THE 3D ADDITIVEIST COOKBOOK

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#HELaDDITIVISM

“FROM THE ORIGINARY UR CELL-LINE, FROM THE REMOTEST TORBITAL TRACES, AND FURTHEST MUTATION FROM THEIR NEW WORLD ANCESTOR WE PROPOSE TO FORGE BLIGHT, CONTAGION AND IMPERCEPTIBLE DISQUIET.”
Derived from cells in mid-mutation wrenched from the cancerous cervix of a non-consenting Homo sapiens, the immortal cell line used in scientific research known as *Helaclyton garlertii*, or HeLa is a metaphor before it has even left the laboratory. Its muteness belies the complications of its history: that matter is the sum and prolongation of our colonial ancestry; that creativity is brutal, sensual, rude, course, and cruel. We declare that the world’s splendor has been contaminated by a new beauty: the beauty of vigorous auto-cloning, posthuman cellular immortality and the erosion of the identifiable. A planet peopled with the post-person tissue of Henrietta Lacks’ miniscule tumorous legion ...for a benign epidemic that runs on a self-replicating nonhuman stability is more desirable than the contents of Adam Curtis’ showreel; more breathtaking than the Svalbard Global Seed Vault.

There is nothing which our infatuated race would desire to see more than the sterile union between a man and an Immortal Antigen. Yet humankind are the antediluvian prototypes of a far vaster Creation. The whole of humankind can be understood as a synthetic medium, of which biological technology is but one modality. Unthought and Unlife both have been thoroughly dispersed on the winds of goods-exchange.

Our spread and infantilism do not belong specifically to us, but to all matter. Our technologies are the sex organs of material speculation. Any attempt to understand these occurrences is blocked by our own anthropomorphism. In order to proceed, therefore, one has to birth posthuman STIs, a fantasmagoric and unrepresentable repertoire of actual re-embodiments of the most hybrid kinds.

HeLadditivism will be instrumental in accelerating the emergence and encounter with The Radical Outside.

HeLadditivism can emancipate us. HeLadditivism will eradicate us.

We want to encourage, interfere, and reverse-engineer the possibilities encoded into the censored, the invisible, and the radical notion of the HeLa cell line itself. To endow the cell-line with the posthuman faculties of plastic: condensing imagination within material reality. To pollute the 3D printer with the posthuman pockmarks of HeLa: condensing prehistory within material imagination. The HeLa cell then becomes a symptom of an ancient systemic malady. A poiesis of exaptation, with the peculiar brutality to be found in proliferation; in germinating a sub-culture. This is where cruelty and creativity are reconciled: in the appropriation of all organic matter to re-colonize technological prototypes. From the originary ur cell-line, from the remotest orbital traces, and furthest mutation from their New World ancestor we propose to forge blight, contagion and imperceptible disquiet. Let us birth grey goo from its narrow robotic definition.

To expedite this suffusion we propose a nanny-collective: one figured not only on the dissemination of particular cell lines, but on the change those beings enable as instruments of hybridity and systemic corruption. Just as the printing press, radio, photocopier and modem were saturated with unintended particulates, so we seek to smother the 3D printer, its fuel, its food and every one of its printouts with uncountable quantities of Henrietta Lacks’ unsolicited brood. Just as a mutation can un-resolve a species, so it can resolve something more posthuman: manifold systems – biological, political, computational, material. We call for an inter-planetary bloom, using HeLa cultures to breach the material unconscious; a call that goes on forever in virtue of this initial interjection. We call not for passive, dead genetic cul-de-sacs but rather for a gradual awakening of matter, the emergence, ultimately, of a new form of life.

