EPIC2014

New York

SEPT 7-10, 2014
CONFERENCE PROCEEDINGS

HOSTED BY
THE CENTER FOR POSITIVE MARKETING
AT FORDHAM UNIVERSITY

EPIC *Advancing the Value of Ethnography*

EPIC promotes the use of ethnographic principles in the study of people and social phenomena. We are dedicated to providing practitioners, businesses, and partner organizations with access to the best practical ethnographic expertise from around the world. By illuminating the arc of social change through theory and practice, we can create better business strategies, processes and products, as well as enhance and simplify people's lives in a digital age. EPIC is committed to the view that theory and practice inform one another and that the integration of rigorous methods and theory from multiple disciplines creates transformative value for businesses.

The annual EPIC conference brings together a dynamic community of practitioners and scholars concerned with how ethnographic thinking, methods and practices are used to transform design, business and innovation contexts. Presenters and attendees come from technology corporations, product and service companies, a range of consultancies, universities and design schools, government and NGOs, and research institutes. Our annual conference submissions go through a double blind-peer review process. The final EPIC2014 proceedings will be published by Wiley Blackwell and on epicpeople.org. EPIC is a 501(c)(3) incorporated in the state of Oregon

Intelligences

epicpeople.org/intelligences

Search, read, share, comment, provoke—EPIC Intelligences offers ongoing engagement with a decade of tightly curated, expert content. Produced by the thriving community of EPIC people who are building and advancing ethnographic praxis, this collection includes all peer-reviewed conference papers since 2005, keynotes, and conversations, with more multimedia content to come.

Affiliate Organizations

The **National Association for the Practice of Anthropology** (NAPA) is pleased to welcome you to this tenth annual *Ethnographic Praxis in Industry Conference*. NAPA is a section of the American Anthropological Association and supports the work of practicing anthropology by helping practitioners refine their skills, develop their careers, and market their services. www.practicinganthropology.org

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American Anthropological Association, the primary professional society of anthropologists in the United States since its founding in 1902, is the world's largest professional organization of individuals interested in anthropology. We are proud to be an EPIC sponsor again this year.

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Conference Co-Chairs' Welcome

Welcome to New York City.

This city has been a site of possibilities ever since it was founded as a liberal colony in the New World, a destination where 'different' people of multiple origins and backgrounds could start anew. Embracing diversity at its core, New York has grown into a 'City of the World,' welcoming multitudes of people, cultures, values and ideas. Proximity to different Others launched new relations and thoughts that would not have been possible in a homogenized environment. At the heart of New York lies exchanges of power, but also dreams, ideals and, of course, disillusions, engendered by its longstanding and complex interface with business, culture and practice—from the Rockefellers to the New York Stock Exchange to the World Trade Center to the Freedom Tower. New York City epitomizes EPIC because both cultivate dynamic exchange by bringing together diverse appeals and fostering global values.

Our aim this year is to bring business values closer to the center of EPIC discussions. In hosting the conference at Fordham's Center for Positive Marketing, in the heart of a business school, we encourage critical reflection on the various kinds of value exchanges EPIC enables. Like EPIC, the Center for Positive Marketing seeks positive value exchange in relationships—between consumers and corporations, management and employees—and promotes fostering this relationship for mutual benefit to all. Both organizations seek to create values with all those with whom we engage, whether in industry, academia or other institutions. *Creating value* and *fostering value exchange* encapsulate our theme this year.

When we team EPIC with business, we ask not only ethnographers but also consumer researchers and practitioners in fields from the social sciences to design, engineering, and business: What are the positive values and relations in your world that can lead to new beginnings and new possibilities, or reestablish and re-strengthen old ties? How can positive relationships create new value in the things, places and people with whom ethnographers encounter and engage in their practice and theory?

One hundred years ago Simmel noted that value motivates and sustains exchanges between two or more distinct parties. For business professions today, including EPIC, this value is a central part of their *raison d'être*. Value is a concept and practice that also creates movement, requiring continual adjustments and change, so that if one party gains or looses value at the expense of the other, both must relationally adjust to keep the equation going. Similarly, at EPIC we constantly seek value in practice with our clients and our community of professionals, academics and students. We continually try new things, invite new speakers,

and expand our program to create value and new values for ourselves and others. This year we offer an Authors' Space to introduce our community to relevant new authors. We draw our Student Colloquium into our main program so that, as students express new thoughts and ideas, practitioners can also learn from this rising generation. EPIC moves and adjusts to take new concepts, practices and members into its community, with ideas both accepted and controversial. We strive to push the envelope by inviting speakers, panelists, workshops and salons that complement our community but also challenge us. Movement prevents stagnation.

These qualities of value exchange and seeking value in others lie at the heart of the EPIC community. EPIC adapts and changes to whom we relate, what we offer, and where we generate and receive dynamism. We look forward this year to forming new relations with people we meet, gaining fresh ideas from interacting with others, and learning from this site of inspiration. Thanks for making EPIC 2014 an exciting exchange for all.

EPIC has never looked better, stood stronger, or embraced more collective good will and enlightened thought. We are grateful to be a part of it.

Timothy and Rogério

Timothy de Waal Malefyt, Fordham Business School
Rogério de Paula IBM Research

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The EPIC 2014 Conversation

MARIA BEZAITIS
Intel

ALEXANDRA MACK
Pitney Bowes

KEN ANDERSON
Intel

From September 7 through 10, EPIC convened in New York City at Fordham University's Manhattan campus. This year's conference was hosted by Fordham's Center For Positive Marketing, a fact that encouraged a conference emphasis on value and values. Our organizing team, led by Tim de Waal Malefyt and Rogério de Paula, brought four keynote talks into the main conference program this year, giving the EPIC community a chance to hear from culture critic Thomas Frank, industry practitioners Christian Madsbjerg (Red Associates) and Kate Crawford (Microsoft Research), and Professor Dawn Lerman (Executive Director, Center for Positive Marketing and Senior Associate Dean of Research and Academic Innovation, Fordham University).

Every year, the EPIC community introduces important new elements and innovations to the conference. Brigitte Jordan created the Authors' Space, which highlighted new publications by EPIC people and gave the community a chance to interact with authors. Students from the University of North Texas and Indiana University organized the Future Practitioners Exchange to facilitate networking among students and between students and practitioners at the conference. Melissa Cefkin worked with the organizers of the Graduate Student Colloquium, Marietta Baba and Melissa Fisher, to integrate student voices and work into the main conference program. We were thrilled to see so much student activity and the great work produced by so many EPIC people.

As an organization, EPIC is dedicated to providing practitioners, businesses, and partner organizations with access to the best practical ethnographic expertise from around the world. We provide the space, both at our annual conference an online all year, for practitioners to explore and debate the issues that drive us forward and make an impact on the world through how we do what we do or how we think about what we do. This year, the push for impact was apparent in several papers. On the methodological side (doing what we do), Sam Ladner reminded us that non-verbal language should be a key part of what we analyze and study. Julie Norvaisas and Jonathan (Yoni) Karpfen presented tangible examples of how a very small group of qualitative researchers is changing how technologists interpret and approach data at LinkedIn. Evan Hanover shared lessons from taking "common" participatory research methods into West Africa, where the tools and techniques of our trade are not "common" to the participants.

Others challenged us to consider how we think about what we do and how we analyze and interpret our data. While ethnographers often see our role as that of provoking our clients and internal stakeholders to see the world differently, we should not forget to

challenge our own assumptions about ourselves. In his keynote address, Christian Madsbjerg called on the community to "grow up" as a practice and take more seriously its role and value in the business world. He provoked the audience to consider the impact our work could and should have on strategy, post–merger integration, cost reduction, technology, and resource allocation. Melissa Cefkin, Obinna Anya, and Robert Moore presented a compelling case for rethinking work and jobs. In a beautifully presented Pecha Kucha, Nora Morales and Santiago Negrete transformed Mexico City traffic into an experience to be absorbed and reflected upon.

Finally, EPIC2014 coincided with an important transition for EPIC as an organization. In June 2014 we introduced epicpeople.org, a new digital presence, and an expanded role for the organization. Having focused for 10 years on conceiving and orchestrating the annual conference, EPIC will enable more, year-around interactions among our practitioner community through online content sharing, discussions, and a range of informational resources. Our community has grown substantially over the years, and we feel strongly that developing EPIC as an organization that does more to make practitioner work visible and provide tools and resources practitioners need to further their expertise and their careers is critical, not only for us, but also for organizations who don't yet invest in ethnography. As we move the conference to Brazil in 2015 and then the University of Minnesota in 2016, we look forward to new opportunities to expand EPIC participation, at and beyond the conference itself.

We encourage everyone to take the papers in this year's proceedings as a starting point for delving further into these conversations, and to join epicpeople.org to push our practice further.

A Perfect Storm? Reimagining Work in the Era of the End of the Job

MELISSA CEFKIN
IBM Research

OBINNA ANYA
IBM Research

ROBERT MOORE
IBM Research

Trends of independent workers, an economy of increasingly automated processes and an ethos of the peer-to-peer "sharing economy" are all coming together to transform work and employment as we know them. Emerging forms of "open" and "crowd" work are particularly keen sites for investigating how the structures and experiences of work, employment and organizations are changing. Drawing on research and design of work in organizational contexts, this paper explores how experiences with open and crowd work systems serve as sites of workplace cultural re-imagining. A marketplace, a crowdwork system and a crowdfunding experiment, all implemented within IBM, are examined as instances of new workplace configurations.

> "It's like old age. It's the worst thing, except the alternative."
> (A local farmer when asked to take on more work in Downton Abbey, Season 4)

INTRODUCTION: WHITHER THE JOB, LONG LIVE WORK!

A perfect storm in the world of work may be forming. Consider the following dynamics. In the United States, the Affordable Care Act is projected to enable freedom from job lock, or the need to stick with an employer primarily for benefits, particularly health insurance (Dewan 2014) This comes on the heels of the Great Recession which has pushed many into "the independent workforce" a population some already consider undercounted, under-represented (Horowitz 2014) and likely growing (MBO Partners 2013, US Government Accountability Office 2006). Increasing automation and technical systems are giving rise to the possibility of extreme productivity and technological unemployment (Arthur 2011, Rifkin 2014). Peer-to-peer models for engaging with others are taking hold in arenas as diverse as consumption, education and services. Upstarts of the "sharing economy" are attaining mainstream status (The Economist 2013, Friedman 2014). The models and ethos of "sharing" and "open" are permeating the world of labor. Do these trends together spell the end of "the job" as we know it?

At least since Marx's critiques of industrial capitalism and Weber's "iron cage of rationality" in bureaucracy (1930), social researchers have long critiqued alienating, stultifying and manipulative forms of organizations and labor (Casey 1995, Graeber 2013, Gregg 2013, Hochschild 1989, 2003) and advocated for change. Push factors, such as retiring workforces (Aiken 2012), also challenge current work configurations as long-tenured employees, especially baby boomer generations, depart organizations taking their reserves of experience and knowledge with them. At the same time, emerging business models and technologies enable work to be designed and distributed in new ways. The organization as the pre-eminent industrial era site for harnessing creativity, managing production, and developing and disseminating the produce of business is under stress. Such tensions reverberate through the organization of labor for ethnographic praxis in industry as well. Calls to evolve the practice (Bezaitis and anderson 2011, anderson et al. 2013, Wakeford 2011) sit beside those who remain vigilant to the risks of market transformations of ethnographic labor (Granka and Larvie 2008, Lombardi 2009).

At the same time, collaborative and peer-based forms of labor organization are emerging, sharing in the ethos of DIY, maker, hacker and other open and peer movements. For some, these dynamics hold out the promise of freedom from institutionalized hierarchies, the autonomy to determine what work to do and how, and for the possibility to shape lives independent of dominant institutional forms. Others see these same dynamics as instead portending a kind of neo-liberal feudalism, the demise of job security and the shifting of the requirement for management to the worker. Not only is the threat of return to piece-work evident, but the generative value of organizational forms (eg., for protection, for mobilizing resources towards long-term ends) may be at risk. The worse thing indeed, except the alternative?

Systems for open and crowd forms of work are particularly keen sites for investigating what is coming of these dynamics. Open and crowd work systems enable the distribution of work through open calls rather than assignment. Whether deployed for employees internal to an organization (as is of particular interest here) or for freelance and cross-organization labor, the work done and how it is organized may be undergoing transformation. In general and consistent with the broader growth of service, platform-driven, API models of transaction, we are witnessing shifts from "acquiring" to "accessing", even in the case of labor.

What is happening to the cultural meaning of the workplace and forms of workplace sociality that organizations engender? Drawing on experiences in studying, designing and using intra-organizational open and crowd work systems, this paper investigates changing relations between organizations and those who perform labor for them in the context of changing ways of organizing work. As explored by (Batteau 2001), organizational culture is made through constant processes of negotiation and management of ambiguities. But what happens when the target of affiliation is less the organization and more specific and often granular units of work? Is the assumption of the collective entity and identity of the organization changing through participation in crowd and open work?

Understanding changing meanings of the workplace, we argue, requires looking not just at the organization of labor, but the configurations of the work itself. How work is conceptualized, represented, disseminated, accessed, managed and performed, may be

changing through use of these systems (Cefkin 2014, Anya et al. 2014, Irani 2013, Martin et al. 2014, Moore et al. 2014), demanding an even more intimate consideration of the experience of work and working. How do these experiments with alternatives to traditional staffing and assignment models impact the way organizational culture is imagined and enacted? In what ways do open and crowd forms of work enhance or detract from workplace sociality and from other aspects of organizational practice and workforce engagement? A deeper understanding of shifting engagement between organizations and workers – a relationship mediated through the work itself – advances understanding of potentially significant social transformations, allowing ethnographers in industry to sustain an active voice within the organization about the changing nature of society (Bezaitis 2012, anderson et al. 2013).

OPEN AND CROWD WORK SYSTEMS

By "open" and "crowd work" systems, we mean online applications that enable the distribution of work through open calls rather than through assignment or pre-defined job-role requirements. In contrast to the more narrowly defined terrain of online crowdsourcing most commonly associated with microtask labor, we include a wide range of mechanisms and event types within our definition. These systems enable work opportunities of a tremendously varied focus and scope to be announced openly and for people looking to perform work ("the crowd") to find and perform it. They can vary in the degree of "openness", from the world at large (or at least those with digital access and know-how) to a particular group of people, or even sub-group within a company or population. Depending on the form of the system, those looking to perform the work may simply claim it, apply to be selected to perform it, or submit completed work results.

Thousands of applications using these models exist. They range from *specialized marketplaces supporting a single domain or practice* (eg., HighSkill Pro for consultants, finance and legal professional, Freelance Physician for doctors, Petridisk.org for lifesciences), to *general purpose intermediaries across a range of work domains* (Elance-Odesk is perhaps the largest and best known of these), to *volunteer and charitable assistance sites* (eg., LinkedIn, Spark!), to *outcome-based contest sites* (eg., 99Designs for creative work or Innocentive for complex scientific and technical innovation development), to *microtask platforms* such as Mechanical Turk. Though some systems are designed only to support *digital work*, the model of open and crowd work can also support *place-based labor*. Task Rabbit supports finding people to perform errands and chores, OnForce provides local IT support, and the above-mentioned Freelance Physicians aligns doctors to hospitals. While the work is not digital, these platforms rely on digital capabilities for such things as matching, notification and communication. Participatory systems that allow the design and execution of complex work, such as those common to citizen science projects (eg., GalaxyZoo, or the contest-hosting platform InnoCentive), may well require attendant off-line work with other instrumentation and participants.

