STORYTELLING AND USER EXPERIENCE DESIGN: HOW STORIES SHAPE DESIGN AND HOW DESIGN SHAPES EVERYTHING

by

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To Christina
for without whom there is nothing

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Chapter 4 - Emotions, then Stuff

Technology fills a great portion of our daily life. We use it to work, we use it for entertainment, and we use it for the gaps in-between those two activities. Technology, it seems, is ubiquitous. In a certain way it is, and many conceptions of technology operate under this condition. A computer or phone is a single node within a vast network of interconnected nodes. This, on its face, is definitely true. It feels really simple. A computer calls a server, gets the ok, sends information, and that server then passes it along to another connected device on the network that requested the information. Simple as that. The internet works on one, flat plane, like a car driving through a street. Something leaves point A and follows a straight line to point B. This *can* be, and is true–sometimes.

However, more exists within the devices we use and the structures in which they inhabit. Things and ideas and whole layers of philosophy live within our stuff, but most often they are hidden, hard to find, or purposefully obfuscated. A flat level of understanding of the internet and the technology that powers it is a simple one. I'd venture this idea is oversimplified as to be incorrect, but this understanding is not without value. It has a lot going for it. It's simple. It feels pretty true. It's easy to share with others. But it's also not quite right, not completely. This conception of how the internet works and the technology that powers it lacks depth and context, two crucial ingredients in critical understanding. Like the inhabitants of *Flatland* come to understand, understanding without depth or context doesn't quite tell the entire story of what something is. You'll miss the entire picture of what's real. The internet is most assuredly a labyrinthine structure, easy to get lost within and difficult to escape from. And building on this puzzle, there are more than just left and right turns. To escape, you'll need more than front and

back movement. You'll also need the confusing ability of needing to go both up and down, left and right, across, down, every direction in three-dimensions and occasionally the fourth dimension–time. As Ender learns in *Ender's Game* when he is first confronted with weightlessness in space, there isn't a stable place from which to view a single thing, holistically. Everything is relational to one another by connected points rather than a firm location, and each thing changes as one changes both who they are and where they are when looking.

What this means in practice is that, sure, the internet is something you can use in a linear fashion, moving in a straight line from logging in, browsing, clicking, and purchasing. However, there are depths within the internet itself, both as the Thing as it is represented socially, the Thing as it's represented philosophically, as well as the Thing as an Object that exists in the world. Any IT support person can verify this as true, as countless numbers of the people they support refer to these machines as The Computer or that Thing, tiny little boxes with human-traits and agency of their own. This always felt weird to me, assigning human-like qualities to clearly non-human things. I know now it felt weird because *it was* weird and also because it is true–paradoxical. There's a certain animating spirit within objects that when held too long or too seriously falls through one's conception and understanding, kernels of the unknown slipping away like sand on Arrakis. Perhaps it is a deep-seated alarm within our psyche to ascribe negative agency to objects we find threatening for their assumed intelligence and efficiency. This thing is a threat; it must be monitored at all times. But maybe that's not so weird after all? Maybe these technological objects do contain something within them that gives them some sense of kinetic animus, and by better understanding them, we can seek to disarm them.

In this chapter, I'll present two major methods by which to consider the different structures I've discussed so far. Previously, I've discussed structural and technical methods by which to understand. This chapter will focus on the harder to pin down, but no less resolute, philosophical and maybe even spiritual ways to understand technology. First, I'll review short stories and literature, and provide a way of meaning-making and looking that isn't always so clear and obvious at first. How do we dig into a short story and find the kernels of truth buried within? Next, I'll interrogate the objects themselves. What's inside there? Is it merely components and parts, or is there something else going on? Finally, I'll interrogate the act of creativity itself, and how one goes about making both stories and stuff. How does it happen? What goes on when we make something?

Each of these facets, each new way of looking and considering isn't really right or wrong. I wouldn't even say that one is better or worse than the other. I don't really operate in that mode of thinking anymore after being a designer for so long. Goodness and Badness are always relative. Rather, what I suggest is that these strategies are ways of making meaning, ways of consideration that then offer some measure of success or failure, with all of the attendant confusions and questions of what it means to "succeed" or "fail". Is a design that doesn't work quite well enough but contributes knowledge and ideas to the final design in meaningful ways a failure? Sure; maybe. Maybe not. But that's not really the goal. Consider this as a trip to the home improvement store. While you won't always need all the tools or knowledge offered here, when you have the specific tool one for the right situation[45], the job becomes much, much

[45] I swapped out a few toilets once in my house. At first, I used a mish-mash of random tools to get the job done. It took a long time. The next time I needed to swap a toilet, I purchased the 4$ tool specially made for unscrewing specific types of screws that are used on toilets. It took about 5 minutes. Did I *need* it, strictly speaking? Not really. But it sure made the job easier, more enjoyable, and ultimately, more successful.

easier. But along the way, it's also important to understand how to think about solutions. This is where we will begin.

