The Game Mechanics of Enlightenment:
An Interview with Tracy Fullerton

Tracy Fullerton, currently an Assistant Professor at the USC School of Cinematic Arts and the co-director of the Electronic Arts Game Innovation Lab, began her career in interactive media quite by accident. In 1991, after getting her MFA from the USC film program, she interviewed for a position on a documentary crew. This "documentary" turned out to be an interactive educational program about the voyages of Columbus. This program, produced by Robert Abel's company Synapse Technologies, was an early experiment in hypertextuality and the educational use of interactive media featuring James Earl Jones as the host. The projects created by the company used what were, for the time, cutting edge technologies such as video cards and laser discs. *Columbus: Discovery, Encounter and Beyond*, one of three major projects completed by Synapse, was displayed for some time at the Library of Congress as an example of the future of interactive education.

After leaving Synapse, Fullerton, who had studied experimental filmmaking, became interested in both the theoretical and practical issues surrounding interactive storytelling and went to work as the Creative Director at the interactive film studio, Interfilm. Interfilm made "cinematic games" in which the audience chose what would happen next in the story. Fullerton approached the form as a game, with the audience competing for votes, trying to find correct solutions to narrative problems, and striving for outcomes that could mean winning or losing. She co-wrote and co-directed the project *Ride for your Life*, starring Adam West and Matthew Lillard, in which Earth is being threatened by aliens and the only way for the audience to stop them is by winning a bicycle race through Central Park.

After Interfilm, Fullerton went to work for the New York Design Firm, R/GA interactive, a cutting edge computer graphics firm that was just starting a new interactive group. Here she designed several games, including the first multiplayer casual games for Microsoft and Sony. *NetWits* launched for MSN in 1996, was created as a way to introduce the possibilities of the web to early non-gaming users; *Jeopardy!* and *Wheel of Fortune,* which quickly became two of the most popular games on the web when they launched in 1998, were created to extend these popular television games to internet audiences. After these successes, and with an expanded interest in developing the kinds of games that casual gamers could enjoy in the large communities that the web could offer, she left R/GA and co-founded Spiderdance with colleagues Michael Gresh, Steven Hoffman and Naomi Kokubo.

At Spiderdance, Fullerton and Gresh designed a client-server technology that could handle millions of simultaneous players, with gameplay synchronized within milliseconds. Most web servers are designed to handle the asynchronous arrival of numerous users on a rolling basis. What Spiderdance needed was one that could handle millions of players arriving all at once, for "appointment playing." Spiderdance and MTV partnered to produce *webRIOT*, a massively multiplayer game which was synchronized to the television show of the same name. This could only be achieved

using the Spiderdance technology. Soon NBC, TBS, WB and the History Channel were knocking on their door. After producing a number of foundational sync to broadcast programs, including *webRIOT*, *History IQ* and *The Weakest Link*, Spiderdance closed its doors in 2002.

Throughout her professional career, Fullerton had always taught as well—first as an adjunct at the School of Visual Arts in New York and later at USC. When Spiderdance closed, she felt that the next challenge would be to teach full time and to work on building one of the first programs in game design at a major research university.

Jonathan Cohn: What lessons did you carry over from these business and creative production experiences to your classes?

Tracy Fullerton: In teaching, I use the same techniques we developed at R/GA for creating experimental game play. After coming up with an idea for a game, we would always prototype it on paper, playtest it, and then move on to develop a digital version. It's common sense now, and is gaining more and more favor in the industry, and it is really a great way to teach people how to make games. I really enjoy the work I do at USC, because there I can explore "cutting edge" ideas without having to worry about an immediate bottom line. In academia, it is good to take risks, whereas at a company, it is usually better to be conservative. All of my ideas tend to be five to ten years out, which is a value in an academic setting, where we're really trying to explore new territory. On the flip side of that, I think it's also important to stay involved with the industry for a variety of reasons. Getting your ideas out to real people is a tremendous experience, and I never want to forget that I'm designing for real players. I still do game design part time for companies like Disney Imagineering and several independent game developers.