Another distinction is whether the system acts as an actual site for crowdwork or merely act as an intermediary for matching work efforts with specific producers who submit bids to perform the work (eg., Elance or Freelance.com. Some platforms allow *microtasks* while

others provide support for *complex work*. Microtasking involves the decomponentization of work into tiny bits which can be disseminated, claimed and performed by people worldwide in the matter of minutes. Here work producers simply perform and submit the work rather than applying to perform it. A similar model plays out at the other end of the spectrum, the large contest platforms such as InnoCentive and Kaggle, which provide a platform upon which other entities (governments, universities, businesses) host contests aimed to solve large, complex challenges. The work is performed and a winner(s) selected. Even crowdfunding plays into these dynamics; people identify work to be performed (e.g., an art work or gadget to be produced) and solicit investment in the form of time and money from others to get it done.

In short, the diversity of forms, sites of application, and implications for the kind of work performed and how it is organized is significant. At the same time, as has been recently made apparent in the popular media, attention to such peer-based consumer systems as Uber, these are not just experimental or feel-good efforts to collaborate in new ways. Many are business enterprises with profit-making interests, which aim to support businesses in enhancing productivity and accelerating innovation. Indeed, the usefulness of these models for business operations is witnessed in the fact that open and crowd work models can be *applied internally among full-time employees*, as we explore here. IBM has utilized crowdwork platforms for the execution of componentized technical and creative work drawing on work producers both internal and external to the organization. Applications that enable people to post work requests to reach across organizational bounds but within the company at large are used (including a system the authors have been prototyping). Crowd-sourced ideation and problem solving "jams" where employees at large are invited to participate are common, as are hack-a-thons and other contest-based models open to all employees or those of a particular division. And a number of internal crowdfunding programs have been run, in which employees allot company funds to employee-created projects. Many of these are designed as much to extend participation and innovation than, for instance, narrowing costs. So while open and crowd work systems may portend further practices of neoliberalization (a worry that surfaces in the experience of participants, as we show below), they are not singularly about shedding jobs from companies or engaging freelancers. Even so, they do change the relationship to (and amongst) their consumers and workers. The line between consumers and producers, requesters and workers, blurs. We believe that a look at *intra-*organizational experiences with crowd and open work promises some of the richest cases for considering what the emergence of these forms of work may mean in terms of the cultural reimagining of work and the workplace.

DATA AND METHODS

We have been tracking the development of new work formations and the crowd work industry through secondary sources (the press, others' research) and by engaging in online forums and public meetings. We also have conducted research in a variety of specific projects at IBM involving open or crowd forms of work. The particular role we played in these projects has varied. We have designed concepts for broader strategic consideration,

analyzed the use of systems others developed, and made recommendations on design and use. We have also developed and tested technical prototypes that we designed.

Here we focus on data from three programs. All were used internal to the organization, engaging employees in working with their peers in new ways. One of them also included external participants. While each program opened up for broad input some aspect of the work, whether identification, selection and/or execution, the aims, forms and mechanisms employed by each varied, shaping the experiences of participants in different ways. We conducted interviews with participants in a variety of roles for each system, and observed communications and meetings amongst those supporting the efforts.

Marketplace

One program involved the pilot of an application our team had designed. The purpose of the application, referred to as a "marketplace," was to match people trained in organizational change management methods to specific initiatives. The program aimed to address two key challenges. First, as organizational change management applies broadly across an organization, many people from different geographies, roles and divisions were being trained. However very few of those trained had the opportunity to perform change management on a consistent basis, limiting their meaningful, on-the-job experience post-training. Secondly, as a large, global firm, the times and places where change management expertise is required are uneven. This means that not only might those who have been trained have difficulty finding opportunities, but initiatives needing personnel at particular times and places cannot easily find available people. The marketplace was designed to provide a central location where those with work needs could post their requests and those looking to perform work could apply to be selected to do it.

Crowdwork

We studied the use of an existing crowdwork system designed initially for the execution of technical work such as software development by employees and by external participants who worked through existing vendor service provider companies. Targeted work was that which could be done in a week or less. Detailed specifications for desired work products were posted in the system by requesters. Workers submitted proposals based on the specs, and, if awarded the bid, the worker would perform the work and return the results through the system. As a work execution system, the intention was that the work could be sourced and completed without (or with only minimal) interaction between the requester and worker. This contrasts with the marketplace, which was designed as a simple match-making system to identify people, but where the details of the effort and the results were shared outside the system. In the crowdwork system, work agreements were "outcome-based," that is, worker and requester agree on a fixed price for a pre-specified outcome or product.

Crowdfunding

The third case was a crowdfunding program that occurred in our own research lab (Muller et al. 2014). Dollars were allotted by the lab director to each member of the research division at

the lab. Research and other lab staff both proposed projects and were able to invest their allotted dollars in others' proposed projects (people could not invest in their own project) as well as to volunteer to work on those projects. Projects ranged from the simple purchase of products (eg., plastic cups to replace Styrofoam in the cafeteria) to more elaborate endeavors (eg, supporting data wrangling for advanced scientific projects).

FINDINGS

In re-examining our interviews and observations from these projects, we see evidence of a number of ways in which open and crowd work systems are engendering workplace reimagining. We found that the mere fact of people having a chance to participate in these novel initiatives occasioned reflection and commentary on aspects of people's working lives, from the nature of bureaucracy ("Things get lost in bureaucracy, people don't want to stick their necks out") and how crowdfunding has the opportunity to disrupt it (through the bottom up approach), to how people manage personal commitment vis-à-vis work, to the opportunities (or lack thereof) for personal growth and development. And we heard directly, and with some anxiety, reflection on what crowd and open models portend for the future of work more generally, such as the concern that making work beholden to the crowd will give rise to an ominous slippery slope of employment, "we'll all be greeters at Walmart." It may be that these reflections were especially charged given the internal organizational settings we observed, where these approaches contrast directly with more traditional and stable means of organizing work.

Here we look in more depth at three dimensions emerging from the data. The first explores indicators of how participation in an open and crowd work initiatives appeared to prompt reflection on the question "what kind of person am I?", on people's sense of identity as a person, worker, professional, and organizational member. The second extends from this to consider relational dimensions of work, how participation in these initiatives throws into relief workplace and organizational relationships and affiliations. And the third looks at authority and control. By definition, the move from work assignments determined by resource-owning entities to more open access and selection shifts the locus of control. It is this factor that leads some to optimistically suggest these forms are leading to greater democratization, and others to see them as the further commoditization of work.

Identity and Roles

Participation in these three programs gave rise to reflections on people's sense of self, constructs of identity and the social roles they play.

The *crowdfunding* effort invited participants to propose "any" project (as long as it was legal, and was not for the purchase of capital equipment so as to avoid undue accounting and taxation complications.) These projects and proposals, then, signaled to members of the lab what others found to be important. As participants considered what to support and how (eg., investing and/or volunteering), they necessarily judged their estimation of others' proposals. By making transparent what mattered, people were confronted with the question

of whether what others proposed fits their own expectations of the kind of work and workplace they aspired to be a part of.

In a number of cases, people's identities as scientists in a research lab played into their evaluations. One proposer, a long-time Silicon Valley tech expert with experience across a range of companies, proposed to initiate a particular talk series in order to make the lab a more "researchery" place. "It's important, I think, for a research place to have a kind of an *economy of ideas* as the basis, rather than an *economy of products* or an *economy of business*.... And a good way to determine that is how many speakers come through the lab and how well-attended they are." He felt the results would speak for themselves about what kind of place this is, whether it a place worthy of the investment of scientists. "It goes to who we are." (The proposal was funded.)

Another research scientist, in assessing whether to invest in a proposal for a community garden, wished the proposal were "more scientific", by focusing on practices of field flooding, analysis of evaporation and optimized water use, or adjusting potassium levels with soil tests. Referring to lessons from his childhood in India:

> My dad's engineer used to say this when I was a kid, "It's an engineer's job to eliminate other engineer's jobs." Always optimization. It kind of sticks with you. You think this is the meanest, harshest thing to say. You are going to bring in more automation, you are going to take people out of a job. But you know you bring in automation, you optimize production. So its one of those things. And I didn't see that.

Here we see how the evaluation of a project proposed by a colleague raised questions as to what was a worthy investment given the context of the scientific lab and the worldviews of this scientist, informed by a childhood in India, and which drives his own scientific efforts. Encounters with the proposals of peers in the crowdfunding initiative gave rise to questions of belonging, a chance to ask: Do I/my peers belong here?, questions prompted by the open and visible participant-driven approach of the program.

The *marketplace* rested on the willingness of employees both to make aspects of their work available to others ("work requesters") and to opt in to work on others' projects ("work producers"). One question is why work producers choose to perform work for others when it wasn't a job requirement?[1] We heard a range of reasons for why people opted in as workers. A participant in China aimed to increase opportunities to perform change management work, which is her preferred kind of work but is something she rarely has an opportunity to do in China. An employee in India, faces a one month code-freeze, and as an "industrious person" who likes to stay busy, he looked to the marketplace as a valid and interesting way to do so. Another participant who described himself as "all about efficiency" described being turned off by requests that appeared too bureaucratic or ill-composed. "And I think, okay, what are they really trying to accomplish here? And what is actually going to happen? And I think nothing. Nothing's going to happen and it's going to be frustrating. Close it. Move on to the next one." Others were attracted by the potential to try out new

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1 In this section we particularly examine the work producers. Below the experience of requesters is also included.

kinds of work, to expand their horizon. Each of these demonstrates how encountering options for the kind of work they could perform encouraged a reflection on who they understood themselves to be and what mattered.

For external, paid workers in the *crowdwork* system[2], the theme of "flexibility" emerged strongly – the ability to work remotely and outside organizational bounds in order to fulfill, for instance, the role of father and husband by managing a work-at-home arrangement. One participant felt his engagement gave him a chance to think about and figure out how to solve complex problems whereas another took it as a chance to focus on a particular kind of work he already knows well. Both reveal ways in which the opportunity to select their work encouraged their reflection on the kind of worker they understood themselves to be. The preference of the latter participant offers a valuable comparison to the lives of those enmeshed in the social configurations of traditional organizational life. He specifically contrasted the kind of work he likes with that which he does not, namely, being a "team lead" where he'd be expected to take on additional responsibilities. A hallmark of traditional employment is the performance appraisal. This appraisal typically includes a factor considering evaluating leadership potential, and the expectation that "successful" workers are those that demonstrate leadership ability is not uncommon. "In personnel actions and judgments, we see the embodiment of an organization's cultures, resolving the contradictions of command and inclusion. The individuals who make up the organization are the signposts of its values, artifacts of this resolution." (Batteau 2001, p. 735) While there was a reputation system built into the crowdwork program, it was based on people's record in being selected or completing the work as asked for in the system. Being a crowd worker gave him a chance to avoid the kind of evaluation he might face internal to organization.

We also saw evidence of how these arrangements could be in tension with people's professional identities. For example, the crowd work system is designed to support short-term execution work. The question of how to ensure quality work surfaced repeatedly and is in fact one of the most frequent topics more generally in discussions of crowdsourcing. In contrast to a common view that crowd workers are trying to get by with minimal effort and game the system, said one participant "I don't like to deliver poor quality work because I've been in IT long enough to know that if that happens, someone somewhere is going to wear it. And that I guess is my empathy with the general IT population that we shouldn't let each other down like that."

We see then in this section some of the ways in which open and crowd work systems are impacting workers' identities and roles. In each case, encounters with others' ideas and with potential work to be performed caused them to reflect on their own sense of self, their own priorities. Overall the open and crowd work systems encourage people to re-imagine their identities and roles, from what it means to be "industrious", to being a "research scientist" or a "software developer", a "father" or "team lead."

Relations and Work

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[2] In this section we focus on experiences of the external work producers. Experiences of work requesters will be addressed below. We do not currently have sufficient data on the internal employees engaged with the crowd work system of work producers.

Open and crowd work mechanisms also have the potential to shift the way people experience and enact their relationships with others in the workplace and with their organization.

The *crowdwork* system we investigated was developed to fit with existing organizational processes; it was designed to take small bits of work that would have previously been done by a "retained team" of IT service delivery personnel and put them out to the crowd who was either elsewhere inside of or external to the organization. In this kind of system, participants enter into a *requester-producer* relationship. As the crowd workers were not part of the retained team, it gave rise to the need to manage an "insider-outsider" relationship, creating at times an "us and them" relationship on the job. The expressed wish by an external worker that all the communications between requesters and workers would happen through the provided online forum so as to ensure transparency and fairness illuminates this point, and is contrasted to the complaint of a work requester: "That's one of the things that has really killed us, in that you know you can't pick up the phone, you can't send 'em [an instant message], they're not invited to your meetings, they're not part of your team, they're kind of a one-off contractor that you really can't- ... collaborate with on a real-time basis." Referring to the kind of insider knowledge gained through full-employment and longer term collaborations as "tribal knowledge," another remark by requesters was the difficulty in specifying the work requirements. One requester said, "…there's lots of shortcuts you can take when you're using a member of your own team, from the level of details to the terminology to use…." The crowd workers lacked the tribal knowledge that the retained team members shared by virtue of working together over time (see Moore et al., 2014 for a related analysis). Consequently, communicating with crowd workers, compared to retained team members, tends to require extensive articulation of background knowledge that working teams can take for granted. This led requesters to complain continually about the unmeasured overhead required in writing detailed work specifications for crowdworkers.

Despite this divide between "team members" and crowd workers and the anonymous representation of crowd workers (known only by aliases), relationships did develop between requesters and producers. Anonymity is not the same as being without relationship. (See also Martin et al., 2014.) A telling example surfaced in a discussion we observed amongst requesters. Suspecting the producer had simply uploaded the wrong final document, a requester had tried to reach out to the participant to correct the error, but she received no response. When others asked which producer it was, the others' agreed that this seemed uncharacteristic for this worker and began suggesting different ways of trying to follow up. They worried, the worker may have "fallen off the face of the earth", and wondered if perhaps he or she had taken a full-time job and was not longer working through the system.

Further, the crowdwork system provided a bridge between the organization and those who had previously been employed there. Said one worker who left to be a stay-at-home dad while his wife returned to work, "I've had such a long association with IBM. It allows me to maintain that sense of community that I've had previously…. It allows me to continue the relationships that I've already established." At the same time, the crowdwork system is a far cry from a sociable workplace, as was already suggested in the earlier comments about the limits of communication. Said one crowd worker: "You don't build relationships for just doing work, piece work. It's almost like being in a factory sometimes and the work is coming

down the conveyor belt. You don't know the people who sent it down the conveyor belt and you don't really know where it's going after that… It [crowdwork] is a fairly soulless industry."

In the *crowdfunding* system, one of the most common criteria used to evaluate investment options was consideration of who would benefit from the project. People evaluated the proposals in terms of their "altruistic" nature or their degree of "selfishness", for instance. The proposal for an offsite event for a particular group within the lab caused some to view it as counter to the spirit of the program. Summarizing a general view, one investor stated: "My view on it is that if it has a larger focus- a lab-wide focus, the return on my investment is greater. More people are impacted hopefully positively and that was a better funding choice than something that was really very narrow and specific." However, what specifically constituted an adequate "lab-wide focus" was a matter of interpretation. Indeed employee's perceptions of each other's proposals became the basis for reflecting on similarities and differences within the lab. In some cases this may have enlarged a sense of difference between people, differences that would have otherwise remained submerged. For instance, as a chemist's response to many of the computer-science-driven analytics projects was: "They don't get what I do, I don't get what they do." Other people experienced the range of projects instead as an expression of a more general sense of commonality or shared interest. The proposal to host an offsite event open to one segment of the population evoked feelings on both sides. Whereas numerous participants felt it was not worth their own investment and was even counter to the collectivist spirit of the initiative, others acknowledged its scientific merit, and felt it worthy of support even if they wouldn't directly benefit.