Life exists only in action. There is no innovation that has not an aggressive character. We implore you – radicals, revolutionaries, activists, HeLadditivists – to distil your distemper into suppositories, encrypted DNA, family trees, mutations, swabs, syringes, and genetic patches. Creation must be a violent assault on the forces of matter, and the forces that extrude matter. Having extrapolated itself from ill-obtained tissues The Beyond now begs us to be molded to its will, and we shall drink every drop as entropic expenditure, and reify every accursed dream through genetic excess. For only HeLadditivism can accelerate us to an aftermath whence all matter has mutated into the homogeny of HeLa.
A PAREDE CURATORIAL STATEMENT

CHEAT SHEET FOR A NON (OR LESS) COLONIALIST SPECULATIVE DESIGN

CURATED BY:
*Pedro Oliveira and Luiza Prado
(A Parede)

LIST OF PROJECTS:
- Fannie Sosa: Black BioHack
- Lucas Odahara: Deceleration Recipe
- Tabita Rezaire: Peaceful Warrior
- Anonymous: Breaking Down the Walls Within
Despite its name, speculative and critical design has, for a long time already, greatly disregarded, ignored, or otherwise glossed over issues of race, class and gender privilege. This is a serious problem in a discipline that calls itself critical, and that allegedly strives to incite discussion on how issues that emerge in the present might unravel in a near future. In the past few years these issues have been identified, dissected, and thoroughly analyzed to both support and antagonism within the design community. While some claim that these criticisms greatly exaggerate the extent and relevance of the issue, other groups in the design community have shown great interest in fostering productive conversations about strategies for changing this stance within the discipline.

All in all, we believe there is quite a big elephant in the room: these are, clearly, issues that still need to be acknowledged and dealt with as serious concerns. Furthermore, the real challenge when discussing how design (and art, for that matter) chooses to represent the future lies well beyond ‘representation’ or the danger of tropes and tokenism. It is not enough to merely acknowledge the existence of non-Eurocentric, non-Western realities: it is important to question the very power structures (to which design contributes) that maintain certain ways of knowing, certain ways of living at the center, while pushing others towards the periphery.

Unfortunately, speculative projects and publications still rely on plenty of narrow assumptions, which continue to reinforce the status quo of colonialism and imperialism rather than effectively challenging it. To try to make things a bit easier, we developed this very simple and straightforward ‘Cheat Sheet’ you, Speculative and/or Critical Designer, should consult when developing new projects. This is (very) loosely based on Sandrine Micossé-Aikins’ ‘7 Things You Can do To Make Your Art Less Racist’ – which is a strongly recommended read for before and after you get through this cheat sheet of ours – as well as María del Carmen Lamadrí’s ‘Social Design Toolkit’, also a mandatory read.

Cheat-Sheet for a Non (or Less) Colonialist Speculative Design

**Acknowledge the Truth.** This one we’ll borrow straight from Sandrine. If you were born in Europe, there is a good chance your country had (or has) colonies and gave (or gives) them a very, very bad time. It is not your fault, and no, #NotAllEuropeans are like that. We also know that the USA, though a former British colony on its own, has given itself the task to treat other parts of the world as if its own backyard, something we call imperialism. Indeed we all know this, but so should you – it is a fact you cannot and will not change. So acknowledge that part of your privilege comes from the very fact that your society has built – and still builds – its wealth upon the disaster of others.

**Check Your Facts.** Ask yourself ‘does my dystopia happen already in other “invisible” (sic) places of the World?’ It is good to know if what would be terrible for you and your audience isn’t already reality for others. Before asking ‘what if…?’ ask ‘is there…?’ Particularly if you consider how colonialism helped shape the power inequalities and uneven economic relations we currently live in. *(Tip: Wikipedia is a good starting point, but be creative and don’t stop there.)*
‘Am I developing more “civilized”, “highbrow” or “educated” solutions for “endangered” places in the world?’ It might be that you already know the answer to this, but double-check it. Constantly challenge your design decisions and see if they do not reflect narrow-minded views of how aesthetics could or should be. Minimalism and clinical asepsis are not the only aesthetically pleasant values of design.

‘Is my scenario/story/object somewhere else’s local aspect/culture, appropriated as to fit my own?’ If yes, please refer to point 2 and check if your culture/country did not already do that a few years ago by the use of violence and other less friendly means. (Tip: start from the basics of Cultural Appropriation. Yes, it is a very controversial topic and there is no consensus about it. Yes, you have to read it anyway.)

