Hidden in Plain Sight

How to Create Extraordinary Products for Tomorrow's Customers

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with Simon Steinhardt

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Crossing State (of Mind) Lines

You and I may never have met before. I have no idea where you are or how you're consuming this book. I will, however, venture a guess: wherever you may be reading this, you're not doing it in the shower. If I'm wrong, well, bravo for you. But if I'm right, my question to you is this: why *aren't* you in the shower right now?

It may seem like a dumb question, but in design research it's exactly the sort of foundational inquiry that allows us to get at the core of user behavior. Unless you're designing wedding rings or pacemakers, there's no such thing as a 24-7-365 user. My colleagues and I spend a great deal of time thinking about touchpoints—the times and places where users would likely be interacting with the product or service we're designing—and triggers that would prompt users to act in one way or another during those times and in those places. These factors can highlight new opportunities to serve unmet needs, or to better tailor products and services to fit the circumstances in which customers use them. But in order to understand touchpoints and triggers,

we have to take into account the boundaries that separate use from disuse—the border between doing and don't-ing.

Let's take this mind-set to a café, where most people would look around and see a bunch of people seated at tables drinking coffee, chatting, and typing on laptops. An inquisitive researcher, however, might ask why none of them are in the restroom, why anyone would even want to go to the restroom, or even whether it would behoove management to provide free diapers for customers.

Questions like these, however dumb they may seem, allow us to outline the parameters of user behavior—and human behavior. We ask these questions because we know that behavior isn't simply dictated by the laws of nature and the laws of states, but also by cultural norms, social contexts, interpersonal relationships, personalities, and perceptions. When we look at any behavior, even something as mundane as a trip to the restroom, we can uncover all sorts of factors at play. Our goal is to put the parameters of behavior into perspective. And in order to paint the proper picture, we need to put it in the proper frame.

The Frame Job

Over the course of a corporate field study, it's common to collect a great deal of information from participants about the minutiae of their lives: from what time they get up in the morning to the last thing they do before closing their eyes at night; where and with whom they hang out; where they go shopping; what they wear; why they prefer one brand over another; with whom they communicate and why. Some of it may be quite valuable, some

entirely trivial, and we use a variety of techniques to help us figure out what matters. When we move from collecting all this information into analyzing and synthesizing it, we are looking to do two things: make sense of our observations and then reveal patterns and trends that we believe are accurate enough to share with our clients.

To a client or outside observer, design ideas that aren't presented within a research-based, real-world framework can seem arbitrary. For organizations that were weaned on quantitative market research, it's not enough to be inspired—they want to be able to trace that inspiration back to its source.

A multilayered synthesis process runs throughout every field study. During an interview, the questions evolve from those that build a foundational understanding to ones that include more inferred assumptions. As soon as we finish an interview or other data collection session, the team members assemble in the nearest café and review the data we've collected, working to build a shared understanding of what we thought was relevant. Data, like milk, is best consumed fresh; the longer we take to analyze it, the more likely we are to lose the thread that connects it to its original meaning. At some point in the day the team heads back to our "mission control," most often a room in a hotel, guesthouse, or home, where the walls are papered with notes and ideas. Before leaving the city, while we still have access to our local team, we like to spend a full day sifting through the data. Later, back at the studio, we might spend a week or two in a project room surrounded by the data pinned to the wall on giant foam boards, where the team systematically processes it through different lenses.

At this stage, we need to begin organizing the data into a cohesive framework, but the right one—one that creates order out of the chaos of data, setting all the little statements, events, and outcomes to a story—is rarely easy to find.* A good framework helps the researcher accomplish several things: it tells a big truth, substantiated by all the important data and contradicted by none of it; it often maps behaviors across space and/or time; it captures the different behaviors across a range of individuals, taking into account idiosyncrasies without overgeneralizing them; and it creates a narrative around causes and effects, so that reasonable assumptions can be made if anyone tries to throw a "what-if" at it. If someone can glance at it, understand it with minimal explanation, incorporate it into their worldview, and then use it to contemplate new scenarios, then it's working.

