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Identity

If you would understand anything, observe its beginning and its development.
–Aristotle

If I asked you to tell me who you are, you might respond with your name, age, gender, profession, and where you live. If you were feeling generous, you might tell me more about your ethnicity, beliefs, accomplishments, political affiliation, hobbies, values, or your place within your family or community. Whatever depth you chose to go into, you would be sharing with me, in some form, a version of your identity. From a very young age, we begin to construct an understanding of ourselves, comprised of a broad range of details gathered over years and decades, which informs a central definition of who we are.

There are several things that are useful to understand about our identities. The first is that our identity is largely conscious, meaning that we are aware of it, unlike other components of our psychology, such as our fears or motivations, which are more often hidden, or unconscious. Our identities are also largely performative, in that we consciously choose

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observable behaviors, traits, or language that align with our fundamental definition of who we are. This has two important effects. First, demonstrating certain characteristics reinforces our own understanding of our identity. Second, these qualities project an image that communicates to others how we would like to be perceived. The last thing to know about our identities is that they can be incredibly inaccurate, particularly if we fail to honestly observe ourselves or don't possess the tools needed to accurately self-reflect.

The more accurate one's definition of oneself is, the better equipped we are to conduct and regulate ourselves in a healthy way, particularly in our relationships with other people. Psychoanalyst Edward Edinger describes the importance of personal identity—or ego,[1] as he calls it—in terms of how we affect the world around us:

> It's vitally important just considering the social aspect of the matter that the members of society have good, strong, reliable egos. That means they have to have an authentic sense of their own identity—they have to have acquired a responsible character structure that enables them to function responsibly in relation to other people. That's all a product of ego development…. Good ego development is good not only for the individual, it's good for the society that the individual's a part of.[2]

The story of who we are, in other words, should ideally be both consistent and grounded in reality, as the accuracy and congruence of our identity will invariably affect our relationships with others. A healthy identity is characterized by a robust awareness of oneself that is in accordance with reality; an unhealthy, or undifferentiated identity, by contrast, either (1) lacks an awareness of itself, or (2) is incompatible with others' experience of that person or group. In other words, if the way others see us is not aligned with how we see ourselves, it is possible our identity is not very fully integrated or we lack awareness about certain aspects of ourselves.

At both an individual and collective level, our identity is always the first and most visible element of our psychology. Our image of ourselves tends to be the first thing we offer up to others, for the simple reason that it is largely conscious and observable. When we interact with people, we extend or communicate our version of who we are, which others use in

conjunction with other observable facts or behaviors to form an opinion of us. For example, I may tell you I am from Southern California, am an only child, love good coffee, modern art, and lived abroad for most of the last decade, where I worked for the National Health Service in London. This short description contains components of who I am, which I strongly identify with and want to communicate: I am from a liberal place; a bit of an independent loner; I'm interested in things like art and culture (and caffeine); and I spent time working for the U.K.'s single-payer health system. Embedded within this information, you could begin to piece together at least some of my interests, background, values, and perhaps even my political affiliation. If you spent more time with me and gathered a bit more information from whatever cues I dropped, you would be able to build out this picture more fully. You would also be able to corroborate whether what I told you was an accurate representation of who I claim to be, or if I'm a little bit full of crap.

It is not uncommon (or a criticism) that how we describe ourselves doesn't always line up with our actions or with others' experience of who we are. There are a variety of ways our identity can be misaligned with or unrepresentative of what we're like in reality. We might oversell an aspect of our behavior, such as telling others we're an advocate of volunteering, when in fact we volunteered once several years ago and haven't done it again since. We may want to believe something about ourselves so strongly that we maintain it is part of who we are, when in practice we do not demonstrate that quality at all. Someone might believe himself to be open-minded, for example, when in fact he is quite judgmental. In other cases, we may simply be unaware of our actions or how we come across. When elements of our identity do not ring true, or if there are demonstrable aspects of ourselves of which we are unaware, we can infer that there are components of our identity we have not fully integrated, and that building out a more cohesive and accurate identity may be a valuable piece of our psychological work.

Collective identity, like personal identity, consists of a set of ideas that inform how a group of individuals see themselves and behave. Companies, sports teams, countries, and political parties, for example, collectively agree on aspects of their identity that explain who they are and what distinguishes them from others, which may be a certain set of beliefs or

qualities. Group identity can be highly adaptive in that it provides a sense of belonging or allegiance and can direct social behavior in more prosocial ways. At an organizational level, technology writer and venture capitalist Om Malik, describes this as the corporate DNA of an organization or industry. Malik explains that the products, services, and behaviors of a company are rooted in the commonalities of the people who work there, creating a cultural identity or "corporate psyche" that defines the organization.[3]

Whatever you think of Silicon Valley and the companies that comprise it, given technology's reach, scope, and influence on our lives, it's hard to argue that understanding the industry on a deeper level wouldn't prove a worthwhile endeavor. The first step to accomplish this is to expand our understanding of what the tech industry is and is not—which begins with an accurate understanding of its identity.

