

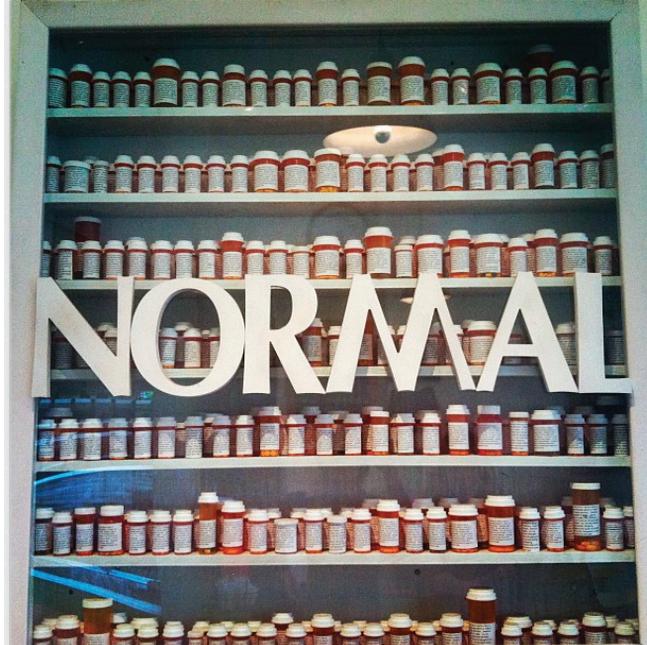
# The Manufactured Pharmakon:

by mae wiskin

## Pharmaceutical Drugs and the Technology of Life and Death

The lighting in the cafe was dim and I walked right past the installation. I was in a rush and barely noticed the enormous word “Normal,” plastered on the back wall. Yet the glare from the neon orange pill bottles was so bright that it struck the corner of my eye. Out of curiosity, I turned and walked back towards the glow. The piece was so startling, direct and jarring that I spent the better part of an hour staring at it.

The messages conveyed by the installation (*Figure 1*) were thought provoking, multiple and loud. It was dramatic, not only because its nature was visceral and discomfiting, but also because the imagery was so familiar. The use of pills and pill bottles in order to create artwork is evocative because it forces onlookers to think of themselves in relation to both drugs and society. Here, the viewer is faced with the additional task of deconstructing the definition of “normal.” What does ‘normal’ mean within this context? What does the notion refer to and how does the term resonate within our culture? Was the artist suggesting that drugs have become so ubiquitous in society that we are all incognizant of their presence and noxious potential? Or does the piece speak to the notion of self, identity, the quality of our conscious experience and perception? The questions this installation raises are important and innumerable.



**FIGURE 1** "Normal."  
Anonymous work of art.  
Duboce Park Cafe, San  
Francisco, 2013). Image  
taken by Mae Wisken.

It is striking to me that even after three years, I still occasionally think about this particular work of art. When I look at the photograph above, I am reminded of the powerful role pills and medications play in our everyday lives. Taking and interacting with drugs has become profoundly normalized and indispensable in today's world. Greg Cristser speaks to this incredible pervasiveness, writing that:

*Today the expectation is that pills can and will do everything, from guarding us against our excesses of drink, food, and tobacco, to increasing our children's performance at school, to jump-starting our own productivity at work, to extending our very time on this mortal coil. Indeed pills – and by that I mean prescription drugs that require a physician's signed authorization – have become interwoven with the very notion of what constitutes health.<sup>1</sup>*

I would extend Critser's statement even further and suggest that because humans are transforming themselves into pharmaceutical selves on a scale previously unknown, the artist was aiming to enhance consciousness and begin a conversation.

William Shakespeare wrote, "Art is a mirror held up to nature." This is a compelling and poetic way to think about pills—prescrip-

tion or otherwise—because pills have the distinct capacity to alter the qualities of that mirror. According to author Janis H. Jenkins, if we comprehend the self as the sum of processes by which the subject is situated in the world and toward other people, then, “the pharmaceutical self” is that aspect of self oriented by and toward pharmaceutical drugs.<sup>2</sup> Pills as a class of material “things” have lives of their own. They are uniquely able to reshape and regulate what it means to be human. When philosophizing about the transformative qualities of pills, design thinking is essential because the topic requires that you be both immensely critical, and also aware of how much these “things” affect our mode of being and acting in the world. Pills are of particular import because they have effectively re-conceptualized social interactions, networks and our sense of both agency and dependency.

