Designing the Future of Sex

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One model would be a cluster of small apartments, each with a bedroom each for the parent and the child or children, a separate bathroom and a small private living area. All of the apartments would share a common kitchen and living area. Trying to shoehorn that relationship structure into a set of more traditional apartments might work, technically, but it's very difficult to create that sort of social structure without support from the environment.

Even if the group can afford to have custom construction work done,it is difficult or impossible to build housing like that, between building code requirements and banks that won't lend money for non-traditional structures. Needless to say, economically disadvantaged parents, who could benefit even more from a collective structure, are even less likely to be able to find or create such housing.

There are almost certainly a wide variety of housing types which should be investigated, along with the corresponding relationship structures that they'd support. Until we can get variety into the available housing stock, heteronormative relationship structures will retain a huge amount of power.

Conclusion

This paper covers a lot of ground. I hope that some of it will give you new ways to look at how we do and can construct relationships, have sex, and live our lives. All of these things are mutable, and redesigning the context in live can change the way we live. Also, remember—sleep with your local designer! The future of sex depends on it.

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tions have proved to be fascinatingly flexible legal entities. Why not use that same structural construct and design a modular structure of contracts to enable a whole spectrum of legal relationships between whatever groups of people decide they want a legal relationship? Of course, designing a set of contracts and ensuring that they'll be legally enforceable are different matters, but without an existing model, there's nothing to fight for.

Family Cohousing

The economic structures of heteronormative relationships reinforce those relationships in the culture to an impressive degree. If we want to break the pattern of relationship structures, we have to break the economic relations that create, support, and enforce them. Divorcing economic structures from reproduction is just as fundamental of a social change as divorcing sex from reproduction is. This, of course, is an amazingly complex problem, many parts of which have more to do with social norms and economics than design. One area that is intimately connected to design, however, is the way those heteronormative economic reactions are programmed into and enforced by the built environment, the architecture around us, the houses we live in.

Raising children is hard. Some form of income and labor sharing is hard to do without, and it strains the resources even of many couples. The dominance of the intimate couple as the core of the family unit is reflected in housing, and attempts to construct alternate sharing arrangements literally don't fit.

Picture a group of three to five people, all either raising their own children or committed to help raise the children of other people in the group, but none of them involved with each other, although they may have partners, even serious long-term ones, outside of the group. Where do they live?

Breastfeeding is a fascinating and complex interaction with a new child; we're still learning all of the things it does. Among other things, it appears to encourage an emotional bond above and beyond the intimacy of the experience. There's also a transmission of disease immunity via breast milk. Traditionally, of course, breastfeeding only occurs with the birth mother, not other members of the family (excepting wet nurses). This is limiting even in traditional heteronormative families, as the father is excluded from this relationship.

Medically, though, there's no reason for this—inducing lactation is medically trivial, for both men and women. Why not use this ability to redesign the non-traditional family unit? Criticisms are leveled at non-traditional families raising children for not having a natural connection to the child. Obviously, these are more politically motivated than they are motivated by any meaningfully objective understanding, but why not redesign that relationship further, to strengthen that natural connection? As it is, breastfeeding is frequently complicated for mothers who want to work, acting as another site enforcing the heteronormative economic relationship of motherhood. If all of the care-giving adults in the family can breastfeed a new child, that problem largely goes away. Of course, the existing construction of masculinity would be challenged by this, but is that a bad thing?

Nontraditional Group Legal Structures

Gay marriage is fine and all, but really, is that even what we want? Congratulations, the heteronormative relationship contract has been extended one tiny notch. Why not fight to blow it out of the water, instead?

In the 1886 decision in the Santa Clara County vs. Southern Pacific Railroad case, corporations were granted rights as natural persons, with almost no precedent. Throughout their history, corpora-

Introduction

Objects, experiences, and systems are all products of design and have a huge effect on every aspect of our lives, in ways we often do not even realize. Sex and relationships are, of course, no exception. Social desires feed technological changes as they fund, prioritize and permit research, but the objects and concepts that come from those changes affect society too. Can we subvert those desires through design?

Social change requires mass disruption—individual hacking can at best prefigure and rehearse it. When technology changes society, the change starts slowly and accelerates and accumulates as it goes. Five years of change barely registers, but twenty can change society to the point where it is almost unrecognizable. Compounded over time, design can be a profoundly disruptive social force. Knowing what might be later opens our eyes to what can be now, and the fictional future can teach us about what is really transgressive in the actual present—it permits us to see our context from the outside.