Silicon Valley in a Nutshell

When we consider the identity of Silicon Valley—by which I mean the set of ideas that informs how Silicon Valley sees itself—certain qualities and characteristics probably spring to mind. The Valley is, first and foremost, a geographical space, nestled between the San Francisco Bay and one of Northern California's many Redwood State Parks, stretching about 15 miles from end to end and a few miles across. It is home to some of the most iconic tech companies in the world, including Apple, Facebook, Netflix, LinkedIn, Google, Hewlett-Packard, Intel, Cisco, eBay, and many, many more. Despite its iconic inhabitants, however, Silicon Valley, as a space, is relatively nondescript. Its streets are clean, safe, and tidy, but more suburban than one would expect. There are more strip malls and Safeways than shiny, space-age campuses. Even Sand Hill Road, a stretch of several blocks that is home to some of the biggest venture capital offices in the Bay Area, is in no way glamorous or ostensibly interesting. The garages where Hewlett-Packard, Google, and Apple were born look like something out of an 80s film or, if you grew up in a middle-class neighborhood, maybe your childhood. Standing in the middle of Silicon Valley, you could be anywhere.

But of course you wouldn't be; you would be in the home of the third and fourth industrial revolutions and the epicenter of the information economy. What defines Silicon Valley ultimately has very little to do with its landscape, infrastructure, or its many products and platforms. What makes the Valley what it is are its many intangibles: its people, ideas, and unique ways of thinking about the world, which have converged to produce the most profitable, fastest-growing, and influential industry in the history of mankind. The idea that Silicon Valley has become untethered from its geography is echoed by tech journalists such as Leslie Hook, who explains the Valley is not a place at all, but an abstraction of the tech industry itself.[4] Alexandra Suich Bass simply calls it "an idea" and "a byword for innovation and ingenuity,"[5] while LinkedIn founder Reid Hoffman famously observed, "Silicon Valley is a mindset, not a location," which no doubt made its way into many a startup slide deck. Each of these interpretations harken back to a central idea: Silicon Valley is not a place; it is a way of thinking and a set of mental characteristic and attitudes. It is defined, in other words, by its psychology.

The identity of Silicon Valley has, until quite recently, remained focused on its many positive qualities. The "engineering expertise, thriving business networks, deep pools of capital, strong universities and a risk-taking culture" which Bass associates with the tech industry are the primary qualities that structure its conscious identity.[6] Another prevalent descriptor of the Bay Area is its reputation as "an ideas culture" that values problem-solving, creativity, and innovation. "People don't talk about other people," one man who worked at Uber's San Francisco headquarters told me, "it's a culture of ideas." Such identifiers are hallmarks of the Valley's identity; they are also largely beyond contradiction, meaning these qualities tend to be aligned both in terms of how the tech industry understands itself and how others perceive it. No one would argue that the network, capital, and academic profile of the Bay Area are not of an exceptionally high quality. Nor would anyone dispute the fact that Silicon Valley has great pools of knowledge in certain domains, such as engineering and entrepreneurship, which provide unique ways of thinking about the world. These qualities represent valuable, accurate, and healthy conceptions of Silicon Valley's identity.

What is less obvious, and I would argue more interesting and important, is where the accuracy of this identity falters: where what the industry believes to be true about itself jars with our experience of what it has become. Where our previous, positive associations about the tech industry are breaking down is precisely where we can learn the most about Silicon Valley's companies, the impacts they have on our world, and whether the industry's identity is an accurate representation of what it is. To explore this, we'll take a closer look at three facets of Silicon Valley's identity that appear to be misaligned with the reality of its behaviors or motivations. First, the Bay Area's history as a place of opportunity and the recent changes to its socioeconomic landscape; second, the values on which the industry was founded and how these have changed over time; and finally, the prominent images, ways of thinking, and attitudes that dominate and are valorized in the tech community.

Land of Opportunity?

Central to the Bay Area's historical identity are its sheer number of financial success stories. Since the Gold Rush of the mid-nineteenth century, Northern California has been unequivocally associated with economic prosperity. Richard Walker, a historian and urbanist at the University of California, Berkeley, explains the significance of the Gold Rush as one of San Francisco's structuring myths, which has recycled itself in various incarnations since literal gold "spilled out of the mountains" of the Bay Area, ushering in the mining era and the region's reputation for financial opportunity.[7] For over 150 years, Northern California has continued to be associated with entrepreneurialism, risk-taking, and affluence, from the gold and metal fortunes of the 1850s, to the railway companies of the early twentieth-century, to the more recent dot com and silicon booms of the 90s and 2000s.