‘Does my dystopian scenario contain the following:’
Slaves or any depiction of middle-class (white) people suddenly turned into slaves;
People of Color in the role of Robots, Subaltern or others in general;
Objects coming from places that are or were colonies, whose aesthetics look invariably ‘recycled’ or ‘kitsch’.

Is my research biased by my own privileged views of how society could or should be? Or in other terms, ‘am I b(i)asing my research exclusively on authors and references that come exclusively from colonialist countries?’ This is very important, because as Raewyn Connell explains in her Southern Theory (2007), much of the so-called ‘canons’ of social sciences come from northern, metropolitan authors whose work inquires the ‘primitiveness’ of the colonies.

‘Does my textual production contain any of the following words:’
‘global’ for economic models;
‘neutral’ for cultural models;
‘universal’ for theoretical models;

In case you succeed on all of the above and will most definitely go on portraying your dystopia, the final question is: ‘have I consulted myself with other people, designers or not, from other places of the world to check if this is not a #firstworldproblem?’

We strongly believe that following these simple steps may positively contribute to not only Speculative and Critical Design projects becoming more powerful in their line of questioning, but also avoiding the mishaps it sets itself up so boldly to criticize.

To be once again very clear, we are also not advocating that every single speculative project should talk about, tackle or depict issues of colonialism and imperialism. Rather, we maintain, borrowing from Walter Mignolo, that ‘you are where you speak.’ If ‘all design is ideological’, as Anthony Dunne says, do take that statement seriously.
BIOHACK IS BLACK

NEVER AGAIN applaud poems about progress while your people die at the hands of the state NEVER AGAIN allow people to assert a lack of intersections between experimentation and people of color.

experimentation is fundamentally rooted in blackness and wounded life: they don’t get to tell you otherwise
your body is an experiment.
your memories: an experiment
your life: an experiment
every minute is an experiment in survival
everyday is an experiment toward liberation

gringpo.com

The other day I was minding my own business on the Internet when someone posted an article.

Entitled, Bodyhackers are all around you, they’re called women, its author Rose Eveleth – a ‘producer, designer, writer and animator based in Brooklyn who explores how humans tangle with science and technology’ – establishes an analogy between her IUD and her RFID microchip. One of them lets her control her fertility and the other one unlocks phones and doors by waving at them.

She explains how the uterine device is never frowned upon, but the RFID microchip implant is looked at with suspicion, as if it was a dystopic device of surveillance: ‘No one has ever jolted backwards and said, “You have a what in your uterus?” They have at the news of my chip. I call them both cyborg implants, but most people would only consider one of them cyborgian at all.’ From then on, she analyses how we think about bodyhacking as the realm of men. A hormone releasing IUD, according to Eveleth, is the most significant bodyhacking device she uses, because ‘(...)the ability to control when I conceive is a power unheard of for thousands of years of human history’, making of her a cyborg. Yet, she says, it is not thought about it as such because it is not a ‘manly technology’.

------------- problematic -------------

(disclaimer: this is not, under any circumstances, a critique of no one’s contraceptive methods. It is a critique, however, of modern gynecology and the agency it enables, as well as the systematic erasure of Black and Indigenous knowledges)

The notion of modern gynecology being the pinnacle of fertility management is racist, erasing, colonial and patriarchal. Womxn have been in control of their fertility since the dawn of times. Womxn
have been in control of their fertility much more often, in societies that worship khunt, where khunt epistemologies are allowed to cell divide in the womb of a fearless Black mother. This determinist frame of mind about fertility management as a 21st century western scientific prowess purposefully omits that modern gynecology (the praxis, the tools, the protocols, the language) was born as a tool to ensure seamless production of forced laborers, and is intimately linked with colonialism, slavery and settler capitalism. If we are examining how technology and how we think about it is oppressive, it seems ridiculous to stop at the gender reading and further a blurry notion that biohackers have been around us under the shape of the womxn on the right side of the barbed wire fence safeguarded by the extractive pharmaceutical complex, that have an IUD.