It's going to get pretty weird around here. In this paper, we will explore this territory using design fictions as a lens. Specifically, we are going to examine some of the following questions, which were used to generate the fictions we will see:

Intimacy

- How can artifacts and services enable new forms of intimacy, and in doing so, alter the constraints under which it acts?

- Does virtualizing intimacy help or hurt real, modern relationships?

- Can we qualitatively change the kind of sex we are capable of?

Identity

- Can redesigning the experience of sexual interaction profoundly change the interactees?

- Can an artifact alter our socio-sexual identity?

Awareness

- How does making difference visible change society?

- Can we change sex by intermediating it?

- Can mediated social awareness empower networks of sexual change?

Control

- How can design shift the locus of control in the interactions that revolve around sex?

- Can we create entire new vectors of sexual control, or erase old ones?

Economics

- Can we enable in people the power to escape rigid heteronormative economic relationships?

- Can designed changes to sexual economics act as a disruptive social force?

A Note On Politics and Possibility

The fictions in this paper tread right around the line of possibility. In general, everything we are considering is firmly in the realm of the known possible—often not something we can realize

You decide you'd like to get laid tonight, but you don't really have anyone specific in mind. So you send out an SMS to the Emergency Bootycall System. It propagates out, first going to your A-list, and then if no one has taken you up on it, your B-list and your C-list. You've told the system that you'd like dinner beforehand as well, so the system looks at the preferences you and the respondent have both set and selects a location. It looks at your calendars, figures out when you're both going to be off work, and sets a time, and if necessary, sends a reservation request.

Say everyone you already know is busy. The system asks you if you like to throw out a wider net. Maybe you'd like a surprise. You tell the system to set up a date. It tells you to be at a specific place and time, and you meet someone there. You've already told it what you're looking for, in general and tonight, and it knows who's off limits. The people whom you've slept with have vouched for you, in a distributed reputation system, and other people have decided how much they trust those people's opinions, and about what, so when a stranger sees your request, they have a measure of what the community thinks of you, and how distant you are socially.

Enabling Nontraditional Reproductive Groups

This concept and the next are less design-related than most of the rest, but they have implications that are too interesting to pass up.

Given the biological complication of a pregnancy, it seems unlikely that we'll see reproduction literally and completely divorced from sex anytime soon. That said, gene manipulation has already allowed us to create embryos with more than one genetic mother, more than one genetic father, etc. This is obviously a good start toward a non-traditional reproductive family unit.

The prostheses she uses are static, not even powered, let alone wired into the nervous system. Additionally, the structural requirements for leg prostheses are more complicated than those for arms, as fewer shapes will accommodate walking. With arms, we can explore different forms, and we can even look at solutions entirely outside simulations of standard vertebrate bone-and- muscle movement.

Another interesting area of research emerging research involves what is called soft body robotics—basically, things that move by the same mechanisms as slugs, worms, caterpillars, or jellyfish. Instead of having a rigid skeleton with rigid joints that are actuated, soft volumes of tissue-like things change shape and volume. For example, one current Department of Defense research project involves a surveillance robot that can move like an earthworm and can change its shape, so it can squeeze under a thin gap under a door or a through narrow pipe.

Fabricating soft-body robots is, needless to say, very complicated. However, there's a lot of promise in 3D printing technologies, especially multi-material printing techniques.

Combining these different technologies, we see a fairly realistic path to construct a functional tentacle, either as a replacement limb, or possibly even just as an additional limb. The process won't be either fast or easy, but there's no reason to believe it's not possible, and not that far off.

How will people react, the first time they see a person with a tentacle for an arm walking down the street? How will they react the first time they end up in bed? If you lost an arm, what would you want to replace it with?

Emergency Bootycall

Fuck buddies are great. Everyone should have at least a half dozen. Scheduling, though, royally sucks.

immediately, with some notable exceptions, but not so far out on the development curve that we cannot understand it—the near future, where design becomes meaningfully possible. To understand how far out we may be looking, each fiction will note an approximate timeline of when it might be meaningfully possible. To the extent that the distinction matters, the fictions here are primarily all about designed objects, environments, or systems, even if they are very tightly integrated with the body. We will mostly avoid the territory of genetic engineering and similar issues.