Taming of the screw

In 1974, philosopher and writer Robert Pirsig published his breakout book, *Zen and the Art of Motorcycle Maintenance.* A very mild American picaresque, the novel follows a father and son as they traverse the American West on a motorcycle as they attempt to repair a damaged and broken relationship, and often, a damaged and unresponsive motorcycle. The son is young and petulant. The father gruff and quick to anger. When recounting the travel narrative portion of the work, the book is told in a fairly straightforward and descriptive fashion, a standard telling of events as they unfold. However, what really drives *Zen* as a work with staying power decades later is the short interludes discussing notions of Quality, what it means to solve problems, and how we as people go about considering and thinking about those problems. A particularly notable moment involves a single screw that effectively debilitates an entire motorcycle, rendering it essentially worthless. A single, small thing echoes, tearing down the functionality of everything around it.

Pirsig writes, "If you want to build a factory, or fix a motorcycle, … classical, structured, dualistic subject-object knowledge, although necessary, isn't enough, You have to have some feeling for the quality of the work. You have to have a sense of what's good" (284). It's not enough to merely understand who acts (subject) and who is acted upon (object). Something else exists within this space, and for Pirsig, it is a notion of Quality[46]. For Pirsig, and myself as

[46] So you've probably noticed all these mid-sentence capitalizations. These aren't arbitrary or "not understanding how capitalization works," as the worst professor/teacher/manager-type of my entire life once noted. This is my *doctoral dissertation*, so do the math on the volume of that number and the meaning of that statement. These are capitonyms, which reference the translation of Plato's works and the use of capitalization to show transcendent

well, understanding a thing's Quality is a relational exercise in understanding both context and situation-ness. How does this thing relate to other things and those things to the initial thing? Under what conditions does this thing operate, and under what conditions does this thing *do what it's intended to do*? Rather than looking at a broken screw as a part to replace, Pirsig encourages looking at the job a screw does in relation to other items doing jobs. In Pirsig's example, a single broken screw is preventing his motorcycle from running, but what is important here isn't getting a new screw and fixing the motorcycle. All solutions seem obvious after one goes about the hard, sometimes seemingly impossible work of finding it. The method by which one thinks about locating the screw to fix is only possible through a process of understanding and ultimately, revealing. What's important is the process by which one evaluates "brokenness" and the relationships created and caused by this break.

Forgive the longish quote, but this next part is important to understand and needs more context than the usual short-ish quote would provide. He continues:

> Normally screws are so cheap and small and simple you think of them as unimportant. But now, as your Quality awareness becomes stronger, you realize that this one, individual, particular screw is neither cheap nor small nor unimportant. Right now this screw is worth exactly the selling price of the whole motorcycle, because the motorcycle is actually valueless until you get the screw out. With this reevaluation of the screw comes a willingness to expand your knowledge of it…
>
> If you concentrate on it … you will come to see that the screw is less and less an object typical of a class and more an object unique in itself. Then with more concentration you

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ideas that represent an ideal, yet unattainable, state. So when I (and many, many others) write things like Quality or Beauty, they are meant in the philosophical sense of highlighting a term that then gets explained more fully or deeply, in this instance "perfection that is unattainable but worthy of pursuit," which is a deeper and more meaningful understanding of capitalization, writing, and communication and neither a mistake nor a misunderstanding of how any of that works. But hey; when you're looking to be awful to someone for questionable reasons, you use whatever you can, no matter how indicative of one's ignorance and/or stupidity it may be. This all nets out to the following lesson: seek to understand and ask questions, less you become an A-hole.

> will begin to see the screw as not even an object at all but as a collection of functions…What it *is* has ceased to be a category of thought and is a continuing direct experience…You are interested in what it *does* and why it's doing it. You will ask functional questions. (286-28).

Without consideration, it's far too easy to overlook simple things that can cause big problems. A small, broken screw can break an entire motorcycle. A poorly written line of code can offer a backdoor for hackers and malware to break giant systems. The goal here is not to encourage some level of neuroticism and paranoia about every small and minute thing every minute of every day. Rather, the goal is to offer a method by which to solve big problems by beginning at the very simplest of ideas and considering what role they have within a larger system. It's easy to look at the big picture, and in fact is so encouraged in our modern discourse as to become cliche.

What Pirsig offers here is useful methodology not only for User Experience, one I use daily, but understanding how things work and break in a variety of ways–big and small and the echoes and ramifications of each. Sometimes, you need a new computer. The whole thing is trashed. Sometimes, you just need to restart it. Both would solve the problem, but one is simple, efficient, and effective. It's always tempting to point one's finger at big, monolithic-seeming structures and say, "tear these mf-ers down." This is an often popular (yet intellectually lazy) way of offering "analysis" of "problems," one that nets out a great deal of scholarly articles and yet very little tangible solutions. Pirsig offers a way to think about things, both big and small, and consider their *function* within a system rather than their *location* or presumed *value* within a system. Why tear down an entire monolith, when a well-researched

and thoughtful analysis of the structure would reveal how a single crack in the right spot would do the job just as effectively as a wrecking ball?