For many entrepreneurs and venture capitalists in the Bay Area who have benefitted from the success of the tech economy, this characterization still holds true. Even hard-working, rank and file workers at companies like Google, where the median salary is $246,804,[8] feed the vision of abundance that is hardwired into Silicon Valley's identity. They do not,

however, tell the whole story. Tom Goodwin, Executive Vice President of Innovation at Zenith Media, describes the wealth that is enjoyed in tech not as something wholly negative in and of itself, but as a key ingredient that drives its confused sense of identity:

> If you live in Silicon Valley, your impression of the world is that most people get Ubers everywhere, that Tesla is a really popular car, that a salary is a way to keep yourself alive while your stock options potentially boom into something that allows you to get a million dollars. They think that all this extreme behavior is actually quite normal.[9]

To honestly explore the identity of Silicon Valley is to acknowledge that the extreme wealth of the region that Goodwin describes is offset by extreme economic inequality and financial hardship for many living on the periphery of the tech industry's success. As income and wealth inequality continue to widen, the prosperity of the Bay Area tech community has—rightly—become a rather uncomfortable subject of tension and discord. It has also undermined the industry's conception of itself as a meritocratic, problem-solving, and social justice-driven collective.

As the tech industry struggles to reconcile its identity as a place of opportunity with the less favorable financial implications of its success, the region continues to see the impact of growing economic inequality. Rising levels of homelessness, a bifurcating, two-class job market, and the exodus of the middle class from the Bay Area are just some of the problems underlying the growth of big tech, which has raised housing and living costs to unprecedented levels while failing to provide a living wage for those who are not part of the tech boom. In *Pictures of a Gone City: Tech and the Dark Side of Prosperity in the San Francisco Bay Area*, Walker explains that while "the Bay Area has been blessed by an unprecedented abundance of riches," the narrative that the region as a whole benefits from Silicon Valley's success is grossly misleading. Instead, San Francisco and its neighbors—Marin, Alameda, and Santa Clara—some of the wealthiest counties in the U.S., have instead become shockingly unequal.[10]

The last official count in 2017 found that 7,499 people were living on San Francisco's streets; many experts, however, suspect the actual number is closer to 10,000 or 12,000.[11] In a city of approximately 884,363 people,

this amounts to close to one percent of the city's population, the second highest rate in the U.S. after New York City. Unlike East Coast cities like New York, however, which have right-to-shelter laws, San Francisco is not legally required to provide a bed for everyone who needs one, resulting in a very visible unsheltered homeless population (by far the worst in the country). Stark reminders of homelessness and inequality are everywhere: the spread of tent cities, the $30 million annual cost of cleaning needles and human feces from San Francisco's streets, and the historic migration from the city each serve as markers of the region's economic negligence. Following a tour of Manila, Jakarta, and Mexico City's slums, UN special rapporteur Leilani Farha visited the Bay Area to assess San Francisco's homelessness epidemic, which Farha described as a "deplorable" violation of human rights.[12] San Francisco Supervisor Hillary Ronen has called the situation a "human tragedy,"[13] while Dr. Lee Riley, an infectious disease scientist at UC Berkeley, has pointed out that the problem is also becoming a public health issue. Riley explains that parts of the city are actually more contaminated by waste and feces than some of the dirtiest slums in Brazil, Kenya, and India, as slum dwellings in these countries tend to be more permanent fixtures, whereas the homeless communities in San Francisco are often removed and relocated from one part of town to another.[14]

Homelessness and poverty are complex, deeply layered social issues. The scale of unsheltered homeless people in the Bay Area, however, is most directly linked to the lack of affordable housing and increased costs of living, driven in part by the influx of big tech, in part by the inability of city officials and local government to keep up with the pace of change. Farha explains that the short-term solution, building affordable housing, is actually the easy part. Addressing the underlying, systemic causes of inequality, such as "stagnating wages, escalating housing costs, investors swooping in and buying properties,"[15] however, makes the problem infinitely more difficult. Contrary to dominant cultural narratives that tend to blame homelessness on mental illness or drug abuse, both the San Francisco Bay Area Planning and Urban Research Association and the National Coalition for Homelessness cite economic dislocation, which includes lack of affordable housing, high cost of living, and lack of employment opportunities, as the primary cause of homelessness in most

urban areas. A Lyft driver in Berkeley summed up the problem rather succinctly:

> There are a lot of people who are getting pushed out of their apartments in San Francisco. Landlords kick people out with no legitimate reason, then renovate their properties and rent them out for $4,000 or $6,000 a month. People are getting kicked out and have nowhere else to go. Their rent is four times what it was and they can't afford it, so a lot of people end up living in tents, going to work, and taking a shower at their gym.