It is worth noting here that just as many of the questions we are asking are not directly sexual, or even purely relevant to intimate relationships, many of the fictions are not either—if for no other reason than that sex is both necessarily political and heavily embedded in its lived context. It is this more complicated territory that we address here. Some of these fictions are intended as positive statements, but many of them are more ambiguous. The world will change, whether or not we really want it to.

Modern Flagging

Fractured identities complicate meeting people in a situated manner. Things like flagging (from the BDSM world) do not really generalize across social groups, but personal ad sites at best add another layer of division—after all, other people have to opt in to the site. The usual mechanisms of subculture work, but they lack any kind of geographic referent—the people you see at the club across town are not the people you see at the corner store. How do you find out if the woman next dooris into the same things as you? Subcultures and sexual diversity can alienate us from our surroundings even when they do not need to, making the lack of commonality the default assumption.

If you believe privacy is dead, why wait for people to announce they are looking?

You walk into a grocery store. Your phone looks around, figures out whom all the other phones belong to, and then drift-nets through their data shadows. You get notified, while picking out tomatoes, that the cute woman by the fruit really likes getting choked. You go say "Hi."

The mobile parts of a system like this are mostly trivial—the only hardware support needed is a bit more locative space-awareness and phones that are a bit more promiscuous with identities. Filtering the datashadow is the interesting part—semantic web style analysis, social network enumeration, heuristic analysis of past interactions ("If you liked sleeping with Susan, you'll love Mary!"), and careful use of all of the (increasing amount) of relevant information people put online.

There is an argument, of course, that there is a standard of public propriety that keeps us from thinking about sex in that very public context, but should there be? Is keeping sex out of public space actually creating the kind of sexual culture we want to live in? On the other hand, there are some implications of a system like this that are pretty scary—sexualizing public space is a double-edged sword in the real world of stalking, rape, and rampant misogyny.

Visible Identities

Fashion and body language, while both ubiquitous and versatile, have their limits as a medium to surface identity. Not only that, but they feed things we do not always want to feed. Want to show the world that you opted out as a consumer? Great, there are product lines for that. The complicated details of a modern identity cannot always be easily read in person—see femme dyke invisibility, for instance. Turning our bodies into physical billboards only goes so far, can only express some identities,and is really quite inflexible—subtlety, the complexity of a person, gets lost.

ulation, it is perfectly possible, with training, to drive a prosthetic arm from a patch of nerve endings on the upper chest, for instance. This is sometimes useful therapeutically when the amputation site is not suitable for connecting a prosthesis and also interesting for our purposes. Prosthetics like this are on the cutting edge of what is currently possibly with today's technology, not anything that is in wide deployment. There are many challenges here, of course, including the number of nerve connections that a surgeon can make—even a dozen is fairly challenging,let alone hundreds or thousands.

Penetrating the skin is a big current problem for prosthetics, both for wiring up electrodes and for physical connections to mechanically anchor the limb. Creating structural connections to bones inside the body is, if not easy, then at least reasonably well understood—see joint replacement technology, for instance. In order to connect a prosthesis, however, there must be a mechanical connection to something that is by definition outside of the body. One of the most promising routes forward here involves gum tissue—cultured and transplanted onto the site of the attachment, it might provide that bridge.

This research is all aimed at traditional therapeutic implants, of course. Attitudes around prosthetics are a fascinating microcosm of how society treats disability and medicine in general. Research is almost always aimed at trying to bring a disabled person back to the social norm. However, once the basic integration with the human form is working well, the range of possibilities is huge. Aimee Mullins, a double-leg amputee who has done a lot of ground- breaking work in artificial legs, including legs which let her run at or above the peak efficiency of a so-called normal human, told a fascinating story during a TED talk. She has a dozen different pairs of legs that she wears for different occasions, including a pair that makes her several inches taller. The first time she wore them, to a party, a friend was shocked to see how tall she was, actually exclaiming how unfair it was—I mean, prosthetics are never supposed to make someone more able than "normal", right?

Sadly, they are unlikely to become within the reach of our medical technology for a while yet. Even compared to the kinds of fairly invasive modifications we have talked about previously, large-scale body modifications appear to remain extremely difficult, if not impossible. Biomechanical hybrid systems, on the other hand, are potentially a different issue.