JC: Video Game design is one of the newest academic fields out there. How was it started at USC?

TF: When I started teaching there, we were still teaching in the basement. Then Electronic Arts (EA) came and wanted to make a serious investment in the future of the medium. I think they chose us for a number of reasons; for one, the school has a great reputation for educating creative thinkers and leaders. Also, they saw that even though we were down there teaching in the basement, we had a number of students who had graduated and were doing great in the industry. We were teaching a methodology called "playcentric" game design, which is essentially game design with a focus on the user experience. I have written a book about it called *Game Design Workshop*, which a lot of schools are now using. Basically, they saw that we had a great methodology and a lot of passion for the subject… and of course the film school has a great reputation. They made an $8 million endowment to the school, for the establishment of a program in "interactive entertainment." At the same time, they also established the Game Innovation Lab that I co-direct.

JC: I'm often surprised EA doesn't advertise their connection with USC as much as they might want to. They tend to get flack for not creating experimental games.

TF: Yes, well we are not just an EA school. We have a lot of great people from a number of companies that teach classes in the program and volunteer their time to mentor students. For example, we have people from Activision, Naughty Dog, Buena Vista Games, Microsoft, Sony, etc. So, while we have great people from EA who teach classes and advise on curriculum, we have also made great efforts to involve companies throughout LA, to get many different perspectives. Also, we like to bring in artists and interactive designers from related fields to broaden our students' perspectives. For us, it is great for the students to get that perspective of how the industry really does work, but we also would like them to come out of the program thinking about how the current state of gaming might be changed. There definitely needs to be a balance between the industry focus that USC is definitely known for, and a passion for independence, which is a strong part of our division's culture.

JC: What advice do you have for others who want to start gaming programs?

TF: Every school has its own culture and its own way of thinking about media. Because games are completely interdisciplinary, these programs are going to arise out of many different departments. There is no one way to start a program, as they might start from a Computer Science department, or a Film, English or Communications department. Our focus, because of where we are, is on designing games that have a more emotional appeal. We focus on the experience of the player. There are other ways to approach games, of course, such as a technology problem, which has certainly been successful at other places, but is not our strength. There are people in our department who are interested in that, but the focus is definitely more on the design side. If you are starting a department, make sure you acknowledge what you do best and make sure your students are also passionate about it. Make the program for your culture. There is nothing harder than trying to get people to be passionate about something that they don't care for. I've seen that—where someone will just declare a games program because it is the hot thing to do, but there is no one in the department who knows anything about games. We have been really lucky. Also, if you want to make games, you need to build a community to do it. Games are very hard to make alone. With a film, its better to have more people, but ultimately you can make something with just yourself and a camera. Historically, the reason people went to film school was because the tuition was cheaper than the equipment. That is no longer true. Now what you are paying for is the people, the professors, and the collaboration. The same thing is true of games, except that the equipment is still very esoteric, expensive, and difficult to use. Getting a community of people who are passionate about games is very important.

JC: For students at schools who don't have this equipment or gaming programs, is there a way for them to learn how to make games?

TF: Sure, people are starting game design clubs all over the place. This points back to the methodology that you don't necessarily need to start with computer games. When they are learning to design games, the technology usually excites people, but they don't often realize that it is a process that can begin without technology. If you don't have a

group of people, you can just start making paper prototypes and begin to hone your creative skills apart from learning the technology skills. Also, most community colleges will have basic programming or digital media classes that will teach most of the technology.

The State of Video Games

JC: How does the average video game get made?

TF: The cynical answer is that they just remake another game. A developer will have a game engine that works a certain way and they will come up with a new idea that uses that existing engine, but perhaps with a few new features. There is a great advantage to just re-using that engine in another game with just another skin over it. Publishers have an investment in certain genres. The industry is very genre oriented; it reminds me of the classic studio days in Hollywood, where essentially there are six accepted genres or so and we just keep getting the same genres with different skins added onto the same engines.

