Skittles
Jinni or Universe in a Pocket?

The difference between a "problem" and a "mystery" is that we may be able to solve a problem, but the mystery is something we have to live with.

––Harvey Cox, Harvard University

This was the big data economy, and it promised spectacular gains. A computer program could speed through thousands of resumés or loan applications in a second or two and sort them into neat lists, with the most promising candidates on top. This not only saved time but also was marketed as fair and objective. After all, it didn't involve prejudiced humans digging through reams of paper, just machines processing cold numbers...The math- powered applications powering the data economy were based on choices made by fallible human beings. Some of these choices were no doubt made with the best intentions. Nevertheless, many of these models encoded human prejudice, misunderstanding, and bias into the software systems that increasingly managed our lives. Like gods, these mathematical models were opaque, their workings invisible to all but the highest priests in their domain. Their verdicts, even when wrong or harmful, were beyond dispute or appeal. And they tended to punish the poor and the oppressed in our society, while making the rich richer...Without feedback, however, a statistical engine can continue spinning out faulty and damaging analysis while never learning from its mistakes...They define their own reality and use it to justify their results. This type of model is self-perpetuating, highly destructive, and very common.

––Cathy O'Neil, Weapons of Math Destruction

Figure 1. San Antonio, a city in transition.

Antonio Petrov
Urban Future Lab, University of Texas San Antonio

According to the Census, every day more than 66 people officially begin a new life in San Antonio, TX––unofficial estimates are closer to 150 people. It makes the seventh-largest city in the United States the fastest-growing currently, and with an estimated 1.4 million people moving to San Antonio within the next 25 years, the city's population

will nearly double. Despite these prospects––and historic endorsements like Mark Twain's, who views San Antonio along with Boston, San Francisco, and New Orleans as one of the four "unique cities" –– San Antonio continues to be "an often underestimated, predominantly Hispanic, American microcosm."1 Moving forward, however, urban transformations, the climate emergency, and income inequality have increased the stakes for San Antonio. From the 25 largest metro areas the city has the second-highest percentage of people living in poverty. In 2018, 18.5 percent of the city's residents lived below the poverty line, which is higher than the national average of 14 percent. The future of San Antonio is no longer determined solely by traditional investments in the economy, infrastructure, and transportation, as how to holistically safeguard the environmental trust and well-being are also at stake.
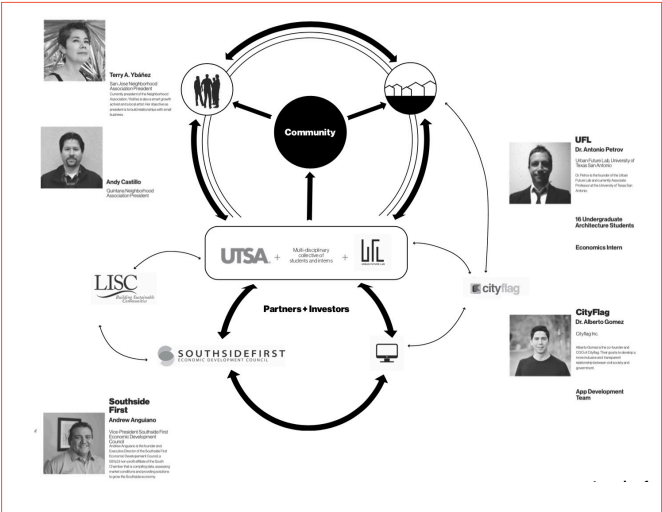

Figure 2. Network of Actors.

In response to these challenges, I have founded the Urban Future Lab, a think-and-do tank, research and teaching lab at the University of Texas, San Antonio. In collaboration with Southside First Economic Development Council and our strategic partners—Southside Chamber of Commerce, local tech company Cityflag, and Local Initiatives Support Corporation (LISC, a non-profit community development financial institution—we initiated a pilot project in two of the most impoverished communities in the nation. The pilot communities, Mission San Jose and Quintana Rd. on San Antonio's Southside, not only have one in three residents living at or below the poverty line but with their proximity to a UNESCO World Heritage Site, with an estimated regional economic impact of $100 million, and Port San Antonio–– occupying 22% of the community's footprint––with an impact of $5 billion, both exist in environments that are not activated by the surrounding economic assets.

