

Visualizing Data for Pleasure
Heather Kelley on Game Design,
Sexuality, and User Interfaces

Diana Pozo and Heather Kelley

Independent game designer, hacker, and artist Heather Kelley¹ is known for her innovations in interface design and for exploring representation of women's sexuality through video games. Kelley co-founded Kokoromi,² an experimental game design collective, and she is also a fixture of the alternative game design world, regularly serving as a jury member for gaming festivals and as a presenter at gaming and technology conferences worldwide. I spoke to Kelley in July 2012 during the run of *Joue le Jeu*.³ Kelley co-curated this Paris exhibit of interactive play, which focused on tactile, social, and mixed reality games.

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This interview links Kelley's early career, in which she innovated in the representation of female sexuality through games, with her more recent career, which focuses on alternative interfaces and embodiment. Throughout her work, Kelley focuses on alternative ways to represent data and new senses—tactile and proprioceptive rather than audio and visual—through which

data can be explored and manipulated. Kelley is particularly ingenious at repurposing existing interfaces to do new things.

Kelley's 2005 game concept, *Lapis*, for the Nintendo DS, was an abstract visualization of female masturbation. Users would use the DS's various interface capabilities—its touchscreen, buttons, and even its microphone—to prod, tickle, and whisper to a cartoon bunny, trying to take the bunny on a "magical pet adventure" to its "happy place." Though it was never produced outside of a demo form, *Lapis* won the 2006 MIGS Game Design Challenge.

In 2010, Kelley designed an iPhone app, entitled *Body Heat*, as a remote control interface for OhMiBod's line of audio-controlled vibrators.⁴ While these vibrators were designed to pulse in time with users' favorite music, Kelley used the OhMiBod's audio capabilities to design one of the most complex vibrator interfaces available.⁵

Most high-end vibrators feature a series of pre-programmed settings accessible by scrolling through settings with a button. Kelley's OhMiBod interface, now known as the OhMiBod Remote, visualizes these touch sensations on an X-Y axis. Though novelty developers use the term "haptic data" to discuss toy control information transmitted electronically, this data is often invisibly synched to existing pornographic video content. Rather than visually representing female anatomy, Kelley's OhMiBod app represents the data itself as colorful, glowing fingerprints on the blackened screen.

In a 2013 presentation at Lift13 in Geneva, Switzerland, Kelley argues that interface design is the central problem facing the women's sex toy market today.⁶ The mechanical action of the vibrator, for example, has not changed since the nineteenth century. Thus, the range of sensations available to the user is dependent almost entirely on the user interface. As high-end sex toy design becomes less focused on representing body parts and more oriented towards abstract and functional design, this interface-design problem becomes a problem of visualizing haptic data in space.

I began by asking Kelley about her OhMiBod app design, and continued with a discussion of her design process for *Lapis*. Finally, Kelley discussed her design philosophy, both for erotic games and for other alternative game designs.

Diana Pozo: *What inspired you to create a mobile app interface for a vibrator?*

Heather Kelley: At least two or three years prior to when my app came out, [OhMiBod] released their hardware that is pitched as working with your audio device, which by the time they released was primarily marketed and branded toward iPhone users. I cannot even remember when I heard about the OhMiBod, but I was interested in it because I had been doing work in interactive technology related to women's sexuality and it sort of caught my eye.

I am a digital artist who has worked in a number of different media including audio and sound and music, and I'm very interested in sound because I'm philosophically interested in getting away from vision and from screens too. There was this vibrator that was based on audio input and was marketed towards iPhone users, and had good design.

That's the other thing [that inspired me]: the growing trend of sex technology that was more influenced by and actually paying attention to women's bodies, women's needs, and women's "aesthetics," if you could call it that.

There [were] so many things about [OhMiBod] that intrigued me. I bought one, and the first thing I thought was, "well, ok, I can play my music with this, I can plug it into any iPhone—or iPod—but now that the iPhone is here, it would be so much more easy and intuitive, and it would give you so much more flexibility to just use this touchscreen as the input device to drive the audio!"

By that point I understood technically how it works: it takes the output from the regular audio jack [of the iPhone] and there's a chip inside that transforms the audio signal into a vibration signal. With a touchscreen attached, you could really control a more nuanced range of sensations from the vibrator than you could with [the] seven preprogrammed settings, which is fairly standard [for vibrators]. It just does these certain things and cycles through them with one button, like, "push the button and go to the next pattern!"

I just looked around and realized, right now, as far as I know, no one has released anything like I imagine, and I have the technology, and I have the

people. To me this was an art experiment. [I thought] I'll see how far this can go, and I'll make it a real thing, I'm not gonna shortchange it.