This type of monolith destruction was and is a popular way by which to understand the world. It's got a fun catchy name, postmodernism, and for a while made a lot of sense as a way to understand the world and affect change. Fredric Jameson in his major book on the topic, *Postmodernism, or the Cultural Logic of Late Capitalism,* calls attention to this change. Rather than Pirsig's depth, Jameson notes a shift in our social thinking. Our contemporary culture is defined by two main tenets: depthlessness and pastiche. For Jameson, our culture has rejected depth in favor of capital. Why make something deep, complicated, and interesting when one can make something superficial and profitable? Jameson looks a little bit backwards to make his claims. One support column for his argument is Warhol, who's Campbell's soup cans were meant to interrogate and represent the notion of art within a capitalist space (9). He compares them to Van Gogh's infamous shoes, meant to portray not merely the opportunity to purchase shoes but the very lives, actions, and culture of a people portrayed by a single object. These three objects–soup cans, shoes, screws–contain much more than just soup, people, and functional utility. They are representative of *ideas*, a cultural milieu made obvious by objects. The stuff we have, and use, represents who we are, as much as we like to pretend it does not. For Jameson and postmodernism, what is being portrayed by our objects is shallow, superficial even. We are *too* free of depth and nuance, and the typical means that we would use to criticize our stagnant and repressive culture, parody and/or satire, have become a toothless pastiche devoid of an intellectual or social power. There's not even enough Quality within these items to even offer critique. He notes, "Pastiche is thus blank parody, a statue with blind eyeballs: it is to

parody what that other interesting and historically original modern thing, the practice of a kind of blank irony, it to what Wayne Booth calls the 'stable ironies' of the eighteenth century" (17). As a culture, we used to be able to rely on certain types of rhetorical structures–parody, satire, irony–to poke fun (often, at those in power) and affect change. For Jameson, those opportunities are gone. There is no There there. Postmodernism, then, remedies this by doing all of the tearing down and none of the building. There's nothing worth saving. But there's always something worth saving, and postmodernism's desire to destroy leaves behind rubble that can be sorted, cataloged, and rebuilt with. In order to answer these claims and offer some measure of a solution on how we can make things better, we need to ricochet around time a little bit.

Russian philosopher and critic Mikhail Bakhtin in his chapter "Epic and Novel" from the *Dialogic Imagination* comments, "After all, every great and serious contemporaneity requires an authentic profile of the past, an authentic other language from another time" (30). Bakhtin is attempting to reconcile the differences between the Epic, a structure I've laid out in Chapter One's hero journey and a newer form of writing, the Novel[47], which doesn't need or even want to follow a strict, rigid structure in order to tell stories and make meaning. The Epic is often standalone, rigid, and inflexible. It doesn't offer the ability to bring in *other intellectual stuff*, a requirement for the understanding of Quality that Pirsig noted above. The Epic is a monolith; the novel is more amorphous. In a sense, the novel is like the modern internet, a place where

[47] "New" and "Old" here are real, real generous in their scope. For Bakhtin, old means like, thousands of years old, and new means only a few hundred years. Intellectual thought is often like this, requiring a fair amount of context to understand what's going on. I technically study "contemporary" literature, which is a scant 80-120 years, give or take. So I get it–this can feel kinda weird, time-wise, saying new and old. Particularly now when an "old iPhone" is like, one year old in some cases.

multiple nodes and seemingly disparate pieces of information can coalesce to create something weird, new, and interesting. He continues:

> No matter how distant this object is from us in time, it is connected to our incomplete, present-day, continuing temporal transitions, it develops a relationship with our unpreparedness, with our present. But meanwhile our present has been moving into an inconclusive future (*Epic and Novel*, 30).

For Bakhtin, the novels of the past offer a means by which to understand the future. Taken more liberally, the past can be instructive of the future, giving and making meaning on things that don't exist yet. While Jameson suggests that cultural objects are too devoid of meaning and value to make productive critiques and changes, Bakhtin suggests we can somewhat short circuit the intellectual tradition. We can use the past to make meaning of the present-day, and we can use the present-day to influence both the past and the future based on the interconnectedness of the structural forms of writing. The novel has the capacity to make meaning by fluidity, rather than rigidity. There is no "right." There is only "right"--for right now. Novels don't have a right answer; they are mirrors, reflective of the conditions by which they are received, understood, and discussed. This, for Bakhtin, is the crucial work of the dialogic imagination. The conversations about something and the understanding that is created from this process *across time* is where the meaning of a novel is both continually made and constantly transformed. Meaning, then, is borne from the past, observable within the present, and able to make and understand the future.

George Saunders leans on both Jameson and Bakhtin in his work *A Swim in a Pond in the Rain,* a guide-like work that takes short stories, and leaning on his years of being a professor, teaches the reader effectively *how to read*. In his introduction, channeling his inner Jameson,

Saunders writes, “We live, as you may have noticed, in a degraded era, bombarded by facile, shallow, agenda-laced, too rapidly disseminated information bursts” (5). But unlike postmodernism, Saunders goes a step further, offering solutions and methods by which to understand. None of this is new or particularly groundbreaking for any Liberal Arts Types who have done this type of work before. However, it isn’t particularly common or practiced among those in other disciplines and thus bears repeating and sharing. Further, his methodology for analysis is a good reminder on how to simply *exist* and carefully consider any work for itself, rather than stripmine the piece for Key Takeaways and listicles. He continues:

> The basic drill I’m proposing here is: read the story, then turn your mind to the experience you’ve just had. Was there a place you found particularly moving? Something you resisted or that confused you?A moment when you found yourself tearing up, getting annoyed, thinking anew? … No need to dress up your response in literary language or express it in terms of “theme” or “plot” or “character development” or any of that. …
>
> The main thing I want us to be asking together is: What did we feel and where did we feel it?” (All coherent intellectual work begins with a genuine reaction.) (6-7)