Would you give up an arm to have a prehensile tentacle in its place, assuming it could sense at least pressure and temperature?

Several emerging technologies are very promising when looking at biomechanically fictionalized bodies. The first involves functional electrical stimulation, a specific kind of electrical stimulation of the nerves. FES uses an external (or eventually, implanted) neuroprosthesis to stimulate nerves that have been injured. Current work has allowed paraplegic patients to stand and walk, and restored hand grasp function to quadriplegics. In addition, researchers are using the same technique experimentally to provide sense input from prosthetic limbs. Similar techniques are being used, again experimentally, to sense the activations of motor nerves at amputation sites, to drive the motions of powered prosthetic limbs.

Neuroplasticity is the phenomenon wherein the brain will reconstruct damaged portions and functions can migrate between radically different areas of the nervous system. It is implicated in all sorts of things, including stroke recovery and chronic pain. More importantly for us, it is also being used for modern prosthetics.

Using a combination of implanted sensing electrode grids and FES-style driven electrodes, a prosthesis can be attached to the ends of the nerves at an amputation site. Initially, the nerves will send and receive mostly noise, but via training on both the inputs and the output, a person can become attuned to the prosthesis. Their brain rewires itself as needed until they can use the prosthesis relatively transparently. One of the fascinating features of neuroplasticity, however, is that while it is helpful to use motor neurons for connections intended to move things, and sensing neurons for stim-

Why bother trying to make a complex identity fit into the commoditized physical world? Splash it around your virtual self! Replace the image of you that people see with a mutable full-body avatar, and show the world an entirely different identity, without any of the complications of physical objects. Don't want to push things that far? How about a simple set of icons that can stand in for different facets of your identity and show off different slices of your data?

For anyone who has not been watching it explode over the past few years, augmented reality involves digital information, either in some rendered form or just simple text or flat graphics being inserted into a video stream shot in real time from the viewer's position. For example, one can hold up a phone to a scene, and have it act as a lens, appearing roughly transparent. The information overlaid is located positionally in the world, augmenting the view you have of the space.

AR has been exploding for a lot of reasons, and it seems pretty likely that it will continue to become an important component of how we interact with the world. Currently, short-range object locations and graphic registration are challenging for a lot of systems, especially lightweight ones—they are far better at overlaying data on building-scale objects and at map- scale distances. Registration and location will continue to improve as the technology matures. In order to be socially interesting, however, some degree of ubiquity is required, as with the previous fiction, at least among the class of people with whom you are interacting. Using AR to surface identity requires not only deep penetration of AR, but fairly regular, if not continuous use of it—your augmented identity will not be visible if no one looks. The notion that one might end up presenting completely different identities to different social classes is also interesting, if undesirable—the creation of a class of social have-nots, economically locked out from large swaths of not only culture but immediate personal presentation.

Avoiding Ambient Indoctrination

Advertising is, generally speaking, a very important source of cultural propagation in late capitalism. Specifically, advertising, as a core component of popular culture intended explicitly to cultivate desire, has a strong effect on things like body image and the sexualities that are visible to us.

Several years ago, São Paolo banned outdoor ads. Why wait for that to spread? It would take a fairly intrusive AR system, but in theory, you could literally have AdBlock for reality—imagine walking through a city without the visual assault of hyper-perfect heteronormative bodies, or riding mass transit without being told all the ways your body is inferior. Of course, this goes both ways—what happens when the spammers (or worse, the "legitimate marketers") start to plaster themselves all over augmented realities? A potential escape becomes another front.

Making Sex Safe Again

The sexual revolution at the end of the Modern period in the 60's and 70's was brought about, socially, by many things, and enabled by a whole host of others. Chief among the enablers was the Pill, which suddenly made sex less serious, divorcing it from reproduction. In the 80's and 90's, HIV and the rise of at least the awareness of rape culture made sex serious again, ushering in what might be called late heteronormativity. What if we could get rid of that seriousness again?