Pills, or more accurately, tablets and capsules, are tiny manufactured objects with enormous socio-economic implications and interpretations. The scope and depth of their resonance is self-evident in that when you think about them, myriad conceptions and supplementary meanings immediately come to mind. Though seemingly banal everyday objects, their effects are profound, as pills—and psychotropic drugs in particular—are capable of affecting the mind, emotions and the overall behavior of users. Illustrated most generally, pills allow us to mediate our reality by enhancing or altering personal capacities. Pills ought to be defined by their anomalous qualities because as designed objects they carry consequences that affect users not only physically, but also economically. From birth control, diet pills, antidepressants, prescriptions and over-the-counter medications, pills enable us to undergo complex psychosomatic experiences. Given how interconnected they are to numerous psychological, social and commercial practices, it is clear that as a paradoxically designed object, pills can only be understood in terms of their complexity, dynamism, ethical implications and multidimensionality.

The scope in which we can analyze and reconfigure pills is so large, however, that this essay will only attempt to touch upon the ways in which these everyday objects fit within our contemporary context. In this

paper I will attempt to unravel how pills can be understood in relation to “design thinking” and theory. By using a design-centered approach, things and objects appear intrinsically linked and tied to the human experience. According to theorist Giorgio De Michelis, this allows the design object to be “envisioned as an evolving web of things created, imported, or modified by designers.”<sup>3</sup> The focus on dynamism and fluidity is critical here because in order to understand objects and things (I will use these terms interchangeably), we need to move beyond limiting categorizations and static perceptions. The philosopher and sociologist Bruno Latour aptly wrote about this evolution, noting that, “design has been extended from the details of daily objects to cities, landscapes, nations, cultures, bodies, genes, and...to nature itself.”<sup>4</sup> The meaning of the word is now so wide that there is an incalculable range of ways in which it can be applied and interpreted.

All objects are inherently linked to evolving social processes, and thus also, inextricably connected to a “dynamic actor network in which material and semiotic actors create meaning.”<sup>5</sup> In light of Giorgio De Michelis, John Law and Bruno Latour’s work on actor network theory, also known as “sociology of association,” or “material semiotics,” I will primarily analyze the pill as a fluid design object that is tied to a complex and ever-changing social netting of entities. This web of relations are created and interpreted by “designers” who are in actuality a combination of scientists, medical and pharmaceutical professionals.<sup>6</sup>

Actor network theory (ANT) can be applied to numerous contexts. For the purposes of this paper, ANT will be defined as a sociological method deployed in order to understand the life of scientific objects, their roles, materiality and modes of being. Given this, the enormous resonance of pills will largely be understood by analyzing both ANT and Latour’s notion of “matters of concern” and “matters of fact.” ANT is useful in a discussion on pills because the theory encourages the reimagining of the social as a network of interconnected relationships and configurations. ANT aims to understand how interwoven associations make actors behave in the ways they do. Due to this, pills then consist of multiple realities

attached to myriad complex ‘connections.’ Moreover, because materials play a central role in how people interact with the world, humans and things need to be considered symmetrically.<sup>7</sup>

Through the lens of ANT, all designed objects have the ability to generate actions from other stakeholders involved within the ‘web.’ Pills serve as an indisputable example of this because of their inherent multiplicity. Cloatre writes:

*Drugs are an interesting example of multilayered heterogeneous assemblages. At one level, they could be defined as very ‘simple’ materials – molecular structures that are relatively easy and cheap to produce and replicate in most cases. However, each drug is also the result of a very complex process that becomes inscribed into each of the tablets that is produced, and each tablet carries with it significant implications in relation to health and life, but also in relation to the future production of drugs...Interestingly, the same ‘tablet’ can therefore acquire significantly different meanings, depending on its situatedness in networks of production.*<sup>8</sup>

Cloatre very clearly highlights the enabling power of pills and their ability to seriously impact and influence various structures of power and relationships. No design exists without consequences; however, the ubiquity and complexity of drugs is such that their design and the systems that derive from their production have not only created new patterns of control, but also caused global repercussions, which extend into the political space and beyond.