Notably absent are any notions of good versus bad; literary devices being used and their effects on the reader. The first step of any level of understanding deeper and more complex pieces of Art or Literatures is really, really simple. What did this thing do to you, emotionally? How did you feel and where did you feel it? That’s it. After, if you want, you can then go back to the parts of that Art or Literature Thing and see why those things made you feel that way. But simply understanding *what* you feel and *where* you felt it is the main thing. There’s this idea that literature and art are hard to understand, and sometimes literature can be confusing, I’ll concede that. But I don’t think they are ever hard to understand when considered this way,

arguably, their truest and best way, with all these high-brow conceptions and exclusionary jargon stripped away. At the end of the day, it's a simple proposition. After you read this thing, how do you feel?

Saunders, like Pirsig, is asking the reader to do less. They both ask the reader to consider information cautiously, slowly, and carefully with a keen eye towards the internal mechanism within one's mind. Pirsig suggests that by understanding small, simple things and how those things work, one can solve big impossibly seeming problems. Saunders suggests something similar, using simple emotions and their location within literature as the place to begin understanding. He concludes:

> What we're going to be doing here, essentially, is watching ourselves read … Why would we want to do this? Well, the part of the mind that reads a story is also the part that reads the world; it can deceive us, but it can also be trained to accuracy; it can fall into disuse and make us more susceptible to lazy, violent, materialistic forces, but it can also be urged back to life, transforming us into more active, curious, alert reader of reality. (8)

Effectively, what Jameson bemoans and problematizes and what Pirsig, Bakhtin, and Saunders offer solutions for are all the same. The way to understand and make meaning of the world is by slowing down and understanding how the thing we are looking at works, either physically, temporally, or emotionally. Rather than immediately reacting and responding, slow down and consider. Rather than rushing to *say something*, a crucial technique offered by stories is to *feel something* in order to *understand something*. Put another way, rather than using emotions to fuel action, use emotions to fuel understanding of the self and how the self makes meaning. Another word for this is Empathy. Another word for this is Love.

How it's made

A single screw offers a moment of reflection, a place to consider functionality as well as how a part affects the whole. What is the thing made of? How does it do its job? How does this job affect other jobs that other things do? In User Experience, this is called Systems Thinking. Systems Thinking looks at input and outputs, both human capital as well as physical processes, and analyzes how stuff gets accomplished or made. A broken water pipe not only affects water production[48], it affects the other parts of the system that rely on water like washing dishes or clothes. In effect, every thing in a system affects every other part of a system, both forwards and back. To use an extreme example, a broken water pipe might not let me wash clothes, which could affect my job performance, which could lead me to losing my job, which would then prevent me from earning money to fix the broken water pipe. Systems, like stories, are often circular, self-contained, and highly integrated.

Each system is made up of other systems, and down the rabbit hole we could go if we so desired. Pirsig offered a human-centric approach to understanding how things work. We, as people, consider the screw. However, what if we inverted our frame of thinking, shifted our paradigm ever so slightly to not consider the person in the system and instead considered the things in the system and the *system itself* as objects and structures that have their own animating features? The objects around us, perhaps, have agencies and motives of their own, crafted and held deep within their being. Can stuff have a Soul? Maybe items have thoughts, feelings, and intuitions about what they should be used for? This feels a little silly, until, like I've noted above, you hear us human-types use phrases like, "The guitar wants to be played" or

[48] I had a broken water pipe the night before writing this and let me tell you. A broken water pipe really screws up *everything*.

"The Computer doesn't want to work today." Do these things actually have something like a Soul, or Motive, or are we merely imposing our own view on these lifeless things, giving them energy where none existed? Do these things have some sort of internal motion, a forward movement that practically forces the user to use them for a certain outcome? I think I would suggest in this chapter that two things can be true at the same time. Two things can be false, as well.

Jean-Francois Lyotard in *The Libidinal Economy* writes, "Everything is what it is because each thing resembles another thing," and it is through this lens of interconnected *thingness* that we begin. In our lived world, there are a great many objects, artifacts, items, commodities, devices, gadgets, instruments, tools, utensils, implements, thingies and thingamabobs and thingamajigs, gizmos, and doodads[49]. And yet despite all their unique and special qualities, they each share similar traits of their essence that interconnect them. To lean on our platonic capitalization from above, there are things and then there are Things; there objects as well as Objects. One denotes a generic category; one denotes a specific way of thinking about that item. If we consider these items at all, which we rarely do, we tend to think in a binary way–working or not working. In most design sessions, we spend a great deal of time focusing on things that aren't correctly working, moments within a design that are troubling, confusing, or don't allow the user to accomplish the task that they set out to do. Software designer and programmer Alan Cooper in *The Inmates are Running the Asylum* notes early on, "It's one thing to see that a problem exists, but it's quite another to devise a solution" (19). When the printer doesn't print, it's pretty obvious that it's not working. A thornier and more interesting question

[49] Who's-its and whats-its galore.

is *why*. Almost always, the problem isn't the surface one immediately obvious and clear to us; the problem lies behind the obvious thing that *feels* like it should be the place to begin one's work. The problem is the *thing behind the Thing*.