"It's just so unrealistic how much you get paid when it costs this much to live here," the woman said, after telling me about past jobs at Airbnb, Zupper, and Apple, jobs which always had to be worked in pairs to allow her to make rent. As we drove from West Oakland to Berkeley, she told me about a former roommate who was so discouraged by the cost of living that he decided to move to Mount Diablo, a state park east of San Francisco, where he lived in a tent and commuted to the city to work. This is the new deal in the Bay Area for its shrinking middle class: either live outside the city and commute for hours,[16] or sleep in your car, in a tent, or on the street—all while potentially still working long hours and multiple jobs.[17]

The problem has led many to pack up for more affordable pastures. At the end of 2017, more residents moved out of San Francisco than any other city in the country,[18] and in 2018, the Edelman Trust Barometer reported that 49% of Bay Area residents were considering moving, a number that jumped to 58% amongst millennials.[19] The crux of the issue, as Farha and others have identified, is an increasingly unequal set of economic and social factors that no longer work for the average person. Of those Edelman surveyed, 74% said the socioeconomic system in the community favors the rich and powerful, particularly those in the tech industry, who respondents said should be doing more to combat the impact the industry has made on housing and living costs.[20]

While no one in tech would deny the extent of the homelessness crisis or rising inequality in the Bay Area, some are more likely than others to assume responsibility for driving the economic factors contributing to it. Certain tech companies and CEOs, such as Salesforce's Marc Benioff,

have dedicated their energy and resources to initiatives that would increase social housing and shelters, such as San Francisco's Proposition C, which will tax the top 1% of corporations in order to generate funds to tackle the city's homelessness epidemic.[21] Others, such as Twitter CEO Jack Dorsey, openly opposed the bill and actively lobbied against it. The takeaway here is not that one of these CEOs is benevolent and the other immoral; they do, however, represent two competing versions of Silicon Valley's identity struggle. Benioff and his wife have campaigned for years to raise millions of dollars to combat economic dislocation, and have integrated the role of the tech community in addressing the systemic problems of inequality facing the Bay Area. Other tech execs, like Dorsey, employ a more hands-off approach, refusing to acknowledge their company's role either in contributing to or solving the problem.

Admitting we are in some way accountable for something is neither a welcome nor an easy task. Psychologically, it takes a great deal of awareness and maturity to accept that our identity is marked by both positive and negative traits. When told we are complicit or culpable of something, particularly when it is framed as blame, our knee-jerk reaction is often defensiveness, reactivity, and an inability to be open to alternative points of view. Silicon Valley's reluctance to acknowledge and integrate the economic side effects of its success and the stark inequality in the Bay Area remains an uncomfortable and largely unaccounted for element of its identity.

A Tale of Two Internets

To understand the identity of Silicon Valley, we must not only appreciate its historical and modern socioeconomic landscape, but also the values on which it was founded and how these have evolved over time. The internet we have come to know, love, and, at times, curse and bemoan, began as a U.S. government-funded project called the Advanced Research Projects Agency Networks, or ARPAnet. Historical writer Mary Bellis describes ARPAnet, which launched in 1969 for use in the U.S. military, as "the grandfather to the Internet."[22] The purpose of the project was to share information held on individual government computers across an

interconnected network. In the late 80s and early 90s, a public version of the web, created by a team at CERN and led by Oxford physicist Tim Berners-Lee, began to take shape. Berners-Lee and the CERN team not only developed the World Wide Web, but also defined features central to the creation of the internet, such as hypertext markup language (HTML), HyperText Transfer Protocol (HTTP), and Universal Resource Locators (URLs), which even those of us who can't code to save our lives will recognize.

The internet, as envisioned by its founder, was a place that offered high-quality information, peer-to-peer sharing of such information, and a means to access useful services. Berners-Lee and others conceived of a "free, open, creative space"[23] that would serve human beings individually and humanity collectively. Internet culture journalist Jason Parham describes this era of the early internet as a turning point in history, which was underpinned by a collective expectation of human flourishing.

> In the dawning days of the millennium, a great harvest was promised. A new class of young revolutionists, who saw the world as not yet living up to its grandeur and thus felt the duty to order it in their vision, vowed a season of abundance and grand prosperity.[24]

This democratic, utopian vision of the web survived for a number of years, but began to break down with the commercialization of the internet in the early 2000s.

