a second. If you do *a*, *b*, and *c*, and you throw in *d*, *e*, and *f*, we’ve solved the bounding problem. We can do *Adventure Construction Set* on these systems. Your idea will work.”

He said, “I know it’ll work. Yeah, and, by the way, I agree with you about those things.”

I went back in—and I think I was betting my job on it at the time, although I wasn’t thinking that way—and I said, “I know you signed a contract with Stuart to produce this adventure game,” which he was famous for doing. “Great, but his ideas for Adventure Construction Set will work. We did some of this Mattel, and what he is saying makes sense.”

Trip [Hawkins] blessed it, and so we changed the adventure back to *Adventure Construction Set*. And when we shipped that, Stuart had built the adventure, he had designed the thing, and we had worked on it together. I built tutorials of different kinds to show how the game would work, and so with Stuart’s encouragement, I actually got credited for doing the tutorials on the package. It was prominently his photograph was on the package, as it should have been. It was his idea and everything. But I still feel very good about getting that credit, at least, for doing it.

When we did *Earl Weaver Baseball* and Eddie [Dombrower] and I co-designed, Eddie designed the text side, I designed the baseball simulation, and Eddie again did his visual magic of how to make machines do things other people could not make them do. In the final package, I am credited as “Special Thanks” and Eddie is credited for the design just because producers could not do that. We could not be credited.

Weaver: By this time, there were multiple people who were working on projects. It was no longer a one-to-one ratio as in the old days, so the projects were much more complex, weren’t they? Could you talk about that a little bit from the standpoint of the differences? And also, from a practical standpoint, how did EA work with outside artists, literal artists? Because some of them weren’t internal.

Daglow: If we look back through the craft of games from the very beginning, we start out with this one person, one project. You are doing everything. If you do not know how to do it, it doesn’t matter, you are doing it anyway. You really had that sense of it was your game. It was very personal. And then we got to where we could bring an artist to help us do the art and sound engineers and musicians to help do audio. When I was at EA, we got to where we actually started looking at projects where we might have more than one programmer on a project. We had, I think, one game called *Starflight*, which didn’t ship for three years, but that game was already underway when I arrived at EA, or just getting started. I wrote another of my inflammatory “Wake up, everybody. We have to realize—,”

memos saying, “Teams, not individuals, are the wave of the future. The idea that we have central designers who are the vision I buy completely; Our view that we are solving the problems that Mattel had, that Atari had. We are doing it right. I lived through it. Yay for us. But machines keep getting more powerful. We can’t just keep thinking about one-person teams. *Starflight* is not just an exception; it is the harbinger of the future.”

I am walking through the halls for a while after that getting, “Yeah, Mr. Big Ideas.” It was playful, but just kind of this theme of me getting too excited and engaging in hyperbole.

But anyway, it turned out it was going that way. We were starting to get towards having teams. As that happened, it became more complex. Not only having two programmers on a team and having artists and programmers, but now you start to get the team dynamics of managing real groups, and not just across multiple projects. [For example,] “Okay, here is eight engineers working on eight games,” but, “Here is two, three, five people working on one game with different ideas.” When you have visual creatives, they think in one style. When you have digital and engineering creatives, they think in another style. That can produce “one plus one equals five” or it can produce conflict. Very often it produces both at the same time. All those issues start to come into the idea of game production.

Weaver: How did you deal with it?

Daglow: When we went from being one person per project to small groups, so much of it was the chemistry of putting the right people together where that particular mix of people could work together. As director at Intellivision, a lot of what I did was figure who was going to go where, who would be paired with whom. Artists were normally working on multiple projects; engineers were normally working on only one. How do you take that so that you produce the creative fireworks that will get you something cool from both? If you just go for peace, you are going to get vanilla and “blah.” If you put opposites together too much, you are never going to ship. Somewhere in between, you are going to get some productive fireworks, and that becomes an art form. I think that continues to this day in our industry of how you team people up, so you do not get comfortable, because comfortable very rarely produces something special, but you also do not get junior high. I taught junior high. I have been there. I went through it. That is what we are trying to avoid. That itself is an art form. I think for modern producers, if you fast-forward through the years, the one thing that is consistent for producers is that art of putting the right people together in the right structure with the right

challenge and the right amount of both reward and pushing beyond the obvious. That is what a lot of production still is.

Weaver: And that is the magic.

Daglow: That is the magic.

Weaver: Got it. Okay. Was there a formal green-lighting process at EA?

Daglow: In the early days of Electronic Arts, we went through a series of formal green-lighting processes that got more and more refined. In the early days of EA, the producers would basically go around to various leaders of the company, most senior people, and you would pitch an idea. If somebody kind of liked that idea, then you would write it up and then you would come back with your write-up for the idea. Then it got to where Trip [Hawkins], Marketing, and the engineering side kind of looked at it. The leaders of those groups generally kind of got kind of a consensus, more or less, that that was a good idea and that your budget made sense. You would be given permission to either go find an artist to create it or to take the artist who inspired you to pitch that idea and negotiate and sign a contract with him.

We then became this dual role as producers, which was *very* different from Intellivision. At Mattel, I am embedded in this hierarchy and you are fighting to get resources out of the hierarchy to create products. Here, yes, we have to persuade the hierarchy to give us resources, but then *we* negotiated the agreement and the contract with the outside artist who is creating the game. Now we suddenly turn into businesspeople negotiating with them. Once the contract is signed, we then have this Frankenstein split personality, which actually works. We represented the company to the outside artists, who, in most cases, did not work inside the company. They worked typically from their homes. We would go see them, representing the company. We would then come back into the company and basically act like their agents. We would present what they were doing and what they wanted to do, representing them back to the company. Whoever we were with, we were representing the other side to at that moment.

We were that conduit, so we were both pushing the artists to try and get the best possible product out of them, and also if somebody internally was skeptical about something we believed in, we were then coming back on the artist's behalf and saying, "No, give this a shot. Give it a chance." And, obviously, Adventure Construction Set turning back into Adventure Construction Set, the original idea, was an example of that. That was tough sometimes, because if you are

negotiating a tough business deal, and, by definition, with limited resources in a very tough industry at a very tough time, these contracts were tight. Even though we were offering the best deals in the industry, they were still tight. So, you are both negotiating against and fighting for all at the same time. That was another of the balancing acts of the producer that we had to do.

Weaver: This mechanism that you are talking about was relatively new at the time. Electronic Arts, because they were basically writing the recipe, in other words, not following the cookbook, they had a number of affiliates, didn't they? They gave a lot of people their start in the industry both on a positive side and a negative side. Can you talk about that a little bit from somebody who was working inside at the time, and then ultimately was somebody looking from the outside?

Daglow: Mm-hmm. Because EA was basically innovating so much in how games were being built—they had taken the best ideas out of Activision, and then they had modernized them to the exciting new world of 1983, 1984—in some cases, we were making up the rulebook as we went. Some of the artists we brought in were established leaders. Bill Budge had shipped *Raster Blaster*. *Raster Blaster* was a pinball game on the Apple II that did things the Apple II had no business doing. Steve Wozniak had no idea that that platform could do that.¹⁰ In fact, when he saw it, he wrote a note to people for Bill Budge saying, “Hey, pay attention to this. This is special.” *Raster Blaster* became this big hit. Bill became, arguably, the most famous, best-known game designer in that era, because now his video games are collapsing [expectations]. The Activision designers are no longer having the same foundation from which to work.

Bill comes along and here is this new game that is actually a hit on the Apple II. Then on the Commodore 64 and it makes lots of money. Bill now is this star, and we then come in and say, “Okay.” *Raster Blaster* had been self-published. He had his own little publishing company called BudgeCo.

Trip said to him, “Look. We can give you a sales force. You do not have to do the business anymore. You do not have to be stuffing plastic bags with your game. We'll do all that for you. We'll do the business side. We will let you do more volume and focus just on doing what you love to do.” Bill built *Pinball Construction Set* that way, and, again, fabulous hit, our first real big breakthrough hit. Probably is the reason the company survived, because it was such a terrible time we were heading into just as we were founded.

¹⁰ Steve Wozniak, co-founder of Apple, Inc., primarily designed the Apple II in 1977, known as one of the first highly successful mass-produced microcomputers.

And *Raster Blaster* had already changed what everybody thought, because what you as an engineer thought you could do with an Apple II. Before *Raster Blaster*, you pictured, okay, there is certain kinds of things, there is a certain kind of play feel, that you move things in certain ways. Here is this guy who makes everything faster than it should be. He is making circles reflect objects with correct physics. There is not a delay. You press the controls, they respond immediately. Is this guy an alien from space? What is it? And Bill Budge simply was so brilliant that he changed all of our expectations. When he got his Hall of Fame award at the D.I.C.E. Awards at the Academy of Interactive Arts & Sciences, I had the honor of being the one who presented that award to him. I loved that, because most people there in that room did not know that he changed our whole world by changing our expectations. And we were at a point where we were dying. People thought we were no longer cool. They thought it is yesterday's toy. It is like the doll that stops being popular. It is never made again. That is what all of video games are. [You were told] you are fooling yourself. This is a dead business. You guys are dead men walking.

