Mapping Abstract Futures

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doi: 10.3311/adim.2019.02.186

The future we need to explore is more abstract than it is concrete. As designers, we are constantly conjuring ideas based on a concrete world to improve what we have already seen. Within these predetermined frameworks, we unintentionally bring our own biases to planning the future based on what we know and what we consider safe. However, methods of gathering evidence must reveal the essential dynamics and tensions of the individual in the context of society. The cultural system that represents this process of adaptation can be plotted as a system of language that reflects the dynamics between the concrete and abstract worlds. A craving for such emotional intelligence requires that we expand our binary world into an abstract space for which only the human brain has the capacity. We need such a systematic view in order to think intuitively on multiple levels at the same time.

Keywords: applied sociology, epistemology, semiotics, strategic foresight, systems thinking

The Limits of Our Perception

The landscape of future planning is broad. It can be commercial and explore consumer products, or it can be a landscape of peace and democracy. However, in all cases, we establish predetermined limits of what we explore. We need to foresee all intersecting futures related to the work under consideration. Myopic approaches keep true innovation hidden. To predict any ramifications, we need to be unafraid of the inputs. We can always pull back. We tend to look for what we want to see at a particular moment instead of engaging tensions and evoking provocative ideas.

Consider the artist Piet Mondrian. He could paint a house as well as any other early 20th century artist could. However, his curiosity about his fast-changing environment led him to see his perspective in abstraction. A house is not simply a house in its immediate setting. A house lives in the context of the world surrounding it. What we really see in a Mondrian painting, as well as in other abstract works, is the functioning of the mind that produced the work, not the limited constraints of the apparent subject. We should always allow our minds to go beyond boundaries. The process should be constant and iterative.

We are challenged to re-examine the methods we use to frame the future. We live in a world where there are rallying cries for sustainability, global awareness, safety, privacy, and inspiration. These concepts are no longer tangential but can thrive as progressive initiatives that are fundamental and universal. Our perspectives on the future have much to do with the ideological biases in our research methods. We seek shortcuts and quick classifiers. However, quick classifiers no longer exist. The ways in which we classify and organize information need to be protean, working in tandem with our evolving intelligence.

Design has become cemented in the language of the machine age. As it leans toward speeding up the future, it exposes us to unintended future possibilities. Its methods of inquiry and analysis are biased toward what
technology can do much more than we can foresee as real human societal needs. A sustainable and ethical future requires an abstract framework of ideation. Abstraction literacy refocuses our thinking on well-formulated ideas, thus keeping design rooted in its essence.

We spend great amounts of time and money quantifying waning concepts. Quantifying things lends confidence. It gives us a platform to build on—a green light. However, quantifying abstract ideas worries us. If the query is framed correctly, there should be no problem quantifying abstract ideas. Still, we tend to default to educated opinions. A primary problem lies in how quantification is defined.

"More" still equals "better." That should not be valid. We should be looking at the effects of the numbers on trajectories. If we do not, we open ourselves to the possibilities of the worst that could happen. People thought social media was a brilliant way to network. We did not expect the current negative affect on our health and society.

Because the word trajectory implies movement through space and time, it compounds the complexity that is desperately needed to be explored. Such exploration should empower us to think as we classify, analyze patterns, and evaluate effects.

**Jammed in the Machine Age**

The ideology of the machine age has left an indelible imprint on both forecasting and the design frameworks it informs. Le Corbusier’s idea of "machine for living" best defines the dominant ideological relationship between the designer and the world brought forward into the information age. Le Corbusier noted, “A house is a machine for living in...An armchair is a machine for sitting in and so on” (Corbusier & Etchells, 2014).

Design evolved to become an engineering function, satisfying needs at scale. That language of efficiency and scale can be observed today in everything from suburbia to iPhones. Materiality has become the de facto meaning of design. Consequently, forecasting has become distorted by this process. Legacy design thinking abides by the laws embedded in the materials themselves, not in the world around them. The future we imagine depends on the expanding feasibility of the applications in our existing design vocabulary.

Ironically, the core of Le Corbusier’s philosophy is that the “machine for living” would be positively adapted to the materials and social conditions of the time (Ghyka, 1927). If the machine for living were positively adapted to our social conditions, then this process would be protean. However, in this model of materiality, technological utopias quickly became dystopias. The “appification” of the home is in the interest of what technology can do rather than what we truly need. Do we need constant surveillance to survive? We forget to look at the future in decline. What might go wrong in the context of success? These questions have been largely overlooked.