JC: Genres are based on the type of game engine used?

TF: Yes, genres in video games are based on a set of mechanics. The first person shooter (FPS) incorporates the mechanics of a first person camera, line of sight, and basically shooting which is line of sight. There are many variations on this—multiplayer, single player, story based, you can have Nazis, aliens or zombie-monsters from Hell, but basically that sums it up. Of course there are other genres. I would personally equate the multiplayer FPS genre with horseplay or tag; it is certainly very fun. Single player FPS are usually narrative-based, but with the same basic mechanics as the multiplayer games. Genres play on a set of audience expectations and allow the designer to rely on certain conventions and codes without explaining too much. This makes everyone feel safe and happy, so it is easier to make these games over and over, and it is easier to play them, as the audience basically already knows how they will work. In the game innovation lab, we try to discover other activities and nuances that we can model and bring out to create new genres of play—new types of emotional experiences in games. That is risky. Publishers and developers have trouble doing that because so much money goes into it, but we have the knowledge that we don't have to totally succeed every time and that failure is ok, and is sometimes a critical part of the design process.

Now we have an amazing sea change on the horizon, in which Nintendo has thrown down the gauntlet and proclaimed that games need to change. They can't just be for serious gamers anymore.

JC: Where do you see the Wii taking gaming?

TF: Video games are moving toward shorter, more social events with *Wii Sports, Wii Play* and *Wario Ware: Smooth Moves*. We all live such busy lives; who has enough time

to play a forty hour game? *Twilight Princess* makes me feel like I'm making my way through *Moby Dick*. What I really want to do is play for 20-30 minutes after work and play for a while to unwind.

JC: Has your taste in games changed over time?

TF: Yes, as I get older, it is true that there are fewer and fewer games that are marketed to me. I remember getting *Warcraft 2* and thinking that it was brilliant, just like *Star Wars*, with the grand music and the emotional effects, but now I think, where is a story for the person who loved *Warcraft 2*, but who is just a little bit older? There isn't a lot of choice in that regard.

JC: What do you think that story is?

TF: Well it's an interesting question. Can you make games about topical issues? About serious, romantic, or controversial issues? Ones that may spark our interests more? It's an interesting question because I really would love to play games that would challenge me intellectually. I want to play games that create deeper emotional connections between me and the characters. I guess I don't really know yet. But I love games that start to approach it—like *Shadow of the Colossus—*or games that are stunningly original in their look and feel like *Okami*. There is a generation behind me that never lived in a world without video games and I suspect that they will be the more natural creators of these new games and their languages.

JC: There was recently some controversy with Slamdance, a video game festival that was supposed to feature the more controversial and "adult" side of video games. The programmers pulled *Super Columbine Massacre RPG* from competition. Subsequently, USC dropped its sponsorship of the event and several other game producers removed their products from competition as well. Can you explain this game, the controversy and the larger issues that this has brought to the surface in the video game community?

TF: *Columbine* is a role-playing game, where you can play the two Columbine shooters, Eric [Harris] and Dylan [Klebold]. You walk through the events of that day all the way to the end. Eventually, you can go with the boys to Hell. Essentially it is a game that puts you in the shoes of these two very disturbed young men. To me, it's not an easy game to play; it's really disturbing. In most games the enemies fight back. You can get caught in the early part, if you're not careful, but once the shooting starts, it's just fish in a barrel and not fun to participate in. One of the ironies is that the Hell level is really hard, but the more people you kill, the more powered up you are in Hell. When you talk about the mechanics and what they mean, it's a terrible statement. I don't think it's a great game, but I do think it is important that games be able to address subjects like this. It is certainly provocative. Games like this will be made and they will be made better in the future. To have a venue like Slamdance pull this game from their competition speaks to a cultural bias against games as an art form. It basically accepts the notion that games cannot be about serious subjects. Scott Fisher—the chair of the Interactive Media Division—and I thought this was against the entire philosophy of what Slamdance was supposed to

represent. So we decided to pull our support of the contest in protest. This was the only way we could take a stance for what we think is the future of games as an art form. It would have been easier to just let it go, of course, but it would not be responsible. Games should not be treated as a lesser art form. And independent games shown in that venue should be treated with the same respect as the independent films that are shown there. As a culture, we understand there should be a venue for interesting films; we need to have the same understanding for games. It is an issue of the cultural acceptance of this particular medium.