And Bill is, meanwhile, saying, "Hey, wait a second. No, our expectations aren't here; our expectations are here. We can make these machines do these things."

Well, in the old days, that is how we thought. "We can make machines do things the hardware engineers never thought of." Bill gave us back our confidence. Bill gave us back that belief we could do this art form. [Cries momentarily.] I am sorry.

Weaver: It was very tough times.

Daglow: We thought it was being taken away from us. We thought our whole lives were being taken away from us, and Bill gave it back in many ways.

Anyway, so bringing him into EA and having Bill be our anchor was special in many ways. The history and how much of a difference it made for the whole industry and how much it mattered for us. This is my life; this is what I committed my life to. Somebody tries to take it away and somebody else helps you keep it; you look back and you realize how important that person is. And that really was the foundation from which we built. That let us then reach out to other people.

Jon Freeman, Anne Westfall had already been very successful at Epics. Paul Ritchie, a young designer they brought in who has had a long and fabulous career, came in with them. Reaching out to these people, it was a mixture of

those people who already had these fabulous successes. *Dr. J vs. Larry Bird* was an internal idea that the leadership of the company had.¹¹ They went and found Eric Hammond to bring it to life. It was all this mix of internal idea, we go get somebody, a great talent outside, we bring him in and said, “What do you want to do? Forget what we want to do. What do *you* want to do?” It was all of the above. It was why it was a very, very exciting time to be working with these people. By and large, the people I worked with were just wonderful human beings.

Bill Budge, at that time where he is on posters, he is being made like a TV or movie star. He is this tall, young, handsome guy. Bill Budge is one of the nicest, most modest, gracious people in the games industry. He was then; he is now. He had this image where you would see a guy who would strut into a room. In the original famous EA poster, he is posed there. He has a leather cuff on his wrist, and he looks like he is a tough—maybe he will go ride his motorcycle and ride over someone on his way out. What actually happened is they are trying to make this shoot more dramatic. They have some props sitting there and start handing them out to the guys in this poster who are our original artists, which included Anne Westfall.¹² Bill picks up the cuff and puts it on his wrist. “Okay. I’ll use this prop.” But that whole image of Bill just came from the coincidence of this photo shoot.

He was at a point where anything he wanted to do with anybody in the games business, he could have. He was the best known, most bankable person in the industry. He was somebody where if there was one cookie left on the plate at the end of the lunch, he would hold out the plate to you. If there was talk about credits or whatever else, he wasn’t particularly [vain]— “Yeah, it is nice. Thanks for putting my name on it. I am interested in the engineering,” which I think is also something that Steve Wozniak saw in him. I think Woz saw that he was special as an engineer, but he also he was a special human being.

Woz was on our board of directors and would come in for board meetings. You talk about somebody who would give you confidence in a tough time. Having Woz there being very effusive, positive, upbeat, that was another very helpful thing at a tough time. Early 1984, we got called into the conference room. All of us fit in kind of a standard office conference room at that point. Probably had forty-five people in the company, so we had chairs around a table, people kind of lining the walls, and a few people sitting on the floor in back. Trip said, “If

¹¹ *One on One: Dr. J vs. Larry Bird* was first released for the Apple II in 1983.

¹² Anne Westfall is a game programmer known for 1983’s *Archon: The Light and the Dark*, originally written for the Atari 8-bit family.

things keep going like this, we are going to run out of cash. We are using up the cash at too fast a rate, and we all know what is going on around us at the industry.”

I am sitting here, this is three months after I left Mattel, and I am thinking, “Oh, god. Is it coming here?” We all knew how bad it was.

He said, “So here is what we are going to do. If we have to go raise more money, we might not be able to raise it at all. If we could, we wouldn’t like the terms, so we are not going to go raise more money. We are going to make this cash last. We are going to batten down the hatches. We are doing a hiring freeze. We are controlling expenses. Everybody here, you should expect to do any job in the company. You may need to go up to the warehouse in the shipping center sometimes and work on the line up there. You may need to go out on sales calls. Whatever we need, just be ready to do. We are going to get through this, but we are not going to spend our way through it with money. What we are going to do is we are going to work our way through it.”

Everybody looked at each other and went, “This is scary, but—,” and we went from there. But hearing we are running out of money again three months afterwards, that was tough. But, as we all know, it worked out.

Weaver: Well, just pulling something out of that before I forget about it, I do not think it is unknown to you that you have a reputation in the industry which is not all that unlike Budge. Now, I am not making a direct one-to-one, but what I am saying is do you think that those influences dramatically affected the way that you’ve sort of treated the newbies in the industry and the humility that you are known for? Do you think that all of those influences have had a dramatic effect on you, or were you that way before?

Daglow: First of all, anytime my name is in the same sentence as Bill Budge, it means a lot to me. No, it is just the kind of person I want to be. When I was in school, I was always marked out as special. I was always told, “You are special. You are going to go far. You are going to do great things,” even though I was the kid where you looked at me when I walked into the classroom sometimes with my shoes taped together with duct tape. It was so bad at home, and people knew that. When I was a teacher, I saw other kids and I knew, oh, god. My teachers knew exactly what was going on with me. How bad things were for me at home. But even against all that, I was always marked out as special in school. I had the chance to go to top schools. I always was given these opportunities. I married a girl who was born in the *barrio* of East L.A. Everything she ever did she did with

pure hard work, working her way through school, everything. I was given all these opportunities, scholarships, fellowships.

But I heard my mom's voice through it all, because even though she had all of her troubles, she was also this incredible human being, all the way through. Anytime anything good ever happened to me, she would always say, "You are not better than anybody else. You may be special. You may be *incredibly* gifted in some things, and it is great that people say you have these gifts. That is lovely. You are not better than anybody else. Constitution says we are all created equal. Some of us may have different strengths and specials. The minute you think you are better than other people, God, fate, others will make sure you get your vision corrected. Do not you ever think you are better than anybody else, because you are not."

That internal dialogue runs inside me still. I like that internal dialogue. I believe that. I believe we are equal. I believe we all are worthy of respect. We all have a dignity, and all of us who are practicing an art form have the right to try and do that as best we can and as well as we can to communicate some piece of something we believe. That is what I was taught as a playwright originally in what I thought was going to be my career. Art is only art if you take your work and yourself seriously. Art is only art if you believe you have something to say. Art is only art if, once you say it, it actually means something to somebody else. So, guess what? As artists, we are completely out of control in the world. All we can do is practice our craft and hope that somehow that mystical, completely indefinable process goes. But all of us who are practicing that craft are practicing on a hope together. All of us start out as equals, and what happens after that is very often luck. We have to show respect for each other. We have to respect the craft. I learned that watching people who are woodworkers and how they respect their tools. For us, I think it is some of the same things. No, that got burned in early, and I am very happy and proud that it got burned into me.

Weaver: I realize we are chapterizing this in terms of your life, but let's stay on this for a minute, because you are talking to people who do not know you personally, who do not have the benefit of the kind of asides that we make to one another and understand the unique person that you are. You are talking to students, you are talking to others who want to understand, as you just said, what is the unique driver, where does it come from. It is more than just inspiration, as you said. What would you tell them? You are a teacher. What do you want to transfer to them that is going to go beyond the ages? What do they need to understand and know?

Daglow: When I visit universities and I talk to game students, I tell them, “Forget trying to be like anybody who is in the industry now or ever has been, because they are them and you are you. The moment that you have now is your moment. The life you are going to live is your life. The ‘star-chasing machinery behind the popular song,’ as Joni Mitchell put it, is a business.”¹³

What happens is that people play a game they love, and they learn about who designed that game, and, naturally, they want to be like that person. They want to design similar games, which I think is great. But they see the TV ads, the promotional things, and that side of the industry that follows on craft. And at different times in our industry, different people have been made into stars by the publicity process. Bill Budge is the example I always bring up, because I say Bill became that bankable star, like the most well-known game designers are today, but he never believed it. He kept practicing his craft in the way he believed in and he thought was good. That is one reason Bill still programs and still loves being an engineer, as of the last time we talked. The idea of “I want to have this big hit. I want people to see my name in lights. I want people to line up to buy my game,” that is mistaking the symptom for the condition. The condition is to be a working artist who has a chance to have things sell, to have things impact people in a way that makes money, but also impacts them in a way that is more important.