How could we not see the future decline of suburbia as we planned it? Why stop progress? We do not know whether we should be harnessing progress until it is too late. Robert Moses and Henry Ford had valid sustainable ideas, but we prioritized only industrialization.

In his article “For geoengineers, a scientific existential crisis” (Undark.org), Dave Levitan quotes Joshua Horton, a research director of geoengineering at Harvard University: “The world is full of things we wish didn’t exist but ignore at our peril” (Levitan, 2019). According to Levitan, technofixes for the climate crisis are not anyone’s first choice. These issues hit home hard.

An epidemic of loneliness accompanies our hyperconnected mobile world. Blind spots occur when the future is framed from a dominant position of technology over human response. Unraveling the future forces designers to consider the broad responsibility of purpose and sustainability to adapt to the lives of people rather than conform to the machines. Problems of bias and blind spots are to be solved now before increased technological momentum.

**Revealing the “Unknown Unknowns”**

Over the last century, advances in trend forecasting emerged from periods of war. An advantage during wars is the ability to assess the influence of weather on actions taken on the battlefield. We measure predictions of the immediate cost. In World War II, the ability to predict the weather delayed D-Day and allowed the window of opportunity by Allied forces on June 6. The assessment of risk and uncertainty informs the framework
developed for a set of tactical actions. We assess the available data and combine this knowledge with the available materials to propose a set of scenarios within that framework.

According to StrategyByDesign.com, “The military historian Liddell Hart says that the purpose of strategy is ‘to diminish the possibility of resistance...under the most advantageous circumstances.’” (Rhodes, 2011). Troops were warned to expect the unexpected within an articulation of a set of operating principles. The forecast model merely directs the path based on a finite set of variables and available materials. It does not consider the long-term aftermath. We feel those effects today.

The military forecast model is a framework of “known unknowns.” Donald Rumsfeld used this phrase at a press conference in 2002 to refer to the lack of evidence linking Iraq to weapons of mass destruction. The structure of knowing includes “known knowns” (things that will happen), “known unknowns” (risks we are aware of) and “unknown unknowns” (risks we are not aware of). “Unknown unknowns” present the most significant challenge. They represent the realm of abstraction, involve human variability, and require a broad scope of consideration.

American psychologists Joseph Luft and Harrington Ingham coined the “known” terms in their analytical technique called the Johari Window. The technique is used to examine what we know about ourselves, what others know about us, and what we do not know about ourselves or about others. Its purpose is to move us beyond a single perspective of the self and improve how we function in the world. The logical exercise determines and classifies the gaps in understanding, forming an algorithm of self-actualization. Identifying the notable voids is critical.

Figure 1: The Johari Window. Source: Luft & Ingham (1955)

At the 2019 Consumer Electronics Show (CES) in Las Vegas, product launches highlighted the struggle between the concrete and abstract domains of design foresight: a television disappears from view and a wearable device tracks how you sleep. These designs convey the existential crisis. Why do we want our electronics to disappear? Why are we not sleeping? Buckminster Fuller referred to this phenomenon as “weaponry over livingry” (Fuller, 1963). Fuller’s concept of “livingry” places design within a broader system of consideration. All the preliminary questions must be thoroughly investigated before we compound the problem.

**Developing a Sustainable Model of Design Foresight**

A current challenge to design thinking is the sustainability of purpose. Sustainability does not follow a linear path, but designing sustainability has become an excuse to make more consumer products and services. The more we dilute the process of investigation, the more we obfuscate the path to innovation, cluttering the world with designs that further agitate cognitive dissonance. The underlying thinking is that analysis slows the
production process, and complicates the path to completion. Design further complicates by saturating experiences with “tweaks.”

Consider personalized pre-packaged prescriptions. AI and machine learning promote pharmacy automation to increase accuracy and efficiency. This comes at a cost. Eventually, automation will allow human pharmacists to better interact with patients. At present, a senior person might be put off by the early stage processing of pre-packaging and perceive a complete lack of interaction regarding their care. A lack of compliance is sometimes the result.