If there's such a thing as a default framework in corporate research, it's the customer journey map, which provides detailed information about each event in a customer's typical day, diagrams how she moves from one event to another, and identifies all the touchpoints where she may use the product or service we're designing. Customer journey maps tend to be very precise in their documentation and technical in their appearance—many boxes connected by many lines. They're useful for building a basic level of understanding, and certainly no one would accuse them of being arbitrary, but reading them can sometimes feel like a mechanical process.

* http://www.servicedesigntools.org offers a nice collection of frameworks and other tools used in design research, along with some simple case studies.

There are numerous alternatives to the customer journey map, but there is one in particular, less commonly used but phenomenally useful when applied skillfully, that can bring the diffuse spectrum of almost any human behavior into focus: the threshold map.

Threshold mapping allows us to map out "default" conditions—the normal state a person experiences a majority of the time (for example, most people feel clean enough throughout the day that they won't drop whatever they're doing and hop in the shower if it's available)—and then understand what happens when a person crosses the line into an alternative condition. Often, the feelings that people experience as they approach or cross a threshold lead them to think and act differently.

Design studios, workshops, and laboratories are good at testing and exploring what their products are capable of and what they can withstand when users put them through the wringer of everyday life. Most warranties are predicated on "normal wear and tear," and you can bet a team of researchers spent a good deal of time defining "normal." But increasingly companies around the globe are looking to inform design with greater insight into the makings of their users, not just their products, and what drives use in the first place. And in order to understand behavior, we need to get out of the lab and into people's natural environs.

Often, when people cross a threshold from one state into its alternative, or when they avoid crossing that boundary by taking an action to steer themselves away from the borderline, it's a matter of maintaining standards of acceptability and appropriateness. For designers to understand what lies within the

boundaries of acceptable use and what lies outside those boundaries, they need to understand the contexts in which things will be used, and the range of likely conditions that will change that context in some way.

In the same way that a testing laboratory can help us understand the boundary between normal and extreme (and probably out-of-warranty) use of a product, design research helps us understand the boundaries of normal behaviors. And one of the strongest ways of communicating normal and outlier behavior is through a threshold diagram.

Threshold Mapping 101

Thresholds can teach us a great deal about the ways people make decisions based on their physical and mental states, and what they do to maintain or regain a particular state. To give you a quick rundown of the basics, I'll walk you through a simple example by mapping a threshold you manage every day, all the time: hunger.

Imagine, for a moment, a day in your life as a horizontal timeline, with 12:01 a.m. at one end of that line and midnight at the other. Mark off when you get up and when you go to sleep (and assuming for now that you won't wake until morning once you're asleep). So that we have some context, plot the different places that you go during the day, and the time you spend there: home, your commute, work, the café where you like to lunch, the grocery store you shop at on the way home, and then home again. On top of this, plot the moments when you eat, whether a meal or a snack. The vertical axis, in this case, indicates your

level of hunger. Now plot three lines along the timeline: your level of hunger, as it varies throughout the day; a peak threshold, above which you may be so well sated that you can't even bear the thought of another morsel of food; and a trough threshold, below which you would be too hungry to function. The area between the two thresholds is your comfort zone, and in normal circumstances you'll do what it takes to stay within that zone.

Unless you like to eat to the verge of stomach rupture or fast until you're just about dead from starvation, these thresholds are not absolutes. Moreover, they are not straight lines. They shift up and down throughout the day as you navigate various contexts, with the trough rising as you recognize the need for brain food before a big exam or sinking as you climb into bed too tired to address the rumble in your midsection.

Your hunger level is of course not static, either, gradually veering toward the trough as you go an increasing length of time without eating. If you're proactive, and conscientious about staying within your comfort zone, you'll see the trough coming and eat something as you near it but before you reach it. You'll also stop eating before you reach the peak. It's a neat, simple pattern that anyone can visualize.