Bill Brown in his article "Thing Theory" provides a basic outline for how items in the world can be understood. He comments, "As they circulate through our lives, we look through objects (to see what they disclose about history, society, nature, or culture—above all, what they disclose about us), but we only catch a glimpse of things" (4). Brown is doing two things here, both of them important. First, he is calling attention to relationships like Pirsig previously, that of the observer/actor and that of the observed/subject. As people, we often position ourselves as the actor, or as the kids would say, "the main character." This is the starting point of most interrogations, and a place where Pirsig encourages us to move beyond–the simple understanding of subject-object relationships, actor and acted upon. Like Lyotard suggests and Brown notes, when we view or use stuff in our lives, we almost naturally view them in relation to other things–this is like that except in a few ways that are notable. Natural comparisons and ontological categorizing is an outcropping of this tendency. There's phylums and genuses and all sorts of scientific language for saying how a beetle is like other beetle-things and not elephant-like-things. For people, that often turns into hierarchies, where the thing I like is better than the thing you like. When presented at scale, this is a Twitter argument over some banal and facile subject matter, a boxing match of semantics that is almost always a waste of time.

Secondly, Brown gestures quite subtly at a more hidden and less apparent facet of objects, noting how we as viewers "only catch a glimpse of things." We can see how things relate in our lives, but we aren't really able to see in totality the essence of an object in

question. As Pirsig and Saunders advocate for, if we look more closely and slowly with emotional resonance at the forefront, we could unearth an important distinction within the nature of an object. As Brown later notes in his book *A Sense of Things*, items within the world can be categorized in two ways:

- Things
    - *Things have value*, measured by successful functioning, utility, or some other value-derived from a person's experience with them
- Objects
    - Objects have lost their value by either not working or no longer serving the role they were supposed to fulfill[50]

Pirsig's example of a screw shows this shift. A screw holding up an important part of the motorcycle that contributes to the motorcycle functioning is a Thing. When that screw breaks or no longer works, it shifts into an Object. Brown continues, "We begin to confront the thingness of objects when they stop working for us: when the drill breaks, when the car stalls … when their flow within the circuits of production and distribution, consumption and exhibition, has been arrested, however momentarily" (4). This moment of breakage is often a moment of frustration and negativity. I want this artifact to work and it's not working–I don't like that. But instead of shifting immediately to negativity, we could choose to stop and consider, like Pirsig and Saunders suggests, to consider something altogether different. Are we mad it's not

[50] Heidegger, who we will discuss in a moment, introduces similarly parallel but slightly different concepts. For Heidegger, there are two ways to approach the world: *Vorhandenheit* (present-at-hand) and *Zuhandenheit* (ready-to-hand). *Vorhandenheit* suggests a more theoretical stance when approaching the world, while *Zuhandenheit* refers to a more practical relationship to things that are useful. One can endlessly analyze the world and the things within it, creating theories and ideas for discussion and thought. However, one's relationship with the practical world is that of interaction and utility. We can forever think of the hammer and its many layers and meanings across art and time, but a hammer is also a practical object that has real-world uses and applications. This tension, that of objects as theory and objects as practice/utility, is an important insight. Planning and thinking about things is great, but sometimes it's more useful just to *do*, to *act.* Knowing the right time to stop analyzing and start doing is tremendous creative skill, one I still am working to understand.

working, or are we mad it's not showing us what it is? Do we miss the action the Thing did, or do we miss how the Thing made us feel?

Brown works from a position articulated by Martin Heidegger[51] in *The Question Concerning Technology.* Items only have value insofar as they can be used for something productive, calling on the Greek term *poiesis* or "to make". Taken a step further, then, we can consider technological artifacts as a method by which to bring-forth truth, order. He writes, "Technology is therefore no mere means. Technology is a way of revealing. If we give heed to this, then another whole realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e., of truth" (12). The phones and computers we surround ourselves with can log into Facebook, send emails, and also post funny pictures around the world. What these items can also do is function as a Thing, where their primary ability (although often hidden or hard to discern) is revealing the true nature of that which is already there. This, then, poses a more sinister and troubling question. We bemoan the cruelness and vapidity of the internet; but was this already there in our society, ever-present just oft ignored? The technology we use

[51] No need to bury the lede: Heidegger, for a chunk of his life, was a Nazi. Obviously, not great and very, very bad. How do we square up really important philosophical contributions with other more noxious and baffling lines of reasoning that are clearly and painfully anti-semitic? Bernad Stiegler's "Doing and Saying Stupid Things in the Twentieth Century" sums up and solves this conundrum quite simply. Heidegger, for all of this intelligence and insight, was also stupid, and forgot that he, as sharp and as lauded at the time as he was, *could* be stupid. Stiegler writes, "This is above all a question of my stupidity such that it is capable – that is, such that I am capable – of making me ashamed: a stupidity such that I perceive my being stupid. Without which (for want of being stupid, of being able to be) I would not be able to be affected (pained, struck) by the stupidity of others, or to have shame for myself (as if their stupidity necessarily and immediately becomes mine): without that, I could not be made ashamed." Steigler also notes Heidegger's passion, which allows him both to chase down complicated notions of Being and Technology, working against him when chasing down ideas of German dominance and anti-semitism. So what, then, do we do with this guy? I use him as a cautionary tale of awareness. A hammer can build a house; a hammer can kill a person. Not allowing or forbidding hammers doesn't make them go away; it simply hampers those who need them to build houses. For everyone, and especially those who achieve great success of any kind but *especially* intellectual success, an awareness of the power of one's ideas and the requirement for further and aggressive interrogation of those ideas (since they now have scale) is paramount. Otherwise, you might forget that you, too, can be stupid and say stupid things, and you might say some truly regrettable and awful things that can and do tarnish your entire body of work. Heidegger is a cautionary tale, a lesson all should remember about remaining sharp, humble, and aware.