Foresight always should consider the living abstract layer that designs will enter. The aforementioned disappearing television indicates that we feel crammed to technological capacity. The wearable sleep device processes more data than we can handle. In design, there is both a perfect future and a negative future. The application of design foresight should not lean too heavily on a bias toward material design perfection. We allow products to be visible when ease and elegance are applied to their design. Usability does not affirm that something is needed. The assumption of usability is made in the context of the product that exists in the first place.

The Technological Echo within Design Foresight

The absence of the natural process of evolution creates an echo effect in design. We design tools that design tools that design tools. In art, the term mise en abyme refers to the technique of placing the copy of an image within itself, suggesting an infinitely recurring sequence. The method is known as the Droste effect, named after an early 20th century Dutch brand of cocoa powder that used the technique in its packaging illustration. That algorithmic echo is the essential metaphor of the machine age of forecasting. From the assembly line to the “selfie,” our relationship to technology has reached the point of distortion. We surrender our forecasting to the “known unknowns” of the mechanical process, thus becoming the mechanics of our inventions.

Figure 2: Example of the Droste effect. Source: photograph of Droste’s cacao tin, designed by Jan Misset (1904)

Elizabeth Holmes and her company Theranos provide an example of the Droste effect. Holmes stole admiration by modeling herself after Steve Jobs. Her mission of democratizing healthcare offered a model of aspiration. Investors saw what they wanted to believe, and collectively drove the visibility of Theranos until it fell apart at the policy regulation level. Aspiration cannot be designed toward. The sustainability of health and society requires that design truly looks at the meaning of democratizing healthcare. We are already seeing reactions to Uber and its eclipse of accessible public transportation systems. We need not more apps. We need thinking.

Moore’s Law is the observation that the number of transistors in a densely integrated circuit doubles about every two years. This law became a forecasting model used to predict the growth of technology. The linearity of a forecasting model based on materiality alone leads to exponential distortion. The exponential trajectory
creates behavioral unpredictability. The more significant challenge then becomes how we can develop our designs to anticipate and adapt to this abstract layer of human response.

We assume that the perfectly ergonomic phone will create perfect communication. The opposite is true. How the design is received, contextualized, and eventually rejected must be considered in forecasting the evolution of its use. The utopia of suburbia becomes a dystopia of economic instability. The gap in our forecast lies beyond the explicit nature of design but within its implicit connection to the unpredictability of human expression. These “unknown unknowns” are biological, not mechanical.

**Learning from the Process of Evolution**

Practitioners of design foresight can learn from the natural world. Evolutionary biology reveals the interconnected ways in which change manifests. An example is the flight of birds. Feathers are interlinked with the meaning of flight. However, science has revealed that flight was not forecast by the presence of feathers. Flight is a secondary adaptation of thermoregulation. Opportunity affected the response of the birds to the environment imposed on them. To understand evolution is to understand the ways in which unexpected traits take shape. The feather becomes the trait of flight only in the context of its environment. This process of exaptation demonstrates that the biology of flight is a far more incremental process than we might think. The feather adapts to the environment and, in turn, the feather shifts from the trait of insulation to the trait of mobility and flight (Parry, 2013).

Our cognitive development follows a similar process of adaptation. The system of meaning creation and adaptation can be modeled using Piaget’s theory of cognitive development. Piaget’s theory describes how humans acquire, construct, and use language in their world. In the processes of assimilation and accommodation, we move from one framework of meaning to another framework of meaning as the context changes (Piaget, 1966). A child learns by interacting with the physical world and develops abstract concepts of the meaning of things. For example, as a child learns the concept of “hot,” other implied language enters into the schema, such as “danger,” thus framing a narrative that the child uses to apply to new phenomena.

This process of accommodation is the psychological framework of abstraction. It is how new lineages in culture emerge. Our language defines the reality in the context in which it is presented. In effect, it is a schema that provides us with a template for processing all that follows it. These schemata are the essential reality of design and foresight. Schemata reveal the ways design will work or not work in the future. They reveal the discrete relationship between the seen and the unseen, that is, the abstract and the concrete.