> The web that many connected to years ago is not what new users will find today. What was once a rich selection of blogs and websites has been compressed under the powerful weight of a few dominant platforms. This concentration of power creates a new set of gatekeepers, allowing a handful of platforms to control which ideas and opinions are seen and shared.[25]

Berners-Lee goes on to describe the centralization of power, the corruption of truth, and the weaponization of information that has become synonymous with the modern internet and its myriad problems and PR disasters. The competition-blocking practices, startup acquisition, and monopolization of talent by internet giants has led Berners-Lee to forecast

not only that the next two decades will see a decline in innovation,[26] but also that the internet, if left in its current form, will exacerbate the problems of global inequality.[27]

While the road to the internet was paved with good intentions, it has not weathered the corporate onslaught against its original values very well. Berners-Lee argues that the root cause of this returns, again and again, to "companies that have been built to maximise profit more than to maximise social good."[28] So pervasive is this dynamic that understanding the implications of such motivations requires its own chapter.[29] It is equally important, however, to appreciate how this shift in values within Silicon Valley has impacted the identity of the industry. Douglass Rushkoff, lecturer, media theorist, and author of over a dozen books, including *Throwing Rocks at the Google Bus*, frames the transition of the tech industry's values in the following terms:

> There was a brief moment, in the early 1990s, when the digital future felt open-ended and up for our invention. Technology was becoming a playground for the counterculture, who saw in it the opportunity to create a more inclusive, distributed, and pro-human future. But established business interests only saw new potentials for the same old extraction, and too many technologists were seduced by unicorn IPOs. Digital futures became understood more like stock futures or cotton futures—something to predict and make bets on. So nearly every speech, article, study, documentary, or white paper was seen as relevant only insofar as it pointed to a ticker symbol. The future became less a thing we create through our present-day choices or hopes for humankind than a predestined scenario we bet on with our venture capital but arrive at passively.[30]

So began a process in which the original prosocial, democratic objectives of the web were co-opted by commercial interests. Jaron Lanier, author of *Who Owns the Future?* and *Ten Arguments for Deleting Your Social Media Accounts Right Now*, describes the fundamental contradiction that has plagued Silicon Valley ever since:

> [T]he fundamental mistake we made is that we set up the wrong financial incentives, and that's caused us to turn into jerks and screw around with people too much. Way back in the '80s, we wanted everything to be free

> because we were hippie socialists. But we also loved entrepreneurs because we loved Steve Jobs. So you wanna be both a socialist and a libertarian at the same time, and it's absurd. But that's the kind of absurdity that Silicon Valley culture has to grapple with.[31]

Despite the profound shifts that have occurred in the industry as the web has been invaded by big tech, the image of the rebellious counterculture of underdogs has been preserved within the psyche of the industry and incorporated into the story of its identity. Such a picture is increasingly difficult to reconcile with the more modern, corporate objectives of most Silicon Valley companies, and has created a tension that strikes to the heart of the industry's confusion about what it truly is.

It is important to note that this misunderstanding tends not to be inauthentic so much as profoundly outdated. In the same way the Gold Rush lingers in the collective unconscious of the Bay Area, so does the rebellious, socially woke ideals on which the tech industry was founded. A more honest appraisal of the industry's values, an appreciation of how these have changed, and a willingness to reenvision the principles of Silicon Valley may help the industry as a whole synthesize two competing (though perhaps incompatible) elements of its character.

Let's Talk About Tech, Baby

A final element of the tech industry's somewhat disordered identity lies not in its history or the rocky journey of its principles, but in the mentality, attitudes, and behaviors of those who comprise it. The nature of any group of people—be it a business, team, religion, or family—is in many ways related to the qualities of the people in it. Do they tend to be more open-minded or a bit judgmental? If you have a problem, are they more likely to hold your hand and listen, or want to help you fix it? Are they, on the whole, humble and considerate of other points of view, or more unwavering or assertive in their opinions? Would you describe them as kind? Likeable? Socially aware? Self-aware? There is, of course, a huge variance of traits within any collection of people, particularly in large groups. But there are also salient features that, while they may not hold

true for everyone, are common enough that they inform a significant feature of the group as a whole.

Understanding the commonalities of thinking and behavior in Silicon Valley, which inform a significant portion of the industry's image and identity, centers on looking at its dominant characteristics, both positive and negative. In a group setting, particularly when we find ourselves with like-minded people, the group's dominant qualities—such as what is most valued or how people behave—will be normalized, reinforced, and multiply. The remainder of this chapter will look at some of the most prominent values, attitudes, and ways of thinking that dominate the tech community.

Two of the most salient values found throughout Silicon Valley are a dedication to problem-solving and big ideas. Looking through my notes and hundreds of pages of transcribed interviews, there is rarely a conversation that doesn't, at some point, veer into the tech industry's desire to solve big problems. One woman I spoke to in San Francisco explained this drive in the following way: "People are always running here, they're always on, and they're always motivated to be ideas people. They're constantly asking themselves, 'how do we solve big problems?'" Another explained to me, over lunch at his company's rooftop patio, "engineers run this place, and their main value is solving a problem." Problem-solving is a refrain you'll hear over and over again as soon as you start asking what those in the tech community value.