I went ahead and did it and published it, but then immediately got in touch with OhMiBod, because I knew that it would be very interesting to them, and of course it fits within their aesthetic, but it was created completely independently. They were extremely interested and so within a few weeks we had already struck a deal, and now they're the publishers of it. Very little time passed between me self-publishing and calling it Body Heat, and them buying it and it becoming the OhMiBod App. OhMiBod Remote is what it's officially called.

You were talking about how it was easier or more subtle to produce different types of patterns using the interface of the iPhone. What were the concerns that went into figuring out a design for the app and figuring out how you wanted it to be controlled?

There were a number of different concerns that we discovered along the way. One of them is that not all of the vibes are functioning in exactly the same way. They don't all have exactly the same guts. Different vibes in their line of vibes have different responses to the iPhone. If you only have one of those, then you just dial it up or dial it down according to what you like, but if you are trying to make an app that can equally serve [all] of them, it's a little more complicated. The answer is still just dial up or dial down the volume knob, but it's hard to explain that when you are doing something that within the app you can also dial up and dial down the volume. It's just that doing so on the actual hardware volume will determine the overall lowest and highest sensation that you get, and then the app will be able to vary between those dynamically. It was really hard to get that perfect—it's kind of like in a game when you're trying to develop simultaneously for multiple [types of] system hardware. The solution to that is just to try to find a happy medium, and then let people know. So we have a little pop up at the beginning that says you can use your volume controls to control the overall intensity of the vibe.

Another concern was that to make it the most efficient vibration, the app had to create a specific sound wave, and that sound wave isn't really pleasant to listen to. We didn't want people plugging in their headphones and listening to the app. We wanted it really to be through the vibe, and so in the end we decided that if they don't have something plugged into the jack it won't make

the noise. So you can't just hold your iPhone up to your ear and hear the noise that it makes. You could hear it if you had headphones on.

It was a choice to not expose the sound primarily because it doesn't make any sense to the ears. It's really tuned precisely to what the vibe wants, and to the human it's just like "bong bong bong bong;" it's completely uninteresting and not sexy in the slightest.

The other was in terms of how the visual interface behaves. I want something that's kind of sexy and attractive but without being overtly pornographic, because it's just not as interesting for most women—I would make this broad generalization, I could be totally wrong—maybe women really want to look at something that looks like a vulva and touch it, but my personal choice is for it to be more symbolic and sexy without being literally graphic and sexual. I've seen apps before that were more about—more aimed at men—that were about women's bodies and stroking them and were meant to be a visual turn-on. But frankly part of the appeal of the app was for it to be really functional. You're not looking at it and playing with someone's body. You're using it to control something that you're using to touch yourself, and you're likely not even going to have your eyes open.

If you make it really graphically pornographic, the other legality of course is you can't actually sell it in the iPhone store. So there were multiple reasons not to go that route, but that wasn't my initial reason. My initial reason was just because I'm not interested in looking at that if I'm trying to get off, and I don't need it, and it would probably be inaccurate. You can't analogize the anatomy on a screen to the sensation you're creating.

So it was really important to me that the visuals were more visualizing an aspect of what you were controlling—the intensity of vibration, the speed of the vibration—so we worked a lot on the graphic design and visual design for those very dynamic things that were happening, which is why you have the color intensities. You can't make a literal mapping of color to intensity, but in general it is the more white hot brighter it gets, the stronger it is, and then the more muted colors—blue and such—are slower, and more relaxed, not as intense. And also you'll notice a ring that's shooting out of it, a white ring; it's a pulse, actually.

I was inspired by graphic design using heat maps. In the very literal manifestation of heat maps: the colors blend together, but they really do, on a point-by-point basis, represent a certain piece of data or information. In our case it was more of a bloomy—bloom is a computer graphics term—it's sort of that glowy type of feeling to it. It's not literal; and more evocative. You can notice when you see it in a certain color in a certain spot on the screen it's more intense than in another color on another spot on the screen. And the rings that shoot out of it are not literally at the same rate as the pulsations or the variations in the speed, but they are relative to it. I forget what we made the ratio in the end, but they're shooting out like every other pulse in the vibe. Essentially it was about finding the happy medium between making it a literal visual infographic, if you will, and doing something that is just more evocative of the changes that you are experiencing when you use the app, rather than a literal representation of what is happening.

Lapis has a more representational graphic style than the OhMiBod app, but it's still more evocative of something sexual than literally representing an image of a naked body or something that's intended to be visually arousing.

I'm interested in female sexuality, but not as a spectator of it, watching other people's sexuality per se. I'm interested in improving my own, and the experiential side of that.

It should be noted, because I guess it's relevant, that I'm heterosexual. Perhaps if I was lesbian, I'd actually be incredibly interested in visualizing women's bodies, but for me the emphasis is on what are the most appropriate visuals for the non-graphic. For me, graphic representations of female sexuality are not very interesting. I'm coming from the world of games. There's a lot more standard porn out there than there is alternative, more appealing—to me—content.