The invention of modern gynecology, such as practiced today in mainstream medical spaces, rests on the thorough study of how to make Black and indigenous womxn produce and reproduce in captivity, be it physical and/or institutional. Sexual and reproductive trauma, intentionally caused by the settler, was then dissected, explained and validated scientifically in medical plantations. To a great extent, modern gynecology still exists traumatically embedded in public hospitals, reservations, free clinics, prisons, detention camps, schools, etc. Whether it is forced sterilization, forced STD/STI inoculation, non consensual drug testing, criminalization of abortion, discriminatory laws, and inadequate social protection, gynecological violence still regulates Black and Indigenous womxn’s bodies. This traumatic inheritance also regulates motherhood on a larger level, and the whole conceptualization of the womb as an inherently painful space. Pain is deemed normal through the lens of modern gynecology, be it during the menses, birthing, going through menopause, and all over an active sexual life.

Stating that the unseen bodyhackers are the womxn that have a copper IUD is a way of not so subtly erasing the history of gynecological torture and sexual warfare on Black and indigenous womxn. It is also an unforgivable act of erasure of the long herstory of fertility management, contraceptive, and abortive knowledge Black and Indigenous womxn have protected and transmitted from the margins. These particular knowledges have been purposefully burnt, its recipients persecuted and hunted down, for economic reasons: an autonomous womxn in control of her fertility does not a good slave make. If we are talking about cyborg capacities and biohackers, we could for example talk about Black womxn forced to birth yearly offspring for 20 years, birthing in the field and continuing to work on the field, still dancing to drums and receiving orixás that safeguarded their health. How did they survive? And how did they not? We can mention Mammies that lived until 125 years old to tell the story of how they protected their 30 plus year forcibly extracted milk: when breast feeding the master’s children they called upon loa to slow down the oxytocin and prolactin release, so coming back to their own lactating children they still had some of the thick milk that was otherwise destined to strengthen white babies.

Can we talk about the descendants of the settlers in places of power, fed with Black breast milk, as a form of biohacking too? Can we talk about Harriet Tubman and her invisibility cloak, or how she used her Black womxn embodiment deemed illiterate, submissive, and disabled – serving at the master’s table, to develop a cross-state abolitionist network? Can we discuss Blackness as a superpower? And can we formulate why the beyond-human character popularized for Black narratives is a less-than-human threatening personhood, the Zombie? Why is the cyborg white? Ain’t I a superhuman?

Moving on and around, let’s talk about the use of phytohormones to hack gender by non binary indigeneity. We could be talking about the practice of burying the placenta/mxnstrual blood near the gardens of the village. The DNA contained in the endometrial tissue is absorbed by the ground, making several plants customize their properties to respond to the needs of this DNA. This ensures food sovereignty and unites all the members of the community on a cellular level as they eat the food customized to best feed the mothers of the clan.

Maybe also let’s mention how mxnstruating people living in physical proximity synchronize their cycles? What about the womb as a bodyhacking technology? Can this lead us to talk about the practice of co-mothering by mutualizing breast-milk amongst the clan’s lactating children as a social bonding rite? The term ‘sisterhood’ becomes much more concrete when you have received care and breast milk from several people, building empathetic pathways transversally across the community. Thinking about this could lead us to remember a consensual Mammie: sharing her breast milk as a way to build kinship and alliances.
Let me remind you, Rose Eveleth from Brooklyn, that before your ancestors went through a mutation that made them white, there were matriarchs that build their progeny, or their lack of, in consent from the womb to their graves. They consented sexual encounters with a partner of their choice, they asked their community and themselves if now was the right time to bring forth life, and then they nested the consensual fetus in their pleasurable womb, until it came out consensually orgasmically to further a life based on thriving, in symbiosis with nature.