But it's also not a realistic one for most people. There are many moments where the normal rules won't apply: you wake up late for work, pick up breakfast at the café next to your office, and give in to the temptation to buy one of their famous bagels; you're stuffed from lunch but it's a coworker's birthday and you feel social pressure to accept a slice of chocolate cake; or you leave work late and find yourself at the grocery store with a shopping cart full of comfort food, due to a combination of hunger

and all the tantalizing smells of fresh, sweet dough emanating from the bakery. Your own comfort zone probably shifted just from reading that last sentence, although the extent of the shift will likely depend on whether you've just eaten.

The thresholds change even more drastically when you consider an extreme event like devout fasting for Ramadan or ritualistic gorging on Thanksgiving. All those external forces can make a mess of what might otherwise be nicely systematic behavior, but the beauty of the threshold map is that it can take those moments into consideration, plot them and their outcomes, and still provide a clear picture—no matter how jagged the three lines get.

We can also map different threshold diagrams for different types of people: how would a hunger threshold diagram differ for a twenty-year-old athlete versus a forty-five-year-old office worker? How would it differ for a successful dieter versus a compulsive eater?

It's a simple exercise but one that can deliver a large payoff, revealing both a richer understanding of *what* people *are and are not* doing, what triggers them to go outside their zone of comfort, and more important, *why*. The format also allows an audience to rapidly absorb the basics, and supports an incredible level of depth and storytelling, particularly around the exceptions.

Exceptions to the Rules

For many people, the comfort zone is an ideal, normalized state, and like anything else that people call "normal," it comes wrapped in a set of social and personal assumptions that can

reveal someone's worldview. It also inherently suggests that there is an "abnormal," a state that lies on the other side of some boundary, a state that may be considered extreme, where one might not venture by choice. The abnormal state is most likely an uncomfortable one (in our example feeling bloated or excessively hungry), and someone who falls into it is likely to try to get out of it as quickly as possible. Like a product testing lab exploring what will trigger a product to break, understanding what it takes for someone to move to an extreme can be just as revealing. In my experience, companies have a reasonable understanding of what is normal but struggle with the extremes, which means they don't understand the tensions that pull normal in different directions.

Just think: How uncomfortable do you get when you haven't checked your email for an hour? How many minutes do you have to spend at the gym before you decide it's okay to have a cupcake later on? How long does a shirt have to go unworn before you decide to give it away? How annoying does that half-broken thing in your house need to be before you'll finally get around to fixing it? Understanding the exceptions and the behaviors needed to bring you back into the comfort zone often reveals little things that might turn out to not be so little: a tweaked interface for prioritizing missed communication; a new pricing model for using exercise machines; how recycling used clothing can free up room in the cupboard and trigger new purchasing behaviors; or a distributed model for sharing DIY tools in the neighborhood.

Such thresholds are fundamental factors in decision-making, whether we explicitly set them or not. Sticking to them,

however, is another matter, and a great deal of research has gone into uncovering how and why people miss their marks, so to speak.

Casinos are especially adept at coaxing patrons out of their comfort zones and into risk-taking by plying them with alcoholic drinks, free meals, and massive doses of oxygen. Psychological experiments on willpower have shown that hunger, lack of sleep, and decision fatigue (the mental toll exacted by extensive decision-making) can all derail otherwise steadfast commitments to self-discipline. Consumer psychologists tell us about how seemingly innocuous distractions, from sound snippets to lighting, promote impulsive, irrational buying habits. In Richard Thaler and Cass Sunstein's book *Nudge: Improving Decisions About Health, Wealth, and Happiness*, the authors argue that people can be coaxed into making better (or at least more classically rational) decisions through "choice architecture," creating defaults and subtle encouragements that suggest one direction of action without compelling it. These are but a few of the countless examples of research on the pliability of ordinary behavior.

