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Making the Qualitative Quantitative

A PATTERN PERSPECTIVE

“The conclusion of design flows naturally from the data; we should not shrink from it; we should embrace it and build on it.”

—Michael Behe
As designers should we seek to be inspired or informed by research? Before we answer that question, we need to step back and consider a commonly held assumption that design is not a democracy. Future innovation does not come from the people for whom we design. Instead, it comes from design rock stars, industry veterans and visionaries through a deep-seated knowledge, a propensity for creative thinking and designerly knowing, a la inspiration. This belief—that inspiration is the basis for design ideas—has led some businesses and designers to use ethnography as a tool to merely inspire. However, another way to consider ethnographic research in the design process is to use it as a creative foundation built on structure, rigor and information analysis. When used this way, what emerges is a creative framework and a foundation for design—what we commonly refer to as the pattern perspective.

**On Inspiration**

Inspiration is a natural and necessary part of the design process. Inspiration is what fuels us and certainly informs us along with the practice of our craft, our innate intuition and our quest to constantly improve the world or products around us.

As designers we are more observant than most to that world. Our gift is a honed ability to see something in almost anything—the careless flick of cigarette ash, the casual conversation overheard or a person’s behavior in a public bathroom. Meaningful moments like these have been captured by Jane Fulton Suri, IDSA in her book *Thoughtless Acts?* Inspiration, inherently, is an internal reflection process, built from the designer’s constructs. What Suri may see and consider with one image, another designer would see in a very different manner, and they would each create entirely unique responses to what they see as designers.

The limitation of inspiration is that our internal ideation is not from co-creation, a shared understanding or an external process. It is an individual pursuit. And while there is beauty in the singular, there is meaning in the multiple—multiple perspectives (usually your team), multiple inputs (usually a variety of research methods), multiple people (stakeholders, subject matter experts and consumers) and multiple dimensions (because the problems we solve aren’t always simple and are part of larger systems and processes).

Thus, we would argue that inspiration is not always enough for the challenges we face today. Inspiration may help us see the opportunity but doesn’t always provide the best solution. And ultimately the qualitative nature of ethnography remains simply that, qualitative.
As humans, we live in a world of patterns—sound, scent, touch, taste and certainly visual. As a profession, we have made patterns the gestalt of design. A Pattern Language by Christopher Alexander or Principles of Pattern Design by Richard Proctor grace most shelves, depending on your discipline. Patterns help us wrangle complexity, provide structure to data and soothe our need for symmetry. But more than any other affordance, patterns provide meaning—particularly, meaning in the complexity of gathered data.

At frog design, patterns are a part of our DNA. The way we interpret and synthesize data—whether it’s from strategic investigation, secondary research, workshop ideation or co-creation in participatory design—always comes back to patterns. This pattern perspective has even been formalized in both our proprietary and nonproprietary methods. We might also look at patterns multidimensionally through the combination of stakeholders, a product’s life cycle and the lens through which we focus—such as behavior, emotion and organization. But what pattern analysis can we create from participatory design and co-creation with only a handful of people or from more traditional ethnography where we historically have gathered singular moments of inspiration? How many participants are enough for data-driven research analysis?

Several years ago, an article on P&G described the moment the company changed its approach to research. Rather than focus groups and statistics, the company’s newest product innovation was diving deep and immersive with as few as three to four people. One innovation lead even quipped that he’d learn more by going deep with one person than he ever could by going broad with many. And in the aggressive timelines we are all seeing today, sometimes you don’t have the luxury of quantitative studies. Thus, the answer is to set up our immersion so that we see patterns across only a few participants.

Patterning Tools
From the future of electric vehicles to more responsive medical identification, from group game play to products for the Asian market, we have had to craft design research protocols and synthesize the collected data into usable patterns with as few as four participants and sometimes as many as 20. The commonality across the research has been the purposeful planning and composition of the probing or creationary artifacts as well as the researcher’s focus lens.