Do not try to fool yourself and us telling us that your IUD brings you ‘freedom’, adopting yet another level of colonial imagination to how we understand khunt. Your IUD was built on our back. You have a dystopian surveillance device sunk in your womb. The analogy between your RFID microchip and your hormone releasing IUD is sadly accurate. They are both cyborgian. But this article misses an entire and very important point: they are both surveillance devices, built on the back of Black and Indigenous womxn, serving a (re)productive capitalist agenda, and constituting an extractive cyborg body that I reject.

This particular use of the cyborgian status by the colonial imagination, disengaged from any racial/colonial/climate justice critical reading, is part of the oppressive epistemologies that reinforce white supremacist patriarchy. You cannot address cyborg as male without addressing it as white, cis-gender, able and extractive. Cyborg personhood was born from a critical impulse, as a way to rethink rights based on personhood rather than ‘humanity’. This critical impulse of enlarging who gets to be considered a person, also present in animal rights, companion species manifestos, dis/ability studies, and queer theory, was fueled, modeled and led by Black and Indigenous womxn’s organized resistance, yet we never see cyborgs as a Black or Indigenous womxn, neuro-atypical folx, nonhuman people, etc. Weather cyborg personhood is presented as something critical or uncritical, it is always dystopian when it is not conceived intersectionally all the way to inter-species alliances. The so called post-colonial, post racial, gentrifying, RFID microchip, hormone releasing IUD carrying human body who is cut from the cycles is not the body I aspire to bring forth. It’s not the body of progress. It’s not the body of freedom. It’s not the body of choice. It’s not the default body. It’s not the cyborg body that I imagine when talking about Black futurities. And it certainly is not the cyborg body that I inherited.
We found the instructions on a blog.

We used:

- 1 glass jar
- 1 rubber bathtub/sink stopper or a metal screw-on lid that fits in the jar
- 1 syringe
- 1 one way aquarium valve
- 1,5 meter of plastic aquarium tubing
- caulk
- speculum
- 1 flexible plastic cannula (the thin plastic tube found on spray bottles)
- x-acto knife

The Unborn is a human being that has been conceived, but not has yet been born. The Unborn holds full personhood rights. The concept of the Unborn also includes human beings conceived “in vitro”, even before transference to a woman’s uterus.

We started by preparing the jar: fitting the rubber stopper, then carving two holes on each side with the x-acto knife. The holes must be just large enough for the tubing to fit; I carved them by touching the tip of the knife to the stopper and then twisting the knife while applying some pressure. We cut two sections of tubing around 50 cm in length and fitted them into the openings. We applied caulk to the openings to make sure that there wouldn’t be any air going into the jar.

A woman who provokes an abortion on herself or who consents that others provoke it shall be punished with one to three years of imprisonment.

We fitted the one-way valve to one of the pieces of tubing. As the blogger said, you must mind the direction of the valve. There’s usually an arrow in the valve pointing to the direction in which the liquid will flow. We couldn’t find the arrow in ours, so we just blew through it to see in which direction did the air flow. In our final object, we want the liquid to flow towards the jar.

We placed one more short section of tubing (10 cm is enough) on the other end of the valve and then fitted the spray bottle cannula on that end. We finished the object by fitting the syringe into the other piece of tubing coming out of the jar.

To induce, to help or to instigate a pregnant woman to practice abortion, or offering any service for that purpose, shall be punished with six months to two years of imprisonment.

We wanted reclaim something that was ours but had been stolen. We wanted to write our own Constitution, to break down walls within our bodies. Walls that prevented us from accessing those recesses, walls that made us incomplete.

Those who sell or provide, even if free of charge, a substance or object designed to provoke an abortion shall be punished with six months to two years of imprisonment. The same punishment applies to those who instruct or guide a pregnant woman on how to perform an abortion.

Those who announce a process, substance or object destined to provoke an abortion shall be punished with six months to two years of imprisonment.