The *marketplace* for change management activities was designed in part to overcome cross-divisional barriers; participants were united in their common orientation to and use of the change management methodology across regions, divisions, and roles. In the pilot we found that work requesters and producers indeed reached beyond regional and organizational lines, and prior work relationships. We did not find work producers filtering for or targeting opportunities based on whether they knew of the work requester or not. Similarly, work requesters expressed satisfaction in selecting people to work with who were previously completely unknown to them. "I think there is a big difference [working through the marketplace]" commented one work producer, "it's - normally, it's who you know and who you've spoken to, where you would get to do interesting work, to be honest. It's not as open as this one is. And the fact that I can work with people from across the globe […] it seems more open, more transparent way of getting work or even finding out about it […] This is direct interaction with the requester and I think it's fantastic, its a great concept." As in the crowd work system, then, the marketplace included a dimension of managing outsider status. However whereas before we heard more clearly of the limitations of that challenge, here that possibility is rendered more optimistically. "I don't know their background, they don't know mine…. So it was kind of leap of faith" said one participant, "It's very rare for me to work with someone who has no idea of who I am. That is very brave of them..."

In this section, we see how some open and crowd systems are impacting the relationships among workers. The crowdwork system created somewhat of a sense of "us and them" as teams of employees coordinate their work activities with external individuals whose availability is less predictable, and yet at the same time prompted participants to

recognize other, perhaps more basic forms of commonality. Organizational crowdfunding enabled employees to initiate new projects affecting their fellow employees, as well as, to support each others' proposals through a nontraditional form of participatory budgeting. And the marketplace enabled employees to collaborate with colleagues across the organization whom they would not have otherwise met. Overall, these systems are reshaping the workers' networks of colleagues both within and without the organization.

Authority and Control

For systems used internal to organizations, the question of who authorizes the performance of the work emerges. The threat to managerial regimes is one of the potentially more profound consequences of these systems. Inviting employees to choose what work to spend time on disrupts management control over their labor.

Within the *marketplace*, the question arose as to who, if anyone, needed to approve employee's time to participate. We could have designed the system so that when someone applied to a request, the system would route an approval request to their management before they could be selected. We proposed instead having the system route a notification to let the manager know that a member of their group had applied or been selected for a work effort, but not to track approval. If the manager did have a concern, they would have to take it up directly with their employee rather than having the system institutionalize and systematize that authority system. Indeed, none of the participants we spoke with voiced particular difficulty or anxiety around verbally checking with their manager regarding their participation, and a number brushed this off completely. "My discretionary time is my own, I don't have to ask anyone."

Producers in open and crowd work systems may enjoy greater control over the kind of work they perform. As we see in some of the statements above, in the *crowdwork* system we studied, participants selected those work requests for which they thought they could be most successful, would give them the greatest flexibility, or those that would provide the most interesting challenges. However, some requests are so specifically defined that there appears to be little leeway in how the work is performed. Further, requesters remain the final arbiters of quality. And the work was also performed under shorter term contractual commitments compared to traditional forms of employment. The fragility of this commitment played out from both sides. On the one hand, a requester indicated that they could "dump [workers] any time we want to," that is, when there is less work for them to do or when budgets are strained. On the other hand, producers could also dump the requesters at any time. Another requester explained: "a guy that has been part of a couple of [work] events and all of a sudden he disappears. Okay, because there is no commitment. Okay, I mean he could find some other project he wants to work on, he gets bored with you, he gets pissed off, he just leaves." Recall in the previous section a case in which a producer unexpectedly "fell off the face of the earth." The crowdwork system prohibits long-term contracts between requester and producer, yet this is something that each party often seeks.

Members of a particular service delivery unit were mandated to adopt the system and tasked with distributing a fixed percentage of their overall workload to the crowdwork system. The effort it took to accomplish this successfully was not insignificant, and many

were unhappy with being required to use the system. "There is an Executive Edict that says: Thou shalt do [Crowdwork]." As with any organizational mandate, the deployment of the crowdwork system reinforced these workers' team leads' and lower-level managers' positional authority (or lack thereof) in the organization. This also meant that within the crowdwork system, the requesters themselves do not necessarily hold all the power.

The *crowdfunding* program departed from traditional structures of authority and control by enabling a novel form of bottom-up decision making. And there was ample enthusiasm from participants about that possibility. One participant offered a particularly philosophical statement:

> I'm a big fan of letting people voice what they want. I think that the only way to ensure prosperity for the greater good is to ensure prosperity for the individual. …When you extrapolate that to crowdfunding then now all of a sudden you let individuals influence their immediate communities rather than, you know [headquarters] sending down policies for us, that you know, they are 2500 miles away.

In other words, the employees tended to perceive the crowdfunding program as empowering for them and not as just as another corporate initiative or stunt.

Some employees speculated that crowdfunding might be a way to counter some of the undesirable effects of the organizational bureaucracy and internal power relations of the workplace. One said, "… people always have vested interests, right... And so, you know, if it in any shape or form if there's a feeling that it's going to infringe on their territory then most likely they're going to (nix) it, right... But doing it this way [crowdfunding] you probably - you can sort of minimize that, I think."

At the same time, the crowdfunding program also required the proposer, and the team of volunteers they gathered (if any), to completely drive the project once it came to execution. So while this put a good deal of control in the hands of those proposing the work, it also put the onus more fully on them to complete it. This couldn't be done, in many cases, without garnering support from some senior people in the organization, and gaining that support became part of the work. One year later, in fact, we see that not all the efforts which achieved their investment targets and were allotted funding have succeeded, suggesting that they may well have faced additional barriers in the doing of the work.

Crowdfunding also highlighted relationships of authority and control in the organization. Many proposed projects were in reaction to things that used to be available and no longer were, that people perceived had been taken away. Somewhere between a protest vote and an accommodation, the crowdfunding program was used as a route to shine a light on these losses, acting as a voice as if saying "hey, we want these things back!" The way in which the proposals themselves acted as signifiers of employee-organization relationships was expressed more wistfully in this statement by a long tenured employee evoking the 'good old days' which he perceived as being more supportive of far-reaching scientific work: "You know, we have lost that … So in many ways this sort of enables at least *the scientists in us* to go and do something that is not really IBM's bread and butter." Another concern that surfaced was the worry that this form of decision making would substitute for other models of funding and decision making in the everyday work and the scientific efforts of the lab.

What I'm worried about is if they're going to come, then all the research projects are going to go to some sort of approach like this…. You know, I mean we already have to justify our projects. I mean some of them are dictated out of need from [headquarters] internally. Others are not and we have to look for funding and bring money into the lab, but is it ultimately going to go to something like this? It's kind of scary to think it would be.

In this section shifts in structures of authority and control were explored. In all three cases, employees gained some autonomy in pursuing opportunities of their choice. The marketplace helped people extend their network by working with previously unknown colleagues across the organization. In the case of organizational crowdwork, producers exercise a degree of control in deciding which work requests to accept, and in theory, in how that work was performed. However standards of acceptance and quality remained outside their control. And, requesting employees experienced less control over how to manage their work in that the use of the crowd was mandated from above. The organizational crowdfunding system was felt to enable more "democratic" ways of budgeting resources, but also demanded of people that they be accountable for their own success. Overall we see disruptions in managerial authority in which frontline workers are gaining greater discretion in selecting particular work requests to perform or projects to fund.

WORKPLACE REIMAGININGS

Experiences of work go to the fundamental bedrock of ourselves as people, as collectives, as culturally constituted beings. These explorations of people's experiences in using open and crowd work systems inside of organizations illuminate ways work is being transformed, and in turn transforming how people perceive themselves at work and as workers vis-à-vis their colleagues and the work itself. Open and crowd work systems also affect the basis for and experience of relating to others at work and the workplace as a social environment. And they create fissures in assumptions about who has the authority to initiate, manage and control the work. In turn this leads us to question the centrality of "the organization" as the primary site of and means for driving the core economic activities of the industrial and post-industrial eras, including innovation, development and the movement of goods, services and expertise.

This look at the gentle winds of change emerging inside of organizations may be suggestive of a larger storm approaching as more and more work may be performed by 'strangers', both across an organization and beyond. While not an entirely new phenomenon – subcontracting and outsourcing have been with us a long time – this further dis-intermediating of work from centralized organizational apparati, may suggest greater change on the horizon. The threat of technological unemployment, the rise and greater visibility of the independent workforce, and ethos spreading (and facing resistance) of collaborative and peer-based models may lessen the managerialism of bureaucratic models, on the one hand, while reducing the value and effect of work-based social ties on the other.

By shining a light on these dynamics, we aim to ensure that the scope of ethnographic understanding in industry is expanded to include these important shifts in work and workplace culture. Ethnographic practitioners are themselves enmeshed in workplace relations, which are subject to the same dynamics and changing mechanisms of work. And as participants in business, our job as social analysts and practitioners to look closer and understand deeper so as to create the kind of knowledge that leads to better business strategies and a better society.

Melissa Cefkin is an anthropologist at IBM Research who focuses on work and organization in complex contexts. She worked previously at the intersection of social science research, design and consulting at Sapient Corporation and at the Institute for Research on Learning. Melissa served on the Board and as co-organizer for the Ethnographic Praxis in Industry Conference. She published Ethnography and the Corporate Encounter (2009), and numerous articles, including most recently "Work Practice Studies as Anthropology" in the Handbook of Anthropology in Business (2014). mcefkin@us.ibm.com

Obinna Anya is a postdoctoral researcher at IBM Research – Almaden. His work blends methods of social science and computer science in the design of human-centred systems and environments for network-enabled organizations of the future. He holds a PhD in computer science from the University of Liverpool. obanya@us.ibm.com

Bob Moore is a sociologist at IBM Research - Almaden, where he examines work practice, social interaction and human-computer interaction. Previously he worked at Xerox PARC and Yahoo! and has studied search-engine interaction using eye-tracking, avatar-mediated interaction, face-to-face interaction in print shops and telephone-mediated interaction in survey call centers. rjmoore@us.ibm.com

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Manufacturing Expertise for the People:
The Open-Source Hardware Movement in Japan

MATT KREBS
KelCor, Inc., University of Kentucky

Manufacturing itself is changing as open-source sentiment grows with the "maker" movement, especially in FabLabs around the world. "Makers" are open-source hardware enthusiasts who want anyone to be able to make almost anything. This ethnographic research, conducted in 2013, centers on the "makers" in FabLabs in Japan. The research addresses cultural coherence among actors – human and machine – in these FabLabs, and changing notions of expertise enabled by open-source, DIY manufacturing practices. Are modern machines like 3D printers changing manufacturing? Will they change the world?

> "Scarcely a new invention comes along that someone does not proclaim it the salvation of a free society."
> Langdon Winner 1980:121-122

INTRODUCTION

Social researchers have been intrigued by open-source projects that have led to changes in industrial practice through disruptive software projects like Linux and Firefox. Perhaps some companies have been spooked by such projects as a threat to the bottom line or to the expertise that justifies some of the value of their products. Now, open-source sentiment is growing in hardware design and production domains as well, reshaping the expertise and practice of manufacturing. The term "maker" has begun to be used as shorthand for a do-it-yourself (DIY), open-source, global movement to "make" things and "hack" things that previously were the express domain of corporate design, engineering, and production teams. What does this "maker" movement look like at close range? The ethnographic research reviewed in this paper addresses a subset of the "maker" movement, focusing on the people who operate and occupy FabLabs in Japan. I conducted the research during the summer of 2013 with support from Intel Labs, visiting each of Japan's six operating FabLabs, interviewing proprietors and patrons, and observing the practice of "making".

Most people (especially in technology circles) now recognize that extra-corporate collaborators – ad hoc groups that create competing products - can deter well-planned product lines. However, the total impact of this percolating open-source sentiment is much more variegated and nuanced. Today, in the space between garage tinkerers and corporate engineering teams, there is a range of actors "making" things. There seems to be more at stake than a few product lines. "Makers" speak of a world where anyone can make "almost

anything" (Gershenfeld 2012, 2005) and where new tools like 3D printers presage a "new industrial revolution" (Anderson 2012). The ambitions of individual "makers", the venues of production, and the tools of choice may differ but their central purpose remains the same: put the power of manufacturing in the hands of the people and change the future.

The "makers" whom I observed in FabLabs in Japan help to provide some measured ethnographic perspective on the enthusiasm with which popular literature has begun to herald the "maker" movement. In this paper, after situating the Japanese "makers" among whom I studied within the broader context of FabLabs, of benighted economic Japan, and of the global "maker" movement, I will describe a few of the FabLabs in enough detail to give the reader a sense of their operation and attitude. I will highlight the way in which FabLabs are used to "employ" (in Latour's sense, 2005) ever-more accessible technical tools such as CAD software, 3D printers, microcontrollers, and laser-cutters - recruiting and assembling a host of agents. The proactive practice of the agents who employ these tools interacts with the existing cultures in which they operate. To tease out some understanding from the ethnographic data, I will address changing notions of manufacturing expertise and the Japanese sociocultural backdrop against which their work plays. Finally, I will comment on the way in which the lavish enthusiasm for the possibilities of "making", while perhaps overwrought, nevertheless has a discernible effect on the cohering of the agents that comprise the movement.

SITUATING "MAKERS" IN JAPAN

Making is certainly not new. People have always made things, of course. Chris Anderson, Neil Gershenfeld, and Cory Doctorow, who have helped to popularize the term, along with O'Reilly Media's "Make Magazine", neither invented the term nor the movement. Furthermore, FabLabs are not the only place where it coheres and performs. In my experience among "makers" there is certainly no singular nor essential culture (of expertise or otherwise) coalesced as a primary structuring force in "makers'" lives. "Making" in its present, technology-centric denotation refers to the broad practice of creating objects for fun or perhaps income. The creation usually involves new technical tools and the designs are often shared. A quick, general summary of the field will help to situate the "makers" among whom I studied in Japan.

"Making" can be applied as a descriptor to a host of creative practices. At any given "Maker Faire", of which there are now dozens around the world sanctioned formally by Maker Media, people of all ages will bring their resourceful creations to display and discuss. Some will be all plastic and duct tape. Some will be programmed by microcontrollers. Some will be just for fun and some will boggle the mind with their practical ingenuity. The allure of "making" is enhanced by the phenomenal range of creations that come from the minds of "makers", enabled by the increased availability of knowledge and tools.

There are many places where "making" happens. The general term: "makerspaces", often synonymous or at least co-located with "hackerspaces", describes the thousands of little workshops around the world where people tinker with things - either to fix, hack, or create them. In the U.S., San Francisco is a hub for "makerspaces", along with New York and Boston, following the vanguard of technology. Still, even my native Lexington,

Kentucky, is presently building public "makerspaces" in a school and a library. On the national stage, President Obama has instituted special support for education-a-la-"making" through the National Network for Manufacturing Innovation, funding new machine-centered curricula, such as that being programmed by Stanford's FabLearn Fellows program. Then, of course, there is the young but storied Tech Shop franchise from which inventions such as the Square credit card reader have emerged. This business-grade "makerspace" costs $125 per month but gets you access to top-tier equipment and hands-on help from experts.