And so, the goal I give students is, “If you do this business for a while, you will understand what the best reward of all is. We get to get up every morning and do this.” I have been getting up in the morning and wanting to make games for now forty-five years. I still love getting up in the morning and getting to make games. I am excited about doing that. “If what you love is the craft, nobody can ever take it from you. If what you want are notoriety, attention, fame, recognition, rising out of the pack, being seen as an individual instead of one of a group, all of those are not actionable for artists except by practicing our craft. And here is how you know when you’ve practiced your craft well.”

And I admit—I will pause dramatically at this moment very deliberately to let them wonder for a moment what I am going to say because I really want them to listen. I can tell them all sorts of stories from history, I can give them all sorts of advice on how to produce games, but this may be the single best thing I give those students, in my view. That is that “Once you’ve done it for a while, people will come up to you and they say, ‘Oh, you worked on that game, right? Oh, I love that game.’ They will not tell you, ‘Oh, the way you balanced the transitions

¹³ The quote “Stoking the star maker machinery behind the popular song” is drawn from lyrics of the song *Free Man in Paris* by Joni Mitchell, released in 1973 by Crazy Crow Music.

on Level 5 to keep the challenge up, and so the difficulty level ratcheted up, but not too much. Ah, that was great.' You never hear that. We may obsess for a month over how to transition the difficulty level on 5 to keep it a challenge. You never get feedback on that. What they will always tell you is where they were when they played, when it was in their lives, with whom they were playing, and why they still care enough to want to tell you about it. And I can look in your eyes and know you've had the same experience as a game maker. I know you've done the same thing, because they will start to tell you why your work is important. 'Your work mattered to me because I never had a connection with my grandfather, but we started playing games together and now we had something to talk about. And your game was just one of many games we played together, but you are part of that formula that now my memories of my grandfather are of. Somebody I am deeply close to instead of remembering him as kind of this distant guy who was hard to communicate with.'"

I was giving a presentation in Germany like two years ago. A guy comes up to me afterwards and he says, "You know what? You were telling that story for us. I am one of those people. I was this lonely kid when I was in high school, and I did not fit in. I did not get along with everybody, and I just spent one entire summer playing *Racing Destruction Set*. And that game that you guys did, that was my lifeline for that entire summer." And I was not expecting it there because we did not have that much distribution in Europe, but wherever you go—but they are not telling you about the game; they are telling about a moment in their lives when you did something that mattered to them. That is what art is. We hold the mirror up for life. We create an experience. If it has meaning for them, it is art; if not, ah, it is a nice story, it is illustration, it is a fun show. But if creates meaning and they remember it and then they want to tell you, that is art. If you pursue that, that is timeless. You can *never* have that joy taken away from you. Even when you fail, produce three bad products in a row, you start to doubt yourself, but the potential to have the fourth product create that reaction is still there. Everything else they can take away from you, but they can't take that away from you. You can't take away somebody's art form.

Weaver: Don, one of the key programmers on *Neverwinter Nights* was Cathryn Mataga. How did she come to Stormfront?

Daglow: Cathryn Mataga is a really interesting figure, because she had deep experience in the 6502-based computers on Apple and Commodore 64 in the very early days of the industry with Synapse Software. She had done work after that at Brøderbund when I was there, and she came available doing project work just at the point where I was starting to look for additional resources for *Neverwinter*

Nights. And Cathryn ended up being the lead programmer, lead engineer of the project on the Stormfront side. That was important for two reasons. First of all, she is an outstanding engineer. She was a big part of why we were able to conquer that challenge of getting the first graphical multiuser RPG. For that project to work, there had to be this melding of the engineers on the AOL [America Online] side with our team both in terms of product tradeoffs. “Okay, we can do this, we can’t do that. Here is a problem we need to figure—do we solve it on the client side? Do we solve it on the server side?” Well, the server side is AOL’s side. Their engineers would change their system to accommodate what we needed. Other things we had to change on our side was we were really determining what was the experience for the game player.

Cathryn really brought tremendous expertise to that process. She also brought a lack of ego. You mention her name, I immediately hear her voice going, “Well, that would be—” You can see her starting to think it would be hard, and then she goes, “Ah, no problem. No problem.” I got very used to hearing Cathryn start a sentence of describing that something was difficult, pause to think for a moment, and say, “No problem.” That ability simply to take on problems without ego, without drama, and work collaboratively with engineers who were thousands of miles away, all of that were unseen ways in which she contributed to the project.

Weaver: What was the inspiration for *Stronghold*?

Daglow: Stronghold was another one of my ideas where it was “Oh, wait. I know how to do that,” because the Amiga had run its course, but we had gotten used to thinking of using bit planes on the Amiga and how they worked. And everybody was starting to talk about how great 3-D was going to be in games, 3-D graphics, but the existing machines were not really capable of supporting it yet. I was thinking about, “Well, it would be great to be able to do *SimCity* meets *Dungeons & Dragons*, but if we just do it top-down like in a *SimCity*, it is just going to look like a rip of *SimCity*. There is no originality there. It is just a derivative product.”

And then one day I just started thinking about bit planes and I started thinking, “Wait a second. If we take that principle and we start applying it to create a full sense of 3-D, within the speed constraints of these devices, we can build something that looks 3-D, but is not. That gives us a chance to do *SimCity* plus *Dungeons & Dragons* plus real-time combat for energy and action.” So that is where the idea for *Stronghold* came from.

Weaver: Why did you decide to try transitioning to publishing in the early 1990s?

Daglow: We had been doing baseball as of the early nineties for several years. We had had a lot of success working with SSI [Strategic Simulations, Inc.], and, inevitably, you reach a point where our series of baseball games, the *La Russa* series, had its own reputation and brand. We had a fantastic publisher relationship with SSI, but when you are an outside company working with a publisher, you still get the smallest piece of the pie. What does a publisher do for you? A good publisher, first of all, they finance a project upfront. We had reached the point where we could finance it ourselves. They give you good input and guidance as to what's going on in the marketplace, because they see many products. They will be a foil and a feedback loop where they are an outsider. You can lose that sense of perspective on your own product. We tend to fall in love with our own games. We love them so much that you lose perspective. A good publisher will provide that perspective where they really like the game, but they do not love it so much that they lose that sense of balance of all the factors. It was a valuable relationship, but the way that money works in the industry as a whole said that it was time for us to move to publishing the game ourselves so that we had the larger share of the revenue. We believed that many of the things that any publisher could give us we could provide ourselves. But we still did other projects with SSI after that. We still regarded SSI as a very valuable, very strong, and great ally.

Weaver: Can you describe the troubles that the company had in 1994 and 1995?

Daglow: Yeah. If you are a company that does a famous and successful baseball game, and then the Major League Baseball players' union and Major League Baseball have a falling-out on a labor negotiation and there is a strike—in fact, the most destructive and lengthy strike in the history of modern baseball—you go back to 1890 to find a players' strike that was more destructive than what we saw in the mid-nineties—that is a bad time when that happens. We saw that sales of both of our baseball games, both *Tony La Russa Baseball* and *Old Time Baseball*, which was focused on the history of baseball, both those products had their sales fall way off. Our revenues dropped precipitously. We had gone into publishing and taken on all the extra expenses of publishing at a point where it had seemed as though they were going to settle the contract negotiations and there would not be a strike. Well, ultimately, they did not and there was a destructive strike. We took a tremendous hit. We certainly lost over a million dollars out of that and ended up having to back out of the publishing side and go back to a distribution deal. It was misfortune of timing, and we survived it, but it cost us a lot of money.

Weaver: Stormfront ending up working with EA [Electronic Arts] to port the *Madden* series to the PC [Personal Computer]. How did that deal come about?

Daglow: We worked with EA on *Madden* as a coincidence, actually, of industry friendships. When Scott Orr went to work at Electronic Arts, he and I had been friends for many years. We had competed with sports games. I had tremendous respect for Scott as a game designer in sports. When he went inside the team at EA to work with Rich Hilleman, we had been talking about doing a kids' educational adventure game. Scott said to EA, "Look. I would love to come work on *Madden*. This would be fun. But I really want to do this educational game with Stormfront."

EA said, "Sure. No, we'll do it as a package."

The *Eagle Eye Mysteries* series, which is two educational games, came out of Scott's original ideas of what we wanted to do. That was a really fun project. And people do not think of [low voice] *Madden NFL* being grouped with [higher voice] *Eagle Eye Mysteries* for kids, but, actually, that is how it came about. The newest version of *Madden* was just starting to take off on the Sega Genesis and so they were looking at doing other platforms as well. Our role on *Madden* was to do the PC version that was spawned by the success of that Sega version. That involved a lot of redesign for the different kind of hardware, the different kinds of interface options, and the different graphics options you have on a PC.