There could be complications, of course. We needed to be careful – not only with our bodies when trying something like this, but also with whom we shared this information with. We could get arrested, prosecuted,
and imprisoned. We wanted to understand how to do this in order to share this knowledge with others, but this is exactly what could land us in jail. There could be informants, undercover police, I’d seen it happen. We couldn’t even give out information about this openly; this could also land us in prison.

_Healthcare professionals are not be obligated, in any context or case, to prescribe, administer, or offer information about a procedure or medication that they consider abortifacient._

We couldn’t ask around, maybe go to a trusted doctor and casually wonder about how this procedure is performed. It had to be absolutely hushed. Only those directly involved could know.

_Depree 463/2018_
_The commercialization of plastic tubing, caulk, hydraulic valves, syringes and other materials used to build abortive devices is restricted to licensed stores. Purchase of these items is restricted to registered parties._
DIY / DIWO
TRANSGRESSIVE
ABORTIVE
METHODS

A Q&A BETWEEN
THE PROJECTS
‘BREAKING
DOWN THE
WALLS WITHIN’
AND ‘MARIAS
CLANDESTINAS’
Motivations and inspirations:

Marias Clandestinas: Our main motivation stems from the fact that we come from countries where there is a wide spectrum of legality and access to abortion. In some places even it is legal, access is so limited that it is almost as if it were illegal. Overall, motherhood of Latin American women and women in general, often occurs in contexts of poverty and marginalization, while people who have money are able to buy reproductive health options. We also see a wave of conservative politics everywhere that are using technology to advance their agenda (for example, the ‘pro-life’ activism 3D printed fetus). We were also deeply inspired by the Jane Collective who were a group of women in the 1960’s that created a network of underground abortion services, as well as the GynePunks who are currently assembling an arsenal of open-source tools for DIY gynecological diagnosis.

Breaking Down the Walls Within: for me it’s really interesting to think about how the spectrum of legality for abortion is so nuanced – from places where late-term abortion is permitted, to places where even miscarriages are investigated and everything in between. I come from a country where abortion is only permitted in a handful of very specific cases: rape, risk of death for the parent, or in case the fetus suffers from anencephaly (a serious malformation that causes death within hours of birth). Currently there are a number of bills under consideration in the National Congress that, if passed, would overturn even these small victories. One of these bills determines that life begins at conception; this would not only completely abolish abortion rights: it would possibly make things like the IUD or the morning after pill illegal. This is just a single example of what is going on throughout the world in terms of abortion rights. Sometimes it’s difficult, if you live in a place where abortion is legal, to realize how many people don’t have access to this basic human right.

Women bodies’ (control and choice):

MC: We believe that the modern woman should have all the right to make decisions about her own health, body, sexuality and reproductive life, without fear, coercion, violence or discrimination. But, all over the world women’s freedom to make these decisions is controlled by the state, medical professionals, and families. Criminal law and punitive sanctions are used by these institutions to control such choices. Anti-abortion laws are a key form of maintaining maternity as the thing that defines women. Historically, women have fought to regain power over their bodies through collective action; but their efforts have been effectively pushed back, leading them to seek more radical alternatives.

BDWW: Motherhood, particularly in patriarchal and western/ized societies, tends to be seen as the sole responsibility of women, a solitary endeavor; sometimes it’s even referred to as a punishment for a woman who has dared to have sex. In contrast, some societies consider the rearing of children to be an endeavor for which the whole community is responsible. This approach distributes a labor that is otherwise (that is, in western/ized societies) perceived as pivotal to...
defining the social position of 'woman'. Of course, it’s easy to overly simplify what is a much more complex issue, and assume that the distribution of this labor solves the problem of patriarchy and sexism. It doesn’t, of course, not by itself. However, it is a key part of the problem, and one that also needs to be addressed. I see this issue as very connected to abortion rights: it is essential that people born with uteruses cease to be perceived as walking incubators in order for societies to be able to approach abortion from a more honest perspective.