**Social Systems Reveal Cultural Abstraction**

A return to the fundamentals of sociology helps us determine what we can consider evidence to measure cultural adaptations. Biological analogies of creative synthesis influenced Emile Durkheim’s model of social causation. A system of social facts shapes our world. We are not isolated individuals but interconnected organisms and parts of a whole. The interplay of individual and collective adaptation frames our world. In *The Rules of Sociological Method*, Durkheim outlined the following:

> Sociology cannot dissociate itself from what concerns the substratum of collective life...If the population clusters together in our cities instead of being scattered over the rural areas, it is because there exists a trend of opinion, a collective drive which imposes this concentration upon individuals. (Durkheim, 1950, p. 58)

This collective system is the framework that our design must occupy. Our methods of gathering evidence must reveal the essential dynamics and tensions of the individual in the context of society, both explicitly and implicitly. It must reveal the connection between what we perceive as material evidence and what is hidden as implicit responses to our environment. The traits that emerge are cycles of dissent and aspiration that emerge in our social exaptation.

Like feathers adapting to flight, language and behavior are adapted as cultural mythologies. Our design foresight must consider that shift in schemata from the adherence to rules to the starting point of a symbolic design rebellion.

**Mapping the Concrete and Abstract Layers**
The uncertainty and chaos of forecasting are traits of cultural change that reflect the relationship between the explicit and the implicit. Hidden biological response and human expression attempt to mitigate the chaos. These traits are the abstract ideological underpinnings of “unknown unknowns.” They influence our everyday life and consumption. The symbols and language of culture make apparent the abstract layer, serving as evidence for application in the design process.

The cultural system that represents adaptation can be plotted as a system of language that reflects the dynamics between the concrete and abstract worlds. We can use a model, such as the Johari Window, to examine how culture responds implicitly to reveal traits of future behavior. We can then see the inception points of cognitive dissonance as well as cognitive aspiration. The patterns reflect a holistic view of how design functions in the world. We can then track how culture migrates in a taxonomy of words, images, and gestures.

Language reveals the abstract world of implicit meaning before it takes concrete shape in cultural norms and values. Semiotics, the study of linguistic signs, provides us with the tools to distinguish the abstract and concrete elements of culture. These linguistic signals represent the dynamics of cultural adaptation in direct relationship to the environment within which they emerge. The relationships between residual, dominant, emergent, and disruptive codes of meaning are given a cognitive, social context. The process of signification that shapes these codes consists of a series of social facts that rise and fall. They can be measured and patterned to reveal the abstract spaces that determine the context of uncertainty.

![Figure 3: A system and method for culture mapping. Source: U.S. Patent No. US9002755B2.](image)

The matrix diagram (Fig. 4) is based on a patented method of analyzing and classifying open and closed corpora into discrete behavioral archetypes that can be visualized as a system of signifiers within a semiotic square (Fig. 3). It classifies and quantifies linguistic signifiers along three principal axes. The x-axis represents the relationship to self from analytical to expressive. The y-axis represents the relationship to society from affirming societal norms and values to resisting societal norms and values. The z-axis represents time. This framework provides an ideological systematic view of the dynamics and patterns that emerge in expressed language, including words, visual images, and gestures. It contextualizes the relationship between certainty and uncertainty.
Figure 4: Abstract/concrete foresight matrix, adapted from a system and method for culture mapping. Source: U.S. Patent No. US9002755B2.

The framework maps the relationships between discrete elements of the collective social system to reveal gaps. We can also use this mapping of layers to reveal the migration of meaning. The migration is charted by classifying the coordinates of human expression.

In the matrix model, the two top quadrants represent the concrete layer of cultural meaning creation: identity and social currency migrating within the framework toward social zeitgeist and public policy. This layer affirms societal codes. The two bottom quadrants represent the abstract layer where new meaning creation forms. This layer resists societal codes. New meaning emerges as a pattern of dissent to the social order. It manifests as symbolic and philosophical traits that eventually are made physical through new techniques and rituals. These techniques and rituals become the social currency that informs the concrete layer when the schema is updated.

Ideologies emerge within these domains as taxonomies of expressed language, revealing codes of social cohesion within discrete social groups. The method allows for visualizing the full picture of the variability of how design works as part of a complete living system, including dynamics beyond the control of the imagined isolated user. The reality is that there is no “user.” The individual is always connected as part of the larger system.

The described archetypal framework reveals the narrative variability that is promoted by environmental, political, and social forces. It is rooted in Carl Jung’s essential cognitive theory of psycho-physical patterns common to all humanity (Robertson, 2009). And, much like Jung’s hero’s journey, it too is a system of shadow and light, entering into the unknown to restore order. Within the framework, linguistic clusters form making apparent relevant archetypes and their codes. By mapping them as a part of a measurable social system, we
can integrate unconscious elements, thus demonstrating how linguistic evidence emerges in patterns that reveal critical schematic shifts.