Pills clearly do not exist ‘outside design.’ Design, however, is a difficult term to satisfactorily define because there is no concrete consensus as to what the notion fully means and encompasses. Due to this I have loosely defined design as a fundamentally hybrid human activity, which provides a framework through which we can begin to understand and mediate our built environment. Humans largely understand the concept of values through their interaction with objects. Given this, design provides a sufficient lens through which to understand the relationship between animate and inanimate things. Similarly to design, pills also represent one type of lens through which we can come to understand the artificial and our place within it. This lens is also historical in its reach; from the advent of *the* pill, aspirin, and penicillin

etc., pills, as a class of things, are indispensable to our lives, and in many respects maintain an even quasi-magical quality. Jenkins writes, “Multivocal symbolizations of pharmaceuticals such as ‘magic bullets,’ ‘awakenings,’ ‘placebo,’ ‘God’s miracle,’ ‘happy pills,’ ‘cure,’ or the scientific foundation for recent “evidence-based” medical practice seem to constitute components of a transformative magic in the form of science and almost with the aura of religion.”<sup>9</sup>

Psychopharmacological use in North America and Europe is estimated to be as high as a quarter of the adult population and the aggressiveness of the marketing and consumption of drugs worldwide is increasing.<sup>10</sup> When people or subjects enter into a relationship with an existing situation, an object appears, which is in our case, the ubiquitous pill. Giorgio De Michelis writes in *Design and Culture*, “[...] design creates an evolving web of things that reflect the way the design thing will be used, the functions it will accomplish, and the emotions it will elicit. This web reveals the images its constituents evoke, the stories they tell, and the diverse views stakeholders may have on it.”<sup>11</sup> Clearly, pills maintain a tangled social nature, which reflect and respond to the diversity, needs, desires and emotions of those

negotiating with them. Giorgio De Michelis captures the intrinsic complexity between the pill as an object and its relationship to people who can be interpreted as its subject, writing how, “Inner complexity reflects outer complexity, or better we can access the inner complexity of things only through the outer complexity of the social processes that objectify them.”<sup>12</sup>

Having explored how pills engage with ANT, I will now uncover their relationship to Bruno Latour’s theory of “matters of concern” and “matters of fact.” Latour writes, “Whenever a network is deployed, a substance is transformed from an object into a thing...from a matter of fact to a matter of concern.”<sup>13</sup> Latour summarizes this notion colorfully by writing: “A matter of concern is what happens to a matter of fact when you add to it its whole scenography, much like you would do by shifting your attention from the stage to the whole machinery of a theatre.”<sup>14</sup> To add more weight to this philosophical proposition, Latour notes a few core specifications that are required in order to deem an object or class of things matters of concern. Firstly, and most evidently, matters of concern have to *matter*; they cannot simply be classified as “pure stuff of no interest whatsoever...”<sup>15</sup> Secondly, matters of concern have to be *liked*, signifying that they must embody a sense of relevance and desire. Thirdly, matters of concern have to be *populated*. This simply means that they have to become something that could be recognized as a “gathering.” The things in question must “gather human beings” and play a central role in the common experience of community.<sup>16</sup> Finally, matters of concern have to be *durable*, meaning that they are not ephemeral and thus have “staying power.” When positioned against the essential characteristics of drugs, pills satisfy each of these key specifications, thus illustrating the usefulness of understanding pills through the lens of both theories.