can show us something, and it can teach us something as well about the things that often live within the ineffable ether with a hidden essence. Technology isn't only lines of code for function. Technology can reveal truth and emotions that were long buried. Technology can be just as wondrous and magical and dangerous and scandalous as any painting or sculpture. Technology can be art.

In the "Origin of the Work of Art," Heidegger attempts to understand how art creates within the viewer a deeper understanding of things and a person's position relative to objects. Heidegger begins by making some careful delineations in the world of stuff. He starts by understanding what art is *not*, before tackling that which it is. Brown notes there's a difference between Things and Objects, but Heidegger has another category worth consideration as we examine the technological objects in our day to day life. Heidegger notes a subcategory, that of Equipment, who's value hinges on its capacity to be reliable, fashioned by people, and ultimately, forgettable throughout the course of one's life. The oft-used and reiterated Heideggerean example is a hammer, only knowable through its utility. A hammer is decidedly not art. Its chief characteristics are its ability to function and its desire to be forgotten.

However, art serves a very different purpose, that of revealing. He writes, "The art work opens up in its own way the Being of beings … In the art work, the truth of what it has set itself to work. Art is truth setting itself to work" (38). Although technology is typically understood through the framework of its Greek etymology of *techne* as craftsmanship or craft, Heidegger suggests that art is a place for revealing, both of itself as Art and something within the viewer. Similar to an interface that a user has never seen before, as they work through the particular flow or screen, something very tangible is happening. Interactions occur between both subject

(person) and object (interface). When we look at art, we assume there is some back and forth occurring as the person views the art in question. However, we seem to forget this back and forth when dealing with computers or technology. We assume that we only put things in, that we act upon technology. In return, we get whatever it is that we want. However, technology is telling us something very important, and in a tangible way, is acting upon us as well.

A quick example is the infinite scroll. Social media uses the infinite scroll to trap users, encouraging them to continually scroll down the page (and stay on their app) endlessly. This encourages addictive behavior, similar to a slot machine. This is called "gamification" in the technology space and is a wildly pernicious and troubling way to design things. Technology, in a real way, changes behavior, modes of thinking, and emotions almost always for a profit motive. What technology is revealing is our capacity to understand, to think, and to listen. When something breaks, as Brown notes, we are *definitely* aware of the limitations and flaws of a computational system. But these flaws always exist, have always existed, and likely, will persist. It's merely our capacity as people to understand, to see, that fluctuates.

For Heidegger, Things can be thought of in three discrete ways: "as a bearer of traits, as the unity of a manifold of sensations, as formed matter" (30). He uses a granite block to prove his point. A granite block bears the traits of being hard and gray. It also can be understood through a viewer's senses (such as sight or touch). Finally, it can be thought of as a form, "the distribution and arrangement of the material parts in spatial locations, resulting in a particular shape, namely that of a block" (27). These particular traits can be a bit muddy in our modern conception of Technology as Things. Assuredly, computers have definable traits, but those traits seem to be more hidden and hard to find as time progresses. Anyone who's tried to fix their

own iPhone can attest to this challenge. Apple uses proprietary screws that require special screwdrivers to access and use. A user can definitely touch and see a computer, but they don't see the computer, not really. They see the interface layer atop the circuits and components, a pleasing facsimile of life in what is in reality a gray machine that bleeps and bloops. Further, the iPhone has a form, no doubt, but not really an organic one in any real sense. A painting has brush strokes, visible by the human eye as remnants of the human hand. An iPhone is machine milled, designed and built largely on *other* computers, a thing making a Thing to make more Things. The kaleidoscope folds upon itself infinitely. All of these layers, one atop another, compact and compress until the kernel of Truth deep within the system becomes too hard for the average person to find. And yet, it remains.

Heidegger puts two items in conversation with one another to prove his point: a physical pair of peasant's shoes and a painting of peasant's shoes by Van Gogh. The peasant's shoes are equipment; they serve no other purpose than to function as protection for one's feet. They don't "say" or "do" or "possess" anything other than their assigned function as protection. Heidegger notes their "reliability" as a defining trait that makes them equipment. This is how we consider our computers, our phones, on an unexamined and cursory level. The shoes invite no further examination; they are common, mundane. Conversely, Van Gogh's painting can give a deeper understanding and *reveal*—of the peasant woman's world, her place in society by revealing the shoe's inner essence. Heidegger comments, "This painting spoke. In the vicinity of the work we were suddenly somewhere else than we usually tend to be" (35). This transformation occurs in art for Heidegger because he views art as "the happening of truth" (37). Art's function is to reveal a thing's general essence through work (arguably, the work of

reflection, examination, and interrogation). Like Saunders suggests, we should stop and consider how these items make us feel. Heidegger summarizes his initial thesis on art at the end of the opening section, writing, "The art work opens up in its own way the Being of beings … In the art work, the truth of what is has set itself to work. Art is truth setting itself to work" (38). Where we have gone astray and currently struggle with is tension.