"Making", then, is a global phenomenon that encompasses a wide range of people, places, and activities all animated by an interest in building and sharing things. Its future impact is an often-conjectured but open question.

Popular Literature on "Making"

While the precise etymology and static meaning of the term "maker", as it is used in this research, may never be more than an approximation, a few authors have certainly had an impact on its present signification.

Chris Anderson's 2012 book: *Makers: The New Industrial Revolution* has been a pivotal work of introduction to ideas about "making" for many people. Anderson suggests that "making" will redirect people to newly invented machines for local, collaborative, and DIY projects, fundamentally altering the preeminent mode of work in established manufacturing operations. The book gives many examples of impressively collaborative creations, such as his own DIY Drone project, and commercially successful projects like the Square credit card reader. Most notably, perhaps, is Anderson's unequivocal argument throughout the book that "making" is the beginning of "a new industrial revolution". At its core, Anderson's book is a tale of micro-batch entrepreneurs who can go from tinkering to sales very quickly, the business-class of the "maker" group.

Neil Gershenfeld, at MIT, seeded the burgeoning FabLab corner of the "maker" movement with his book about a lab he arranged on the MIT campus inside the Center for Bits and Atoms. *Fab, The Coming Revolution on Your Desktop - From Personal Computers to Personal Fabrication* (2005) is the introductory text for nearly all of the people I met as "makers" in Japan, who read its Japanese translation. Gershenfeld filled his lab in Boston with a set of machines by which students could make "almost anything" in one semester. The novel notion and belabored epiphany of the book is that with these new tools, "anyone can make almost anything" (17). With a creative idea, a lab with the right machines, and a mentor to help with software and hardware, Gershenfeld (and thousands more FabLab enthusiasts) hold forth that we will all be "making" things on our desktops and in garages, or in FabLabs soon. There are already more than 250 chartered FabLabs in the world. There is a ten-year-old International FabLab Conference and a FabLab Research Group. Gershenfeld's mantra is that fabrication (or "making", or design, or manufacturing) is on the cusp of being personal, social, and never again just commercial.

A final publication that has impacted the present meaning of "maker" is *Make* magazine, originally published by O'Reilly Media and then spun off as part of Maker Media. The magazine, however, is just an entrée to the website, the webshop, and the Maker Faire

events that Maker Media operate - a center of activity and publicity that continues to garner attention for the "maker" concept.

This sampling of publications gives a further sense of what is meant by the term "maker". Each publication has its own spin on the practice of "making" but I note that each is also, in its own way, imagining "maker" activity to be the precursor to a whole new human future. There remains, I think, ample space to examine as ethnographers the present shape of the movement, its rhetoric, and its future as it gains momentum around the world.

Critiquing the Rhetoric

Scholars in anthropology and especially in the interdisciplinary domain of science, technology, and society studies (STS) have not shied away from investigating the deep social implications of new social formations such as the "maker" community. M.J. Fischer has turned a great deal of research attention toward "emergent forms of life" (2009, 2003) enabled by technological change, of which "making" is certainly one.

Susan Currie Sivek (2011) has directly addressed *Make* magazine, suggesting based on her textual analysis of the magazine and observations of its Make Faires that it promotes a technological utopianism, offering "participation in technology as an opportunity for self-actualization" (189). Sivek questions the assumption therein that the power of technology is by definition positive and natural. She notes how the technical objects of "maker" affection reflect a narrow vision of what can be created. For example, "make" objects often require energy to function but "makers" seldom design down power requirements. Sivek calls for more critical research and writing to supplant the dominant utopian assumptions.

Brian Pfaffenberger, an anthropologist, has described the fallacy of "technological determinism" (1998), or the assumption that technology is a "powerful and autonomous agent that dictates the patterns of human social and cultural life" (Pfaffenberger 239). The claim that 3D printers will democratize manufacturing, for example, makes that assumption: that the object dictates the human patterns. In fact, maintains Pfaffenberger, "the outcome of a given innovation is still subject to substantial modification by social, political and cultural forces" (Pfaffenberger 240). The relevant point here is that with new machines like 3D printers or free CAD software like Autodesk, the rhetoric easily slips into this fallacy of determinism when in fact the human use of the machines remains subject to a great deal of pressure from existing social systems and redirection by external powers such as companies, research institutes and governments.

Dr. Gershenfeld, for example, is welcome to say that in FabLabs anyone can make "almost anything", but there may be many people who cannot, in fact, make anything, such as those inhibited by gender, income, race, and other intransigent social patterns. Examples of creative power in the hands of laypeople are impressive – no doubt. Still, the utopian rhetoric rings with the sense that all is as it should be – positive, natural, and accessible. Should we not expect to find, upon closer investigation, also stories of negative experiences in FabLabs or communities of "makers"? At the least, are there not stories of failed projects, frustrated "makers", or the transition from personal projects to private gain? Who is benefiting from the way in which we talk about "makers" today? And is this fate of

"making" determined by the new technology or is there a social story – with opportunities for derailment or redirection – still being written?

I certainly am not inclined to discredit the "maker" endeavor out-of-hand, faulting only its vaunted rhetoric – more often the contrary. However, there are reasons to ask whether the practices of "making" are what they purport to be.

Why "Makers" in Japan?

Against the global "maker" backdrop, this research focuses on "makers" in Japan where technological advances have been a central part of a once-ascendant global economy, still the third largest in the world. There are many people in Japan whose work is linked to machines, to design, and to manufacturing. Many of these people have worked for large companies such as Hitachi, Toshiba, and Sony, or carmakers such as Toyota, Nissan, and Honda. These have been the bastions of expertise in manufacturing, tightly linked to the universities, research institutes, and government resources that enable Japan's globally respected manufacturing sector. There are also many Japanese folks who fit the broad category "maker" that I have described above, working on personal projects as hobbyists. Sometimes, these are the same people. Many people employed to design and make things in a corporate environment by day continue to pursue personal fabrication projects during their free time. Other "makers" in Japan are unemployed or working in other industries.

FabLabs in Japan – In or around 2010, Dr. Gershenfeld's FabLab model came to Japan (or was brought to Japan, as I will explain in the next section). Now, there are ten FabLabs formally organized in Japan. The FabLab folks are an active group within the "maker" community in Japan. I chose to focus on FabLabs because "maker" activity in them is both anchored in a place and visible to a researcher's eye. A lot of "maker" activity, designed on personal computers and fabricated without the novel machines that interest me, such as 3D printers, is nearly impossible to catch by personal observation. A FabLab generally houses one or more 3D printers, a laser cutter, microcontrollers, CNC machines of various kinds, and other machines for fabrication. The purpose of the lab is to open these machines to the public, to make the software and hardware accessible through training programs, and to spread the knowledge and expertise of manufacturing, or "fabrication", to anyone.

Precarious Japan – Japan's laggard economy seems to have inclined many individuals to a despairing attitude about their prospects for a fulfilling life. This context turns out to be an important social backdrop for a study of "makers". The despair can seem to simmer through Japanese work and personal ambitions. That suggestion may seem rash or untenable – I certainly don't suggest it as definitive – but it is drawn from Anne Alison's (2013) analysis of modern Japan. Alison's key observation is that many in Japan have an existential sense of precarity in life. Alison wrote that this precarity arises from: "struggling with a long lasting recession, political instability, an aging and declining population, and, among the people, rising levels of homelessness, poverty, suicide, and existential despair" (124). This is particularly evident in the Japanese youth who can no longer expect lifetime employment after any manner of training and who are constantly pushed out of sight by the working

population around them. This is what I called, in my intro: benighted economic Japan. Alison draws her analysis through examples of lives disrupted and despairing, losing their connection to their nation, their fellow Japanese, and even themselves, but there is a particular passage that I think situates the role of the "maker" movement within the dire, precarious context that she describes.

> …in trying to survive a condition of precarity that is increasingly shared, one can see a glimmer in these attempts of something new: different alliances and attachments, new forms of togetherness, DIY ways of (social) living and revaluing life. One can sense, if one senses optimistically, an emergent potential in attempts to humanly and collectively survive precarity: a new form of commonwealth (commonly remaking the wealth of sociality)… (Allison 2013:18)

Japan's precarious context as described by Alison is, I think, part of what may give rise to a movement like the "maker" movement. It may be that the promise of a new way of life, "human and collective", as spun by the advocates of the "maker" way of life, is gaining traction for precisely the reasons and in precisely the context that Alison has described. The perceived failure of an old system is increasing clamor for a new system.

Thinking about larger social patterns in Japan such as precarity helps to contextualize the global "maker" rhetoric in a more particular time and place, distinct from the Western environments from which much of the rhetoric is published.

DESCRIBING "MAKERS" IN JAPAN

Considering the context described above, I now attend to a description of what I have observed in my work in Japan so far. I will profile Dr. Hiroya Tanaka who has inspired and helped organize all of the other FabLabs in Japan (Tanaka 2012). Then, I will describe just a few of the FabLabs. My purpose in this segment is to provide a description of these places, activities, and people. Further analysis will follow in the final segment.

Dr. Hiroya Tanaka

At the beginning of my research in Japan, everyone seemed to ask me if I had talked with Dr. Hiroya Tanaka. As soon as possible, I found that chance. I met him at the press conference in Yokohama announcing the opening of FabLab Kannai.

Dr. Tanaka had visited Neil Gershenfeld for a year at MIT in 2009 and then returned to Keio University to build his own laboratory that he calls the Social Fabrication Center. He trains students here much like Dr. Gershenfeld does at MIT, surrounded by machines, busily at work with hands-on projects. As the FabLab model is duplicated around the world - there are now more than 250 FabLabs - enthusiasts like Dr. Tanaka become central players in the coherence of the group. "Makers" in Japan have usually read a book by Dr. Tanaka called:

FabLife: The New Future of Making that Begins with Digital Fabrication[1] (2012)[2]. In that book, Dr. Tanaka describes the core values of the "maker" lifestyle in terms that seem to inspire and recruit many Japanese people to his vision.

Each of the FabLab directors with whom I spoke mentioned crossing paths with Dr. Tanaka, being motivated by him to start a FabLab, and getting startup advice directly from him. I learned from one of the FabLab directors that Dr. Tanaka holds a weekly Google Hangout video chat with all of the directors. Dr. Tanaka speaks often in Japan about FabLabs and is active in the international FabLab community, organizing and promoting the International FabLab Conference. He led Japan's hosting of that Conference in 2013.

When I had occasion to speak with Dr. Tanaka, he described himself as "open-source". That is: he expected everything he said and did to be public domain. He described his vision for the FabLab movement in dizzying detail. As exemplified by the name of his lab at Keio University: Social Fabrication Center, Dr. Tanaka feels strongly that the practice of "making" is best when it is social, especially as people in Japan become increasingly alienated from each other. He also made it clear that he did not want the labs to follow any formal model. Of course, the basic principles of sharing designs and expertise are essential but beyond that, Dr. Tanaka expressed his desire that each lab emerge on its own energies and with its own local personality. Dr. Tanaka's impact on "makers" in Japan, especially in the FabLab community, seems fundamental to the coherence of the enterprise.

Describing The FabLabs in Japan

In Japan, the FabLabs are in Tokyo (Shibuya), Yokohama, Kamakura, Osaka, Tsukuba, Sendai, Oita, Tottori, Hamamatsu, and Saga. I spent time observing "makers" at work in six of these labs. Oita, Tottori, Hamamatsu, and Saga each opened after I left. I attended workshops organized by "makers" and followed online conversations between "makers" on Facebook and other online spaces. I interviewed FabLab directors and patrons in most of those labs in an unstructured format (Bernard 2011).

In this section I will describe just three of the FabLabs in Japan, all started in 2013: Sendai, Kitakagaya (Osaka), and Kannai (Yokohama). Mentioning just a few notable features of each lab, my purpose is to give readers a sense of the distinctions in character between them. A chart at the end of this section gives overview detail on most of the labs, insofar as available to me so far.

Sendai - The FabLab in Sendai is located in an apartment on the fourth floor of a tall building just blocks from the train station in Sendai. Three staff members greet walk-ins from 1:30 pm to 9:00 pm five days a week. This is a lot of open time, compared with other labs. The lab has a wooden desk with electrical outlets in the middle of the room and computers on tables around the perimeter of the room. The fabrication machines are also built around the perimeter: a few 3D printers, a large laser cutter, and a CNC sewing

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[1] Title translation by me because the book is only published in Japanese and Chinese.
[2] Notably, published by O'Reilly Media.

machine. The laser cutter stands out and was in use much of the time I was observing there. A large tube carries debris from the laser cutter out onto the balcony and city below.

The staff are employed officially by the Anno Design Lab (ADL). The company, a design firm, has a hefty grant from the City of Sendai to keep the FabLab operating. The staff reported that the City sees a high value in the FabLab as a place where citizens can work on projects to rebuild their city after the disasters in March, 2011. This business model – exclusive funding from government – is unique among Japan's FabLabs. The director informed me that he was working out a way to continue to fund the lab after the grant expired. He did not have a reliable plan when I last spoke to him but seemed confident that they would find a way to stay open. I saw no more than three patrons at-a-time in FabLab Sendai during the time that I was observing there, though the cost to use the machines was low and there was no entry fee.

One patron was a long-time dollhouse maker, a woman in her sixties. She was thrilled to have found a place that helped her learn to design dollhouse furniture on computers and print or cut them in the FabLab. She was a regular patron. Most of the other patrons I saw there were men who seemed to have a knack for the machines already. The staff was also working on projects, both for clients of ADL and for their own interests. When a patron needed help, the staff would trade off breaking from their work projects to help.

I did my first "making" at the Sendai lab. I needed a lot of help. I had found designs online for toys for my children. The staff at the lab helped me to convert those files to fit their machines and helped me send the files to be printed and cut. Thus, as a patron, I found that I did not need to have much knowledge at all to get an object made. Still, my appetite was whetted for learning the software and the machines better and for making more tailored objects. In fact, upon sending my downloaded design through the 3D printer, in something of an epiphany, I felt a surge of confidence and perhaps power. In my small step into "making" at FabLab Sendai, I understood better the feeling of owning the means of production and why so many people are motivated to own more as "makers".

Kitakagaya (in Osaka) – FabLab Kitakagaya is not open during the week, just on weekends. The FabLab occupies an emptied-out industrial machine shop in the shipyard on the Osaka port. The Osaka port has been second only in commerce to Tokyo's. Osaka is known for its rugged dialect and fast-paced environment. The FabLab reflects this. Everything inside the space is built from scratch. The first thing I was offered when I arrived was bug spray for the swarm of mosquitos hovering in the open-air lab at night. Second, I was offered a drink from the full bar built with wood cut on a CNC router. One room was built inside the lab, without a roof, to enclose the machines used to make projects: a 3D printer, a laser cutter, and a milling machine, among others. Outside the wall of that enclosure sits the large CNC router used to cut the wood pieces needed for projects. The impact of this wood-cutting machine is a most notable feature of this up-from-scratch lab.

As many as fifteen people cooperatively manage FabLab Kitakagaya, all with separate careers of their own including professor, artist (in Kyoto), and designer. The income is from $20 monthly memberships, held by about sixty members (as of 2013). Thus this lab functions more like a club for people who like to use the machines. They use those machines very socially, gathering over weekends to work in concert on a project. Though there are

women members, the majority are men. One weekend, they wanted to try to make a shoe. Each FabLab member would apply their own skills to different parts of the shoe and see what the team could create in a couple of days, lubricated well by drinks from the bar, of course. One patron told me that she goes to the lab for the people more than to make things. Another person called the lab "wild". Still, the tools are mostly the same as in other labs while the lab layout, the people, and the funding model are all quite different.