Having broadly fleshed out Latour’s theory, I argue that Latour would most likely categorize pills as falling under “matters of concern.” Pills involve a large community of stakeholders acknowledged as being linked to an actor network of human and non-human collectives. Also, pills cannot be divorced from human beings; therefore, Latour’s statement that “things do not exist

without being full of people,” substantiates the fact that pills are also “full of people,” and therefore exist *within* the realm of design.<sup>17</sup>

The very nature of pills raises additional questions as to what it means to be human. Since pills have the power to manipulate and alter personality, can they merely be thought of as an inanimate object or must they be categorized as something more substantial? In answering this question, I will turn to the title of this piece, “The Manufactured Pharmakon: Pharmaceutical Drugs and the Technology of Life and Death.” In ancient Greek, the word ‘Pharmakon’ could mean life or death, and often referred to an object that was both a remedy and a poison. Pills can be argued as being similarly paradoxical in that for many they are a cure providing relief, even ‘visibility,’ whereas for others, their semiotics are associated almost strictly with poison,<sup>18</sup> abuse, ‘Big Pharma’ and human experimentation. Since pills are such complex things, and always multiple, it would be inaccurate to state that they are strictly one or the other.

Pills are made even more multifaceted by the fact that they are also treated as economic commodities. The pharmaceutical industry is wildly lucrative and huge profits are made from the manufacturing of pills. Consumers are created and both pharmaceutical companies and pills are ‘culture creators.’ Big Pharma for instance does not necessarily sell drugs as much as create awareness of diseases. Crister quotes a pharmaceutical marketing executive who told him, “We are in the business of branding medical conditions.”<sup>19</sup> This begs the question: how did pills become key transformers of human bodies, ethics and culture?

Additionally, the rise of pharmaceutical financial power has translated to an increase in the industry’s political clout. This is unsurprising given that its main tools are money, media, and lobbying. According to Crister, “Between 1996 and 2002, the industry spent half a billion dollars on lobbying, employing six hundred full-time lobbyists, among them twenty-four former members of Congress.”<sup>20</sup> The freedoms pharmaceutical companies won in order to market pills enabled them to do so as if they were any other consumer product. These

shifts in legal labeling and socio-technical practices have utterly revolutionized the way people use prescription pills to run their lives.

Pills are such commonplace things, yet very few people can definitively answer what they are. According to the Oxford dictionary, a pill, most simply, is “a small round mass of solid medicine for swallowing whole.” In the technical sense, pills are products made through a largely automated manufactured process by companies and corporations whose scientists compress chemicals into tablets or capsules. It’s a multi-layered production effort that involves chemists, marketers, design teams and advertisers who work on sales campaigns, among other initiatives. Also, whereas pills were traditionally handmade by massing the ingredients using a mortar and long-handled pestle with a narrow head, tablets are now produced mechanically by compression.<sup>21</sup> Although pills in some form or another have been in circulation since even before ancient Greece - Roman scholar Pliny who lived from 23-79 AD was the first to coin the word “pilula” - it wasn’t until the mid-nineteenth century that the compressed tablet was invented.<sup>22</sup> English pencil lead manufacturer, William Brockedon, patented the tablet press in 1843, paving the way for the mass manufacture of medicines. This design process effectively eliminated the need to make pills by hand and completely revolutionized the face of medicine making. Interestingly, the technology for creating compressed tablets developed out of the same technology used for making lead bullets for firearms.<sup>23</sup> As mentioned above, the paradox of pills is that for some it is used as a means to improve or enhance life, whereas for others it is intertwined with the technology of death.

The ways in which pills are interpreted depend wholly on the stakeholder. Pharmaceutical companies are primarily concerned with branding their product as an object, which can negotiate between different user personalities. The branding of antidepressants, specifically Prozac, is a particularly useful case study. Most simply, psychotropic drugs work by interfering with the process of synaptic transmission, either by inhibiting or enhancing the effects of neurotransmitters. Prozac, which is a psychotropic drug, has, according to Miller, “become a

metaphor in the public consciousness for all the drugs that are increasingly widely used by psychiatrists...By 2002 more than 40 million people had been prescribed Prozac and sales topped US \$22 billion.”<sup>24</sup> Prozac is a poignant case study to illustrate the pill as a culture creator because its success in the drug market created widespread cultural influences. Prozac stood at the core of this phenomenon and inspired books and films such as *Listening to Prozac*, *Prozac Nation*, *Let Them Eat Prozac and Talking Back to Prozac*. Portraying pills as part of a lifestyle choice illustrates the powerful socio-cultural crafting capacity of pills.