**The Concrete Layer Must Overcome Mechanical Inertia**

Design foresight capitalizes on the inertia of materiality. Parsing through an “Established Future” and a “Residual Future,” we look for what is popular and then seek to scale it. The traditional framework for design foresight begins ideation by looking at unmet needs within existing design. The diffusion of innovations affirms this approach by assuming that future behavior can be modeled on a linear path toward critical mass. It relies on the predictability of social dynamics, which is more about materiality of design moving from adoption toward economy of scale. It is an additive process. It applies design to the feasibility of existing materials in relation to the articulated needs of a user rather than their unarticulated needs. As we scale on the surface layer of adoption, we undermine the social order we need to keep a design viable. We assume people want more and improved versions of what they have.

Wearable technology, for example. The appetite for data-driven wearable applications has expanded into every area from health and sleep to monitoring the activities of your adolescent. To meet the needs of the “helicopter parent,” the global positioning systems (GPS) company Tampa Bay Monitoring provides its ankle-monitor technology for children. It was intended for people released on bail or parole. This designs the idea of passive restraint into our daily lives. Satisfying need alone keeps the design process in the loop of adding applications to mitigate the unease that the technology causes and perpetuates.

The “privacy paradox” has emerged as a measurable trait of social response to technology use. As technology makes it easier to share data, countermeasures emerge to avoid surveillance. We must consider that as we design, we create an unseen response that immediately affects future relevance and sustainability. In their study, Alyson Young and Anabel Quan-Haase (2013) examined the ways in which “the privacy paradox” operated by examining the Facebook behavior of undergraduate students. Their findings showed a distinction between social privacy and institutional privacy.

*Soci**al privacy concerns** revolve around concrete individuals. Therefore, they are accessible and easy to understand. By contrast, institutional privacy concerns deal with companies or public institutions. 

*Institutional privacy concerns describe people’s uneasiness and fear that their data is used for unwanted purposes. (Lutz & Strathoff, 2014, p. 85)*

We market a cycle of near-term dependency. Archetypes of material innocence and inertia emerge to propagate that compliance. At the 2019 CES, Deepak Chopra stated, “I think technology has created a lot of stress for a lot of people, but that’s not the fault of technology. It’s the fault of the people who use technology” (Fowler, 2019). In Chopra’s opinion, our future health lies in more applications, not fewer applications and on more data not less, which betrays the essence of design. We have an ethical responsibility to design for a sustainable universal future.

James Williams, a researcher in design ethics at the Oxford Internet Institute leads the resistance against “Big Tech.” In response to the conviction that our minds are being rewired for commercial purposes, he posits that the idea of human rights should be extended to cyberspace. We label design as “smart,” but it needs constant feeding and adjustments. The result is a dissociation from design as an augmentation of human life. We do not want health applications. We want to be healthy.

The concrete layer of design should culminate in a framework of collective permanence, mindful of its residual imprint. It should represent the sustainable aspiration of our cultural zeitgeist. To that end, we should seek design law that ensures the cultivation of supportive innovation. In developing good law, we maintain the strength of the entire social system. We are also applying the categorical imperative, which is a supreme principle of morality according to 18th-century German philosopher Immanuel Kant (Paton, 1953, p. 134).

We have the potential to accomplish great achievements by affirming the dynamic traits of the social system. Making technology easy and accessible has the potential to create a transparent and collaborative society.

Cracks in the system emerge as breakdowns in our ability to control the uncertainty of human response. In *The Demon Haunted World*, the American astrobiologist Carl Sagan wrote, “Once you give a charlatan control over you, you almost never get it back” (Sagan, 2013). An example surfaced when Samsung mobile phone owners realized they could not remove Facebook from their phones. It was preloaded and blocked from deletion.
(Frier, 2019). The lack of control became increasingly uncomfortable when Facebook was sanctioned for selling users’ data.

A proposed change to West Virginia’s public worker health plan asked teachers to download a mobile fitness app called Go365 and earn points on it by using a Fitbit or other fitness tracker to monitor their steps. The proposal was not successful, but it demonstrated how lines between personalization and empowerment can quickly become sinister.