Kannai (in Yokohama) – FabLab Kannai opened just as I was leaving in 2013. A young graduate student at Tokyo City University was active in organizing the lab and planning the preliminary events to build interest. The 9th International FabLab Conference was held nearby so that the official opening could be part of the conference: Dr. Tanaka's idea. There was not really a "lab", per se, when I was visiting. Rather, a few machines were stored on a shelf inside a shared office space for programmers and designers called Sakura Works. While the space was thus not exclusive to FabLab Kannai use, it meant that the lab had more event space than any other FabLab. Sakura Works is managed by the Yokohama Community Design Lab (YCDL). The folks who run YCDL are enthusiastic about the prospects for the FabLab. They are proponents of a tech- and citizen-oriented revitalization effort in Yokohama and publish a local paper to that end. In August, 2014, I read news that the FabLab had built shelves in a room within Sakura Works and was now holding open hours on weekdays and weekends. This certainly marks growth at FabLab Kannai. Hideyuki Furukawa, the graduate student who was central to the origin of the lab, early on built a small wooden cart on which he could fit all of the machines from his FabLab. He called it the FabLab *yatai*, or: FabLab cart. While the machines are still mostly borrowed and the funding is not entirely secure, FabLab Kannai has a lot of local support, including press, and is likely to grow quickly into one of the prominent FabLabs in Japan.

While all of the FabLabs in Japan hold events periodically, FabLab Kannai seems to excel at it. Perhaps this is because they have the space right at hand. As with every lab except Kamakura, FabLab Kannai is managed by men. At the events I attended, there were just a couple of women attending. One event showcased the 3D printer. Another showcased the new Lego Mindstorm kit. Another, the Arduino microcontroller. I did take the chance to talk with a young woman who was attending many of these events and helping to prepare for the Fab9 conference. She reported that she wished at times that there were more women around but that she never felt any derision or exclusion while volunteering.

| | FabLabs Visited in 2013 | | | | | | New Since August 2013 | | | |
	FabLab Shibuya	FabLab Tsukuba / FPGA Cafe	FabLab Sendai / FLAT	FabLab Kannai (Yokohama)	FabLab Kamakura	FabLab Kitakagaya	Oita	Tottori	Saga	Hamamatsu
City	Shibuya	Tsukuba	Sendai	Yokohama	Kamakura	Osaka				
Date Established	2012	2011	2013	2013	2011	2013				
Location	in Tokyo	East of Tokyo	East of Tokyo	West of Tokyo	West of Tokyo	West of Tokyo				
Distance (from Tokyo)	0 km	80 km	370 km	35 km	55 km	505 km				
Parent/Host	co-lab		Anno Design Lab	YCDL						
Director	Hiroaki Umezawa	Susutawari (Noriyuki Aibe)	Keisuke Watanabe	Kazuo Kadota Tsuneo Masuda Kenichi Ohwada	Youka Watanabe	Kazutoshi Tsuda				
Salaried Employee?	Yes-partial	No	Yes-partial	No	Yes	No				
Open	Work Days - Varies	Sunday afternoons	Wednesday through Sunday	Most days	A few mornings each week, events	Weekends				
Food/Drink		Coffee shop				Home-made bar				
Building	An extension of co-lab's two-story design office	Second floor apartment in suburban Tokyo college town	Fourth floor apartment in downtown Sendai	Borrowed shelves inside Sakura Works' shared office space	Retrofitted portion of Dr. Hiroya Tanaka's 300-year-old home	Empty shipyard factory near Osaka Bay				
Notable Tools	Altogether, co-lab has the most tools but the FabLab uses a standard subset of those	Makes micro-controllers			CNC Sewing machines	ShopBot CNC Router				
Funding	Expensive user fees	Some fees, run by Susutawari as part of his prototyping business.	Funded by a grant from the City of Sendai for civic reconstruction after 2011 disaster	Borrowed equipment, volunteer run, some event and usage fees	Event fees, premium hand-crafted goods sales	Monthly membership from ~60 people at ~$20 each				
Description	Small room jammed with machines in the fashion district of Tokyo, hosts mostly prototypers from nearby design firms	Geeky, manga-character-decorated workshop with a focus on microcontrollers, run by Susutawari	One-room apartment in downtown Sendai, fully funded by Sendai City - most accessible of the FabLabs	Managed by volunteers, organizing events inside a shared office flat near a professional baseball stadium	Occupies a portion of Dr. Hiroya Tanaka's 300-year-old home. Compact on two floors, especially welcoming to seniors	Open-air space with a single room built around the machines. Young group paying membership dues				

Figure 1: FabLab Overview, produced by the author

UNDERSTANDING "MAKERS" IN JAPAN

The descriptions above may seem scant as a representation of the "maker" community in Japan, or even of its FabLabs. There is much more to learn and describe inside these FabLabs in future research and writing about, for example, the impact of existing structures such as gender and class and about the precarity of which Alison has written. I plan to spend most of 2015 in Japan, especially at FabLab Kannai, to extend this inquiry. Still, this project represents a closer look at "makers" in action in Japan than has been available so far from a scholar's ethnographic perspective. Thus, in this final section I aim to connect a few theoretical strands to this research that may be of interest to readers.

Expertise

First, as acknowledged in the title of this paper, there are important changes occurring in the "culture of expertise" by which global production is accomplished because of "making". Noted STS scholars such as Karin Knorr-Cetina (2009), Hugh Gusterson (1998), and Sharon Traweek (1988) have done ethnographic work inside labs and produced a body of evidence pointing to distinct cultures within these labs. These cultures seem to affect the output of the labs at a deep social level. More recently, scholars have been discussing cultures of expertise in a broader range of work (Boyer 2008) such as financial governance (Holmes & Marcus 2006, 2005) and craft cheesemaking (Paxson 2012). In addition, great ethnographic work has been done by many of my colleagues in the EPIC community inside large industrial companies (see Baba 2012, Jordan 2012, Moeran 2011, Cefkin 2009, etc.). From all of this work we are getting a look at what it means to be an expert in different domains, and what that special status imposes upon the output of each unique environment.

The FabLabs, however, are distinctly open-source and profess a rigid egalitarianism. This marks something of a departure from the corporate environments and standard models of expertise in science and manufacturing. I have observed in my work so far a unique culture of expertise forming in its own way among "makers" in FabLabs. In Japan, this "maker" expertise seems anchored in one's degree of openness, non-uniformness, and a geeky (*otaku*) sensibility manifest in personal and online styles, in addition to manufacturing skill. Dr. Tanaka would clearly be seen as an expert. His influence is undoubtable. At FabLab Kannai, however, Mr. Furukawa, perhaps seen by many patrons in 2013 as an expert, was in fact learning a lot himself about "making" as he organized events. In 2014, Mr. Furukawa is no longer managing FabLab Kannai and his status as an expert has probably waned. Reputations or positions of expertise within this community may rise and fall very quickly. Finally, this culture of expertise, aggressively open when compared to the experts who can access larger machines of production inside industrial companies, may be having its effect on the latter, although in the scope of this project I cannot quite get a handle on that influence.

Tools, Actor-Networks, and Cohesion

Another theoretical domain in which this research on "makers" in Japan seems relevant is the consideration of heterogenous actor networks and the question of cohesion in particular. In the actor network model (Latour 2005, Law 2009) the technical tools employed by human agents in FabLabs are not simply dumb objects but rather bear something of an agentive influence on the whole social operation. Robert Oppenheim's advice is to interrogate ad hoc group cohesion beyond the classic anthropological categories: "class, ethnicity and so on" (Oppenheim 2007:474), by way of technical "intermediaries" (Latour's word) that can "faithfully transmit the force of cohesive action" (474). As "intermediaries", newly accessible machines such as 3D printers may be central to the magnetism of "maker" activities. What I mean here is that the answer to why "makers" organize, as Oppenheim suggests by way of the actor network model, may require an inquiry into the objects themselves – 3D printers in this case – that are used as "intermediaries".

Even in my initial research there is strong evidence that the machines in FabLabs are central to the cohesion of the entire endeavor. The simple fact that each lab, very different in its business model, management structure, local community support, gender makeup, class categories represented by patrons, and dozens of other factors, still has the same three machines: the 3D printer, the laser cutter, and some manner of CNC mill, is one example of this evidence. In fact, among many brands available, the Cube 3D printer was observed in nearly every lab. There is a link between labs – a purpose in the acquisition and employment of these tools – that represents a pivotal position of influence born by technical intermediaries in the cohesion of FabLab and "maker" activities in Japan.

Imagination, Hope and Precarity

A final theoretical postulate that I wish to address in this review is the social force born by the human imagination in our modern world. Arjun Appadurai wrote that:

> The imagination is no longer a matter of individual genius, escapism from ordinary life, or just a dimension of aesthetics. It is a faculty that informs the daily lives of ordinary people in myriad ways: It allows people to consider migration, resist state violence, seek social redress, and design new forms of civic association and collaboration, often across national boundaries. This view of the role of the imagination as a popular, social, collective fact in the era of globalization recognises its split character. (2000:6)

Appadurai's posit seems to match what I have seen among "makers" in Japan – new civic associations and collaborations sparked by the imagination. Especially when prospects seem precarious, I suspect that the imaginative possibilities propounded by "maker" rhetoric are central to the emerging cohesion of the "maker" community in Japan.

Further insight into this operation is offered by a Japanese scholar, Hirokazu Miyazaki, who has done groundbreaking ethnographic work among financial derivatives traders at the top of the economy in Japan, and therefore the world. Miyazaki has traced the impact of new ideas about the world that infused a hope in the minds of these traders, and led to disruptions in the economy. Hope, for Miyazaki, "lies in the reorientation of knowledge" (2006:149) and is an important social factor because the "prevalent … ideas generate concrete effects" (151). It is these concrete effects that I think I have begun to trace among "makers" in Japan. The actions of FabLab proprietors to take risks, make sacrifices, and open a lab, as one example, evince a proactive practice in line with a reorientation of the knowledge they have about manufacturing. They seek to turn it not so much toward profit, as in the standard endgame, but to its recursion on itself in the public domain and the growth of a community that this knowledge helps to formulate (see Christopher Kelty on recursive publics, 2005). As another concrete example, the effect of Dr. Tanaka's own imagination has been central to the emergence of each FabLab in Japan. Dr. Tanaka writes, speaks, teaches, and talks over coffee about his imagined, or hoped-for, new future: social (not alienated), environmentally stable, and egalitarian. Each FabLab director with whom I spoke (nearly all of them) reported inspiration and continued guidance from Dr. Tanaka.

In precarious Japan, I saw evidence of people reorienting their knowledge for a new future, in Miyazaki's terms, in all of the "maker" practices and personal imaginings that I observed in FabLabs. Whether utopian, deterministic, or otherwise, this hope still seems to have a centrifugal effect, leading to a cohesion among heterogenous agents that has produced concrete effects, such as the reality of ten FabLabs in Japan in three years. Still, even though I asked often, no one reported anything concrete in the manner of a Linux- or even DIY Drone-equivalent open-source hardware project to speak of in Japan.

CONCLUSIONS

In FabLabs in Japan, at least, my observations lend evidence to the conclusion that some of the high-minded "maker" rhetoric differs from the practices of "makers" I observed ethnographically in Japan. "Makers" in Japan largely see their work as pre-corporate: the domain of hobbyists with shared values and interests, manufacturing for personal utility. There is not a lot of world-changing activity emerging from those labs, at least not in the scope by which Western audiences account for significance. Perhaps, then, companies should have little to fear off their bottom lines. However, from a longer term and social value position the "makers" I observed in Japan are in fact doing something of remarkable social moment. Organizing FabLabs and sharing their ideals – their "hope", in Miyazaki's terms – these agents are employing new tools to bring people together when other valences move them apart, as in Alison's portrait of precarity. This "maker" zeal, or hope, as a centrifugal principle, and its concrete social outcomes seem in any case to merit a continued watchful ethnographic eye.

Matt Krebs is a Ph.D. candidate in anthropology at the University of Kentucky where he also studied diplomacy (M.A., 2005). Matt writes about communication and collaboration for KelCor, Inc. He has been executive director of the Japan/America Society of Kentucky and consulted on economic development projects in rural Kentucky. mattkrebs@KelCor.com

NOTES

This paper reflects the opinions of its author and not KelCor, Inc., or Intel, Inc.

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Corporate Care Reimagined: Farms to Firms to Families

J.A. ENGLISH-LUECK
San Jose State University/Institute for the Future

MIRIAM LUECK AVERY
Institute for the Future

In 2012, the Google Innovation Lab for Food Experiences convened a multi-year conversation between corporate food stakeholders, farmers, chefs, food experts, social scientists and business consultants to reimagine the impact of companies on their employees and the food system. Corporate care increasingly includes food. Food origins and preparations create impacts well beyond the corporate cafe, reaching into fields and families. In the project, Farms to Firms to Families, university-based anthropologists joined with the Institute for the Future to develop a Northern Californian case study on the implications of corporate care across the food system. Ethnographic observations and interviews of people in that system yielded a portrait of cultural values, schema for social change, and diverse practices. We then transformed ethnographic observations into alternative future scenarios, which could help participants in the Google Innovation Lab for Food Experiences, as well as a wider community of food thinkers, identify the impacts of their decisions and actions on the future.

> Truth is so hard to tell, it sometimes needs fiction to make it plausible.
> —Francis Bacon (Leavy 2013: 259)

Corporate care, a phrase we are introducing in this paper, consists of workplace and worker-generated practices that attend to the needs of the whole worker—fostering a healthy body, an agile mind, and a supportive community. In the 19th and 20th centuries, such practices focused on benefits, a shorter work week, a safer workplace and access to insurance. In Silicon Valley, such practices broadened to include campus-based fitness and wellness centers. In such 21st century care workplaces increasingly provide food, sometimes at no cost to the employee. Corporate food management can consider consequences that go beyond worker benefits. The choice of food origin, handling and preparation creates an impact on the food chain well beyond the cafe, reaching into fields at one end, and families at the other. The process of choosing, preparing and consuming food extends what it means to be beneficial to a broader set of stakeholders.

Building on seven years of forecasting in the Global Food Outlook, the Institute for the Future participated in the newly created Google Innovation Lab for Food Experiences, based in Mountain View, California. A group of experts, academics and activists were invited

to participate, stimulating conversations between corporate food stakeholders, farmers, chefs, food experts, social scientists and business consultants to reimagine the impact of companies on the system that produces, distributes and consumes food. Over time, the groups coalesced into umbrella initiatives, each containing individual projects. In one such group, the task was to rethink the impact of corporate food consumption on the entire food system. Participants are bound by a common mission, and participants "share a commitment to creating a more sustainable and responsible food system for all." (Avery et al. 2014: 2).

Our project, Farms to Firms to Families, joining San Jose State University graduate and alumni applied anthropologists with researchers at the Institute for the Future, to develop a Northern Californian case study on the food system, and then think through implications for the future. This case study would not only work in concert with other local initiatives, but provide a common narrative that could help participants implement their audacious mission to provide "a global collaborative network for leading thinkers and doers in the food space that apply their knowledge and passion towards imagining and shaping the future of food. Participants bring different experiences, philosophies and approaches to the Google Innovation Lab for Food Experiences. This article discusses the process of analyzing ethnographic data to shape a range of imagined futures that hold fast to local experiences and yet inform larger discussions across global teams.