The legal drug cultural phenomenon of the 1990s arose when millions of people began clamoring for Prozac despite the enormous stigma associated with taking psychotropic pills. Prior to Prozac, drug branding was largely scientific; Prozac revolutionized medical branding by abandoning that model. It represented a brilliant marketing strategy that highlighted the sales driven “one pill fits all” formula. Moreover, rather than referring strictly to the pharmacological, Prozac as a pill was designed to create a persona and identity. Healy notes that Prozac was marketed “to convey professionalism (through its ‘pro-’ element) and the ability of the medication to target the right area for treatment (through its ‘-zac’ element).”<sup>25</sup> Additionally, New York Times journalist Sara Rimer wrote that before Prozac was widely recognized for its addictive qualities, people—even those opposed to drugs—were nonetheless taking the drug. “But they [consumers] are not talking about getting high, or escaping. They are talking about not feeling depressed anymore, or feeling better able to cope or, in some instances, simply feeling more like themselves.”<sup>26</sup> This returns us to the discussion of what constitutes humanness. Do pills reveal who a person actually is or do they change fundamental capacities? As Healy notes, “Prozac, Zoloft, and Paxil were not put in the drinking water, but they were put into the cultural air we breathe.”<sup>27</sup> The “cultural side effects” meant that pills were transformed into lifestyle agents - inextricably linked to both popular culture and self-identification.

The notion of pills having the ability to alter an individual’s identity is critical to the discussion about the multidimensionality of the

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thing. Elaine Scarry writes in her book, *The Body in Pain*, about what things “know” about human capacities. She asserts that incorporated into objects is an awareness of sentient distress. This is a compelling proposition: it implies that in the design and structure of a pill lies the structure of a perception—that, ultimately, pills represent the material objectification of our awareness of pain.<sup>28</sup> Moreover, Scarry contends that everyday artifacts maintain forms of “materialized awareness” or “projected knowingness” that extend beyond their immediate use. An object is therefore *self-aware* of the specific sentient problem it is meant to eliminate. In this case, the pill must “know” about the problems of both physical and mental human pain. These notions then propose that pills, and by extension pill bottles, are knowledgeable about the human world. Scarry, in writing about the aspirin bottle, addresses this claim:

*It knows about the chemical and neuronal structure of small aches and pains. It knows the size of the hand that will reach out to relieve those aches and pains. It knows that it is itself dangerous to those human beings if taken in large doses. It knows that these human beings know how to read and communicates with them on the subject of amounts through language. It also knows that some human beings do not yet know how to read or read only a different language... it contains within its design a test for helping to ensure responsible usage that has all the elegance of a simple three-step mathematical proof.<sup>29</sup>*

Scarry’s propositions are challenging to accept wholesale because they raise the question of whether the object actually *knows* how to interact with humans, or whether it is simply that whomever designed the interior structure of the given object knew the needs of the user, and therefore designed with those needs and desires in mind. Do pills actually *know* how they will be used or do the user and the designer simply imbue the pill with multiple meanings? Exploring the notion of the inherent intelligence of things fundamentally reconstructs the relationship between objects and people because it suggests that they are sensitive to our limitations and vulnerabilities. If this is the case, how ought humans treat things?