But in my case, with *Lapis* in particular, I was more interested in the metaphor and being incredibly approachable. I'm already kind of out there on the spectrum of what I'm familiar with, and what I've seen, and what I am willing to consider sexy. There's plenty of other people—women, particularly—that just aren't interested in the graphic representation of women's bodies at all. There's a reason why there is a huge number of women who are reading erotica or, you know, reading things like *50 Shades of Gray*, and not

looking at porn. It's because it's just not as visually interesting for them to see the sex acts as it is for them to experience it in other media. It's always uncomfortable for me to make these huge generalizations, but at least in this case, I think the evidence is there. So for *Lapis* I really wanted to have something that was sort of cute and approachable.

The other reason is that the people I was reaching with this app were not the ones who were already comfortable with their sexualities and with graphic depictions of women's bodies—those people already have things they can look at and things they can use and things they can do. I was more interested in reaching people who maybe were less comfortable with the really overtly graphic representations but would be able to benefit from improved sexuality in their lives. That's what it was for me: who was my market?

It should be said that *Lapis* is not a real game. It's completely imaginary. It gets treated like a real game, and I guess I don't fight that too much, because I love the sort of culture hacking that that entails. But it's not like it's a commercially available application. It's simply an idea presentation and a—at least it used to be—a playable demo.

So there would be no way that anyone could actually play this on the Nintendo DS?

Not unless they code it themselves. I totally release all intellectual property to anyone who wishes to take that forward and make *Lapis* real on a DS.

The interesting thing about Lapis is that it almost looks like it's a game for children or teenagers.

It looks like it's a game for the DS!

Exactly, exactly. I guess adults would also be playing those types of games on the DS.

Yeah! I mean think about it! Who played *Animal Crossing*? Ok, sure, maybe some kids, but all of my adult gamer friends were playing it. It's really about the cute visual aesthetic. I even today was discovering for the first time that there's an entire world of adults, including guys, who are really into the new *My Little Pony* TV Show!

Bronies!

Yes! I think *Lapis* might be for the “bronies” of the world, or something, if it ever existed. But it doesn’t exclude other people from playing it. You’ll see this as a common thread throughout my work: it’s about sexuality but it’s not explicit visually. It’s sexy without trying to throw it in your face.

You were saying earlier that one of the major things you are interested in as a designer is to move beyond the level of literal visual representation towards using the other senses. Why are you interested in working with senses like sound, touch, and smell?

It’s about feminism in a way, because it’s about subjectivity and objectivity, and how different senses, for me, are representing different understandings of subjectivity and objectivity, or subject/object dualism. You can see something and have a completely “you’re the subject and it’s an object” relationship to it, but if it’s making a sound, things that make sounds have much more of a subjectivity of their own and force you to think of them as something that moves and lives and can respond to you. It’s just the ontological difference between something that you just see and something that interacts with your other senses. [In my MA thesis^[7]] I was talking about sound, although maybe I could think of others.⁷ To me, smell and taste are much more related to things that really are organic or are alive, whereas the much more symbolic level is still with sound. That’s kind of what I was thinking then, and I doubt I’ve really changed my mind from that. I just don’t actively think about it. But I definitely try to promote the other senses in the creative work that I do.

Could you tell me more about the way you think about modifying or working with existing technologies like the DS and the OhMiBod/iPhone? I’m thinking of how your Touch Tent project used a modified Kinect as part of its interface. It seems from just being around in the online world of gaming that there’s a huge culture of modding, and that a lot of alternative game design is about what I would call “queering” existing technologies, as a verb.

I’m really interested in that, and it’s funny that you pointed out that you could call it queering, because that’s true, but there are a lot of other words for that, completely dependent on the context or the circles you run in. A lot

of people nowadays would of course call it *hacking*. For decades there's been in French the word *détourne*, so like, "de-turn," and there's no real good English translation for it. It's basically just hacking or fucking with: changing something to become something it was never intended to be. I'm incredibly interested in the transgressive aspect of that in general. But I think it should be said that the projects that you've mentioned, while they are using a certain technology in a way that most people wouldn't expect, they're not really hacking it per se. It would be a little bit of a stretch to say I was queering anything. I'm not hacking the OhMiBod or the iPhone, I'm simply making content for it that uses its capabilities in a way that doesn't get used all that often. Maybe that is the definition, but I'm not hacking. I'm not taking it apart and reimagining it and putting it back together. It could be hacking. I'm totally contradicting myself.

I don't know what hacking refers to anymore.

Right. It's become so hip that everyone wants to say that they're doing it. I'm interested in that. I guess that's what I'm doing, but I'm not doing it by breaking it apart and making a thing that only one person has. I'm doing it by using the existing embedded abilities of the system and proposing, usually software, that would use those in a different way than people would expect.