Research has shown that little data exists about the most vulnerable in our society. When it comes to understanding the dynamics of poverty,

Figure 3. Community Impressions, Cultural Fabric and Root Map, Quintana Rd.

the pilot communities on San Antonio's Southside are information deserts. Databases, like the American Census, do not capture many of the residents in Mission San Jose and Quintana Rd. Closer observation not only reveals that the lack of data informs social, cultural, and economic biases, but it also illuminates how the results and the absence of medical, financial, and transportation services affects the lives of residents daily. For example, there are no banks in the pilot communities. Getting to a bank can also be difficult as there is insufficient public transportation. The situation illustrates how deeply rooted inequality is, but it also sets cycles of inequity in motion and further accentuates how these biases contribute to parallel realities, and in these parts of town, also parallel cash-centric economies in which residents rely entirely on cash for all transactions, including purchasing homes.
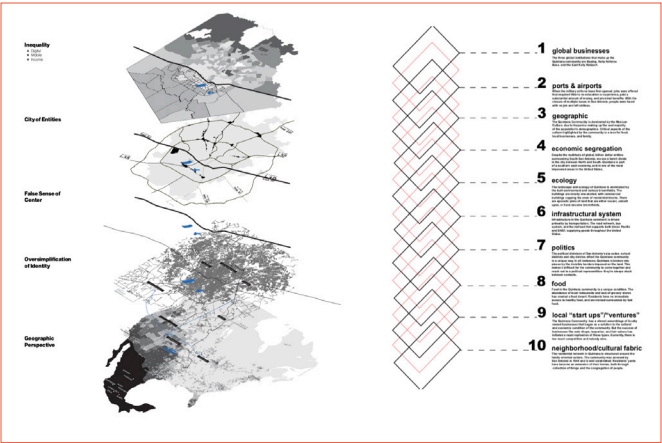

Figure 4. Layering and Convolution of Systems, Problems, and Myth.

Historically architecture has been slow in responding to emerging frontiers. The discipline's self-assurance has created hermetic "isms" which are ripe with discourse, when it comes to inequality, they lack social and political currency. Not only is data a critical instrument for architects to develop social, economic, and political agencies, but it

also should be a reflection of reality, helping to define how the environment is understood, engaged, and experienced, and that makes data fundamentally an architectural issue. Yet, within the epistemological regimes of architecture, the environment of data, for example, "smart cities" and "high-performance architecture," remain out of reach for the impoverished. Not only do we not question the legitimacy of information, but the way we accept these biases while we are conspicuously intertwined with its networks and the mechanics of how data is conditioned by business, political, and corporate interests is creating blind spots in research, policy, and execution.

SKITTLES

Figure 5. Josh Kline, Skittles Installation, Musuem of Modern Art, 2014.

The assumption that data is equally accessible is another mystery we keep living with. While information is abundant within a quarter-mile of your local Starbucks coffee shop, there is next to none in communities like Mission San Jose and Quintana Rd. In fact, there are no (Starbucks coffee shops in these communities. The information flow may silently operate in the background, but with biases manifested in the built environment, the absence of data in these communities also means the absence of things we take for granted, which are building blocks in high-quality neighborhoods. Josh Kline's "Skittles" installation serves as a critical lens through which to highlight our obliviousness towards this systemic issue and how we are participating in the mechanics of non-awareness while being consumed by self-awareness.

In a neon-glowing industrial refrigerator, Kline presents "cold-pressed" juices that embody how we consume and are consumed by information, while we are a seamless part of its production and instrumentalization mechanisms. With ingredients like Google Glass eyewear, latex gloves, or octopus ink, however, he uses juices made from a mix of high-tech materials, chemicals, and organic substances as a metaphor to highlight issues in the built environment. "Tastes" like

minimum wage, anarchy, supplements, condo, and big data are bottled just like the real juice. Big data, for example, blends Google Glass eyewear, shredded Verizon phone bills, Omega-3 fish oil, Purell, and porn into an engineered substance that comes close to the real deal.

We not only intuitively buy into the transformative nature of technology and consumption, but we intuitively trust the mechanics that run it. "Technology, however, is never given, it is made. It is a transformation of matter and data into things, no matter how fugitive or ephemeral it is."[2] Let's remind ourselves that big data is conditional, and its statistical information not only carries prejudices but as a result also produces misreadings that continually increase the disparity between perceived realities and how they conflict with the actual reality, particularly in impoverished communities. When it comes to issues of inequality, using big data is not only challenging; I argue, it is morally questionable. This is a tragic continuation of a long history of deeply entrenched inequities that have created generations of impoverished and disenfranchised residents. In Weapons of Math Destruction, Cathy O'Neil dismantles math-powered applications, arguing, "many of these models encoded human prejudice, misunderstanding, and bias into the software systems that increasingly managed our lives."[3] We not only buy into these biased narratives through the way we partake in the system, but we are part of how it creates "own realities and uses them to justify their results."[4]

ACTS OF DOING

Figure 6. Community Meeting, Mission San Jose, San Antonio, 2018.