JC: You mention you didn't even really think *Columbine* was a particularly great game. Why was it a finalist in this competition?

TF: I would argue that for all its problems—and it is a very disturbing game to play—when I played it, I thought about what those boys' lives were like more than I did when watching or reading any of the news coverage on the tragedy. It made me think about the disconnection and the delusion that they had to be living in to believe that they were heroes. One minute they think they are heroes, another they are realizing what their parents are going to think. You are doing it; there is a sense of being implicated that isn't in any other medium. For all of its faults, I think intellectually the game is quite critical of the very characters you are playing. It has a crude energy about it. The graphics are somewhat crude and have an 8-bit look and feel. Everything is cartoon and blocky, and yet you are dealing with this edgy, important content. So there is a lot going on in this game. And it would seem that the Slamdance jury agreed with this, since it was a finalist.

JC: With so many more people playing video games now, I imagine many will want to make experimental and perhaps controversial video games themselves. What advice would you give them?

TF: First, it is very expensive to make a triple-A title. You are not going to make something like that on your own, but if you are making independent films you aren't going to go out and try to make *Spiderman*. Independent games cannot be huge, but they can be pointed. I tell my students that they should make a little jewel of a game, one that is perfectly cut. A very small game can have very large play potential within it. I mean, look at chess: it has huge long-term play potential, much more than even a gigantic, epic game like *Gears of War*. While you are never going to match the media content of a huge game like this, you can match the play potential by concentrating on creating a small, re-playable system.

JC: The Internet and online distribution has made it much easier to get these games from smaller producers to an audience. What do you see as the negative side of this distribution system?

TF: You are right that it is really easy to make an independent game: put it on the web and get people interested. But it is not easy to make your money back on it. That is a major catch. The newest consoles *might* make this work with their introduction of smaller, downloadable games. A version of *Flow*

(http://intihuatani.usc.edu/cloud/flowing/), designed by some of my students, started online for free and has now been re-made and released as a downloadable game for PlayStation 3. It is not a huge console title, but it is a fresh, unique one and is doing very well. The idea is that these are smaller games that the various companies and audience can take a risk on because they are so much cheaper than a boxed game.

JC: Do you think more amateur game makers will really be able to get their games onto consoles because of this new mode of distribution?

TF: I don't know about amateurs. Making a game for a console is not easy. I see that there will be tools that will allow for amateurs, or semi-professionals, working outside the bounds of the industry to get their games released. "Amateur" connotes people who might not have the skill-sets. What I'm guessing will happen is that there will be tools that will allow for the creation of demo games, and it is possible that there will be an easier route for those demos to be released. Right now there isn't a huge precedent. *Flow* is part of that, but nothing is certain yet as to the future of this type of distribution.

JC: Along with this new distribution scheme, the PS3 especially is marketing itself as a super-photographic, textured blood-on-the-walls device… how come no one ever hugs in these games?

TF: Hugging isn't part of the game mechanics of most games… but also, surprisingly, the technical aspects of collision detection on avatars which would be necessary for a "realistic" hug, is actually somewhat difficult to program. In *Second Life* you used to be able to put your characters right up against each other and move their arms to make them look like they were hugging. And then on a later iteration the programmers "fixed it," so now you can only come so close to someone, and everyone complained. So they put it back. For a programmer, fixing a bug regarding collision detection was a clear positive; to the players, it took away an approximation of something they wanted to do. It wasn't a bug for them, it was ability. I think that this is one of the things we need to get over. In classic computer science, things are problematized in a certain way, having to do with modeling perceived reality. And perceived reality has collision detection of a certain type. That is a problem when a character's arm goes like that. But perhaps in another realm this isn't a problem. Perhaps these glitches provide solutions to other issues, like the inability to hug. I think this all comes back to the idea of player-centric programming.