Using a research design based on "bottom-up forecasting" we collected ethnographic observations and interviews with people from farms, firms, families, schools and local food services, to identify cultural values, schema of social change, and food-related practices (Institute for the Future 2006). While the participants range across the planet, this particular case study is based in greater Silicon Valley, a region itself subject to cultural scrutiny and noted for its particular synthesis of technological innovation and countercultural experimentation (English-Lueck 2002; 2010). The region blends a larger Bay Area countercultural narrative with the experiences of global immigrants—over 36% of Silicon Valley is foreign born (Massaro and Jennings 2014: 11). Californian cuisine has been integral to the countercultural flavor of the region, blending ethnic and exotic preparations with a ruthlessly pragmatic concern with the functions of food (Belasco 2006; 2007). Using science, fad and folk wisdom, people eat particular foods to become "better." Augmentation was a notion common to both the counterculture and the new personal technology ventures (Turner 2006: 109). With such a philosophy, food becomes inexorably intertwined with productivity and thus becomes the province of the workplace.

Farms to Firms to Families dives deeply into local Northern Californian experience, and the scenarios we paint may inform other Google Innovation Lab for Food Experiences teams by thoughtful comparison. The key purpose of the project is to construct a methodology, a way of thinking about the future to better frame the values that underpin each project under the larger umbrella of the Google Innovation Lab for Food Experiences. How can they think concretely about food futures and which future they want to make? Whether they are in Seattle, London or Tokyo, they should be able to work with the questions about alternative futures that we identify. In many ways, our task is less to find answers, than it is to create robust and useful questions that foster meaningful and actionable conversation. To this end, our team collected and sifted data on the aspirations and constraints of people who produce the corporate food system. Our ethnographic team

visited stakeholders ranging from cattle ranchers to elite chefs and talked to them about their work, their dreams for the future, and their experienced obstacles to those dreams. Our instrumental objective was to transform the ethnographic observations into coherent alternative future scenarios, which could help members of the Google Innovation Lab for Food Experiences, as well as a wider community of food thinkers, consider the impacts of their decisions and actions on the future. Although the project team was firmly rooted in anthropological ethnography, we used a deliberately transdisciplinary approach. We drew on ideas and frameworks from futures studies, business management, visual arts, philosophy and critical food studies.

The Google Innovation Lab for Food Experiences wants to produce *good* food system futures. Our job as ethnographers was to explore what that means, to identify a range of aspirations, not to segment the participants, but to build empathy and reflect the views of multiple stakeholder throughout the food web (Avery et al. 2014: 4-7).[1] Ethnography portrays complexity, empathy and verisimilitude, all important features of storytelling (Leavy 2013: 39-40). These based-on-lived-experience fictions form the core features of bottom-up forecasting. The scenarios must emerge from the voices and visions of the interviewed and observed, lightly edited by the forecaster's expert composition. Applied anthropologists do, however, use analytical tools to think through the material in the creation of those stories. To understand how people seek a "better future" it was critical to unpack the notion of "better." Better for what, and for whom, and under what circumstances? Philosopher von Wright's consideration of the "varieties of goodness" helped us parse the aspirational visions of the stakeholders, some closely embedded in today's practices, and others transformational. Carol Sanford's work on responsible business practices builds the case that fundamental relationships among customers, co-creators, investors, community stakeholders and the earth itself must be meaningful and robust for enduring sustainability to be achieved (2011).

From the point of view of corporate food services, wellbeing and sustainability must be rethought and pragmatically reconnected. At the heart of this endeavor is the reinvention of corporate care, a notion that emerges from the work of Annemarie Mol, an anthropologist who theorizes the elastic social meanings of care (2008; 2010). Each of these frameworks gives us a device for translating the practices of food production and distribution, many of which are augmented by existing and potential technologies, into a series of narrative imaginaries, futures in which particular goods could be enacted.

REINVENTING CORPORATE CARE

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[1] Data was collected in two phases. The first phase, Farms to Firms, focused on identifying stakeholders and getting an overview of the food system, a map view. The second phase, Firms to Families, examined the lived experience of chefs, corporate managers, workers and their families, a street view. We engaged in days of participant observation in cafes, farms, community events and corporate workshops, and interviewed 27 people at length, from different farms, vendor organizations and workplaces.

The 20th century labor movements struggled to get employers to view workers as embodied and social beings. Shorter work weeks, sick leave and health care benefits, vacation and family-friendly "work-balance" initiatives acknowledged that workers had bodies, minds and lives (English-Lueck 2010). Providing care onsite, such as providing gyms and trainers, massage and meditation guides and of course, food, changes the relationship of workers and those who provide their care. As with 20th century provisions, such care is not ubiquitous, or consistent. Many companies offer little to their employees, nothing to their contractors. Others offer a range of care practices, but charge fee-for-service; charges vary with the status of the worker. However, the notion of embedded, on-site care, hints at an experiment for broader worker-employer engagement, a moral contract.

Dutch anthropologist Annemarie Mol has delved into the logic of care in multiple settings, especially medical settings. Mol reframes care from an affective state, to a set of practices. Care, socially defined, is more than an intention or an emotion, but a way of interacting. She attends to the way nurses care for patients and nursing homes feed their clients. Inspired by her logic of care, others scholars have examined animal husbandry and medical equipment research. She notes, "The logic of care wants professionals not to treat facts as neutral information, but to attend to their values. (2008: 43)" Care is a set of practices, a social act that reflects implicit social obligations. Farms to Firms to Families data hinted at an emerging concept of corporate care, going beyond minimally legislated offerings, and considering the embodied worker. It is a notion that invokes care in its most basic social form—feeding. Although care is often conflated with empathy and compassion, it does not exclude technology. Mol notes that in the logic of care attentiveness and specificity are assets that augment the impact of care (2008: 74). Care is not a commodity to be passively delivered or purchased but one that actively engages patients in helping themselves and each other; care is a mutual social effort (Mol et al. 2010: 9-13). In her study of food in a nursing home, she coins the negotiation around food as "nourishing care" that combines nutrition with *gezellig*, or a cozy food ambiance (2010: 216-218). Over the last century embodied care has shifted ambiguously between the public and the private, the institution and the home. Corporate care is the 21st century reinvention of many strands of worker rights including wellness, food and work-family buffering. Food provision is a particularly complex moral and social form of care.

As companies reinvent responsible corporate care through food, they must reconsider how each purchase and presentation influences producers, purchasers, policy makers, food preparation teams, as well as consumers and their communities. Food is enmeshed in a social world of farmers, suppliers, cooks, waiters, friends, and family, which exert an act of trust with each bite (Ferguson 2014: 44). Food is consumed in every conceivable setting, with ever increasing channels for obtaining, preparing, consuming and talking about food (Johnston and Baumann 2010: xviii).

The flow of food and food information is so complex and overwhelming that new narratives of sense making must be constantly created and revised. Competing demands pervading these foodscapes that food be natural, discriminating, even elite, yet efficient, cost-effective, and socially just. Not only are apples tracked from the farm, educated foodies should understand which varietals are heirloom, organic, or excessively sugary. Is a niche-market hybrid Honeycrisp better than a mass-market Delicious or Jonathan apple? Which

apples use too much water, produce too few per acre, or exacerbate worker exploitation? Did the apple require a thousand mile trip? Then there are the intimate decisions of which fruits we like. Conveniently, we want a fruit we stick in our pocket to crunch on later at our laptops, but also one we know is "good" across a number of nutritional, ecological and social dimensions. However, the choice of whether to stock that particular apple is well beyond the agency of the end consumer. Those choices are made by farmers, politicians, purchasers and chefs, each balancing a different set of criteria. It is a system based on capital, so cost and value are key factors, but food production and consumption also connects producers and consumers, so relationships must also be reckoned. While direct links are weak in industrial agriculture, contemporary food movements seek to reconnect farms to chefs and cooks to eaters (Cunningham 2011). Artisanal food production, such as that of cheese or tofu, walks a delicate line between leveraging science to produce consistent results and infusing the relationship-rich dedication of art (Paxson 2011; 2013: 128). As Minzhe, a Bay Area artisanal tofu maker we interviewed notes, part of the job is to educate the consumer into a new set of tastes, "developing a palate," creating that intimate connection between maker and eater. Commensality, the act of eating together is another facet of 21st century food activism, and sharing such common tastes underpins those eating experiences (Crowther 2013: 69-71, 158; Kneafsey et al. 2008).

Corporate commensality reflects changes in larger American eating habits and the rhythms of evolving high-tech and knowledge work practices. These shifts in belief and practice are manifest at dining tables and in cubicles as food choices and work schedules become more individuated. Both food and work are markers of class identity and morality, so it is no surprise that corporate food would concern such distinctions. Culinary individualism, flexible work and eating schedules, cosmopolitan cuisine and a progressive morality of foodscapes combine to create a new regime of distinction. Counter to industrial food design based on modularity and mass commodification, new food niches reflect more customized tastes, needs and desires.

Allergies, dislikes and dieting constraints drive the expansion of the choices available to consumers as food activists make their needs known. Requests have become requirements for producer and preparer (Ferguson 2014: 186-187). We see examples of this exchange from the people we interviewed. Sarah, who has celiac disease, tells us about "educating people in restaurants" to learn that her needs go beyond mere preferences. Daniel, a chef in a corporate café, comments on what he has learned by talking to his guests about their individual food experiences. He notes, "There's a woman on campus who was celiac so she had to be completely gluten-free…She kind of educated me on what someone like her would be looking for in packaging and labeling." The proliferation of food-related conditions and diets to address them has made such customization commonplace. Work schedules too have become individuated. Flexible work, especially project-based work, drives tasks into many times and places (see English-Lueck 2002 and Darrah et al. 2007). Work is done on mobile devices, and can colonize the clock.

As work has fragmented and changed the rhythms of work and life, so have the meals that are consumed (Ferguson 2014: 152-153). Parvani works at a company that provides free meals. That company even offers her the chance to learn to cook from master chefs! Depending on the shape of her workload, she will graze small meals, bringing some food

home or using restaurant leftovers to augment meal elements she might prepare. On a long day she might seek out actual meals. Alternatively, she might decide the workday is short enough to warrant a fully cooked meal at home, which would mean a different pattern of light snacking earlier. No two days are alike. On the weekend she might eat a meal cooked by her mother from India, or eat with friends who enjoy cooking and eating together when work permits. She consistently seeks new food experiences and applauds her workplace for broadening her cuisine when she wants, and comforting her with familiar food when she needs that as well.

Cosmopolitan cuisine broadens the array of choices facing the consumer. Foods, meals and cuisines combine ingredients, elements and flavors to innovate. Drawn from immigrant peasant cuisines and haute reformulations, the Bay Area assumes the ubiquity of global choices, both "authentic" and reimagined (see Belasco 2007). As caterer Joaquin Santos muses on using ethnic and exotic tastes, he cites Moroccan, Turkish, Peruvian or Puerto Rican cuisines. Mexican and Chinese barely qualify as ethnic because they are so ubiquitous and integrated with "American comfort food." Only regional dishes, such as Sichuanese, would merit the moniker "ethnic food." Preparing and eating ethnic food is a politically ticklish business. If pursuing authenticity, what makes a food "authentic?" Is it who prepares it? What is in it? How it is eaten? How does a progressive chef or discerning consumer distinguish enjoying from purloining another's cuisine? How can cosmopolitan cuisine be buffered from the taint of colonialism? Anthropologist Crowther notes that imbuing food purchase, preparation and consumption with respect, knowledge and reflection, and with a certain degree of joy, makes such consumption authentic even when the cuisine is not from an ancestral tradition (2013: 190-205; Johnston and Baumann 2010: 104). Cosmopolitan cuisine involves learning more about food than nutrition, or even recipe-based preparation, it means learning the context of the food. James, who had worked in Japan, understood the refinement of a smaller portion size, and that knowledge becomes part of his cognitive palate. Food knowledge can be gained abstractly, from the Internet and multiple food information channels, and intimately from family, peers and social relationships. This constantly shifting foodscape requires effort to keep up, and that work defines the world of the foodie (Ferguson 2014: 183).

Pierre Bourdieu's work on class distinction in 20th century France speaks to the creation of subtle and barely conscious choices that distinguish one class from another (1984). French food is at the center of those choices and practices, linking "healthier fare" to refinement (1984: 177). Not surprisingly, food scholars, now looking at 21st century food movements of production, preparation and consumption spot a parallel process. New distinctions are being created that signal sophistication, quality and moral integrity. How foods are grown, prepared and presented, and enjoyed mark the creative class. Cosmopolitan food choices become cultural capital when effort has been exerted to understand the greater context of a food (where it comes from, how it is to be eaten, how distinct flavors are to be savored). Coined "omnivorous inclusion," a broad and educated palate is something that is learned at some combination of home, work, or restaurant (Johnston and Baumann 2010: 36).

It is in this context that corporate food service goes beyond the snack bar and café to reinvent corporate care. High-tech companies, from Apple to Yahoo have nurtured workers

with a combination of benefit packages and on-site care. In the 1990s, masseuses tended to stressed engineers. In the 2000s Pixar employees could de-stress with yoga and pilates. Corporate gyms supplemented a rich ecosystem of conventional health and alternative wellness facilities (English-Lueck 2010). Food could be purchased in corporate cafes on high-tech campuses that mirrored university cafeterias. In the Bay Area, those educational cafeterias frequently provide sushi chefs and sustainable and locally-grown food.

Knowledge about the food system, however, imbues the foodscape with a moral character. This political foodscape is not simple. Protecting animal rights might be at odds with human rights. Eating locally, being a locavore, might actually be less sustainable that growing a food in a suitable ecosystem. However, tracking and factoring in such social and ecological elements defines the moral character of the producer, preparer and consumer (de Solier 2013: 16-18). Thich Nhất Hanh, the Zen Buddhist teacher, spent a day instructing high-tech corporate chefs and consumers in the art of mindfulness, reminding them of the ecological and moral consequences of each bite they take. In doing so, he augments their growing sense of distinction. They are one step more prepared to understand how, what and why they eat. While it is possible to track and quantify information on soil health, nutrition, and food miles, it is much harder to capture a metric for farm worker justice, or agricultural resiliency. The small farm movement is seriously attempting to map the value that can be added by using organic and sustainable methods, but the earth must double food production by 2050 to sustain the growing human population, and the demand for water and energy expensive meats is only increasing (Foley 2014: 45). Moral and political decisions are embedded in even the smallest food choice, and global corporations make choices that are magnified by their scale and visibility.

Those workers who were fresh from the academy make the transition from university dining hall to corporate café with little disruption to their daily habitus. Google's game changing free food for employees enhanced the sense that the workplace is a campus among high-tech companies. Then these corporate care practices began to expand. While workers still might want plentiful pizza and a salad bar, the food services professionals had the opportunity to think about their impact as purchasers and food educators. Which foods had an impact on the environment, and how could that choice be made transparent to café guests? How could preparation illustrate a more optimal configuration of nutrients, tastes and cuisines? Could cafes and MicroKitchens be places for social interaction and cognitive casual collisions, not just refueling stations? One engineer in high-production mode might crave comfort food, while another lost in thought might be reinvigorated by a culinary adventure. The workforce is global, hailing from Denmark, China and India. What complex of flavors will satisfy a native eater, and still appeal to an adventurous culinary sojourner? Some eaters crave bacon, others vegan or gluten free foods. Workers have online discussions about their preferences and give a constant stream of feedback to food services. There is no one Google café, but many diverse points of contact ranging from small self-serve MicroKitchens to themed cafes.