In Silicon Valley, solving big problems most often comes in the form of technical solutions. Tom Goodwin describes the culture of tech as ideas-focused and "driven by people who make stuff. It's a very pragmatic, functional, and mathematic and engineering-driven culture."[32] Goodwin, who works in advertising, makes another good point: the products of Silicon Valley are mediated through a technical medium, and the creative instinct of the industry is primarily embodied through code, algorithms, and technical expertise. The drive to build and find technically elegant solutions to the problems Silicon Valley companies tend to tackle is often associated with a particular way of thinking, which Goodwin alludes to above; engineering work in particular is often associated with a mathematical and logical way of envisioning solutions. The

prevalence of this type of thinking in tech, it seems, stems from both a natural affinity for technical programming by many who enter the field, and a historical depiction of the type of person psychologists believed would make a good computer engineer.

Just as the Gold Rush fostered the image of opportunity in Silicon Valley, the industry's analytical mindset is rooted in its history as well. Birgitta Böckeler explains the context in which the image of the programmer was born, which began with the birth of the tech industry in the 1960s and the rapid demand for computer engineers that followed.

> It was hard for companies to figure out what skills were needed for this totally new profession. They needed programmers to be really good, because they were panicking about errors. At the same time, they had no specific idea of the necessary skill set. Companies started to think programmers had to be "born, not made," and that programming was a "Black Art." This was fuelled by the fact that programming was a very idiosyncratic activity at the time, almost every computer operated differently. How do you recruit people for a profession like that, when at the same time the demand increases rapidly?[33]

In order to identify what kind of people they were looking for, the computer industry began using aptitude tests. Throughout the 1950s and 1960s, upwards of 80% of tech companies used measures such as the IBM Programmer Aptitude Test to screen millions of applicants and identify those they believed would be the most skilled. In the mid-1960s, in an attempt to define not just the skills, but the personalities of programmers, a software company called System Development Corporation hired two psychologists, William Cannon and Dallis Perry, to build a "vocational interest scale," which would profile computer engineers and assess them for common skills and interests. Their findings were published in a 1966 paper, which detailed two key profile traits characteristic of programmers: an interest in solving puzzles and a dislike of or disinterest in people.[34] In his book, *The Computer Boys Take Over*, Nathan Ensmenger explains that these tests were used to select engineers within the industry for decades, until eventually Cannon and Perry's recommendations proved something of a self-fulfilling prophecy.

> The primary selection mechanism used by the industry selected for antisocial, mathematically inclined males, and therefore antisocial, mathematically inclined males were over-represented in the programmer population; this in turn reinforced the popular perception that programmers ought to be male, antisocial and mathematically inclined, and so on.[35]

Once hiring practices based on these guidelines were in place, the industry began to nurture, albeit largely unconsciously, roles and environments aimed at attracting men who were reserved, logical, detail-oriented, and antisocial.

It's hard to say what would have happened had Dallis and Perry never prescribed a representation of the "ideal" computer programmer. Many believe that regardless of the historical call for mathematically astute, logical thinkers, certain types of people may have been drawn to the industry anyway. Simon Baron-Cohen, a psychologist and researcher at the University of Cambridge, has researched the neurological characteristics endemic in certain fields, most notably in science, technology, engineering, and mathematics (STEM) professions. Baron-Cohen has repeatedly found that those with autism or autistic traits are over-represented in these disciplines, particularly in engineering and mathematics,[36,37,38] a finding that has been corroborated by different research teams.[39] (Over-represented is a key word here; not all engineers or tech employees demonstrate such characteristics, there is simply, according to these findings, a higher representation of those on the autistic spectrum in these fields.) There is much anecdotal evidence and growing research that points to a correlation between the type of work necessitated in tech and the analytical, highly intelligent, and cognitively-focused minds of "Aspies" who may be instinctively drawn to the engineering community.

Autism is a developmental disorder that is often characterized by delays in communication, difficulty relating to others, and restrictive patterns of behavior. Asperger's Syndrome falls under the umbrella of autistic spectrum disorders, but is considered a milder and more high-functioning form of autism. The most common symptoms of Asperger's typically manifest as subtle idiosyncrasies, such as a failure to make eye contact, a preoccupation with a narrow field of study, or pedantic methods of speech, but can also result in more pronounced social difficulties, such as

trouble connecting with others conversationally, a failure to pick up on social cues, or a need for repetition and routine. Other diagnostic markers include trouble recognizing and interpreting emotion in others[40] and reduced levels of empathy.[41] It is estimated that one in every 59 children has some form of autism and the disorder is approximately four times more prevalent in males than females.