JC: When you are making games, how conscious of the platform are you that you are making them for?

TF: You have to be very conscious. The truth is that in many ways, every platform has its own language, its own constraints, and its own potentials. It also has its own connotations and unique ways in which people think about it. People think about theme parks in a different way than they do about movie theaters. I learned this when making the cinematic games at Interfilm: we just tried to jam one form of interactivity into another, and that is very difficult to do. I think that company and its products would have

done much better in a theme park setting. There are certain types of games that work very well on PCs, and others that work well on consoles. Others will eventually work fantastically for cell phones, iPods, etc. Each one has a different constraint. For example, I've been working a lot on theme park ideas recently, brainstorming ideas for location-based entertainment. The constraints of those platforms are situations: why do you go to these places, who do you go with, what are the age ranges of visitors, who are these people and who does this need to be a call to action to? This is very different from the games I made for the web, where people had to come to your site and therefore you knew they had a certain level of technological background just by getting there. In a public environment, how can you know? It is grandma *and* the grandkids… how do you design for all of these groups of people? You have to consider the technological platforms and also the skills, experiences, mindset of why the people are playing and what they expect. One of my pet peeves about games is that they don't invite you very well. Let's say someone invites me to their birthday party and they send a one-line email saying "My birthday party is at this day at this time," that's it. No "please come, we'd love to see you!" This is how computer games treat players. If you want someone to come to your party, you need to really *invite* them. It is the same with a game.

JC: You've been doing some work for Disney lately, What lessons do you think game makers can take away from the happiest place on earth?

TF: Tons of lessons. It's hard to think of the most important one, but in general, a focus on the emotional draw. What pulls people from one space to another? What is going on in their heads when they walk through the door, actually or virtually? Imagineers have explained to me that they designed the entrance so that the way you walk through the gates you go through one of two tunnels and suddenly the real world disappears from view. There is a complete physical and psychological separation. And of course, once you get into Disneyland, the scale of the world is different. In a very simple, unnoticeable way, life becomes more charming; things become a little smaller. That is just genius— that type of detail is exactly what I am talking about. This is opposed to many video games, which say, "Do this, now do that, now do this"…in a very hostile way. There are a ton of actual tricks that you can learn from Disney, but first and foremost that paying attention to the psychological space of the player is key.

JC: Right now you are working on a video game with Bill Viola. I've read in various other places that your goal in this collaboration is to find the "game mechanic of enlightenment." So tell me, what is the secret to enlightenment, and how many lines of code does it consist of?

TF: Looking back on saying that, I now think it was an extraordinarily impertinent question. I don't know if there is a game mechanic of enlightenment, but we are certainly trying to make this experience unlike other games. My own process of discovery as a game designer has been to allow Bill's ideas and thought process become the basis for the development of the game mechanics. If the team responds emotionally to a concept, we go in that direction; if we don't respond, then we go in a different direction. I never know exactly where we are going, but it has been a fantastic journey. We wanted a world

that was not photorealistic, a world you can walk through and interact with. We wanted it to feel more poetic, to have its own sense of place. The goal is to create an emotional resonance within the player. There will be things to be discovered, but there isn't a prize; there will be an ending, but there won't be a win condition. When we asked "what is the mechanic of enlightenment," we were just beginning the process. Now, we are asking new questions that are more specific to the moment by moment experience of the player. One day, we were all entranced by a particular game moment. We watched it for a long time together and were awed. We actually had an emotional experience with our own game, which is pretty hard when you've worked on something this long. I knew at that moment that we were going in the right direction.