What does it all have to do with threshold mapping? Design research is very good at exploring the many different variables that impact changes in behavior, and the aforementioned examples suggest that those parameters are constantly shifting, albeit in ways that can often be anticipated. A threshold map, whether derived from quantitative or qualitative data, allows you to account for these parameter shifts—even when there's no noticeable change in behavior. It can also highlight the times and places where a person is right on the cusp of change and therefore most susceptible to manipulation. So the next time you're in cupcake avoidance mode, be mindful of not only how hungry you are, but also what's going on around you that could bump up your trough threshold and change your mind before you know it. And if you're the one selling the cupcakes, just look for the hungry, tired, and mentally weary passersby and give 'em a nudge.

So Fresh and So Clean

Let's go back to the earlier question: why aren't you in the shower right now? Looking at it through the lens of thresholds, the simple answer is that you're within your comfort zone, somewhere above the (trough) threshold of discomfort. But what would it take to push you below that threshold? And what would it take to push you above your peak threshold, into the zone of maximum confidence? In one study my team and I conducted on behalf of a large, upscale personal care brand, we used these questions to frame our data and show the client how its customers really went about their daily grooming.

In several large Asian cities, we interviewed people at great length about their grooming habits and all the motivations and consequences that play into those habits. We learned about their home lives, their social lives, their love lives, and their work lives, and the pressures they faced in each. We learned when they brushed their hair and when they brushed their teeth. We learned about the difference between taking a bath and standing in front of the sink, the nuanced difference between the dynamics of a morning shower and an evening one. We traveled their morning and evening commuting routes. With all that information, we were

able to outline a typical weekday and weekend day for each participant, and then cluster the participants into different archetypes based on their dominant motivations for grooming: getting a date, climbing the corporate ladder, managing stigmas like body odor or bad breath, and so on.

Each archetype had distinctly nuanced habits. The date-seeker might have spent upward of an hour in front of the mirror before hitting the clubs on a Saturday night, whereas the ambitious worker might have popped a breath mint every time the boss walked by. Another archetype, the carefree coaster, might not groom at all until he sensed that his unkemptness was actively repelling people. They all took steps to stay within their own desired comfort zones, but the dimensions of those zones looked very different when we plotted them out.

In threshold mapping, we use the term "comfort zone" loosely to describe the area where a person maintains the status quo for everyday life, going about business as usual, which typically means not engaging in the behavior we're studying. We could just as well call it the "peace of mind" zone or the "generally okay" zone, because ultimately the barometer for behavior is one's own perception.

With the grooming study, we found that the desire for cleanliness had generally little to do with physical comfort and almost everything to do with social acceptability and self-confidence. Many of the participants expressed little interest in any form of grooming while they spent extended periods of time at home alone. The majority of their grooming efforts at home came in anticipation of social encounters; their efforts outside the home generally took place at times when they developed some anxiety

about impending embarrassment and felt the need to correct course somehow.

This qualitative data suggested that the trough threshold for grooming exists at the point where someone is unwilling to engage in any social interaction (or some specific interaction at that point, like a meeting or a date) without first freshening up somehow. The zone below that threshold is effectively the "zone of shame." At the other end of things, the peak threshold lies at the point of maximum confidence, where people feel like they're so eminently presentable that they can interact with absolutely anyone, from supermodels to heads of state.

When someone falls below a trough, especially in a situation where resources are limited (for example, no toothbrush, shower, or change of clothes readily available), the objective is not to aim for the peak or even a happy middle ground, but simply to find some way to climb back up above the trough, and to do so quickly. It could be as simple as a breath mint and packaging that declares that it "kills bad breath," a splash of cold water on the face, a quick makeup touch-up, or even a reassuring compliment from a friend—whatever it takes to feel, at the very least, adequate. They might not be as thorough as the elaborate rituals one goes through to reach maximum confidence, but the motivations are very different: looking and feeling just acceptable enough to come out of hiding, versus carefully achieving perfection. A shrewd marketer would recognize this difference and see the equivalent messages: "you don't have to be a hermit, and it doesn't take much" versus "you could be a star."