**Leveraging the Abstract Layer as Uniquely Human**

The metrics of sustainable design are livability, participation, and knowledge. The signifiers of disruptive design are found in the categories of “Disruptive Future” and “Emergent Future.” The evolution of disruptive and emergent futures is triggered by the failures of design codification in the concrete layer. When we consider the symbolic space (i.e., the space of the “unknown unknowns”), we are considering that purpose is an essential foundation of materiality. Artificial intelligence both defines the materiality of our time and tests how technology becomes intimate and interwoven with human thought and aspiration. The line between the human and the machine has begun to blur.

A pattern of response emerges when the policy space becomes disconnected from the social order. Revolution is one human reaction to the overreaching of control. We are wired to rebel for the survival of the species. The symbolic language of dissent and philosophical repositioning emerge within culture as a disruptive challenge to imposed atrophy.

In 2016, Edward Snowden summarized the archetypal dynamics of technology, stating, “Privacy is the fountainhead of all other rights. Freedom of speech doesn’t have a lot of meaning if you can’t have a quiet space.” (Schrodt, 2016). An immune response is a declaration that the system is broken and the starting point for design language that seeks to resolve that break.

We should be empowered in the process of ideation to return to zero. We need to see the power behind zero, consider the points of obsolescence, and be aware of how this space links to deeper sources of meaning. If we can remain connected to the semiotic “notness” of design, we can save innovation from being reduced to meaningless gimmickry.

There is a point at which the analytical expression of dissent is transformed into physical action. The ingenuity of the “hack,” improvised solutions, is formed in the expressive abstract space. The hack represents the essence of the natural human order of physically coding the symbolic with a new schema through creativity. In food, it is the point at which organic food becomes a recipe that I can make and eat. We have a right to foods that comply with the standards of organic farming. However, we do not consider the essentialness of this right until we cannot do something that we believe is essential.

We know how to be creative. We also need to think creatively. Apple introduced its Research Kit software to allow medical scientists to gather insights within their own control, thus reinforcing the physician-patient relationship. It is a natural human desire to want balance, information, and a voice. Such initiatives are beginning to pull back on populating consumer applications.

**Informing Speculative Design**

Abstraction looks at speculative design in a way that better informs the designer about the public in question. It functions as intervention allowing designers to deduct “knowns” and “unknowns” from critical futures, both positive and negative. Yet-to-be-realized information, disruptive and emerging, exists within the shadow spaces of these critical worlds. By methodically exhausting what one can know helps get ahead of and mitigate any potential black swan events. Also, the more a designer knows, the more ambiguity can be built into prototyping to allow for natural, open-ended design.

Mapping abstract futures for a global sports brand speculated a new vision for sports in Asia based on socio-political tensions. Recession and mistrust of establishment affected how teens and young adults saw their future. This could not be explicitly articulated. Younger people wanted to reclaim their national identity, and find their own individualism in a highly collectivist society. The answers lived implicitly in how they went about playing their sports, the type of sports they chose and the badges they wore. They were rebooting national identity for a new generation.
Visualizing this more abstract space of emerging identity empowered the brand to think beyond what any one sport represented. It allowed designers to build meaning and relevance in terms of how people affirm who they are in relationship to their society. It allowed them to cultivate muses to fuel their inspirations through emerging traits.

In Autumn 2018, MIT’s Design Issues published *Provocation, Conflict, and Appropriation: The Role of the Designer in Making Publics*. The article discusses various approaches to speculative design. Each case shares an underlying commitment to viewing design as embedded in the production of publics and to making visible their issues and shared struggles. The struggles exist within one framework, but they have varied time trajectories and “notness” spaces.

The evolving approach to speculative design is to shift the designer’s role from singular artist to conspirator, bringing greater participation into the role for diversity. Mapping abstract futures doesn’t lessen the role of the designer. It better informs their design.

**Longitudinal Reliability and Validity**

Mapping abstract futures for American food producer Land O’ Lakes meant it first needed to understand the bigger context of the future of food. People want nourishing food, safe food, food security, transparency, and sustainability. Their demands follow the same challenges as their expectations for privacy. Within their smaller circles of friends and family, they understand: “Food is what I expect.” “Privacy is what I expect.” However, when the public circle widens, human scale is lost.

Land O’ Lakes wanted to live up to the relevancy that society forecast for them. As a legacy brand, they sought a renewal of identity. What were the signals in the social discourse that held possibility for them? Big food blind spots are typically in terms of what a corporation cannot do or scale. Instead, they create facades of seeming innovation.