Weaver: With *Andretti Racing*, Stormfront developed for consoles for the first time. How did that compare to developing games for the PC?

Daglow: It was a very weird feeling for me to go back to console games after being on different forms of personal computers for several years after the destruction of the first wave of video games. At that point, it had started to become solid enough again that it felt like we had actually finally recovered from that crash. When the chance came up to do *Mario Andretti Racing*, that actually grew out of—first we did *La Russa Baseball* for Sega Genesis with EA, and from there, again Scott Orr had the idea that it would be fun to work with Andretti. Also, to have three kinds of racing so that you would have open-wheel, dirt track, and stock car; All the different kinds of racing that Andretti had done. It started as a Scott Orr vision. We had a lot of fun with that project.

Going down to Laguna Seca and meeting with Andretti, I had become used to meeting with athletes by that point, but [there is nothing like] hearing Mario Andretti talk about any track. Normally, somebody would talk about a track and you would expect as a non-driver, somebody who is not in automobile racing, would talk about a track and talk about its general characteristics. We would start to talk about individual tracks with Mario Andretti, and he would describe them

in 100-foot increments. “Well, if you start to go down into turn ten, on the approach, there is a slight reverse-camber, and you have to watch out for that pull. But then as you go into the turn, the pavement’s a little bumpy, at least it is now. It didn’t used to be.” And he is not looking at a map. He has nothing in his hands. He is not pausing for thought. He just goes. And any track we talked about; he could talk about in this detail.

I was having flashbacks at the moment of doing it where I was remembering talking with Tony La Russa. We had been talking about something and he’d go, “Well, that was that game in—,” six years ago, it turns out, when this happened and that happened. And he would go and say, “It was the seventh inning. There was one out. So-and-so was on first, so-and-so was on third.” He would name every player around the play on the field six years later from a random game. This is not a playoff game. These professional athletes who operate at the very highest level have phenomenal minds in addition to all of their other skills.

I also had one of the most embarrassing moments of my entire professional life in games with Mario Andretti. We were finishing up a session and saying goodbye—in fact, it was the first primary session we spent with him. I had spent years as a bilingual schoolteacher before the games industry began. In those years I got very used to switching languages, because as a bilingual teacher, you speak for twenty seconds, in my case, in English, and then do not speak for twenty seconds Spanish. And I had kids in my classroom who spoke each language. You got very used to switching. You said one person’s name in English, you said the other person’s name in Spanish, and you pronounced it in Spanish. We are saying goodbye, and I said something to the effect to Mr. Andretti of, “You know, we are going to do our very best to make Mario Andretti Racing something you are very, very proud of,” except those old instincts kicked in. I said, “We are going to do our very best to make *[in Italian accent]* Mario Andretti Racing *[back to English accent]* the very best we can.”

And I instantly froze inside my head and said, “That is one of the dumbest things you have *ever* done, Don.” And I thought, “What do I do now? Do I call it out? Do I just let it go?” It may have looked like trying to act cool, whatever it was, and I thought, “Just let it ride,” because it was natural. If you did something that was natural, if you are stupid, the best thing you can do is just let it ride. You are not going to make it worse. But I will say now, I am sorry, Mr. Andretti. [Laughs.] I spent weeks going around going, “Oh. Oh,” about that.

Weaver: Like so many other of EA Sports titles, *NASCAR Racing* was produced on an annual basis. How did Stormfront cope with that artificial one-year development cycle?

Daglow: In the mid-1990s when our industry started to get bigger, the companies all started to get much larger. The companies all went public, so now they were publicly traded on the stock markets. They started to have the pressure for revenue and revenue growth that being listed on the stock market creates. It changed the industry in fundamental ways, in my opinion. You saw a change in executive personnel in many companies. You had people who were professionals in working in public companies and generating revenue rather than having people who were game builders and had risen through the ranks to those executive positions. You had the game builders and game creators inside publishers facing additional, you could say, hoops to jump through, measures to meet, obligations to meet, requirements, oversights.

The joke we used to make was that every year there were more attorneys on every contract and more bean counters on every deal. I think there was some truth in that. It was an inevitable byproduct of the industry's growth. We would talk about it at length going to lunch or sitting down with our clients. We kept saying we want the games industry to get big. We want this to become a big industry and everybody to regard games as part of American media, part of our culture. Be careful what you wish for, kids, because, see, when you get big, this is what you get. And instead of complaining and saying, 'Ah, no, you are ruining the industry,' the fact is we wanted to get big. We got what we wanted and that was what came with it.

Part of that was now we have these annual cycles on all the sports games. To build a real quality console game where you are trying to truly craft it, at that point, you would really like to have at least eighteen months. You wouldn't be mad if you had two years. Now, if somebody gave you longer and the industry were stable enough to let you do longer, you would take it, but we had these annual cycles. We couldn't just update the stats in any of these sports games. Depending upon the sport, the year, and the level of competition, you had tremendous pressures within a single year to do a lot of work. Some years you might not have a particularly strong competitor. That pressure was less. But it changed how you had to do things.

And we could go out and complain all we wanted to about, "Boy, we wish we had more time. We wish it were different." But instead of saying, "What would be a great next game? What would be a great next version?" you had to come

back and say, “What can we get done in a year and still have a team that is intact? A team of human beings who are ready to come back the year after that and still work? Not just grind them up and spit them out as human beings inside our teams.” Trying to find that balance somehow. If you combine that pressure, that market pressure, with the changes of the industry, of the companies becoming more corporate, it felt like a steadily closing circle of pressure on the teams for what we did. The games had to keep getting bigger. We had less time. And because of the financial pressures of public companies, very often we were being pushed to do it with more financial risk as well.

Weaver: How would you compare the EA of 1990 to the company that you worked for in the 1980s?

Daglow: It is interesting. When we started working with EA externally in 1991, many of the people we worked with were people I had worked with as an employee inside the company in the early and mid-eighties. I think that, in many ways, the 1991 EA was the logical extension of the EA of 1982, 1983, at the time of its founding. I came late in the beginning of the company. I think that as the nineties went on, that is when those pressures of having gone public and growing large started to increase. Some of the early original people who I think were absolute bedrock to EA’s success retired or left. I think about people particularly like Monty Finefrock, who is not a well-known game producer in the press, but played a key role in the tech group and in the producer group, production, for many years inside EA from the beginning of the company through the late 1990s. Monty was, and is, a person who is just focused on getting the job done. Comes to everything with zero ego, just calm pursuit of something really great. If you do not want to build something really great, Monty is not going to want to work with you, but as long as you are trying to do something really great and you are really working at that, incredibly easy to get along with. If people start to have moments of ego or you start to get tension or everybody starts to get tired late, he could just have this calm about him that was just so refreshing and made him such a pleasure to work with. Plus, the fact that he was brilliant. When you asked him his opinion, what he said was really thoughtful and worth listening to. Monty retired in the late 1990s. I think those kinds of voices are something for any company that is a loss.

I think that even if you look ten years after that out to 2000, 2001, I still think that, in many ways, EA is, frankly, a great company. But the needs created by its size to create different divisions that ran semi-autonomously diluted that spirit of what had always been there. I think that process happened gradually and steadily over the course of the 1990s.

Weaver: How did you end up working on *D&D* games again, starting with *Ruins of Myth Drannor*?

Daglow: For some reason, *Dungeons & Dragons* just keeps coming back into my life. Probably because I love it, and the things you love keep coming to you. We had the chance to work on *D&D* again on a PC game with SSI. They came back to us as part of that ongoing relationship in the late 1990s. That story took a different path because SSI was then acquired. I lose track of exactly who acquired whom in what order, but it was something like Mindscape acquired SSI, who were then acquired by The Learning Company. I start to forget all the rollups, but we were working on a couple of different projects. The company was acquired or changed hands six times while we were working on the project. I have never seen anything like it in my entire career, forty-five years of building games. For myself or anyone else, I have never seen projects acquired six times during the life of one project.

Needless to say, there were a lot of changes on those projects of different masters, different orders, different budgets. I think that all of our good intentions on those games really ended up being largely frustrated. I think some of that is from all the acquisitions. I think some of it is, frankly, from the frustration that all the acquisitions creates of not feeling like you have any chance to go anywhere. I think some of that was I fell into some of that frustration, and I think I contributed to the problem, not just the solution, by that frustration, which was a lesson I took away from that cycle of products. On the plus side, we were the *only* team who had a product in that pipeline at the start of the six acquisitions, and who shipped. On the negative side, I do not think we shipped at the quality level that we would hold ourselves to, despite some absolutely brilliant work inside the project. I look at the people creating the game. Mark Buchignani, for example, I think did some wonderful work inside the projects at that time that just was lost by virtue of all the acquisitions.