Most modern computers hide themselves within themselves, trapped between layers of proprietary screws and purposefully hidden software, a labyrinth of technical prowess and design. There's a decent reason for this–proprietary information is extremely valuable and limiting choices for users helps them use the product and not feel overwhelmed. But by hiding everything about the machine and leaving only the visual interface, the user isn't able to accurately view what this Thing is and what its true function desires. Art is so powerful that it *forces* a revelation within the viewer, but art's unflagging interpellative power gets muddled and confused when packed into a metal case. Technology is Art whose function as a Thing is to reveal, but in our contemporary society this function is so hidden as to be thought of as Equipment. How, then, can we learn to see and tap into the technology's power as Art? Do we need to pause, like Pirsig suggests, and look at the simple small things around us? Do we need to focus on feeling at certain moments, like Saunders recommends? Perhaps, we need one more skill.

Ken Kocienda was a principal engineer[52] of iPhone software at Apple for over fifteen years. The on-screen keyboard on every iPhone and seemingly now every phone, the one that

[52] If you aren't familiar with technology like, ranking and status, principal anything is at the top and pretty rare. Most organizations don't even have, or need, one. It mostly works like: Associate [title]; then just [title]; Senior [title]; Lead [title]; Principal [title]. It's pretty similar to academia or the military. The point here is Principal is a big deal.

doesn't require buttons? He figured that out and made it work[53]. Kocienda wrote a book, *Creative Selection: Inside Apple's Design Process During the Golden Age of Steve Jobs*, that tells the process by which decisions are made within Apple. He tells a great many "how we did it" type stories within the book, and I highly recommend it for anyone who wants a real, thoughtful recounting of how stuff is made and how decisions are made on that stuff at a really high level. But what Kocienda does best is his discussion not necessarily on technical problems to solve. Those, generally, are more scientific in approach and more linear in thought. Often, when solving a problem, some engineers cook up a few solutions to a problem, test them to see which works pretty well, and then refine those ideas into what they believe is the best version of that thing. This works great for technical problems. This does not work at all for design decisions. Those are nebulous. Which shade of blue is better? You might think this is a silly question, but it most definitely is a serious one. People generally believe that designs that look better *work and operate* better, and in a marketplace with similar products, looks matter. This is called the aesthetic-usability effect (*The Aesthetic-Usability Effect*, NNG), and I can tell you from personal experience it is true. How then, do you decide on the blue?

There's a few ways, and they are indicative of how companies operate and make decisions. Google is very technical and data focused, and Kocienda cites Doug Bowman, a former Google employee, on how they go about making decisions:

> Without a person at (or near) the helm who thoroughly understands the principles and elements of Design, a company eventually runs out of reasons for design decisions …

[53] The story itself is super cool, using dictionaries, probability, and previous letters typed to make accurate guesses as to what the next letter is based on the relative locations of the letter typed and its surrounding letters. The whole explanation and process of how he figured it out is super smart and interesting, and he tells it in a really compelling, natural way.

> Without conviction, doubt creeps in. … Reduce each decision to a simple logic problem. … Data in your favor? Ok, launch it. Data shows negative effects? Back to the drawing board. *And that data eventually becomes a crutch for every decision* … Yes, it's true that a team at Google couldn't decide between two blues, so they're testing 41 shades between each blue to see which one performs better" (213, emphasis added)

As a "numbers are always true while language is flexible" denier, this matches my life experience perfectly. Numbers are useless without context, and this idea that numbers can tell the whole truth, always, is patently false. A person who operates under this condition, and as expounded upon by Stiegler, has lost the ability to be stupid, to consider that their viewpoint might in fact be the wrong one. Without entertaining the idea that one's viewpoint could be incorrect, true analysis will be difficult, borderline impossible. Numbers, like language, require context, and that context can be manipulated, adjusted, and repurposed for all sorts of reasons. Bowman continues, citing further issues with the "follow the data and launch" mentality:

> In this kind of test, commonly referred to in the high-tech industry as an A/B test, the choices are already laid out … While the A/B test might be a good way to find the single most clickable shade of blue, the dynamic range between best and worst isn't that much. More important, the opportunity cost of running all the trials meant there was less time available for everyone on the development team to dream up a design that people might like two, or three, or ten times more. A/B tests might be useful in finding a color that will get people to click a link more often, but it can't produce a product that feels like a pleasing and integrated whole…Google factored out taste from its design process.(212-213)

This isn't to say that testing things isn't useful. It most definitely is, but testing can only tell you so much in a limited way. Ultimately, a person needs to have a certain skill that allows them to see beyond the numbers into the realm of Heideggerian Art. The person needs a refined sense of color, shape, and often an intuitive sense of what works and why. A person needs to be able

to see deep into the Being and Essence of a Thing in order to understand. How did Kocienda and Apple make decisions? He writes, “When it came to choosing a color, we picked one. We used our good taste–and our knowledge of how to make software accessible to people with visual difficulties related to color perception–and we moved on” (214).