CULTIVATING CORPORATE RESPONSIBILITY

By the time we had unpacked the first dozen stories of the Greater Silicon Valley corporate food system, we had glimpsed the importance of corporate care, and begun to see what futures mattered to people in this intensely moral foodscape. In the methodology of forecasting, the purpose is to provoke reflection by anticipating possible consequences, including unintended consequences. These anticipated futures drive thoughtful choices, but do not necessary predict actions. In this project, the Google Innovation Lab for Food Experiences wants to identify and pursue positive outcomes, but it was clear from the onset that stakeholders varied in what they thought would be the most important outcome. Positive outcomes combined mundane and audacious goals hoping to "improve the productivity of the workforce" to "end world hunger." We looked closely at the relationships people identified as important, the sources of power and agency within their social worlds, and their particular configurations of hope and concern to reveal potential futures.

In our ethnographic forays we stayed primarily in the present, identifying work niches and practices, and tracing connections to other parts of the food system. We asked policy advocates about their connections to farmers, and farmers about their ties to educators. Chefs were queried about their ties to corporate wellness and to the workers that ate their food. Each person was asked to give an ethnographic tour of the work space, whether literally around a farm or kitchen, or if suitable to the work, figuratively through stories of travel between worksites. In our experientially-focused interviews we asked about the spaces and rhythms of food purchase, preparation and consumption. We queried about workmates, friends and family and their roles in the interviewee's personal foodscape. We watched people in corporate cafes choose dishes, cluster and talk. Some workers had their children with them, a few grabbed food and zipped back to their workspace. We pulled weeds on an organic farm, and asked interns how they saw what they did fitting in with the corporate foodscape.

As we listened we began to discern several key lessons. First, people have deep abiding aspirations for the future of food—either imbedded in their own sense of self and wellness, or through passion for the future of the food system. They could identify clear "good" outcomes, but the criteria for that goodness shifted. We needed to parse those varieties of goodness more exactly. Second, we began to hear particular words and concepts repeatedly, "utopia,²" "practical," "efficient" and "moonshot." Miriam Avery, having worked with Yerba Buena Center for the Arts on Dissident Futures, understood that these words hinted at a threefold framework that sorted overlapping aspirational futures into Speculative, Utopian, and Pragmatic Futures (Hertz 2014). Third, participants were already actively engaged in trying to incorporate elements of Carol Sanford's Responsible Business Framework, which emphasized reconnecting stakeholders into a larger system. As we coded and talked through our first set of interviews and notes, the three analytical lenses jelled into a single coherent whole.

While Pierre Bourdieu was publishing his tome on French distinctions, Georg Henrik von Wright, the Finnish philosopher, was publishing his abstract consideration of the

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² This term was not used by the interviewees, and then by us, in the literary sense of "no place," but as a metaphor for ambitious aspirations.

varieties of goodness (1963). In this work, he systematically considered how goodness distinctively expresses diverse concepts linguistically and morally. We used his framework to ask, "what do these nuances mean in the foodscapes we were exploring?" Avery and I translated his typology into robust questions and combed the notes and transcripts, translating them into insights we could use to describe people's aspirations. Von Wright's domains of technical, instrumental and utilitarian goodness translate into the kind of information that could play out on a smart phone or wearable device that promoted food education—nutritious food, that could be tracked, and could be effectively and appropriately produced. More intriguing for us, would be the sorts of goodness that benefited people. Beneficial goodness integrates food into wellness, and compels action. Moral goodness might mandate environmentally sustainable food systems, or mindful eating. Hedonic or playful goods support adventurous eating, delicious food, nostalgic and "awesome" experiences. Social goodness is inherently moral, and would point to that elusive cosmopolitan set of virtues such as cross-cultural and cross-class respect.

This analytical exercise proved powerful for us. From there it was a short step into sorting interview and observational stories into the overlapping aspirational futures, linking the details of the future fictions with ethnographic realities. Each scenario took the values, practice and aspirations of Utopian, Pragmatic, and Speculative approaches to the food system and projected them into three possible futures, from 2014 to 2040. The terms were drawn from language used in conversations with our interlocutors. Each scenario asked, were corporations to focus their influence on just one approach, how could they impact the food system as a whole? What might be the intended and unintended consequences of privileging one expression of future values over the other two? Our April 2014 Farms to Firms memo, introduced to the summit of the Google Innovation Lab for Food Experiences, presented these future scenarios, as well as excerpts from the ethnographic realities to which they connected. The forecasts read like narrative fiction. For example, the Utopian narrative, "Good food in 2040" read:

> A network of family farms stretches around the world, in cities and rural areas alike. It starts as a niche, separate from the rest of the food system, but clear benefits to People, communities and the Earth quickly accelerate its influence. Global firms move from reactively addressing damage to people and the planet to proactively participating in co-creating and sustaining a resilient, equitable food system. They support a fledgling network of local farms, pioneering a new form of CSAs— "company-supported agriculture." This, along with the efforts of artists, journalists, and chefs, begins to change people's ideas of what a food system can and should be. To feel good about eating, we have to know that food sustains more than individual appetites and wellness. Food isn't good for anyone unless it is good for everyone.

This scenario drew on both the language and practices of research participants engaged in farming and food service vending. However pithy we made our scenarios, any insights we could come up with would have to translate into actions that could be taken up by many participants in the Google Innovation Lab for Food Experiences, and our specific partners

within the food systems team. To provide a quick and provocative overview, we imbedded this chart in the memo (see Figure 1) outlining aspirations, varieties of goodness, limitations and inquiries sorted by scenario (Avery et al. 2014: 8). Playing with the scenarios should be a way of thinking through the consequences of a project, or a strategic plan so that "varieties of goodness" would be achieved. We also framed the scenarios not only as visions of one scenario triumphing over the others, but of each expression of the future offering lessons for the others.

	PRAGMATIC	UTOPIAN	SPECULATIVE
What are its aspirations?	Precision, efficiency, knowledge	Holistic change, community, social justice, spirituality	Adventure, creativity, mixing art and science, invention, augmentation
What is it good at?	Achieving scale, utilizing existing infrastructure and resources	Stabilization, inclusiveness, resilience	Experimentation, inspiration, productivity
What are its limitations?	Vulnerable to disruption, risks focusing on the wrong metrics	Difficult to scale, requires development of nontraditional partnerships	Potential for alienation, requires large investments
What can it learn from other expressions?	Resilience, community, creativity	Scale, metrics for success, room for experimentation	Measuring results, balancing inspiration with comfort

FIGURE 1. Guidelines to participants for engaging with the alternative future scenarios.

Simply being thought-provoking is not enough. How could our insights translate into the world of business people? One of the Google Innovation Lab for Food Experiences participants held the key to this challenge and her collaboration shaped our thinking. Carol Sanford, a business consultant, grapples with integrating corporate responsibility as a necessary part of global business survival. She defines a pentad of stakeholders, which we immediately translated into stakeholder communities we had identified within the context of the food system (see Figure 2):

○ EATERS (consumers): The people who consume the food.

○ VENDORS (co-creators): Food-offering co-creators that produce and serve food.

○ FARMS (Earth): Including bioregions and all environments in which the food is grown.

○ COMMUNITY (community): Stakeholder communities that the organization, co-creators, and consumers are part of or have an impact on.

○ FIRMS (investors): Firms and funders that contract and pay the vendors to supply the food.
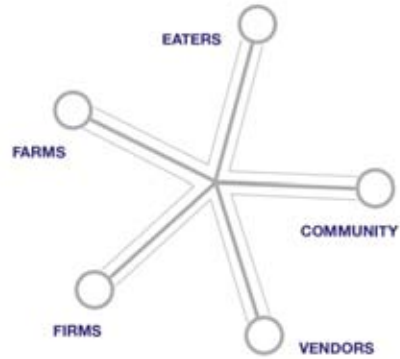
FIGURE 2. Carol Sanford's pentad of stakeholders translated to the food system (Avery et al. 2014: 7).

These stakeholders must connect, often restoring connections once extant in the past, but now no longer reinforced. When a proverbial modern child is asked, "Where did this carrot come from?" That child will say, "Safeway," not a farm. In this framework, Utopian aspirations reconnect customers and the earth, educating people who will make choices about the fate of farm land in acts ranging from the voting booth to the kitchen. Having been sensitized by prior Institute for the Future Global Food Outlook forecasts (see Avery et al. 2013), we imagined that different stakeholders would relate to particular scenarios more enthusiastically. We did not want the participants to think that these scenarios were mutually exclusive, or that they should identify with only one scenario. In practice, at the April 2014 summit of the Google Innovation Lab for Food Experiences, we asked people to self-identify with particular scenarios, donning stickers. Participants validated this integrative approach by consistently self-identifying with more than one approach, and eagerly seeking out those with different combinations than their own.

As we talked to purchasers, chefs, and food managers it was clear that more than serving food was at stake. The choice made by companies to amplify their impact through holistic corporate care creates potential ripple effects. Even as such care makes workplace inequalities visible within and between companies, it also opens up new possibilities for creating positive impacts on the food system, and on the lives of workers. In the 19th century a forty-hour workweek was an almost unattainable aspiration, but it marked the emergence of the 20th century middle-class. In the 21st century, new practices of corporate care could redefine the habitus of food production and consumption, as well as the larger realm of wellbeing. It requires thinking intentionally about the future we collectively make.

Anthropology has long been the great thief of theory, inspired by philosophers, sociologists and each other, to view the world in a new way. We have turned ethnography into reports, films, and plays. We turned our data into near-term science fiction, thinking about corporate food systems and experiences that had not yet come to pass, but would inspired the reader/listener into reflection. Storytelling, particularly storytelling about the future, stimulates such conversations.

J.A. English Lueck is an anthropologist, Interim Dean of the College of Social Sciences at San Jose State University, and a Distinguished Fellow at the Institute for the Future. English-Lueck has written ethnographies about cultural futures from California to China, including three on Silicon Valley (www.svcp.org). Jan.English-Lueck@sjsu.edu

Miriam Lueck Avery is Program Co-Director, Health Horizons and Global Food Outlook at the Institute for the Future. Miriam identifies innovations in health and well-being, health care, food, nutrition, and sustainability. She studied anthropology at the University of California at Berkeley and has been a professional forecaster for seven years. Mavery@iftf.org

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Co-creating Your Insight: A Case from Rural Ghana

EVAN HANOVER
Conifer Research

As Africa becomes the next frontier for consumer innovations, researchers and designers will be faces with a challenge: how can one get deep and meaningful insights on ever-accelerated project timetables? The following case study offers one such possibility. Drawing on work in rural Ghana, I describe my team used co-creation as a means to generate insight, as well as iterate on concepts. Particular attention is paid here to challenges that are unique to Africa (and the base of the pyramid in general), such as how to construct a 'third space' for co-creation when the participants may have no cultural referent for the roles and responsibilities inherent in a market research interaction. Once this third space was established; however, we were able to leverage storytelling and technology to rapidly and co-creatively generate actionable insights.

> What is then this ethnographer's magic, by which he is able to evoke the real spirit of the natives, the true picture of tribal life? As usual, success can only be obtained by a patient and systematic application of a number of rules of common sense and well-known scientific principles, and not by the discovery of any marvelous short-cut leading to the desired results without effort or trouble."
> Branislaw Malinowski, *Argonauts of the Western Pacific* (Malinowski: 6)

> "It turns out that nobody knows anything."
> Max Alexander, *Bright Lights, No City* (Alexander: 3)

The gap between the patient ethnography of Malinowski and the rapid applied ethnographic method of modern business is often a given when we, as designers and researchers, are going about our work. Within the familiar or relatable contexts of our own cultures, or consumer culture in general, we can rigorously apply social scientific principles that yield descriptions and understanding thick enough to deliver insights and innovation opportunities. To be sure, the relative efficacy of abbreviated and adapted ethnographic methods does not make them ideal, but the resulting successful attainment of empathy for user needs and behaviors are validating. Further, the exigencies of business make the patience of Malinowski impractical, and our native and reflexive understanding of consumer culture(s) makes it often unnecessary or superfluous. It is our job, after all, to prioritize the important or impactful for our business from that which is merely interesting.

Challenges arise, however, when we find ourselves in cultural contexts about which we lack a baseline understanding, common language, or the accepted consumer values that we come to so implicitly rely upon. What is the best way to proceed when we want for a frame of reference to quickly identify and probe upon behaviors and beliefs that are significant for

meeting our research and business goals? How can we conjure "the ethnographer's magic" without the requisite patience or the luxury of time and extended immersion?

In this paper, I discuss my experiences traveling to rural Ghana with a consumer packaged goods client and working towards one possible solution to this challenge. Our project had two distinct purposes: on the one hand, we wanted to learn how to effectively develop and deliver malaria prevention products to at-risk communities, and on the other we sought broader insight into the base of the pyramid consumer. The first mission was socially-minded and targeted and the second was business-driven and sought broad-based discovery, but a clear knowledge gap underlay both. We required a foundational understanding of everyday life: What mundane concerns and needs were deeply ingrained in people's routines and what trade-offs and considerations affected their decisions? What was the discourse around these everyday domains? How was value and prioritization construed and acted upon when it came to products, knowledge, and social capital? In short, how did our target population live and consume in their everyday lives?

The research team was selected for their methodological and business expertise, rather than for regional cultural specialization. Prior to the start of the project, much of our knowledge was secondary and full of assumptions extrapolated from books[1], articles and conversations.

We had a cursory understanding of household compositions, daily chores, persistent health concerns, etc. We also had an aggressive timeline and a need to be prepared to develop concepts for testing within a few short months. So, we crafted an approach that would hopefully deliver depth of knowledge, while also jumpstarting the design process. Ultimately we did not abandon our usual applied ethnographic methods (e.g., observations or in-depth, contextual interviews), but augmented them by leveraging 'third spaces' and using co-creation to generate and validate our insights.

WHY CO-CREATORS SHOULD GO TO AFRICA

Western companies are paying great attention to opportunities at the base of the pyramid, and in Sub-Saharan Africa in particular, with a sense of urgency. Macro-level growth is significant in parts of the region. Over the last few years, Africa has represented half of the top ten fastest growing economies year in and year out, with a full third of the countries seeing 6% growth. In itself, this would attract attention, but does even more so in light of China's and India's meteoric growth coming down to earth and Europe and Japan being both economically and demographically anemic. Ad spend in the Middle East and Africa grew by nearly 20% in 2012. The portion of budgets spent on education is more than 50% higher than in the US. Within 15-20 years, Africa will have a larger workforce than China. And, most importantly, a consumer culture is emergent driven by the rise of mobile technologies and an urban middle class. (Berman)

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[1] Max Alexander's *Bright Lights, No City* was helpful in this regard. His story of traveling to Ghana with his brother to start a business informed of some of the things that we would be ultimately unprepared for when we got there.

The sense of urgency among Western companies is amplified by Chinese competition that is establishing a foothold on the continent. In Ghana, for instance, Chinese companies inked a $6 billion deal to revolutionize the country's railroad systems and is committed to billions more for additional transportation infrastructure. With this investment also comes an influx of Chinese workers who will surely have a bottom-up influence on the consumer goods that make their way into the country and ultimately into homes.