Baron-Cohen explains that those with Asperger's tend to demonstrate strong logical reasoning, rational thinking, and problem solving, and are particularly adept at work that focuses on "pick[ing] out patterns in information" and "discern[ing] the logical rules that govern systems."[42] The single most distinguishing symptom of Asperger's syndrome, according to the National Institute of Neurological Disorders, is an "obsessive interest in a single object or topic to the exclusion of any other."[43] In 2012, technology journalist Ryan Tate published an article in which he argued that this obsessiveness was in fact "a major asset in the field of computer programming, which rewards long hours spent immersed in a world of variables, data structures, nested loops and compiler errors."[44] Tate contended that the number of engineers with Asperger's was increasing in the Bay Area, given the skillset many tech positions demanded.[45] Entrepreneur and venture capitalist Peter Thiel similarly described the prevalence of Asperger's in Silicon Valley as "rampant."[46] Autism spokesperson Temple Grandin, a professor at Colorado State University who identifies as an Aspie, also echoes Tate, Thiel, and Baron-Cohen's conclusion:

> Is there a connection between Asperger's and IT? We wouldn't even have any computers if we didn't have Asperger's…. All these labels—'geek' and 'nerd' and 'mild Asperger's'—are all getting at the same thing. ….The Asperger's brain is interested in things rather than people, and people who are interested in things have given us the computer you're working on right now.[47]

According to the Summit State Recovery Center, a non-profit that supports people with autism, those with Asperger's often possess "great talents for creating and analyzing mechanical systems, such as engines, or abstract systems, like mathematics and computer programs."[48] It is

perhaps no wonder, given the type of work that is available in and demanded by tech, that many Aspies feel at home in the field.

While there are many benefits analytical expertise brings to the tech industry—whether from Aspies or simply highly rational, technically-skilled workers—there are also disadvantages to having an over-representation of cognitive rather than emotional intelligence. The most notable result is what many describe as a deficiency of emotional intelligence, particularly empathy, throughout the tech industry. Empathy is defined as the ability to be aware of the feelings and emotions of other people and to be able to put oneself imaginatively in their position.[49] In order to do this effectively, one must be able to pick up on affect, emotions, body language, facial expressions, social cues, and verbal communication. As Peter Bazalgette explains in *The Empathy Instinct*, there is often a marked display of "under-activity in the parts of the brain associated with empathy"[50] in those who naturally demonstrate more analytical than emotional skills. These regions are collectively referred to as the "empathy circuit," which comprise the parts of the brain responsible for empathetic reactions and emotional attunement,[51] including affective empathy, processing of social information, awareness of others' thoughts and feelings, self-awareness, and social judgment.[52] Bazalgette explains that the colloquial labels of left-brained and right-brained dominance broadly capture this rational/logical and emotional/interpersonal divide, as the majority of the functional regions associated with empathy occur in the right hemisphere of the brain. (Those with autism, for instance, often have a malfunction on the right side of their brains, which can affect these structures and make certain interpersonal skills a challenge.[53])

Research has historically attributed this lack of empathy to autism; however, more recent studies have suggested that it is alexithymia, not autism itself, which is responsible for diminished empathy and emotional functioning.[54,55] Alexithymia is described as an inability to identify emotions in the self and others, which is characterized by a lack of emotional awareness, dysfunctional patterns of relating, and a lack of empathy. While only 10 percent of the general population suffers from alexithymia, approximately 50 percent of those on the autistic spectrum are alexithymic. The high prevalence of alexithymia among those with autism has led to a conflation of the two diagnoses, when in fact they are quite distinct.

Diminished activity in the regions linked to the empathy circuit can make it extremely difficult for people to work out what others feel or think and practice empathetic and compassionate responses. While it may seem trivial how empathetic the person programming your food delivery app is, a lack of empathy across an industry may have significant impacts over time across areas like product development, working relationships, and awareness of social issues. Alex Stamos, former Chief Security Officer at Facebook, who now lectures on cybersecurity and technology policy at Stanford, focused on the subject of empathy for customers in his 2017 keynote address at the annual Black Hat conference in Las Vegas:

> As an industry we have a real problem with empathy. And I don't just mean empathy towards each other… but we have a real inability to put ourselves in the shoes of the people that we're trying to protect…. We've got to put ourselves in the shoes of the people who are using our products.[56]

Other tech veterans, including Linus Torvalds, creator of Linux, have spoken publicly about the disadvantages of failing to prioritize qualities of emotional intelligence and the effects on their working environments. Following accusations of bullying, Torvalds told BBC he was stepping down from running Linux in order to seek professional help to grow his emotional intelligence and empathy.[57] A final danger of failing to prioritize empathy is the possibility that those in the industry may remain removed from and unaware of the wider social issues driven by the products they create, such as the rise of misinformation or technological job displacement.