Weaver: Stormfront's last major hit was *Lord of the Rings: Two Towers*. Generally, LOTR games have been adventure games or RPGs [role-playing games] of one form or another, yet *Two Towers* is largely a classic beat-'em-up game. Why that genre?

Daglow: *Lord of the Rings: Two Towers* came to us by an interesting and convoluted path. Peter Jackson was making the *Lord of the Rings* trilogy but was not regarded by the core of the Hollywood media as someone who was likely to make that a big hit. In fact, there was a lot of derision about Peter Jackson doing this. People remembered the old animated *Lord of the Rings* movies and said,

“That killed that franchise. You are not going to have a successful film in that area. Peter Jackson has no experience. He is done some horror stuff. This is a disaster in the making.” And so, the expectations were low.

Electronic Arts, Tom Frisina, licensed the game from New Line Cinema. He licensed it because he, I imagine, thought, “Maybe it doesn’t do well, but if it does do well, the upside is tremendous.” And Tom Frisina is a longtime industry veteran, very wise and savvy guy.

Tom then came to us with our *Dungeons & Dragons* experience, said, “Let’s build a game together.”

We started working on the project, and it ended up being more of an action game rather than roleplaying for a couple of reasons. First of all, roleplaying was, by then, a crowded category. When we started, the movie’s success was not assured. *Fellowship of the Ring* had not yet been seen by anybody. We worked on it for a while. We are going through various cycles of approvals inside EA. Then New Line called EA and said, “We’ve got some early portions of *Fellowship* to show you, and we want to share them with you as a licensee.”

We were invited to the meeting, came down, went to a conference with EA they had set up as a theater. They showed us seventeen minutes of the early portions of *Fellowship of the Ring*. Some time in the hobbit village and then them setting out in the snowstorm, being driven down into the Mines of Moria. As in the final film, you have kind of these peaceful sort of anticipatory parts of it where, yes, you have the Nazgûl threatening you and so on, but not a lot’s going on until that moment when you are inside the Mines of Moria. Now the skeleton falls down the well and suddenly you hear the drums, and then everything just goes crazy. And the portion we saw sitting in that conference room ended after the scene where they are trying to escape, and the old stone stairways are collapsing between them. We see Gandalf hanging by his fingernails and going, “R-r-run, you fools! R-r-run!”

And the screen goes black, and everybody in the room is going, “Oh. My. God.”

Our budget more than doubled. The attention on the project suddenly accelerated from being a “Hey, maybe this’ll turn out” to be a “We must have this.” Resources rained down upon us. Extra involvement of people rained down upon us. Our vision of making it a cinematic-focused trip through the stories was reaffirmed and actually expanded. With the extra resources we were given, there were a lot of technical barriers we were able to push away. We ended up winning

the Interactive [Arts & Science] Academy's D.I.C.E. Award for Visual Engineering that year for that product, and it is because of a lot of the innovations that our tech team did.

It was an absolutely wild ride that went from working our way through approvals to absolutely marching in part of this huge army towards meeting the ship date, the opening date, for the *Two Towers*, because of the time it takes to build games and the time it takes to make movies. Our obligation was to be on store shelves for the opening of the *Lord of the Rings: The Two Towers*. We beat that date by two weeks. It was a wild ride. [Laughs.] That was a big project.

Weaver: Did the license present any challenges? Did you work directly or indirectly with Peter Jackson or was there no involvement? Were you given your own opportunity to do whatever you wanted interpretively? Because generally that is not the way these licenses work. I mean, how did it work from a practical standpoint for you?

Daglow: The *Lord of the Rings*, as licenses go, actually is very complex, and yet it was made straightforward for us. First of all, Peter Jackson's team handled approvals in a *really* constructive way. They were game players. They understood what we were trying to do. They understood a lot of what we had to do to make it work. By any reasonable standard, they were super to work with. EA had dedicated liaison personnel where all they did was get assets from the film production company to us and then get our assets and our builds to Peter Jackson's team for approvals. That kind of full-time focus on just facilitating information flow, it is tremendous. It was really strong production work by the EA team. So much of these things is communication. If they had a question, we could get the question quickly, we could get an answer to them, or a fix, or a "Oh, we didn't know that. Do you have any reference for that?"

"Yes, we do."

And we were just reaching the point where the Internet actually started to be of help with them being in New Zealand and us being in the San Francisco Bay Area. Large assets, not just small things, could actually be sent back and forth.

The other funny thing about it was if you walked into our building, first of all, after hours, the entire office building we were in would be locked. During hours, you would come up into our office, which had a lobby reception area with locked doors. If you then cleared that process, someone would take you through the outer locked door. But if you were working on *Lord of the Rings*, you couldn't

stop at that door. Then you had to go farther into the office, go down, pass through the kitchen, through another area, and then there was another walled-off area with its own locked door that only certain people had the key to who were working on the project. Then you could go into that room. And the film assets from the movie that we had all had to be stored in that room. They were all stored in heavy-duty locked cabinets. There were all these series of electronic locks, metal locks and doors, and everything. Of course, once it became a hit, everybody wants to preview photographs from the set. Everybody wants to preview early examples of scenes. We had all that material for reference because they gave us so much. So, we had all these levels of security. Sometimes it felt like walking into one of these prison movies, like we were walking into the prison. You kept going through all these locked doors just to go in and work on *Lord of the Rings*.

Weaver: For the past decade, more and more independent developers were either acquired or went out of business. What were the economic factors, in your opinion, that led to AAA development being largely brought in-house?¹⁴ How did that affect Stormfront?

Daglow: I think between the mid-nineties and the late 2000s, there was a tremendous movement where AAA project development went from being a mix of in-house and external development to where all of the teams, virtually, were being hired inside the big publishers. This had swung back and forth at different times in game history. You get a period when the publishers would say, “Why do we have all these salaries inside the company when we do not know if the game’s going to be a hit? Let’s lower our risk. Let somebody else share some of the risk. Let’s work with outside teams.”

And then two or three years later, the same publisher would say, “Why are we giving away all these royalties? Why are we paying so much money? Hire them! We do not have to pay royalties to people inside the company. Bring them in to us.” And you would have this sine wave of internal and external development that would come and go.

But as the industry got bigger in the late nineties and the stakes got bigger. The amount of money you could make from a hit franchise got larger. If you left out all other considerations and you viewed it solely as an economic calculation of return on investment, it made sense internally to the publishers to bring projects inside. And so, one by one, major franchises started moving. It came to the point

¹⁴ AAA is a term used in the video game industry as an informal classification used for video games produced and distributed by a mid-sized or major publisher, typically having higher development and marketing budgets.

where even those of us who were doing AAA work independently, we knew that if we built a hit, it would be ours for a while, but at some point there would be a change in technology. When that technology change happened, we didn't own the IP, the intellectual property. We would lose it and it would go inside. We had to find something else to replace both that work and that revenue.

On the other hand, the process of getting to build AAA games, fewer and fewer studios were able to do it. If you were part of that group, that was what we got up in the morning to do in terms of work. We did have discussions about acquisition with some companies in the industry. We never closed a deal with someone. Obviously, in retrospect, I wish that had happened. The way it turned out; the industry grew to the point where AAA actually moved almost completely outside of independent development.

For us, the way it turned out was we went from having four teams when projects were smaller, then games got bigger and we had three teams. Then games started getting really big and we had two teams. We could only work on two projects at a time. With *Lord of the Rings*, games got so big, it was such a massive project, we took our entire team. [It] would have anywhere from sixty-five to eighty people working just on that project full-time. Games of 2017 are being built with even much, much larger teams, but at that time, we saw that compression.

What also you would see is when you have four projects going on at once, the sales cycle for going out and signing your next project with your next publisher was staggered. You didn't have all your projects finish at once. Well, then you go to three, to two. Once you go to one project, now while you are building your game. While you are in the throes of finishing it and really putting the quality on it is also when you have to think about, okay, what is the next project that is going to keep the studio both running and busy with something we are proud of and that we want to do. That conflict of having to sell at the same time as you are trying to build something great, I think, for all of the large independent studios became more and more of an issue.

Weaver: And speaking of it as an issue, can you take us through the closing of Stormfront and, based upon, partially, what you just said, what happened?

Daglow: It is interesting. For us, in the late 2000s, we actually got, in many ways, the best project assignment we had had in many, many years. We had an original AAA console game that we were designing. The original vision for the theme of it came from a publisher, from a producer we knew and had worked with, and very large budget supporting a very strong team. The kind of thing that AAA

independent game studios all want. You want your own intellectual property, working with people you respect inside a publisher, with a schedule that is long enough to build something of quality and a big budget that is big enough to do that.