Picture yourself out drinking at a bar. There is a woman there with whom you have definite chemistry, but you just met. Still, you would both really like to get laid tonight, but you forgot to bring gloves. So, you both get out your phones. You might exchange numbers, but mostly you are trading a limited medical authorization. You press your phone against her abdomen and tap a button to

You get to work, and the tattoos on your right arm fade in slowly; it's a relaxing day. Your skin changes a little through the day, fading blank when you have an older, conservative client to talk to, blending into a darker, more aggressive design as you bike across town in the afternoon.

In the evening, at the club, your shirt is cycling through something vaguely biomechanical, all gears and tentacles, and you see your recent ex-girlfriend. Your skin flashes black in shock for a second and then you slip out the back.

Products are already showing up on the market with flexible low-resolution liquid crystal-based wraps that can change color. Similar technologies are being used in experimental color-changing cloth. E-ink displays are improving in quality and falling in price—flexible and colored versions with faster update speeds are coming. While the cut of clothing may continue to be static for a while yet, color and graphics will become more mutable.

We may be able to make an implantable version of one of these displays as well, but there are other options, too. While I've largely looked at hard technologies here and not at bioengineering, one option that's too interesting to pass up is working with the color-changing chromatophores of cephalopods—instead of getting tattoos, get skin grafts. While the designs would be nominally under more mechanical control, might the basic biological nature of the grafts show through? The idea of humans having similar affective responses, changing color as a stress reaction, would be fascinating. Humans could literally grow entire new affective capabilities.

Soft Body Tentacles

Profound alterations of the body are a longstanding fantasy for many people. They hold as much or more possibility of changing how we see each other, and were we draw the lines on what human means. Not to mention a whole lot of really hot sex.

Even if the effects are isolated to a single person, situationally-based alterations of neurochemistry could have an interesting effect on relationships. Imagine if an implant gave you a steady drip of oxytocin whenever you interacted with your partner? Make that first month relationship honeymoon last forever.

Of course, if you are triggering neurochemical changes in response to outside behavior, you could trigger them in response to all sorts of things—similar to orgasms, you could give someone a neurochemical remote; an emotional organ of sorts, to play your brain.

Mutable Appearance

Virtual projections of identity are great, but what about actual physical changes? The catalog of the ways humans have altered themselves and their appearances is large and exhaustive, but the constant is that with the exception of things like hair and makeup, the body generally changes and is changed slowly—even clothing changes on the course of hours, unless you have an atypically hyperactive personal costuming department. What about creating situational physical identities? There are plenty of reasons to do this, and not just acceptance by a monoculture—fractured network social spaces provide for complicated terrain to navigate, and you might want to become several different versions of yourself in a day.

You wake up in the morning and go about your usual routine. You toss on a t-shirt and jeans and head for the train. On the train, you pull out your phone and dial your jeans and your t-shirt to the color that feels right for the day. You poke around online and find a cute little animation that looks good, and you grab a frame from it and toss it onto your t-shirt. Just a still—nothing too flashy for the morning.

wake up her implant, and then send a status query. The report comes back happily green on all the STI antibody tracking data, and your phone confirms the device signature. She checks you, and you head for the door.

Implantable medical devices are advancing rapidly these days. Currently, most implants are special-purpose devices focusing primarily on various kinds of therapeutic electrical stimulation. This is changing rapidly, though. Many devices are already capable of sensing a broad range of physiological parameters. Manufacturers have been working for some time on drug-dispensing implants. Implants which are intended for purely diagnostic purposes are starting to show up on the market, albeit slowly—implant manufacturers are very conservative.

In the research world, work is being done on communicating networks of implants. For instance, one might have one implant looking at impedance-based measurements of lung fluid, another dispensing an emergency bronchial dilator when needed, and a third archiving information and periodically talking to an external device via radio.

The challenges here are nontrivial, of course. Power management is a huge concern, as the devices currently run on batteries that must last five to eight years. Some newer implants use inductive charging, and there's a chance that low-power devices could run on biofuel cells that take power directly from the body, parasitically. The security and privacy concerns for inter- implant and implant-external communication are also nontrivial, especially as implants cannot currently afford the CPU or storage required to perform modern cryptography. Moore's law has a way of making at least some of these problems go away, however.

Advances in microfluidics, a technology wherein minute amounts of fluid are pumped around through channels cut into silicon wafers at a similar scale to the transistors on a chip, are allowing the rapid miniaturization of diagnostics that currently require full-scale laboratories. Disease detection is a significant

research priority for medical microfluidics, and reusable devices that can detect multiple diseases are already on the research horizon. As the devices are constructed primarily via traditional semiconductor fabrication techniques, they're likely to follow fairly similar cost and capability trajectory.