Scarry’s argument that humans embed their built environment with humane awareness and consciousness is evocative. To assert that people design objects to not only serve as extensions of themselves, but also to

extend the powers of sentience, establishes a framework in which objects can be seen as working on behalf of our wellbeing. Or, in Scarry's own words, the interior structures of things become "the champions of human beings."<sup>30</sup> Although it is common to outwardly dismiss materiality, Scarry discredits this behavior because she writes that in clinging to objects, we acknowledge their importance; and once we establish their value, it becomes self-evident why our desire for them must be controlled and why their benefits must be equally accessible throughout the world.<sup>31</sup> Finally, and this point relates to the discussion of "smart" pill bottles which we will explore later, the human imagination is configured such that the work of imagination is to make the inanimate world animate-like, "to make the world outside the body as responsible as if it were not oblivious to sentience."<sup>32</sup>

In many respects, materiality and marketing go hand in hand. Marketing shapes desire and desire coupled with social interactions is one of the primary driving forces behind designing things. Given the enormous scope of pill production, fringe companies and designers are developing products aimed at the populations who drive the pharmaceutical market. Competitive branding campaigns capitalize on the user's belief that they have a measure of choice in how they pick their drugs and medication. Users often select pills based on their "personality," or the personality embedded within the drug by an advertising campaign chosen by the pharmaceutical company's 'core-brand idea.'<sup>33</sup> Pharmaceutical advertising frames their consumer as an unsatisfied person who would be better off, "more enhanced," if he or she decided to take on a particular pill regimen. This type of marketing offers particular kinds of lives and ways of being, in the hopes that the consumer "buys in," deciding to "take residence inside" the world the pharmaceutical brand concocted for them.<sup>34</sup>

The normalizing quality, ubiquity and perceived banality of pills are not dissimilar from "smart" technologies, which are also deeply interwoven into the fabric of our social networks and mores. For example, people become very emotionally invested in both their medications and smart devices. Technologist, Betti Marenko goes so far as

to suggest that things, such as smartphones, have morphed into our trusted companions with whom we cannot live without. Scarry would agree with Marenko in her discussion of neo-animism, design and object theory, because as is the case with pills, smart technologies are also extensions of our own cognition and emotions.<sup>35</sup> Things are constantly reshaping human behavior, highlighting the undeniable relationship between human beings and designed objects. According to Peter-Paul Verbeek and Adriaan Slob, "Users perform specific actions on the basis of their interaction with technology (in its socio-technical environment), and technologies perform specific tasks on the basis of the ways in which they are embedded in user practices."<sup>36</sup>

Consider GlowCap, the first smart pill bottle. GlowCap is a smart product that reminds its users to take their medications via light, sound and wireless relay alerts using AT&T Mobile Broadband Network. If its user misses a dose for instance, the bottle will light up. If a few hours have passed and the GlowCap user has yet to take his or her medications, the user will receive text messages as well as phone calls until they do. Additionally, GlowCap offers push-of-a-button refills and produces personalized reports, creating, as the website states, "a full circle of care – where it matters most." The GlowCap slogan is "Remembering so you don't have to." GlowCap represents a clear example of a device that possesses intelligent agency. It is an assertive object whose agency speaks very loudly of matters of concern.<sup>37</sup>

GlowCap is a compelling example of how humans cannot be disentangled from things. The reason for this is that humans are constantly *delegating* human characteristics, identities, capacities and capabilities to *things*.<sup>38</sup> Pills alongside smart technologies such as GlowCap shape human actions and attitudes because they are purposefully designed to substitute, influence or transform the actions of people. We project human attributes to things all the time. It is partially because of this that the world today has been rendered inaccessible without the mediation and translation of design. The paradox of our time is twofold, not only are we designing things, which are in turn *re-designing* us, but also, we are creating that

which we have yet to fully comprehend.

We already know that design has the capacity to reconfigure ideas about our world and our relationship with it. Design, therefore, is a complex nexus of theories, cultural practices, processes, discourses and industries – each with its own material entanglements. The cultural obsession with both pills of all types and animated things raises further philosophical questions, the most interesting of which is: What constitutes an object and subject when both object and subject are able to react and respond to one another in unprecedented ways?<sup>39</sup> (Below, I consider the problems associated with clinical trials and human experimentation—topics adding an additional dimension to the discussion around subject and object).