When we look at the parameters of any user behavior through the lens of thresholds, especially within a specific city,

country, or other cultural context, social standards are like an aperture that expands and contracts the comfort zone. If you think about the standards of dress in a typical office in Silicon Valley, there's a very wide band of acceptability—it's okay to wear chinos, it's okay to have visible tattoos, it's even okay to be a bit scruffy. Conversely, in a Japanese corporate environment, the definition of an acceptable appearance is much stricter and therefore creates a much tighter comfort zone. A corporate salaryman is expected to wear a particular shade of suit, particular kinds of shoes and shirts, and maintain his appearance regardless of physical discomfort. The band is so narrow that when the Japanese government instituted energy-saving air-conditioning policies that raised the average office temperature in summer to around 82 degrees Fahrenheit, they had to launch a concurrent marketing campaign prodding workers to lose their suit jackets and neckties (and telling bosses not to fire their subordinates for this otherwise inappropriate conduct).*

If you want to compare behavior across cultures, it can be particularly useful to see what happens when you take one person's habits (his level-of-functioning line) and expand or contract his comfort zone according to different cultural constraints. For instance, what would be considered a socially acceptable level of body odor for a manual laborer in rural Nepal, and what would it be for his cousin, a schoolteacher in the urban hub of Kathmandu? This can give you some sense of what behaviors would change, as well as where and when they would be triggered. Likewise, if you're traveling across cultures, especially for business (or for any other reason that has you set on impressing the locals), you'd be wise to look into the cultural benchmarks for things like dress and grooming, money carrying, and even acceptable levels of drunkenness, and consider how to calibrate your own thresholds accordingly.

* Actually it took two attempts to get Japanese workers to buy into the idea: the "Cool Biz" campaign in 2005 and then "Super Cool Biz" in 2011.

Riotous or Righteous

So far, we've focused strictly on threshold maps as frameworks for the motives and actions of individuals. But just as mapping thresholds opens windows into so many underlying aspects of individual behavior, it can also do the same for our understanding of collective behavior, according to sociologist Mark Granovetter.

In the late 1970s, Granovetter sought to unravel a very tricky question: if a crowd of people is assumed to behave according to accepted social norms yet deviates from those standards, is it because the unwritten rules of society have suddenly changed, or because diverse individual motives have conspired to produce unexpected consequences? He outlined two hypothetical scenarios, both involving crowds of 100 people gathered in a public square, teetering on chaos. In one scenario, a single instigator decides to break a window, which inspires a second rock-thrower, then a third, and so on, until a full-scale riot has broken out. Granovetter imagines the newspaper headline: "A crowd of radicals engaged in riotous behavior." In the other scenario, that first rabble-rouser still breaks a window, but the violence ends there. This time the headline reads, "A demented troublemaker

broke a window while a group of solid citizens looked on." So what accounts for the near-total change in collective action? Do 99 ne'er-do-wells suddenly become peaceniks? Actually, as Granovetter explains, only one of them does—by the slimmest of moral margins.

You see, each individual in the crowd makes a personal decision to riot or not, based on perceptions about the benefits of rioting (a cathartic release of anger) versus the risks (the possibility of arrest). Aside from the instigator, who is willing to riot no matter what, every other member of the crowd seeks a certain safety in numbers. The more radical ones might follow the lead of the instigator, and perhaps a few others thereafter, while the more conservative ones will wait until nearly everyone else is involved before they too join in. These are their thresholds—the number of others they are willing to follow. For the instigator, the threshold is 0; for the most conservative person out of the 100, the threshold is 99 (no room for totally staunch abstainers in this hypothetical).

In the first scenario presented, the distribution of thresholds is completely even. After the instigator, the person with a threshold of 1 (that 1 being the instigator) throws the second rock, followed by the person with a threshold of 2, then the person with a threshold of 3, and so on, until everyone has joined in. However, in the second scenario, there are two people with a threshold of 2 and none with a threshold of 1. After the instigator gets things started, both of those threshold 2s look around to see where that second rock will come from so they can throw theirs, but that second rock never comes. Even though 99 out of 100

people carry the same inclinations, their thresholds are unmet and a completely different situation unfolds.