As we come to understand implants better and the risk of implantation surgery drops, diagnostic implants are likely to become more attractive from a risk/benefit perspective. It is likely, even, that a general-purpose implant capable of continuously monitoring the state of the body and detecting a wide range of diseases accurately (and, given continuous monitoring and in-body positioning, much earlier than with conventional techniques) will be seen as a reasonable component of preventative care. As these devices become widespread, a flexible system of authentication and authorization will be necessary, if nothing else to handle cases of emergency medicine and child and elder care. Why not enable them for personal uses too?

This, of course, brings up all sorts of other scenarios. If someone reprograms their implant to lie about their HIV+ status and you are exposed, it seems likely that a crime has occurred. But what crime? The intentional HIV exposure or the reprogramming of the implant? An implant could also be useful if you are out drinking—telling you when you are getting dangerously intoxicated, or, for instance, if it suddenly detects GHB in your bloodstream. While this might be very useful in making that night on the town safer, it could cut both ways. If you are a victim of date rape, could the rapist subpoena data from your implant to prove that you were not so intoxicated that you couldn't consent? Is an implant part of you, and thus subject to Fifth Amendment rights preventing you from testifying against yourself, in the case of something like a DUI charge? Or is it just another external computing device, despite its uniquely privileged location?

up meaning—can you tell when someone wakes up, what the rhythm of their day is, just from a heartbeat? How does it cross over into in-person interactions? There are some studies that have shown that even loud music can apply a synchronizing effect to the heart's rhythm—would this do that? What happens when you have multiple partners, and receive multiple heartbeats via different actuators?

Endocrine Management

A heartbeat is a single measure of physiological state, and a coarse one. What about the endocrine system? We are coming to understand just how heavily our mood, how our bodies perform, and how we think and perceive things are all dependent on a small number of brain chemicals. These are obviously very complex systems, to be tampered with very carefully. But, as we come to understand them better, we may be able to both monitor and alter the balances of these neurotransmitters in real time, again using implanted devices. While we currently act on the brain's chemical balance with drugs, these are, relatively speaking, very crude devices. In addition to allowing us to perform the same kinds of therapies much more accurately, working in real time allows us to introduce new behavior-oriented functions.

What effect could interacting directly with your partner's endocrine system have on the relationship? Imagine an endocrine mirror—carefully controlled, among other things to prevent feedback effects, but designed to nudge you toward similar affective states. While it could easily trigger entirely new kinds of codependency, it could also allow for radically more compatible interactions. Especially interesting would be the effect on distance—feeling what your partner feels, despite knowing that they are separated from you by hundreds or thousands of miles.

embarrassing complication to deal with, along with a much less painful headache than you might have had.

Portable streaming video and microdisplays are already common enough technology, although combining them into a socially acceptable package has been a challenge for a long time. The implant technology is somewhat more complicated, but entirely within the realm of current possibility. The legal perspective for something like this becomes more interesting—is it possible to create a contract which gives away a temporary power of attorney to a call center employee who's acting on your prior instructions? While obviously the only meaningful solution for sexual assault is for people to stop assaulting others, would something like this fill a useful role in allowing people to balance inebriation and the morning after?

Pulse Bracelets

Long-distance relationships are hard. Keeping the kind of daily awareness and the feeling of connection going that one has with a local lover takes a lot of work. Technology has already radically changed how we interact with long distance relationships—Skype, IM, SMS, and flat- rate phone plans have already made that kind of connection much easier to keep. Where else can it go?

The daily rhythm of life is expressed in many ways, big and small. Imagine sharing your heartbeat with a lover. You each have a bracelet that mirrors the other's pulse—a little membrane beating away, inside your wrist. Surprisingly simple things can carry a lot of information about your partner's life.

The technology behind this one is simple—a GSM modem, a battery, a heart rate sensor, and a small actuator.