We spent months pursuing that deal to get it signed, invested a great deal of money in doing so, and successfully landed it. A few months into the project, our publisher was acquired by another company. And when the new company acquired our publisher, they were after a handful of products that were already being sold by the publisher. They said to us, “Nothing personal. We are terminating *all* of the projects that are in any early stage. It is nothing about your work. It is not about quality. It is just we want stuff that ships now. We want stuff that puts money to the bottom line, because that is the way we know the stock market works. That is what you have to do if you are a publicly traded company.” And so, our project was terminated. We were in a position where after a long, expensive pursuit of the project, we had, in the course of ten days, over \$20 million in booked revenue walk out of the studio. We did not have the reserves to be able to survive that and there was no way we were going to be able to find other projects quickly enough at that moment to support the studio. At that point, after twenty years, we had to shut it down.

Weaver: Post-Stormfront, I assume after some period of time of licking your wounds [Daglow laughs], you got back up. What have you done since? What’s your current life adventure?

Daglow: For the years since 2008, I have actually had a chance to have a series of adventures that have probably brought me more learning in less time than almost any period of my career. During the time when the Wii was popular, I designed and worked with teams who were designing games for motion controls, where you acted out what you wanted to do as the game’s interface and learned a lot about that. Much of that was advisory work where a team has an issue. They are working on something, they need feedback, and so it is fun to go into. Instead of being in a case where you are in a single project for maybe two years and focused on one thing for two years, I might be going in one month into two or three different projects. Sitting down with teams, hearing about what they are struggling with, acting as a foil, as a feedback loop, as a brainstormer. Somebody to kick in some new ideas to help jumpstart things, but always as a resource. It was a very different experience. I actually found myself having a lot of fun, because running a large studio, as you well know, you are doing a lot of administration. You are running a business. We were on the Inc. 500 three

times.¹⁵ And a lot of your time is not on the creative or the craft; it is on the running of the business. And I found myself right back up to my neck in game design and details.

And as that time was going on, then the smartphone revolution started to happen and suddenly the app economy starts to emerge. We start to get mobile games, but mobile games are not like AAA games in every way. We are not using a controller; we are using a touchscreen. We do not have a big monitor at home; we have a little screen on your smartphone. We do not have our players sitting down and saying, “Okay. I am settling in for a good, long play session;” we had somebody going, “Oh, I am in line at the bank and I am ready to play.” We do not have aficionados we have spent years teaching. “Here are the assumptions of these kinds of games. Here are how these kinds of games work,” where they pick up a game and they know how to play it before we even start. They know the secret handshake, they know the inside codes, they know all the agreed-upon “nudge-nudge,” “wink-wink” between a AAA game design team and the players who love those games. But the people playing mobile games know none of that. They know how to use a touchscreen. They know all of those conventions, but whatever you do in your game you are starting from scratch, so everything about those games feels like it is different.

But then, no, wait, that is not enough change. There is more. The business model is completely different, because Apple has established that the old console model does not work for years. The games industry has marched along for decades saying, “It is a razor-and-blades business. We will subsidize, as hardware manufacturers,”—Sony, Microsoft, Nintendo— “we will subsidize the hardware. We’ll make it cheap. We’ll sell the video game consoles for less than it costs to manufacture them because we know that once you buy them, you will then buy games, and we make money on every game that is sold. Every game that is sold for a Sony platform, Sony makes money, so that investment pays off for them. For the publishers, it pays off. The hardware manufacturers create these great platforms. They make great sacrifices to push them out to consumers. The game publishers can then leverage that investment to have big hit games.

But Steve Jobs says, “No, that is not the way it has to work. The Apple iPhone is so valuable that *it* is what is valuable. The iPhone we sell at a profit because it is what is valuable. The iPhone is what makes the app economy and mobile games possible. So, no, it is not razor-and-blades. In fact, what it is, it is more a

¹⁵ Inc. is an American business magazine founded in 1979, published by Mansueto Ventures. Inc., is best known for its annual rankings of the fastest-growing privately held companies in the United States, called the “Inc. 500” and “Inc. 5000.”

case of the sophisticated high-end stereo for which you can pay \$4.95 a month to a streaming service. Listen to all the music you want for five bucks a month. It is not the media that is valuable; it is the hardware on which the media is played.”

This creates a schism in our industry. It creates a mind-exploding crossroads for everybody who works in games. If you believe that what we are doing is an art form and that what we are creating is art when we are at our best, and if you believe that we are impacting people’s lives, as we believe we have proven that we do in a way that brings value to their lives beyond diversion—it brings value in terms of life feelings better and they feel closer to their friends and their family—if we do all those things, we think, “Well, of course people should pay for our products. Our products are worth money. They’ve *always* been worth money.” But no longer was that the assumption. Consumers had been taught that you could have a great game, which instead of buying for \$50 or \$60 at the store, you could download for free. If, and only if, you liked it, you could buy some resources to enjoy the game more. You might spend fifty or sixty or even a hundred or two hundred dollars on the game, but you were doing it only when you wanted to. You didn’t have that initial wall to get over.

And for many consumers, Steve Jobs changed [the economics]—however horrifying it may have been to us as the creators of media. The change was one which was welcome [by consumers] because it was, “Why should I risk \$60 on a bad game? What if I do not like it? Okay, I could sell it used back to the store, but I still lose money and I lose time.” This is like radio. It is a preview mechanism. “Now I can enjoy a game and figure out if I want to spend money on it.”

But for artists, for creatives, it is very hard to let go of that idea of what you create being something that somebody will walk into a store and pay for directly. The idea that someone else is now the economic center, that the hardware company now is the center—it is no longer razor-and-blades. We live on a meritocracy where we compete with 100,000 other people who also love games and also are driven by these same passions to have our games first get noticed. To have our games earn money step by step, inch by inch, crawling by your fingernails across a ledge of stone, that was such a change. It has always been a competitive business. It is always been a difficult business. But if you’ve looked at things a certain way—it is like when the Ptolemaic system was replaced by finally accepting that the Earth was round. You have to completely changed how you look at things.

As a creative, you have two choices. You can say, “No, I am not going there. The world has always been this way. We know there are companies, publishers, manufacturers who are still building games this way, they are still charging this way. The old business model may not be the same, but it is still there, and I am not willing to leave. You guys get in your boats and head to the New World. I am staying here.”

The other choice you have is new continents are kind of exciting, kind of fun. It is awfully scary, but if it is different. If at the end of that, we have a chance to reach people in new ways and reach people we haven’t reached before with our art form, with our medium, with our craft, maybe the best thing to do is to get on the boat and sail across. Go to that scary place and reach those new people. That is the choice I made, believing that game design in all of these new media was an opportunity as well as a life-changing scary thing. Now we had something where instead of people going home to play a game on this device that sat there in the living room, [it was,] “Oh, my game device is always in my pocket. I can access it at any time. If I have got a few minutes free here, I can play my game right now.”

We enter people’s lives with mobile games in fundamentally different ways than we ever could before. Now we have a case where there is the touchscreen interface, which is very well known. We have got three-year-olds playing with iPads very competently. That barrier to anybody learning our games is reduced, as long as we are willing to play by those rules. If we want to twist those rules in clever ways, we only have to teach one twist. “By the way, I am going to do something different with your touchscreen right now. Let me show you what it is. Okay, now you’ve got it.” That is an advantage for creating games that get to people.

Now we have natural language processing, which I believe is something that is also going to revolutionize games in many ways. The project I am working on with Tony La Russa finds ways to use natural language to remove the necessity for other kinds of interfaces at all. Let people use voice to control a game. I think there is exciting new horizons there.

Through all these means, for the last few years, I have had the chance to learn more than I have ever learned, to be involved in more different kinds of projects than I have ever been involved with, and work with great new people. But the goal remains the same. We are still using that opportunity we have been given to reach out and create experiences for people that make them look at their life differently, not only to have fun, [but also to] bring them closer to other people

and give them more things to think about the way they would think if they see a great movie, a great TV series, or a great book.

Weaver: What aspects of video games do you view as significant properties to preserve? What elements of gameplay or user experience should be considered when we talk about preserving the cultural legacy of games?

Daglow: I think when we are talking about what to preserve in the cultural legacy of games, I think the big word that flashes in neon is “culture.” If people have had a few moments of diversion and fun with something, that is a nice piece of history. We can look back at the bestselling popular books of 1911, and that is interesting to look at. If something becomes part of our culture, and if it changes that culture, then it has more meaning, I think. It is not a novelty value in recording it. Then it has a significance, because it is out of the past changes, out of that lesson of the past. I think we learn the lessons that allow us to make our own culture better in the future and to face the cultural and the historic challenges that inevitably are brought to every generation.