Good taste is required to make something great. It is as simple as that. What, then, is “good taste?” There’s no accounting for taste, as the saying goes, so what does that even mean and how do we get it? Kocienda suggests, “Taste is developing a refined sense of judgment and finding the balance that produces a pleasing and integrated whole” (183). This is a bit of an annoying statement, because it’s true but also easily refuted when the plane of argument is shifted away from the aesthetic to the technical. Often, people will demand *definitions*. My sense of judgment and your sense of judgment are different. What does “balance” and “pleasing” mean? This line of thinking and interrogation completely misses the point. This isn’t a technical process that can be brute forced and tested into a solution. There’s no formula to solve. It’s a question of how hundreds of decisions work together as a discrete whole. Kocienda writes, “The small-scale justifications must contribute to a scheme larger than themselves. The design responsibilities expand to balancing the many individual refined-like responses against the other side of the taste equation, the attempt to create a pleasing and integrated whole” (186). Solving one variable changes all the variables. Choosing this color of blue negates all other blues, and affects how that blue works within a larger, complicated, and shifting aesthetic landscape. There is not a “final” answer or theorem to solve. To do Good Design, one must have good taste and to have good taste is to understand small decisions (like the screw) and how those small decisions all coalesce into a single artistic Thing (that creates feeling).

This is an aesthetic understanding of how Art creates Thingness (often using Beauty) as a compilation of a multitude of factors. Instead of reading a spreadsheet, to have good taste we need to stop and consider function and how we felt at the moment of consideration. This feels like some mystical power, but I can assure you it is not. I have good taste, and I am wholly unremarkable. Good taste requires work like every other technical discipline, but it's just a little harder to discuss because it's centered in the emotional world rather than the analytical world. Emotions can feel fleeting and unmoored, but they are very much real and worthy of attending to when making decisions. Arguably, attending to one's emotional life is the *only* way to make artistic decisions. Where, then, do we start? Kocienda offers the path forward, "Studying great work from the past provides the means of comparison and contrast that lets us tap into the collective creativity of previous generations. The past is a source of the timeless and enduring" (184). As an engineer would study great buildings from the past to understand their timelessness, so too can a designer (or anyone) study great work from the past to gain an aesthetic understanding. Taste, then, is a compilation of skills performed at the same time: function; utility; performance; and an awareness of how an item is situated among other items, both in their action and in their aesthetics.

Hello, world

In the work *10 PRINT,* poet and professor of Digital Media Nick Montfort examines how a single line of computer code can offer a glimpse into the culture that created it. He writes, "Like a diary from the forgotten past, computer code is embedded with stories of a program's making, its purpose, its assumptions, and more. Every symbol within a program can help to illuminate these stories and open historical and critical lines of inquiry" (3). Far too often, this

examination begins and ends with the technical machinations required to make a computer *do stuff.* For a long time, computer advertisements worked this way, pushing a technical message that companies felt users cared about. How big is the memory? How fast are the processors? Tell me all the *data* about a thing. But Apple shifted the understanding of how computers worked, pushing an aesthetic and feelings-based approach to computing that made them more accessible, genuine, and relatable to the average person. No longer were RAM and megabytes important; they were replaced by what could I do on a computer and how could that computer engender some measure of an emotional response.

Technology is a place to reveal, and society has forgotten this power. In its place are infinite scrolls, advertisements, hate speech, and distracting nonsense. As Brown suggests, we only notice this thing to object, valuable to value-less transition, when technology stops working for us, which it most certainly has. The artistry within technology has been lost among its other functions. Computers fade into the background much like Heidegger's Equipment when they are working properly, and as Brown notes, it's only when a Word document freezes or an email jams are we forced to pay attention to the details of this larger Thing we are using. But paying attention is important and highly valuable, as Saunders suggests. Arguably, it's the only thing worth doing. For when we look deeper into the machines we use on a daily basis, they are telling us something, and the way we interpret that something is how we, as people, always interpret things–through story. By understanding stories, we can understand the message that technology gives. By using techniques discussed in this chapter, we can more ably understand that when something goes wrong what that means, why it happened, and how to fix it.

By stopping and considering the small details, like Pirsig suggests, we can see computers both as a place of artistic creativity as well as function, so when something on the computer doesn't work quite right, we can consider the functions behind it. When we approach a piece of noxious content or hateful actions, we can, like Saunders suggest, stop and consider the emotional resonance this piece of information has, and then act accordingly, rather than blindly flying into a rage and responding with equally hateful and noxious behavior. Finally, like Kocienda suggests, we can make better things in the future by relying on good judgment and Good Taste, an action that is a learned skill for everyone and not some innate, specialized talent. Technology allows us to be everywhere and nowhere all at once, and this ubiquity and dislocation creates a tension inside one's Self. But this tension can be resolved; it need not persist. By understanding how things work, and by choosing how to look at something differently, we can, maybe, do a little bit better tomorrow than we did today. Small things accrue into big things, and those big things can, if we want, do good rather than harm.