Although pills embody numerous social dimensions, it cannot be forgotten that they are first and foremost commodities. Therefore, by injecting pills with both personalities and desired identities, companies are able to in effect manufacture their user, turning them into passive subjects. In the following example, Emily Martin writes about how drugs can result in “new” persons. Below, she quotes a woman speaking out at a bipolar disorder support group:

*I am Hanna and I am manic-depressive. I am a rapid cycler, I am either up or down, and I am not much in the middle, or at normal (if you want to call that normal). I realize I expected the pills to manage the manic depression, and now I see I need to manage it at all levels, including the spiritual. I need to learn more, to exercise more, to be active not passive. My shift in thinking is due to taking Depakote - it is like a new suit of clothes! I am a snake who has shed its skin, I am all new and shiny.<sup>40</sup>*

Martin goes on to note material culture theorist Susanne Kuchler’s observation that, for some users, pills are “animated things, ‘intelligent’ objects both material and mindful.”<sup>41</sup> Pills are believed to have the power to produce various desired social and psychological outcomes for subjects or users, making them ‘whole’ again. Does this analysis then suggest that we are less of a person without drugs?

Capitalizing upon this complex mentality, pharmaceutical marketers design branding campaigns that encourage psychiatrists to combine drugs into “cocktails.” Healthcare

professionals almost behave as matchmakers who match the perceived character traits of various drugs with their patients’ own traits and symptoms in order to optimize their mental state. In thinking about this practice, it might seem like drugs are more “person-like” than previously thought; however, Martin argues against this interpretation by writing that drugs are not like persons—they can be bought, sold, combined and manipulated much like one would with parts of a car.<sup>42</sup> Although this is in many ways true, the fact that pills can fully alter personality traits and mental states suggests that the distinction between human-like and un-human isn’t so clear-cut. Pills may be an example of how we are becoming *differently* human than in the past. It is limiting and too circular to frame what it means to be human today in terms of an either/or scenario. Rather than questioning whether it is things that are shaping humans or humans that are shaping things, a more effective framework would be to understand the two as shaping one another simultaneously. This reciprocal process is simply a part of our evolution in becoming differently human. The discussion of pills inevitably becomes

a discussion about side effects. No designed object exists without consequences. It is highly strategic on behalf of pharmaceutical companies to ensure that the miniaturized character of pills remains intact because their size make us feel that we are the masters and the pills our subjects. Using Levi-Strauss's argument about the power people feel over miniatures is crucial to our understanding of side effects because we view them as the drug's subject. Intelligent branding displaces side effects to the peripheries of our consciousness.<sup>43</sup> This manufactured reality restricts us to the aisle seat of a much greater power play.

This power play introduces the question of morality into our discussion on design and drugs because every element of pills calls upon ethics. In Adriana Petryna's work titled, *Ethical Variability: Drug Development and Globalizing Clinical Trials*, she contends that the rapid growth of pharmaceutical markets has led to gross ethical dilemmas in the arena of global human-subject research. Throughout her work Petryna found that the global dynamics of pill production play a critical role in reshaping ethical norms, especially as they pertain to individual bodily integrity.<sup>44</sup> Petryna writes about the developing world and the outsourcing of pharmaceutical clinical trials, an enormous industry that is fraught with human rights abuses. Many drug trials are carried out in developing countries because impoverished and disempowered participants are willing to undergo testing for very little monetary compensation.

Additionally, this process has been aided by the fact that U.S. companies are not required to inform the Food and Drug Administration (FDA) before testing on non-U.S. patients, nor does the FDA track research by location upon approval of new drugs.<sup>45</sup> Petryna writes that drugs are the products of profit-making corporations. As long as pharmaceutical companies can prove their drugs are safe "enough" and better than placebo-controlled trials, they have permission to sell them—even to patients who don't absolutely need them. Shah quotes the old Pharma saying, "While it's good to have a pill that cured the disease, it's better to have a pill you have to take every day."<sup>46</sup> Given that these companies are able to control their trial populations, they are able to write the language of

their work; by this I mean that they are able to assert that bad side effects are "merely the hallucination of the psychotic patient."<sup>47</sup> Knowing that these vulnerable populations are unlikely to issue complaints to any government or social justice entity, using developing world populations to displace adverse effects has proven highly lucrative for these companies.