There are a number of engineers that do not fit the definition of a programmer as described by Cannon and Perry, plenty who demonstrate both profound empathy and emotional intelligence, and many who are aware of and dedicated to solving social issues. Some companies—or more locally, some teams within companies—make a point to hire staff with high EQ and prioritize the development of emotional intelligence among their employees. This seems to be particularly true at more mature organizations, such as LinkedIn and Salesforce. Employees at both companies reported that while they recognized an imbalance of cognitive and

emotional intelligence across the industry, this was not necessarily the experience they had of their company or their co-workers. This may be an indication that the field is in the process of changing and diversifying in significant ways or that problems of emotional intelligence may be localized to specific companies. Across the industry, however, there remains an over-representation of cognitive rather than emotional intelligence, and technical rather than social skills.

The Hubris Bubble

In addition to the type of thinking that dominates the industry, there are also behaviors and attitudes that Silicon Valley does not recognize about itself. The two that will prove most consequential when we begin looking at the impacts of technology are the industry's insularity and its arrogance. Journalist Leslie Hook describes the Bay Area tech community as a place "of great earnestness," which "tends to be inwardly focused, with little interest in the rest of the world (except as a potential market)."[58] The result, Hook argues, is a type of insularity that has earned Silicon Valley a reputation as something of a "bubble," that is not only socioeconomically but ideologically isolated from the world around it. Jaron Lanier, author of *Who Owns the Future?* and *Ten Arguments for Deleting Your Social Media Accounts Right Now*, has lamented the insularity of the industry. In 2017, he told reporter Maureen Dowd "how out of touch Silicon Valley people [had] become,"[59] a dynamic that Lanier believes had been exacerbated by their monumental financial success.[60] M.G. Siegler, a general partner at Google Ventures and a long-time veteran of Silicon Valley, has also written extensively on the lack of awareness in tech and his fear that those in the industry "are losing touch with reality."[61]

Many believe the success of the industry, combined with its newfound cultural relevance and the glamorous pull of working for a top tech company, has reinforced not only Silicon Valley's insularity, but also driven what some describe as outright hubris. (Humility, incidentally, was not amongst the qualities anyone I spoke to associated with Silicon Valley.) A woman at one social media firm explained the industry's growing arrogance as stemming from a belief that no problem existed that tech

could not solve. Such conceit becomes problematic, she explained, when lessons that could be learned from other industries, the past, or the experiences of others are ignored, which might potentially make the products and services of the industry better, safer, or more ethically informed. When I asked why this attitude was so prevalent, the woman described a systemic belief, particularly amongst executives, which held that those in the industry were the smartest and best suited to solve the problems they were tasked with, and therefore couldn't "really learn anything from anyone else." I asked what she believed informed this attitude, the woman replied the problem stemmed, in her experience, from a lack of awareness and emotional intelligence within Silicon Valley. When I posed a similar question to an engineer at a different company, his response illustrated her point: "I spend all day thinking," he explained, "and believe I've exhausted all possible scenarios in that thought process and tend to arrive at the right answer." The idea that there might be an alternate, let alone a better solution brought about by a different process or way of thinking was simply not a possibility that seemed particularly likely to him.

In addition to speaking to those who worked at tech companies, I also spent time with psychotherapists in the Bay Area, each of whom had clients who worked in tech. The arrogance exhibited by these clients was one of the more pronounced themes the therapists reported. One man, who worked in-house at a large tech company two days a week, described the attitude as one of "unaware exceptionalism." When I asked what he meant by this, he explained that the perception of doing something new and radical was often accompanied by a sense of hubris and, in extreme cases, almost an expectation of worship. Another psychotherapist in San Francisco described a similar dynamic among many of his clients, which he ascribed to the "positive feedback loop"—both within companies and from society more broadly—that "exalted" tech employees for the skills and service they provided.

Silicon Valley 2.0

Before we can meaningfully change anything—ourselves, our relationships, our institutions—we must first have a grounded understanding of what we seek to change. (It's much more difficult to fix something when

no one agrees on who or what needs to be fixed.) Rectifying the more socially harmful elements of Silicon Valley's identity begins with a more accurate, conscious, and thorough understanding of what that identity is—both what the industry excels at, what it lacks, and the values, thinking, and attitudes that predominate. Jessi Hempel has argued that the greatest danger the tech community faces is that it "cling[s] to an outdated" identity of itself, which is no longer accurate or helpful. In order to move forward, "the Valley itself must evolve" and re-examine the ideas that underlie its conception of itself, a process Hempel acknowledges will require "a severe and sudden-feeling identity shift."[62]

The outdated, unconscious, and, at times, inaccurate view of what it is, suggests that Silicon Valley is an industry that does not understand itself in a variety of important ways. As we outline regulatory guidelines, adopt ethical frameworks for development, and reimagine the standards and values we want to instill in future technologies, it is important we understand both the conscious and the unacknowledged aspects of the industry's identity. This must include the tech industry's less positive characteristics, including its insularity, lack of emotional intelligence, and abdication of responsibility for the social problems it has helped create. It must also include a realistic understanding of its culture and environment, which is the subject of the following chapter.

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