Granovetter's model is purely hypothetical, and even as such you could argue that if the one little shift occurs at threshold 98 instead of threshold 1, the two outcomes would end up roughly the same. Still, it illustrates the notion that a given set of individual motives, especially ones that depend heavily on context, can lead to widely varying outcomes—for individuals and for groups.* As investment firms like to remind us in their disclaimers, past performance is no guarantee of future results.

Many of us, however, are in the business of future results. We want to change the world, make the next big thing, put a ding in the universe. On the surface, a threshold map may not seem like much help. You could say it's a reactive instrument, constructed with details from past and present experiences, generally focused on a typical day-in-the-life rather than the course of that life itself. But whatever it may lack in prescience, it makes up for with perspective. By charting the boundaries of normal/acceptable/preferable behavior and the consequences of crossing those lines, we can focus on creating new tools to help people define their thresholds, stay aware of them, stay within them, and even extend them.

* In further works, Granovetter would go on to demonstrate how individual thresholds affect such complex group dynamics as racial diversity in residential neighborhoods and the role of popularity in consumer demand.

Threshold-Mapping the Future

There's no such thing as a smooth trajectory when it comes to design evolution, but from a threshold mind-set there does appear to be this pattern: designers first have to establish that a threshold exists, then pinpoint it, figure out how to maintain it, and try to expand the comfort zone. Consider the ways people have managed thresholds of sleep over the course of history.

The great philosopher Plato was renowned for his discourses at dawn, launching into dialectics before the sun reached the sky. The timing posed a challenge for both master and students: sundials might be good timekeepers, but they're rather useless when there's no sun overhead. Instead, Plato used a machine that measured time overnight by the gradual trickling of water, sounding an organ after enough water had passed through it. The device wasn't particularly accurate, but it set a common threshold for socially acceptable behavior among the Academy's students. For all we know, Plato could have coined the phrase "You snooze, you lose"; perhaps Aristotle showed up late that day, missed the lesson, and never passed it along.

Fast-forward a couple of millennia, when the Industrial Revolution redefined the consequences of oversleeping. A factory couldn't begin work until everyone showed up, and thus the threshold of waking up on time became more rigid. Mechanical alarm clocks were introduced to the masses, but early versions proved unreliable, or at least unreliable enough to provide a legitimate excuse for latecomers. The mechanical apparatus didn't do the trick, but factory bosses still needed a tool to enforce punctuality. The simple solution was to employ a "knocker-up,"

someone who would go around to factory workers' homes and knock on their doors and windows to make sure they were awake.

Since then, we've conquered the obstacle of time accuracy. We know precisely where our thresholds are for maximum sleep, but we've discovered that quality of sleep often diminishes as we near those thresholds. To keep us within our comfort zones, we now have alarm clocks and apps like Sleep Cycle that stir us in the most gentle and pleasant ways possible, analyzing our sleep patterns to calculate the moments when we'll rouse most easily.

Now that we've established a sleep threshold, pinpointed it, and figured out how to stay comfortable inside it, the next step is to manipulate it. In a way, we've been doing so for ages with caffeine, but we heavy coffee drinkers know you still can't outrun sleep. However, military researchers have found that administering a dose of a brain hormone called orexin A allowed monkeys deprived of sleep for up to thirty-six hours to perform as well on cognitive tests as their well-rested peers. In ten years, will we find ourselves hanging out in orexin A cafés for days on end? And what will be the social pressures on people who choose not to take the drug but live in a world of thirty-hour workdays? If it seems far-fetched, just ask a doctor, nurse, long-haul trucker, or fighter pilot how they feel about it.

Let's look into some of the ways threshold models could help us design better services in an ecosystem we all inhabit: the world of money.