However, Land O’ Lakes had been nurturing a collaborative system of co-op farming since 1921. They knew there was power in being a “farmer-owned” cooperative. Being “farmer-owned” distinguished them from publicly owned big food competitors. It was their “known known.” It was direct and valid. It became the co-op’s mantra. Yet, it unexpectedly rooted Land O’ Lakes in the concrete layer, leading to implicit biases of traditional farming and nostalgia.

The “farmer-owned” positioning also was not supporting the breadth of agritech at Land O’ Lakes. Initiatives were presented as layered, when they were in fact well-integrated. The disconnect and the desire to understand the disconnect was their “known unknown.” “Farmer-owned” needed better interpretation.

Natural language processing uncovered that “farmer-owned” and its future was not about self-pride. Thought-leading farmers were preoccupied with the concept of stewardship. Their concern for stewardship thrived from farmer-to-farmer as they shared notes and sought each other’s support. The stewardship conversation was the “unknown known” that the outside world was not hearing.

Mapping abstract futures, the team exposed the “unknown unknowns” behind “stewardship.” They learned that within a co-op system of stewardship, big learns from small and small learns from big, feeding smart collective knowledge to a future state of innovation. Land O’ Lakes’ un-siloed approach in terms of farm size allowed for the forward-thinking synergy.

The team also learned that gender dynamics were playing a critical role behind stewardship. This was not about masculinity or girl power or “leaning in.” This was still about sustaining farming for the ages, and doing the work to bring real food to people. Many family farms were already run by women (just not designated on paper). Men and women had been working in farming side-by-side for centuries.

The concepts converged under a relatable conviction of “All Together Better,” bringing Land O’ Lakes messaging back to the collaborative essence of farming -- with a resounding modern focus for the future.

Ultimately, this was expressed through their SHE-I-O initiative highlighting the female role in farming, as well as putting forth voices of Land O’ Lakes farmers talking about how they disagree but come together to solve problems.

Each iteration delves into the meaning of stewardship and the gravitas it reflects within “farmer-owned.” Further intriguing “unknown unknowns” are found within empirical evidence across Land O’ Lakes -- from
rethinking university food services in the midst of student protests to their SXSW Copernicus Project challenging beliefs about how our food systems should be. The protean approach to innovation unfolds as a system of social facts. In-the-flow testing against ideology spaces keeps the process inductive and flexible.

Abstraction and the Value of Human Critique

Abraham Maslow’s law of the instrument states, “if all you have is a hammer, everything looks like a nail” (Maslow, 1966). Hence, the process becomes a means to shape materiality rather than shaping the abstract space of how the material will be received and adapted over time.

Mapping relationships between the abstract and the concrete provides a strong model for inductive decision-making. Design foresight that leverages the abstract layer creates frameworks that connect back to the humans involved. Feedback loops should not disassociate the concrete from the abstract. In a provocative talk at the 99U conference in 2017, Natasha Jen of Pentagram described the lack of critique in the process of design thinking:

What is design criticism? For those who have gone to design school, you know how important that is in every step of the design, every discussion. You bring forth an idea. You bring forth evidence and then everybody crit the heck out of it...real designers surround themselves with evidence. You’ve really got to have the evidence and you’ve got to have the crit in order to make the world better. (Jen, 2017)

Critique is fertile domain for design foresight. It demands that our investment in evidence be based on the natural order of “messy” traits that will determine the framework of use, moving away from “short-termism” to “long-termism.” As technology moves toward increasing intimacy, this ideological challenge will increase.

Abstraction is the ultimate test to re-include the human in the design process. Consider that artificial intelligence is gaining computational power. In 2017, AlphaZero, a machine-learning algorithm created by Deepmind, a Google initiative, mastered not only chess but shogi (Japanese chess) and Go. In a matter of hours, the algorithm became the best player, human or computer, the world has ever seen. We can reach the ultimate machine, but we do not consider the ultimate human.

Artificial intelligence and machine learning are rudderless without an abstract framework for a truly sustainable future. The issues of bias and blind spots are problems to be solved now before they gain increased technological momentum.

The craving for emotional intelligence requires that we expand our binary world into an abstract space for which only the human brain has the capacity. Music has its own metaphor: “It’s not the notes you play, it’s the notes you don’t play” (Popik, 2012). This absence is the essential space that separates humans and the silence that transforms materiality into meaning.

References