I look back at the games which may not necessarily have been the bestsellers, but the games that may have been ones that were played different than others. Games that were so popularly accepted, they became referred to and talked about in other media. Just recognizing that it was something pervasive for people, games that had nostalgia value where twenty years later as adults, people still wanted to talk about, “This is what I played as a kid, and this is why it mattered to me. It was so great.”

All those are things that intrude upon our culture, and I say “intrude” as opposed to being accepted because culture is not something which is inviting more participants. Culture is something which is set within us. We actually do not want to change our culture. Ask me if I want to change how we do Thanksgiving dinner, and I’ll tell you, “No, I do not want to change how my family does Thanksgiving dinner.” We get set in our culture. Outsiders to culture have to barge their way in. Those are the things, the things that barge their way in and become part of what we love and accept, even though they start being unwanted in many ways. Those are the things, to me, that are most worth preserving.

Weaver: From the perspective of a pioneer, how have games evolved to the present? Good, bad, lazy, something in between?

Daglow: I think the games have evolved from the very beginnings of electronic games to the present in a way that reflects every aspect of the best, the worst, and

everything in between of human beings. I think we have managed to make them reflect us. The very best games, I think, have given us experiences that have unified people together in experiences. They have brought them together. They give them reasons to discover more about each other. It is not the game that is actually special, it is just that the people are talking with each other and interacting in a way that gives them a closer relationship. I have seen games where the quest for violence was the only apparent motivation for building the game or playing it. I think that plays to the worst in people. I have seen games where the tendency for game conflict to be played out in violence is part of a context where there is a great story being told. *Lord of the Rings*, that ring must be destroyed, or everything will be destroyed. Yes, there is violence in the course of the heroes trying to fulfill their mission and facing evil as they do so. I think that the development of games has been a reflection of us. I see it as neither good nor bad nor brilliant nor full of folly. I see it as being just like us with all of our same strengths and weaknesses.

Weaver: As someone who values objects and artifacts, particularly in relation to virtual worlds in some tangible way, what do you think of the proliferation of distributed games and the move away from games as a physical medium?

Daglow: For me, I have had to stop thinking of something that is physical and that you can hold in your hands as being the game. This has been very hard for me. With books, I still love to take a book; If I can buy an e-book or a physical book, in almost all cases, even though I have got two different e-readers, I'll buy the physical book because I just want to hold it in my hands. I recognize that is probably a product of the generation I am in. When I am creating games, I have to think about that [point] is moot. The question comes down to what is the right platform, the right screen size, the right medium, the right play duration, the right play intensity, the right visual presentation, the right audio, the right music, the right overall experience that any game should have? If you get that part right, how somebody owns it or possesses it, what it feels like in your hands, if you can touch it at all, what you paid for it and in what manner, none of it matters. All that matters is the feeling we create.

One of the things we are taught in theatre is if we make somebody think about something, they will have the thought and later they'll forget it. If you make someone feel something, you can't stop thinking about it. It will keep coming back over and over and over again. If you think about the ending of *Saving Private Ryan*, I have not been able to stop thinking about that since I saw the film. That is art. That is the point. What I think about it and where that takes me is for me as the audience, but for the artist it is to generate that process. For

me, the nature of the product doesn't matter. The nature of the emotion we create is what matters.

Weaver: To follow up on that, do you think there will be a subset of the gaming community that will keep physical game objects in circulation, much in the same way that vinyl LPs have had sort of a new renaissance?

Daglow: I think it is going to be really interesting to see 100 years from now, which, of course, we won't get to see, how the idea of physical works and digital works have transformed themselves. I do not pretend to have a clear vision for that. I know that as someone who was born into a physical age who now works in a digital age and has committed himself to this idea of you have got to jump in the deep end of the pool in terms of forgetting about those issues and focusing just upon the work, I know that I still have those preferences for physical media. Is that something that will change? I honestly do not know, but I am curious as anything.

Weaver: To that point, and not to belabor this area, so do you think that the preservation of physical game-related objects is important to an understanding of the bigger world of games for future interpreters?

Daglow: I think that the more our world turns to the digital versions of everything, the more critical it is. The more important it is to preserve the physical manifestations in whatever way we can of those experiences. Santayana's old quote still haunts us: "Those who cannot learn from the past are condemned to relive it." If the past is stored entirely digitally in every way, as we all know as creators of digital media, we can massage it to be whatever we want it to be. If you do not have some form of preservation of the actual experience, then I think something is truly lost. That actually frightens me for our future, because simply the ability to manipulate a digital world is something we are already very concerned about. Whether it is game history or anything else, the question is what are the physical inalienable, unalterable signposts of any form of media, of culture, of history, of reality that can be preserved? That is not a trivial question. That is one of the great challenges that future generations will have to conquer in order to preserve a way of life that is worth living. If everything about life can retroactively be manipulated in whatever way you want for anyone and everyone, I would suggest something very important has been lost.

Weaver: As a creator, as a designer and creator, as an artist, would you have a problem with museums and the like using emulators to play games when the original devices are no longer available? In other words, you simply do not have them

available. Look at the PDP-1 downstairs, for example. Would you have any problem with that as a creator?

Daglow: If I could give a message to a museum curator of 100 years from now about my input on how to preserve the work we do, my input would be, “Do whatever you have to to preserve not only our form of art but every other form of art and communication that gives people something of value. If that means using emulators rather than original devices because the original devices, for some reason, no longer work, great.” Because it is not the device which intrinsically produces the experience for the player, for the audience. The emotional transformation that we seek in art in our audience is not created by the hardware that brings the art; it is created by the art itself. I have infinite gratitude to the engineers who have created the machines that our games have been played upon, but at the end, the machines are means to that end. For that reason, I also think we have to say that hardware engineers are, themselves, artists. By enabling what is created, it makes the work indivisible from that technology in many ways and they have to be honored in the same way rather than dismissed as something that was an inconsequential part of the process.

Weaver: In terms of that answer with emulation, what steps are necessary to preserve virtual worlds? Do you think that preserving the contextual materials created by the player community will be as vital to understanding the virtual world as the preservation of the software itself?

Daglow: I think when it comes to looking at virtual worlds, it is a matter of we do not know what is going to be the way to preserve those environments. The feelings that are created within them in a way that will make sense to somebody a century from now, which I think calls for “Let us try doing it a whole bunch of different ways.” Instead of putting one camera on something, let us put sixteen cameras from different angles, and I am saying that metaphorically. Let us preserve both the background materials to the creation of the works, the works in their original format, the works in some format they need to be adapted to in order to be understood by somebody generations later. Shakespeare’s foul papers have been preserved because they tell us how he was thinking about a certain play at the draft stage or in the dress rehearsal stage.¹⁶ We have very few of them and we just wish we had more.

We preserve, for game creation, those same versions of Shakespeare’s foul papers of the proposals, the working docs, the scribbled memoranda, everything

¹⁶ Foul papers refer to working drafts, especially for English Renaissance drama.

else that we can preserve of those, the early versions, the drafts, the first playables. For three-dimensional multi-view worlds, for worlds where you are submerged within them, I think we have to be exhaustive in what we preserve, knowing that some of our ideas somebody will look at 100 years from now and go, “Uh, nice try, guys, but that was useless.” But we have no way of knowing what that will be, so we have to try a bunch of different things, hoping that some of our ideas turn out to work and that future generations can have that perspective on what these kinds of media were in our generation.

Weaver: Now I want to deal with the societal impact of games. Can you talk a little bit about the influence of video games on other art forms such as visual arts, music, film, etc.?

Daglow: I think that video games have impacted everyday life. First and foremost, in a way where if you just watch everyday network television and the ads on network television, you will see that people playing video games in the background of a non-game ad have come to be seen as just a normal, accepted, and routine behavior. That tells me that simply the process of creating games and people playing games has now reached a point where it goes alongside listening to music, watching television, going to movies, and so on.

The question becomes, when art starts to become recursive, how are different art forms influencing each other? You can look at ways at which the Dutch painters’ view of light influenced early cinematographers in the creation of film. You can look at the way that the noir novelists of the mid-1900s influenced filmmakers and scriptwriters and then turned out first in the scripts and then in the way that the films were shot. You can look at how music videos and the way that they introduced so many fast cuts then spread to all other forms of cinema and television and changed how cuts were and changed how we expected to look not just at films and television but how we looked at screens. Our smartphones show us media in different lengths of unit before the screen changes, before you have a cut, because of what happened thirty years ago on MTV.

How have games done this? I think we are in the early stages of getting a chance to see it, because cultural change from one art form to another is normally seen in the rearview mirror, and by the time we recognize it, it is already happened. And I think that being inside the belly of the beast, sometimes we are the ones who are going to see it last, but I believe it will happen, and I am excited to see it. I am not sure that I have yet a compelling single example beyond the fact of the kid in the background of the deodorant commercial playing the video game.