In 2009, while I was at Nokia, I conducted a study on mobile money services for emerging markets. At the time, approximately

3.5 billion people around the world lacked access to financial services, but among them roughly half owned mobile phones. Nokia was developing a phone-based system, called Nokia Money, in which users could hand over cash to a merchant and get the digital equivalent deposited on their phones to use for mobile payments, person-to-person transfers, and general safekeeping.*

For the study, we traveled to China, Indonesia, and Malaysia: interviewing manual laborers on the street, visiting housewives in their homes, and talking to people on every rung of the socioeconomic ladder to get a sense of how they spent, saved, and carried money. We asked if they carried wallets, and why or why not. We asked how much cash they were willing to have on them at any time, how they felt when carrying an abnormally large amount, and how they felt when they were running low. We asked how they averted risks, and not just in terms of robbery. How did they avoid overspending, and how did they avoid getting caught out with no cash and no way to get more?

Many of the participants had reserve strategies. If their wallets ran dry, they would have a small amount of cash—a cash cache, if you will—stashed somewhere else (sometimes in a sock, sometimes in a separate pocket, and sometimes, in places with high theft risk, sewn directly into an article of clothing) that could tide them over until they made it home, to a bank, or to an ATM. What was particularly interesting about the cash cache was that people used it to both frighten themselves and assuage their panic. An empty wallet is a scary thing to look into: a sign

* Nokia Money was first rolled out across India in 2011.

that a very weighty threshold has been reached. But instead of that threshold being one of "I have no money—how the hell do I get home/get food/get by now?" it's only a threshold of alarm. If I have a cash cache, I know that my empty wallet doesn't spell doom—it simply means it's time to act, and spend, differently.

An empty wallet is a strong and very concrete feedback mechanism for cash transactions. On the less tangible side, psychologists have found that people with any hint of miserly tendencies use a feedback system in the area of the brain known as the insula, which generates feelings of disgust when we encounter an unpleasant odor, a horrid picture, or, it seems, a budget-shattering pair of Bruno Magli shoes.

But when we use credit cards, debit cards, and mobile wallets, we don't get to peer into the void of a wallet, and we can't always count on our insulae to steer us right. This is where good service design comes in.

The website Mint.com is entirely geared toward helping users navigate the threshold of alarm. It allows anyone to consolidate all their bank accounts, credit cards, investments, and bills into one place, then set budgets and financial goals. When budgets are exceeded, account balances run low, large transactions are made, or suspicious activity takes place, Mint.com can send an alert. The service has become so popular that it created market pressure on banks, which turn healthy profits when customers overshoot their limits, to offer similar alerts.

We know this threshold exists, and now we have ways of actively demarcating it. What sorts of tools can we design in the future to help people stay within their comfort zones? What sorts of tools could even expand those comfort zones? Perhaps

someone will devise a system that can learn your product preferences and your budget, then create shopping lists that satisfy both—or better yet, automatically ship things to you.

The potential for innovation also lies at the other end of the spending comfort zone: the threshold of concern. Every time you face a spending decision, you're expending some amount of cognitive energy, paying what's known in behavioral economics as a mental transaction cost. When that psychological toll surpasses the value of the purchase itself, you've reached the threshold of concern. This is why many web-based micropayment systems have failed—even if you're willing to spend a penny every time you feel like looking at Photoshopped images of cats in outer space, you probably don't want to have to think about that penny every time you spend it. It's also why people prefer subscriptions to piecemeal payments and why they pay restaurant checks with credit cards even when they have enough cash to cover (the ethereal depletion of funds carries a lower mental transaction cost than the physical depletion).

Attacking the threshold of concern is merely a matter of finding ways to wipe out that mental transaction cost. One way to do so is by delegating it. Imagine your car being linked into your city's parking system—it knows where every available parking space is, and how much each space costs. Rather than asking you if you'd prefer to walk two extra blocks to save a dollar, it makes the decision for you based on your general preference for either saving money or parking as close as possible to your destination. When you park, there's no meter to feed; your car either charges it to your credit card or debits the money from a smart account that you've loaded up with cash.

Can I say with any certainty that the future will look like this? Absolutely not. Thresholds and threshold maps are only tools to help us frame what we observe in the present—and an understanding of the present is a hell of a good starting point for thinking about and designing the next.