Building on this, "acts" have taken on a new resonance in our work. As an epistemology, philosophy, and methodology, or shaped by ethos, cause, and social and civic innovation, acts have merged spaces of pedagogy, inquiry, and the collective into one continuous hunch without being tethered to particular (disciplinary expectations, discursive

narratives, or political biases. While authentic human interaction and people-to-people engagement was our primary focus, we also employed hybrid civic-tech as part of our engagement strategy. This meant, parallel to event-based and door-to-door data collection, we also utilized a mobile app––which we co-developed with Cityflag–– to broaden the spectrum of collection and collective knowledge. Ultimately, over 300 residents and community stakeholders participated in our 125-question survey. Given the length of the survey, the success of the assemblage was primarily a result of the community's trust and the way they stood behind the effort.
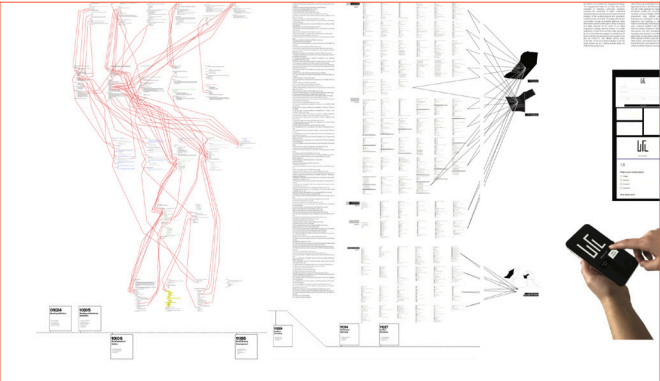

Figure 7. Development of Data Survey and Mobile APP.
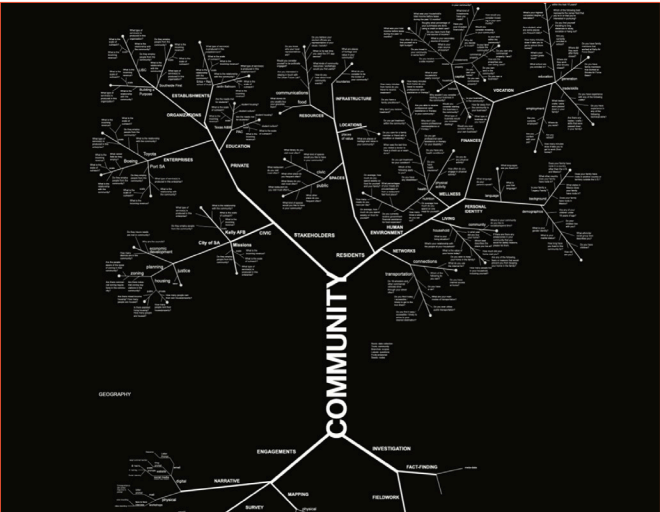
TREE OF LIFE

Figure 8.1. Data Tree of Life.

Inspired by biblical passages like, "The seeds of good deeds become a tree of life,"5 we used the tree of life metaphor as a visual narrative to represent the entire effort. Everything came together in the tree. It not only elucidated the intricate relationships of the

project, but it became a place for everyone to trace back the source of information. This became particularly useful as the project started to grow in complexity. To have one place where collection, analysis, and development of collective knowledge come together not only
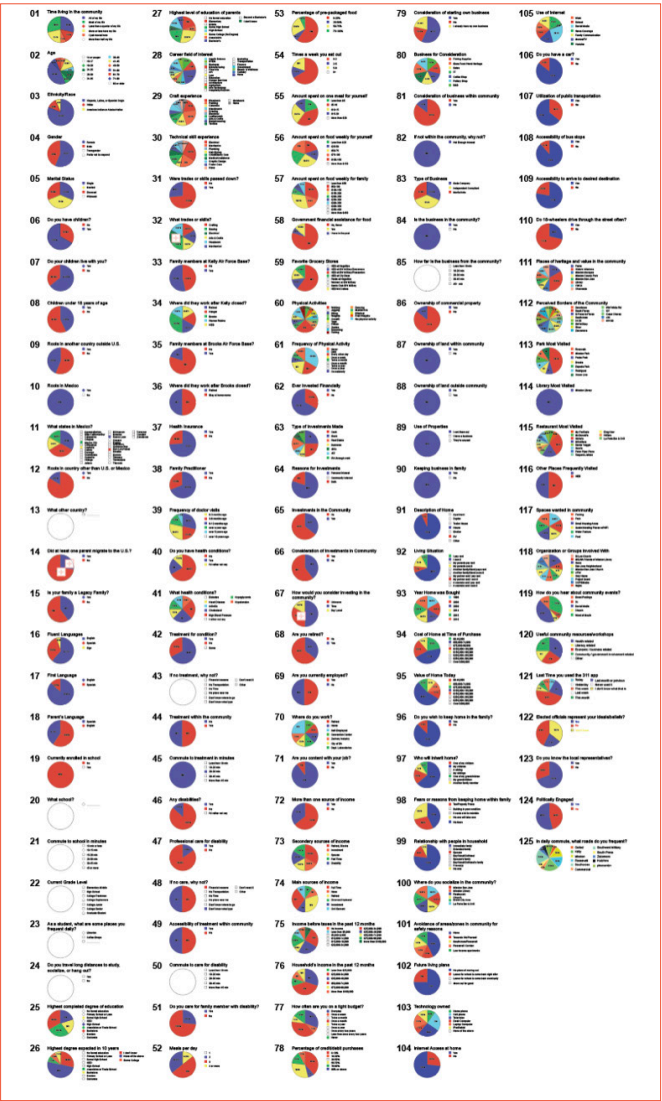