The goal of the participatory design process is to enable co-creation through the act of making the ideal or future product. Because the research team typically provides the inputs (e.g., the kit of parts) to the act of making, patterns are quickly determined. The kit of parts can take

A design synthesis, creating insight combinations through themes and patterns.
the form of Velcro modeling, image collaging, card sorting, process mapping or environmental touchpoints.

Two projects exemplify this type of research perfectly. The first was a concept project designed as part of a team (also including Greg Burkett and Vincent Lam) at M3 Design. The idea was simple. While participatory tools have become more contextual and sensorial, as well as larger in terms of what challenges we tackle using this methodology (e.g., Velcro modeling an entire car), the team felt that the approach to inclusion and analysis hadn’t really changed. Typically, participatory design is done one-on-one, with the kit contents serving as the common factor between individuals and the individuals’ ideals and stories merging through the lens of the researcher or designer. We wondered what were we missing by not enabling the crowd to co-create together, to share a common kit rather than mirror images of separate kits. Well, it turns out we were missing a lot.

The context we set to ground the exercise was in the form of the ideal group game experience for teenagers. To ensure their ability to move from individual mental models to a group mindset when creating the ideal game, we methodically took four teenagers through a series of co-creation activities. The first was an individual image collage, the second was a series of shared continuums around game construct (such as characters, rules and environment), and the third was a single group MAKE kit built from basic physical objects. We found that by enabling participants to co-create together, more improvised innovation developed. The teenagers fed off each others’ ideas, picking up and discarding them as they worked through the challenge together.

The second example of participatory design is a recent project at frog that looked at people’s wayfinding goals as they walked through an environment. After the research was conducted, each set of the participants’ goals was laid out horizontally and then mapped to a color that corresponded to a specific goal. A matrix of eight participants was created this way, with the goals shared by the group visibly seen through color. Because of the proprietary nature of the research, all context has been removed. But that is the beauty in patterns: you can still clearly see the wayfinding process in the resulting color blocks, much like a Mondrian work of art.

Above: The teenagers move from individual ideal to group understanding through game construct continuums. 
Below: A pattern emerges: wayfinding goals are clearly discerned from common color blocks.
Imagine replicating this across participants. How many patterns are missed because we must take in an overall picture rather than focus on the minutia? This method lets the team focus on both.

**Aligning the Qualitative and Quantitative**

Recently a frog design team based in Shanghai traveled to Thailand, Vietnam and Singapore to understand the cultural context and behavioral nuisances in designing an international product for the Southeast Asian market. Here, we utilized ethnographic methods of capture to delve into the day-to-day lives of individuals. We planted ourselves in malls, in bustling business districts, in hospitals and on every type of transportation and watched thousands of individuals use hundreds of products. Simultaneously, our ethnographic research took us into history museums, art galleries and houses of worship to understand the deeply embedded intricacies of the cultures for which we were designing.

While visiting these cities we also performed a small subset of contextual inquiries in which we ventured into people’s homes and lives. We performed home and product tours, contextual interviews and participatory design exercises that helped us understand how these individuals were placing value on everything they owned as well as the images we had captured through our ethnographic inquiries.

In order to disseminate the large quantity of data into something more suitable, we held translation sessions at the end of every day of research. Here we were able to leverage the ethnographic data against the individual contextual inquiries. We found patterns emerging almost immediately.

Ultimately, we were able to make the qualitative and the quantitative align. We did not survey the thousands of individuals we observed, but instead meticulously watched their behaviors in real-world contexts. We then were able to take a much smaller sample of individuals and explore deeply into their thoughts, feelings and aspirations toward the specific product we were designing for.

With one visualization you can captivate your toughest clients and persuade your internal team. Patterns, quite simply, are hard to refute. Why? Because we all crave understanding in the face of voluminous data. Is the goal of research to be inspired or informed? It all really depends on your perspective.
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