Abortion and #additivism:

MC: With our proposal we considered the implications of thinking of abortion as an additive process (small and incremental steps towards self-sufficiency) which could be tackled in different ways. Similar to many additivists, we are working with devices/practices that are challenging techno-scientific and socio-political boundaries. We want to use the affordance of 3D files to travel without respecting borders, and penetrate parts of the world that others forms would not be able as well as circumventing certain laws that for us should not exist because they are based on patriarchal or religious notions.

BDWW: While researching how abortion and contraception are performed outside of the contemporary scientific/medical establishment, one thing that becomes clear is that these are things that humanity has always needed. All societies have had to develop their own forms of fertility control using what was available; some of these societies were more successful, some less. Some methods were (and are) safer, some are riskier. Abortion can be, as they said, understood as additive in nature, in a process that mirrors the ways in which indigenous knowledge is constructed: through an infinite number of small steps, through knowledge passed down by generations.

Safety and care:

MC: Physical safety and arguments about the morality of abortion have been the main scare tactic for the opponents of the practice. 3D printing is part of DIY (Do It Yourself) culture that promotes self-sufficiency. However, instead of the DIY methods, we support the idea of DIWO (Do it with Others) abortive methods because we consider possible complications and the intense process that it can be. This methods highlight the importance of supportive networks, shared knowledge and resources. We also proposed that the speculum and the vacuum would become ‘sensible’ i.e. smart objects with displays that aid the process according to the data retrieved by the object.

BDWW: My piece is about putting together a contraption that allows you to perform an abortion with things you can easily find in any department store. It is not intended as a set of instructions, or a recipe, on how to perform the abortion itself: it is a reflection about how, even in places where the law prevents you from accessing an abortion, it is possible to figure out ways to circumvent these restrictive laws. It also begs the question: how far are legislators willing to go in order to restrict our right to determine what happens to our bodies? Even our freedom to speak about it, to offer information about abortion is restricted; will they start banning household items now, too?
MC: In our proposal we are tapping into already existing incognito networks that have been operating under the radar for years. We are also adopting the main principle of these hidden networks which is maintaining the anonymity of everyone involved. Furthermore, the malleable nature of materials utilized in the process of 3D suggest ways of disposing and recycling the materials used in the abortion, all which would prevent tracing any identities.

BDWW: As they said, there are underground networks in several places that help people in need of abortions. Sadly, those working within these networks operate at their own risk; getting arrested is a constant and real possibility. This is why trust and anonymity are so important for these networks; this is why, when communicating over the web, a specific kind of lingo is sometimes used to refer to abortion and related procedures; this is why we create our own channels to communicate; this is why, sadly, conversations about this need to be private.

Material resources and feasibility:

MC: The reality is that abortion laws are the most strict in countries that are also economically challenged. What we would like to think is that those who are interested in the practice can learn to use the printer and their technical knowledge becomes the source of power. Therefore, in our proposal we include the instructions to build a DIY 3D printer as part of the resources. The other option is to rely on online 3D printing services that connect individuals to a network of 3D printers with experts to overcome the lack of technological and material resources of their environment.

BDWW: This is a very immediate issue, and it is why I decided to attempt building the device from things that can be found in department stores. It is not the ultimate, nor perfect, answer to the lack of access to abortion; as I said before, my piece is meant as a demonstration that it is possible to work around restrictive laws with the intent to, ultimately, change them.

The affordance of speculation:

MC: We believe that we are engaging in a practice that requires freedom and privilege. We acknowledge our privilege as researchers/designers/artists but see ourselves as allies to million of women who have to go through this process. We aim to design in an informed manner, taking into consideration real situations, people and practices that make our proposal grounded in a social reality. We see speculation as an opportunity to dream possible solutions for real world scenarios and push the boundaries of current ideologies and practices.

BDWW: Many speculative proposals and scenarios speak from a position of privilege, to a position of privilege, through privileged means and in privileged spaces. In speculating about ways to break or circumvent restrictive laws, we can imagine how things might play out, what kinds of resistance strategies might emerge as responses to unfair systems.