Figure 8.1. Community Data, General Survey.

increased the transparency of the process, but it illuminated the intricate relationships between residents, assets, individual, and collective interests. It also formalized the unconditional organic nature and the grassroots systems of the community, which was important when we communicated our ideas to city officials, investors, and stakeholders. Hierarchically organized, from the seeds to roots, stem, branches, leaves, and ultimately the fruit representing the answers to the survey questions, the tree revealed the community as it is, rather than as a mathematically constructed conditional framework.

EXPERIENTIAL LEARNING

Now that the pilot project has taken a new path with new partners and new dynamics, at the Urban Future Lab, we are evaluating what felt like a very intuitive process. From the beginning, our partners and we followed a hunch focusing on convening the needs in a community-driven engagement process. Rather than having one determinate conclusion at the end, we focused on "having multiple moments of impact, and multiple moments of realization."6 This not only redefined the metrics of success but also our approach to learning as individuals and community.

Figure 9. Adaptive Model, Urban Future Lab.

I must admit we have not fully made sense of the entire process yet, but so much can already be said. The relationship between the Urban Future Lab and the community existed well beyond the institution, the traditional boundaries of architecture, and even each of us individually. Rather than following institutional and disciplinary protocols, the process, our objectives, and in fact, we as individuals, constantly evolved beyond commercial, socio-economic, and political agendas, including the architectural ones, while upholding our promise to convene these communities. The solutions were not always ours. However, this did not matter because we operated within a field of "urge and fascination" serving the Mission San Jose and Quintana Rd communities in their strife for finding new definitions for the future. While we imagined better futures for the pilot communities, we also contemplated the role and ambitions of architecture in addressing the challenges that determine the built environment in this hinge moment. This was not about the practice of design (and visualization) of information. Instead, we surrendered design to a just cause, incubating the best of all available and possible knowledge into acts of

transformation.

The constantly evolving challenges did not take away from the chances of success, as our expectations did not drive the results. Instead, the diligence of our acts delivered them somewhere between global currents and local particularities. Success comes in many forms. We, however, kept it as a means that cannot be measured by (academic) excellence alone. At the forefront of design, research, and the integration into practice, it is also vital to develop incomplete and not perfectly defined channels to explore the grey areas from which (social and civic) innovation can spring. At stake are the values we assign to binary relations. With shifting frontiers, the challenges are more complex and broader in scope. While the future is about finding solutions for emerging global issues, we must also elicit courage and inspire new vectors of action, and social and political currency to make a difference in our neighborhoods. I argue, this is not only a statement about the professional preparedness of students, but it is about social, civic, and humanistic viewpoints, which are essential and equally as important in gaining intellectual competence to master the complexities intrinsic to the "whole" environment, even if these pressing realities fall outside of the disciplinary scope of architecture. Only then can we perceive coming into consciousness as the moment by which we may measure whether or not we have successfully prepared the next generation.

Oscar Wilde once said we have to arm ourselves with the right attitude: "It is all going to be fine in the end. If it is not yet fine, then it is not yet the end."7 Until then, Skittles, just like a Jinni, are different flavors of what is possible. Like a good story, they change, evolve, and assume any number of guises with many new viewpoints every time the story is told. As a result, new realities unfold, and like a universe in a pocket, stories are told over and over again.

Notes

1. Chozick, Amy. "Is America's Political Future in San Antonio?" The New York Times. January 5, 2019. https://www.nytimes.com/2019/01/05/sunday-review/julian-castro-2020-president.html

2. Kuo, Michelle. "New Order: Art and Technology in the Twenty-First Century". Museum of Modern Art, New York, USA.

3. O'Neil, Cathy. Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. London: Penguin Books Limited, 2016.

4. Ibid.

5. Prov. 11:30

6. Mostafavi, Mohsen. Harvard, Graduate School of Design. 2013.

7. Gawdat, Mo. Solve for Happy: Engineer Your Path to Joy. New York City: Simon and Schuster, 2017.