One of the things that you've done that I think is really interesting and unique is that the concept of the touchscreen is so kind of "hard and flat" today, but you've done a couple different projects that have dealt with the idea of touching something that is flexible and soft.

You're right! I never really thought of it that way. It's partially about having tactile feedback that the screen cannot give you, although haptics has sometimes allowed that the device will vibrate when you touch it or something like that. I haven't intentionally pursued flexible things, but it is certainly something that interests me that you have these other channels of information that don't get used very much because they're difficult to mass-produce, but that can be very enriching or very immersive bodily experiences.

The project I'm working on now is curating an exhibit of games, both video games and sort of installed large experiences of play, in this cultural center in Paris [*Joue le Jeu*]. I'm also interested in the kinesthetic experience, not just

touching with your hands but how your body feels when moving. The latest project is a hopscotch. The game itself is about interactions between people. Depending on which people are playing, it could be as innocent as two ten year old friends who are playing it or two people out on a date who are playing it, and the fact that you are demanded by this game to hold hands and to give each other compliments ties it in to that trend of mine to have a more tactile, and, you know, the bottoms of your feet are tactile too!

Let's get back to the touchable tent thing, because you are lying down instead of standing up to play it. So you have a completely different mentality when you're playing it and different gestures are available to you. Part of my fantasy, that I don't think was ever realized, because it's sort of ridiculous, was that you could control the thing using your feet. And I don't mean just like a dancing game, using your legs and moving around. You could have four or more—eight points of contact or eight trackable spots with this interaction—because you could have two people that have both hands and both feet manipulating it somehow. That just amused me. It doesn't really achieve that but it does support multiple points of contact. You can't really do that unless you're lying down or sitting down or not standing on your legs and doing the normal thing people usually do when they're in front of Kinect. That's actually more important to me than that the surface is touchable. That technologically was just the easiest way to get done the project I wanted to, of having people lying down while using this giant touchscreen-type thing with their feet.

Was there anything else you wanted to say or references you wanted to point people to that I didn't ask about?

I'm kind of at a point in my creative life/career where I'm trying to figure out what is the most interesting thing to do next and where do I want to take it. Do I want to work on more sensual/sexual stuff? People are asking me to do things related to that sometimes, but I don't want to be pigeonholed, but it's still interesting.

If you were to start over, what would be the concern that would drive you at this point? What if you were starting from scratch and no one was thinking of you as an erotic game designer?

I'm not sure. For sure it has been incredibly valuable for me personally and professionally to think about those things and to build a career partially based on that. For a lot of people working on activism around sensuality and sexuality, you don't want it to be seen as the only thing you can do. You want it to be more a part of everyday life and less ostracizing to work in that field, and have it recognized that you can do something like that and then also apply the same skills for design in other fields.

It's just hard, especially in the United States. I've gotten over the point of worrying what my parents will think, because they already know, since Lapis at least, and I haven't been disowned. It's really more about what jobs will I get going forward. Will people only approach me with doing more stuff about sexuality?

To me it's more like, what design problems in the world need to be solved? Sex technology is one of them and it's a big one, and it's one I am interested in solving, but it's not the only one. Most people who approach me about talking about things aren't even wanting it to be about that aspect of the conversation. To me it's about how can design improve... how can technology bring more women to orgasm? But that's not the only question! That's all I can say: that's one very important question, but sometimes there are other questions I'd like to answer.

Notes

1 Heather Kelley. *I Crave Rapport: The Project Log of Moboid*, accessed 9 September 2016, rapport.moboid.com.

2 Kokoromi, experimental game collective, www.kokoromi.org.

3 "joue le jeu / play along," exhibition at La Gaîté lyrique, Paris, France, 21 June–12 August 2012, gaite-lyrique.net/en/exposition/joue-le-jeu-play-along.

4 OhMiBod, "OhMiBod Remote App," accessed 9 September 2016, ohmibod.com/app/.

5 Since this interview, OhMiBod has launched a significant update of their Remote app, giving it a complete visual and functional overhaul. The new version's touch visualizations are not the exact designs created by Heather Kelley. For a demonstration of Kelley's original app design, see Perfect Plum, "OhMiBod Remote app," 11 November 2011, accessed 9 Septemebr 2016, perfectplum.com/portfolio/ohmibod-remote/.

6 Heather Kelley, "Designing the Female Orgasm," presentation at Lift Conference, Geneva, Switzerland, 17 February 2013, accessed 9 September 2016, rapport.moboid.com/designing-the-female-orgasm/.

7 Heather Kelley, "Ontology of the Senses in Interface," *Perfect Plum* 7 April 1997, accessed 9 September 2016, perfectplum.com/portfolio/senses-in-interface/.

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