Weaver: Do you see any parallels between the virtual economy and the real-world economy, in other words, the virtual economy within games and the digital economies like Bitcoin?

Daglow: I think that when we started creating games, all of the different kinds of game economies we created were imitations of real-world economies. One of the hardest things to do inside a roleplaying game—and I know you know this very, very well—is to create the economy. That the supply of gold, the supply of things you need to overcome enemies, different kinds of weaponry to fight enemies, if you have too little of any resource, the game grinds to a halt. If you have too much, the game becomes too easy, is no longer challenging, and people stop playing. As our world economy has become more digital and we have had more digital game economies, ironically, I think the two have paralleled themselves more. What I think about a great deal is having managed digital economies on games where we have to have so many checks and balances against someone coming in and hacking the system and giving themselves ten billion gold pieces to spend as they wish, or, “Look, I have a magic spell that will kill every orc in all of the realms,” where we are battling that. And then I think back to, you know, we really are holding the mirror up to life, because in addition to alternate currencies like Bitcoin, we have all the different kinds of fraud and hacking that happen in the real economies. Ironically, even as we have gone to having digital game economies, the real world has changed in parallel to us. In fact, we are not just reflecting, we are merely adapting to the same forces, the same technological changes, the same cultural changes in the same way.

Weaver: In your opinion, what is the educational imperative of the video game industry?

Daglow: If I think about the educational imperative of the video game industry, I first think about the educational imperative, period. A society that is not educating its young people is going to slide backwards, one way or another. If you are not educating people in an increasingly complex world, the stakes are not lower because machines are doing it for you; the stakes are actually higher because it is more difficult to discover that someone else is presenting you a false world to take advantage of you. I start out with the imperative of education as trumping all, and from there I say, all right, and video games are an extraordinary method of communication simply because they are visual, they are responsive, they are interactive, at their best. But it is up to us to demand of ourselves that we are at our best and to keep learning how to use these tools so we can be part of the solution. We can be part of helping people learn from the very most banal and petty things to the most precise and critical and life-threatening things.

How can we do that? I think that is part game, that is part technology. I love examples like physicians being trained on simulators that are driven by artificial intelligence and computers where the game is “This person’s dying. Figure out what’s wrong, and you’ve got about a minute and a half.” That is a wonderful example. Yes, we are only teaching physicians. We are not teaching a broad section.

I think when kids are playing a game and they not only come out of it with maybe some improved skills in math or language, but they understand the feel of mathematics. One of the things we always know we do in baseball games, if you study baseball and you love it, you start to slide into looking at the statistics and the numbers. It does two things: First of all, as Tony La Russa always says, the more you understand a sport, the more joy it will bring you to watch it. But the second thing it is, when you dissolve yourself into all those baseball numbers, or football or basketball, you get a sense of numbers not as, “Uh, three times three equals nine,” which is a memorization activity, but you get a sense of the number.

If I go to little kids who are sports fans and I say, “Uh, he was batting .240 last year, but this year he is batting .310,” they will perk up. That is a 7 percent difference. The way we normally talk about percentages, seventy points is a 7 percent difference. But they get that a 7 percent difference can be a very big thing. Very often I think the greatest potential we have for teaching in games is not through the didactic pedagogy of educational software, but it is from giving a sense of something to someone instead of merely a fact or a skill in a very arbitrary sense.

Weaver: Language is a very important part of your games. Do you see any parallels between learning early computer languages and the invented languages of Tolkien, for example?

Daglow: I see more than just similarities between computer languages and the invented languages of Tolkien and of any form of literature. I actually think that learning programming languages should be part of everyone’s childhood in parallel to learning. Ideally, more than one natural language. Before the growth of computers and video games, I always believed that if you speak two languages, you have doors into two cultures. You understand that there is always more than one way to look at something. Language always reflects that. The minute you learn a language, it is kind of like, “Well, that is a weird way to look at it. You would word it that way?” But it steals from you the false thought that there is only one way to say it, only one way to do it, one way to think about it. And from there, you learn about cultures. People look into your eyes in some cultures at a

moment of conflict. Others look down at a moment of conflict. Everything about us is different. Language opens that.

I think that, for better or for worse, we are living in a world which is more and more being enabled by, driven by, facilitated by, dehumanized by, and brought closer together by technology, all at the same time. Benefit, loss, benefit, loss, up, down. If you are going to be part of that future world, I believe passionately that the children of that world need to be able to not only converse with a variety of people and a diversity of cultures, but they need to be comfortable with that technology. Technology is becoming a culture unto itself, and understanding how to be master of the machine, master of the voice of technology, master of how you communicate to people through technology, that is not just a useful skill. I think in the future it will be a vital skill to still get up in the morning and believe “I have something to say. I have a way to say it. What I am saying is worth listening to, and I may not always be right, but damn it, I am gonna to say what I have gotta say.” And without that ability to do it through technology, it is possible some people will lose that ability which is critical to what makes us human.

Weaver: What motivates you most deeply? Or put a slightly different way, what is your driving motivation?

Daglow: I get up every morning and I just love what we do. I love making games. I love working with people who make games. I love talking about the making of games, and it is just fun for me. And I do not have a great charge of what I need to do with that other than my very best and something that is completely new. I am not interested in redoing things. I am not interested in advancing the state of something by 1 micron. I am interested in either making a good try and just having a horrible failure or doing something where people look at it and say, “That was really different.” Anything short of that is not interesting.

Weaver: What has success really meant to you? Has it meant freedom of expression or living up to some impossible standard?

Daglow: Success, for me, is I have been married for over forty years. I have got two great kids I am very proud of. Got two great grandkids I am very proud of. The times when I have been wrong, I have hopefully been able to learn from them and go back and get [myself] right after that. The times when I have been unfair to somebody, I have gone back and said, “I am sorry.” And I have been able to continue to demand of myself that I am trying to do the best work I possibly can. Learn from the times in my life when I have not done that best work and try and

change whatever it was that made that the case. That, to me, is success. It is an imperfect success because we are imperfect as people, but I am very content with those successes. I would give up any hit game I have got, ever, and would give up every hit game I have ever had if it would not have been what brought me what I have had in my marriage and with my family. At the end of the day, what makes us human starts from our families and our relationships, and art, on the hierarchy of human needs, is what comes after we have that.

Weaver: What about notoriety? Has notoriety benefited you, hurt you, or really not materially changed anything?

Daglow: It is interesting. Notoriety in the games industry comes and goes. It sometimes comes by coincidence if you are part of a hit game. Sometimes it comes for reasons you deserve, and sometimes it is almost bad luck when it comes along. It is a little bit of everything. What I have taught to every university class I have ever visited has been, “Do not think about what the press will say. Do not think about what a critic will say. Do not think about your scores on some website. Think about how the people who play your games will feel, and if you do that, everything else will take care of itself.”

Weaver: If you had the ability to ask someone, living or dead, a question, what would the question be, and who would the person be?

Daglow: Oh, that is a great question. I am torn, because I start to think about personal or—you start to think on answers in art and you start to think about answers in the personal. If I had the chance to ask that one question, the first thing that comes to my mind is actually personal rather than relating to art or media. Actually, I have a different question. I am going to change your question in an evil way. I am going to bring Shakespeare back to the present day, give him a month to acclimate to what theatre, television, and film are today. Then turn to William Shakespeare and say, “So, Bill, what do you think?”

Weaver: What did you believe that you were originally doing at the time that you got into the business, and now, with the luxury of hindsight, what do you think you actually achieved?

Daglow: And when you say, “the business,” do you mean as an amateur just on mainframes or do you mean as building something that people would actually buy?

Weaver: Any way you would like to interpret it. You can interpret it as widely as you want to. What did you originally go in with, and what do you think you came out with?

Daglow: The first time I ever walked into the little room where they had the terminals where we could learn how to tell stories through a computer that were interactive with people, I thought that this was some new form of very personal theatre that most people could never see because a computer cost millions of dollars and filled an entire room. For the lucky few of us who got to see it, was just so incredibly cool. And, in a way, forty-five years later, I look at it now and I have a very similar view. Except I was wrong that people wouldn't get to see it, and I was wrong that it was just text. I was wrong that it was limited to ideas of story at all.

What we have is this ability to create an interactive experience between our vision of a world and a player, or an interactive experience between two people or between a group of people. We can create self-modifying worlds where people change the world in ways we never could have expected. When I created *Neverwinter Nights*, the idea that there would be guilds in *Neverwinter Nights* had never occurred to me, but when I saw them, it was completely logical. We have no idea what we are going to create when we start the little snowball rolling down the hill. We lose all control over what we create with the little snowball rolling down the hill. Our mission is simply to watch it roll and marvel at what it may become.

Weaver: Thank you, Don.

[End of interview]