Obviously, at first a bracelet like this would be distracting. Eventually, though, given enough time to get used to the stimulus, does it fall into sensory integration? If so, what does that end

Orgasm Control

In some stereotypically masculine worldviews, orgasms define sex. If you came, you had sex. This blatantly ignores the fact that many women are either pre-orgasmic or will frequently not have an orgasm during many sex acts they participate in—even sometimes ones they quite enjoy. On top of this are all sorts of fetishes specifically about the act of having an orgasm, chief among them various forms of orgasm denial.

What if all this could be controlled at the push of a button?

Orgasms are a function of the same part of the nervous system that controls breathing, heartbeat, and similar activities. There is a point on the sacral nerve that can be used to trigger them with electrical stimulation. In addition to triggering orgasms, you can, with careful measurement, detect them, and by suppressing the firing of those nerves (by applying an inverted electrical impulse in real time), you can suppress them. The first of these is a function easily performed by current implanted medical devices—exactly that kind of neurostimulation is exactly what most of them already do, and successful clinical trials have already occurred in North Carolina. Sensing is somewhat more difficult, but entirely within our current reach, and while reliable suppression might be currently difficult, it is largely an engineering challenge, not one of fundamental research.

From a simple perspective, you could call this the ultimate sex toy. Push a button, have an orgasm. Dial knobs for intensity and duration. Decoupling orgasms from their normal context is interesting, too—how does that change the experience? As a dominance/submission device, what happens if you set up the control unit to work remotely and give the button to someone else semi-permanently, with an implant set up such that you cannot orgasm without it?

On the other hand, what about a monitoring-only device? How would a monitoring device change state treatment of sex offenders?

What happens when you require a sex offender to account for the timing and location of every orgasm? While obviously the roots of sex offense are complicated, does a push-button orgasm help them re-integrate into society and resist offending again?

Other people might be interested in a monitoring device, too—it could be the ultimate purity ring, verifiable evidence that the person you are sleeping with has never had an orgasm, regardless of whether or not they have tried. And with push-button control, no more having to learn how to actually please someone sexually.

What would a device like this do to sex work? Would people with the implants still patronize sex workers, assuming they were otherwise inclined to? If so, how would it change that interaction? Would it become more explicitly about human touch, and less about getting off? Would sex workers use the implants themselves?

DNA Sequencing for Sex Workers

Sex work occupies complicated, conflicted political space in the modern left. That said, it is safe to state that in most current legal regimes the majority of sex workers engaging in heteronormative sex acts are at a power disadvantage to their clients.

In order for a sex worker to operate, their clients must be able to find them in at least some context; the clients can often be relatively anonymous outside of the moment of transaction. The sex worker, already disadvantaged by this, is often more legally vulnerable while the client may only be socially vulnerable.

Imagine that you are a sex worker. Your most recent session has gone poorly, and the client did not pay. You are not in a position, normally, to ask for anything like identification that might give you any recourse. Your client, however, cannot avoid leaving DNA material behind. You swab a sample into a paperback-sized DNA sequencer. Ten minutes later,you anonymously upload the sequence and find a match in a public genetic database. The sequencer signs its sample with an anonymized but verifiable signature. You add a note describing the circumstance under which the sample was taken, and let Google do the rest.

DNA sequencers are getting amazingly fast and spectacularly cheap, and the trend shows no sign of slowing down. There are questions about how strong DNA evidence really is, but tactically, that may not matter—the social onus will probably still end up being on the person whose DNA was posted, to explain what happened or why someone wanted to frame them.

Outsourcing Judgment

People do a lot of stupid stuff while drunk, high, or otherwise not all that with it. A lot of that stupid stuff involves sex. Sometimes your friends will step in, but they're not always around, and they might be the problem. How much can someone be protected from themselves?

Take a pair of glasses with a camera in them that stream video remotely, and add a speakerphone and an implant that measures blood alcohol. Before you decide to go out drinking, you figure out what the limits you would like to set for your evening.

Later that night, you walk up to the bar to get another drink, and your glasses flash an icon at you, telling you that you have had enough. The bartender notices it and shakes his head at you.

Later, elsewhere, you have ended up somewhere secluded with someone you have been flirting with. A voice in your ear warns you that you are not sober enough to decide to sleep with someone, per the limits you set earlier. You ignore it. A little bit longer, and your phone trips over into speakerphone mode and informs your the other person that you are not sober enough to consent, and that per prior agreement, you are not currently legally in charge of your actions. You end up safely at home alone, without another