These corporations are essentially treating human subjects as objects and prototypes. Clinical trials and human experimentation turn the body, the *human being*, into a thing. This illustrates how things and people alter and transform one another concomitantly. If pills are quasi-sentient and capable of turning consumers into pharmacological persons, then humans, in becoming pill-testing subjects, are positioned as things. Ethics and governmental bodies should protect these people from harm; however, they are left completely vulnerable because they lack government acknowledgment, protection and support. Petryna writes that in order to even address these human rights abuses: "States themselves need to act as protectors and not abusers; transnational corporations need to respect the rights and dignity of all research subjects and recognize that different situations elicit different kinds of coercion; and international ethics codes must be enforceable in cases of clear violation."

Pills are not inherently 'bad objects;' however, they can easily be treated as such. Pills need to "return" to their intended purpose, and therefore, designers must "rediscover" drugs, such that they become objects of protection rather than of harm. In order to achieve this there needs to be a deeper awareness of bioethical issues, increased encouragement of consumer activism and pharmaceutical transparency. Melanie Klein suggests that the "bad" part of the "bad object" "can be pictured as part of the external world and does not need to be displaced into the hidden interior of the individual."<sup>49</sup> Applying this framework to pharmaceutical products mean that both designers and users need to acknowledge that the polished image of pills cultivated by advertisers is not only damaging, but also, nefarious.

How can these 'bad objects' be understood, or rather ingested, in a more ethical manner? I propose that both conscientiousness

and “humanness” ought to be reinserted back into the design and production of pills. It is also vital that critical thinking be the primary mode through which design acts, creates and is understood. If we stop being conscious of the fact that design is about the relationship between persons, artifacts, and nature, we allow for unbridled mass consumption and abuse. Without ethics, design as a practice is easily reduced to the manufacturing of useless or harmful commodities.

Despite the ubiquity of pills, the pharmacy pill bottle has remained largely unchanged since WWII. The standard issue amber cast pill bottle is not only unattractive and hard to read, but also a major reason why prescription drug users take their medications incorrectly.<sup>50</sup> Poor pill bottle design has been accepted as the norm for decades. Convolved labeling, discordant color choices, hard to read type and the curved shape of the pill bottles are only some examples of problems with the object.

That said, a new path forward is being forged, and there are designers who are seeking to re-envision what pills and their containers can be. In addition to GlowCap, designer Deborah Adler is revolutionizing the layout and construction of the pill bottle. This overhaul is significant because by re-designing the bottle, you transform the ways in which users interact and interpret pills. Adler’s ClearRx prescription-packaging system represents a return to sensibility. In her piece *The Perfect Prescription*, Sarah Bernard explains how Adler’s redesign will transform many existing practices of the pharmaceutical industry. Adler instituted multiple changes to the classic pill bottle. The new container has an easily visible I.D., a more universal color—as red tends to connote caution—a more accessible shape, and, most importantly, a clear hierarchy of information, with the most critical information placed above the black line (drug name, dosage, intake, instructions). There are many other redesigned elements; however, it is most compelling to note that the global megacorporation Target bought the design patent. This is revolutionary because it suggests that major corporations are open to changes taking place within Big Pharma. Although this is simply one of many design solutions that need to happen in order for

pills to be “rediscovered,” Adler’s creation is encouraging.

This paper has examined the pill as a fluid design object that is tied to a complex and ever evolving socio-economic network. As a design object, I have deconstructed the pill to illustrate its profound multidimensionality and deep resonance. From analyzing the pill as art, culture creator, social good, economic commodity, lifestyle agent, companion, paradox and political player, among others, I have tried to illuminate the complex nature of pills and their relationship to what it means to be human. Design is neither neutral nor value free, therefore, it must constantly negotiate with biases that stem from all facets of industry and society. The nature of design is such that it must always be understood as a critical and conscious practice. The enormous responsibility attached to design forces designers to always question in whose interest are they creating and to what end? If design, especially the design of pills, continues to be driven by a sense of aggressive commercial and marketing opportunism, then we face losing touch with what the true focus of design should be.

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