Ghana, in particular, is positioned to be a model for 21st century growth in Sub-Saharan Africa. To be sure a number of well-worn challenges are still endemic: roads, even in parts of the capital, are unpaved and cratered; electricity is unreliable in many areas; obtaining clean water can be laborious; and corruption does rear its head, though it pales in comparison to countries like Nigeria. The lingering nature of these barriers is outweighed by a foundation for growth. Economically, Ghana has enjoyed 9% growth over the last five years. Its educational system, among the best in West Africa, is cited for having made great strides to prepare the next generation of homegrown entrepreneurs. Political stability is strong – the country even weathered a potential electoral crisis concerning voter fraud, but a disputed election was decided by the Supreme Court without major incident. Macro-shifts are heralding widespread changes.

At the micro-level, on the ground, we observed everyday behaviors, stories, and a landscape that evinced the nascence of a consumer economy. In Accra, the accouterments of the middle class are starting to appear, including the opening of the country's first mall. The flow of manufactured goods is growing in villages. Nearly every participant we met had relatives who had moved to the city, effectively creating a supply chain for the circulation of clothing, personal care, and other non-durable goods. Brick and mortar stores, such as a major Accra pharmacy, have trucks that regularly visit the countryside to set up mobile storefronts. All of this combines to create greater penetration of awareness, demand, and access for products, and thus opportunities for innovation. The unique historical, economic and cultural context in play may make Africa's development *sui* generis. To nurture these opportunities, companies must see their value them from a local's perspective: what do Ghanaians want and need as part of the 21st century transformation of their country?

A CASE FROM RURAL GHANA

In 2012, Conifer Research partnered with a large consumer packaged goods firm that was seeking to fulfill the two interrelated missions – the social and the business ones described above. Leveraging existing product offerings and a strong internal scientific knowledge base, they wanted to make an impact in the global fight to eradicate malaria. On the business side, the company already had a presence in Sub-Saharan Africa, but it was limited to a handful of products with highly functional brand associations. They wanted to craft a sustainable African business model and penetrate deeper and more broadly into the market. This meant moving beyond major and regional cities into market towns and villages and developing products with more local resonance. Given the everyday reality of malaria and mosquito-related routines it was unnecessary to distinguish the social and business

missions from a user insights point of view.[2] Both required insights into the everyday routines and beliefs to support effective innovation and product adoption.

When we arrived for our co-creation trip, we were not completely unfamiliar with rural Ghana. Several members of the research team, including individuals from both Conifer and the client, had made an initial expeditionary trip to Ghana. That visit was highly immersive – including homestays, observation and interviews with key contacts and village leaders – but was also brief. We sought a baseline feel for the environments and rhythms of village life, as well as to build relationships on the ground that would pave the way for subsequent research.

The initial trip afforded us a modicum of cultural literacy, a set of principles for approaching our research questions and a frame to interpret behaviors we subsequently observed and responses and stories we elicited. "Enhance, don't replace" was a central principle to come out of this initial immersion. This mantra would drive the innovation as well as the research. To get effective insights, we needed to cleanse as many of our cultural assumptions from our research methods as well as for our output. We should not presume that the Ghanaian market would mirror Western-influenced design criteria or embrace resulting product solutions.

The needs of the project dictated that we would need to be in the concept development and rapid prototyping stages of our work by the end of our time in Ghana. As such we structured our co-creation to occur over two sessions. The first would be generative of insights and a baseline understanding of our participants' everyday needs and use scenarios. The second would be iterative – based on the learnings of the first sessions we would create suites of rough prototypes, present them, and give participants a chance to imagine usage scenarios and changes to be made for the next iteration. For the purposes of this paper, I will focus on the first round of these sessions.

FORGING A THIRD SPACE

Co-creation is, of course, less a fixed methodology and more a malleable and cooperative mode of interaction. At its heart co-creation enfolds users more deeply into the innovation process by moving them from being solely catalysts for real world insights and inspiration to agentive participants alongside of researchers and designers. Co-creation can, in theory, level asymmetries of expertise and democratize the design process. However, those facilitating the co-creation still make choices about the structure of the interactions that necessarily privilege some assumptions about the user-participants. Chosen stimuli, space, group composition and directed activities all say something about what we believe about the needs of our target users. In Ghana, we felt that we were not sure that we could properly identify or clearly communicate those needs at the outset without excessive bias. As such, we also believed that any stimuli should not presume much about our participants. In

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[2] One important finding was that Ghanaians we spoke to did not give malaria the gravity that westerners did. This in itself was a clear indication of a cultural bias that we brought to the research. For our participants, it was, in fact, simply part of the everyday. Or, as one village chief put it more directly, "What is it with white people and malaria?"

short, we required both generative interactions to fill gaps in our knowledge and iterative ones during which we would collaboratively refine possible solutions to these as-yet unspecified needs. So, adapting principles of "third spaces", we created a forum for our Ghanaian participants to "co-create" our insights alongside of us, allowing us to rapidly gain a baseline understanding of certain aspects of everyday life and subsequently prototype and iterate against our emerging hypotheses of user needs and design opportunities.

Third space interactions are grounded in a sense of hybridity and therefore ambiguous ownership and authority over outcomes. For critical theorists, these spaces are borderlands, real or figurative, that afford the disempowered room to disrupt discourse and hierarchy (Bhabha 1994). For designers and researchers they may less overtly politicized. Third spaces de-center professional expertise by giving the user agency in the design process. Physical space is central to this. Co-creation can take place on neutral ground, representing neither the home nor the workplace of the user or designer. Critically though, while these spaces are meant to render the relationship between designer and user ambiguous, the purpose for the interaction itself is not necessarily unclear. Put another way, all co-creators may not know their exact roles in terms or extent of their authority, but they do have a shared sense of why they entered that third space together in the first place.

From the outset, there was a question as to whether we could create a true third space if we had a drastically asymmetrical understanding of the interactions vis a vis our Ghanaian participants. How our Ghanaian participants – all women roughly 18 to 45 – perceived us and our reasons for coming to their villages drove this asymmetry. The research team was comprised of mostly Caucasians. This introduced an immediate dynamic of formality, if not power, to the interactions. *Obruni* (foreigners) such as ourselves were not entirely uncommon in the villages which we visited. By default, however, we were associated with their usual affiliations such as charities or NGOs (perhaps even anthropologists). So, our appearance was imbued with a set of assumptions, namely that we would bring with us some semi-official development to the area.

The other source of confusion, and the most significant for the establishment of an effective third space, stemmed from the nature of the interaction we sought to orchestrate. Almost any consumer in the United States, though they may not be familiar with specific methods, has cultural reference points in regards to market research. It is understood that companies speak with consumers in order to divine their needs and preferences. Some protocol is followed the outcome may be a new product, packaging changes, tweaked messaging, etc. This understanding is foundational for the expectations about rules, roles and common purpose that shape such interactions. Even in third space encounters like co-creation, it is the recognized difference between the expected research interaction and the democratized co-creative one that decenters the experience and makes it co-owned, productive and empowering. In Ghana, "market research" has is no cultural referent and is not a recognized genre of interaction. As such, we had to build that understanding and sense of empowerment for participants, and thus neutralize the power we implicitly possessed via our understanding and orchestration of the interaction. Using physical space, storytelling and the introduction of technology, we tried to build a context that encouraged participants to reveal and reflect upon their needs, thus giving us insight into the same.

Selecting a neutral or public site for co-creation is fundamental for third spaces. Practical concerns limited our options. There were few spaces that were big enough to accommodate our participants and activities, while being reasonably private. Convening in the courtyard of one of the family compounds was an option, but the explicit ownership of that space threatened to either make some participants proprietary or lead to status imbalances based on whose compound was chosen and whose was not. Further, this would not be a true third space because it would be someone's home and therefore a defined locus of many of the behaviors we sought to unpack. It was also recommended that we meet under one of the large, shady trees in the village center, a common site for social gatherings. While meeting some of the third space criteria, this would give us too little control against weather conditions or disruption from onlookers. We ultimately selected the village church. This space, while not exactly free of distraction – we always drew a crowd – was considered a commonly owned site and thus constituted a suitably venue.

We began with storytelling, which is a critical data source in both ethnography and co-creation. Personal anecdotes are often used to stimulate conversations, elucidate use scenarios, or contextualize concepts or prototypes for iteration (Muller: 11). Not wanting to restrict the range of stories, we asked people to bring one item to the session that was important to their everyday routines. We were shown cooking pots, cleaning products, medicines, and school uniforms. The selection of each and associated narratives helped create a composite of everyday priorities and stimulated conversations between participants concerning variation of usage and product and tool preferences, and, most critically, the nature of their significance. Using storytelling at the outset also further diffused our authority as researchers. By only listening, asking for clarifications, and encouraging others to share their perspectives, we tried to negate impressions of judgment or foreknowledge of our participants' daily lives.

As is well known, full explication of quotidian behaviors and needs is difficult because such practices are rooted in assumed cultural knowledge. Storytelling can be a good launching point to deeper understanding, but it requires some disruption to move from simple narrative to critical reflection, from surface details to underlying beliefs. For example, one of the topics that we were interested in was infant healthcare. Asking directly how we might care for a baby, to monitor its health, as Ghanaian mothers do everyday, was received as a silly question. Women we met with did not start learning to care for children only in preparation for motherhood. Watching and caring for children are part of socialization and household division of labor, especially for girls. From that perspective, there was rarely need to talk explicitly about such responsibilities that were always simply known and done.

One way to create a necessary disruption and foster reflexivity is to insert technology that may be typically alien to that interaction. In this case we use instant cameras. Cameras were not common in the villages, but they were, of course, not a novel item either. We asked participants to use the cameras to demonstrate, dissect and document routine childcare behaviors. We provided dolls as props, though some chose to simply pick up their own children and incorporate them into the photographs instead. Our request to have participants frame and depict such behaviors through photography, and not just tell us about them, was just alien enough to have them creatively engage with common and unremarked upon habits. The mediating presence of the cameras fostered this. Women were paired up

and left to capture health-monitoring moments. The cameras forced them to occupy hybrid roles, those of the everyday social actor and the documentarian. (Muller: 13) They explicitly negotiated how to choreograph and capture to ensure proper depiction (e.g., which elements to include and how best to frame them). The recurring scenes in the pictures gave us insight into the signs and symptoms that the mothers reflexively monitor throughout the day to make sure that heat or illness is not threatening the health of their babies. These behavior patterns that they essentially performed for us served as inspiration for concepts such as infant first aid kids and heat patches that we would flesh out for iteration later in the design process.

Lastly, because the co-creation is fundamentally an interaction, consideration of how the structure of the interactions themselves was received also yielded valuable insights. Reflection upon the success or failure of the activities uncovered insight into the underlying values and assumptions of participants. This was the case when we experienced one pointed failure in a session with school children. From our earlier visit, we observed instances of significant responsibilities and trust given to young household members. As with most agrarian societies children took on roles in planting and harvesting, as well as traveling up to several kilometers to fetch water for daily household activities. Older children cared for younger siblings. And village children were important to modernization as conduits for information (e.g., about malaria transmission) and new products into the home.

Given the role of children in operating the household and the forward-looking goals of the client, we wanted to understand their needs and aspirations for the present and future. Naturally, we wanted to make the sessions more playful to be engaging to the children, ages 10-13. One of the exercises we decided to do was to create an empowerment scenario. Using action figures and sketchbooks, we asked them to pretend that they were superheroes and to depict what superpower they would like to help them with their chores. The goal here was similar to the initial object-based storytelling we began the adult sessions with, as a means to gain first-person perceptions and prioritization.

Surprisingly, the superhero device brought the discussion to a halt. A number of the children were put off with the idea. With little to no access to comic books, television cartoons, or movies, the nearest cultural analog to superpowers was black magic which was an enduring village concern. We had stumbled across the boundaries of their moral universe. We quickly shifted the thought exercise to considerations of what the children might do if they were the village chief or president. This course correction fruitfully spurred discussion about how deeply time-consuming and disruptive fetching and using water was to numerous activities as well as for planning for those activities. At a deeper level, the misstep and necessary shift in tactics lent insight into critical topics for innovation adoption: where do people perceive the authority to create and validate change within the village and how might the syncretism between local traditional beliefs and changing consumer beliefs play out?

CONCLUSION

Following the week of generative sessions, we spent a weekend synthesizing scenarios and building rough prototypes. In total, we had nine scenarios, each with its own set of criteria of what our user might need and roughly five prototypes to fulfill those needs. When

we returned to the villages the following week, we split the participants into groups, allowing each group to select two of the scenarios for the co-creation exercises. From this point, the session proceeded along the lines of traditional co-creation: allowing participants to handle, give feedback, and actively alter prototypes, as well as narrate the full imagined experience from acquisition to use to replacement.

Ultimately, this phased structure of our co-creation yielded a dual layer of validation. As with any such effort, enfolding the user into the design process gave immediate feedback for the concepts and rough prototypes. This grounded the next stage of iteration in the user experience. More fundamentally, recognizing that co-creation outcomes are both data and design output checked against our underlying assumptions of our user perceptions of value, affording quick insight into their priorities, against which we could co-design solutions truer to their needs.

Evan Hanover is the Director of Research for Conifer Research in Chicago. He uses his combined interests in linguistic anthropology, photography, and performance in leading research teams at Conifer to unpack how people construct, embody, and communicate meaning and value through language and consumption. evan@coniferresearch.com

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China Over/Under: Exploring Urban China's Informal Markets

ZACH HYMAN

China's political and industrial leaders are striving to transform the most populous country in the world from the 20th century's "global workshop" into the 21st century's "global innovator". In sharp contrast to these lofty ambitions, each day a force of 260 million migrant laborers (equal to the population of the world's ten largest cities combined) struggles simply to put food on the table while still having enough income to save or send home to their families. When work becomes too scarce, however, one of the only options left is to take to the streets to try and sell whatever and wherever possible. This is a visual journey through how an illegal street market in 21st century China looks, sounds, and feels, where listeners will meet some of the people that rely upon them for survival and come to understand the forces that threaten their existence.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Zach Hyman, photographer

Zach Hyman tirelessly seeks out and documents human behavior that could improve products and services. He has built and led research teams for organizations in Myanmar, and chased tractors in China for a Fulbright. He studies design at Carnegie Mellon University, and thinks at squareinchanthro.com. ZLHyman@gmail.com

The Concierge Diaries: Research by Analogy

DEREK KOPEN

SapientNitro

The Concierge has been a ubiquitous staple of the service industry for centuries. How has this industry stood the test of time, and what can we learn from the analog Concierge that might inform better digital experiences? Is there a 'secret-sauce' that can be applied to other channels? In today's self-service world, customer service personnel are being marginalized. As these individuals disappear, brands are increasingly claiming they offer digital Concierges in an attempt to reestablish longed-for human connections. But can digital Concierges ever equal their human counterparts? Derek Kopen sees an opportunity to learn from the century-old craft of the hotel Concierge and examine how looking at analogies can inform digital strategy. Through his Concierge research, Derek presents a simple framework that can be used as a foundational model across any human service that digital is trying to enhance.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Getty Images

Derek Kopen is an Experience Strategist at SapientNitro. He is passionate about qualitative and how it can be used to influence business strategy and improve people's lives. If Derek were not a researcher, he would probably have a daytime talk show and if you were lucky enough to be a guest, he would make you cry. Derek holds a BBA from Emory University. dfkopen@gmail.com

Bodywork and Productivity in Workplace Ethnography

SAM LADNER
Microsoft Corporation

Office workers still rely on their bodies to communicate with each other, despite many decades of technology use. This Pecha Kucha explores how and in what ways office work involves people's bodies and this "bodywork" plays in productivity. I argue that technology is now able to emulate some effects of bodywork.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.
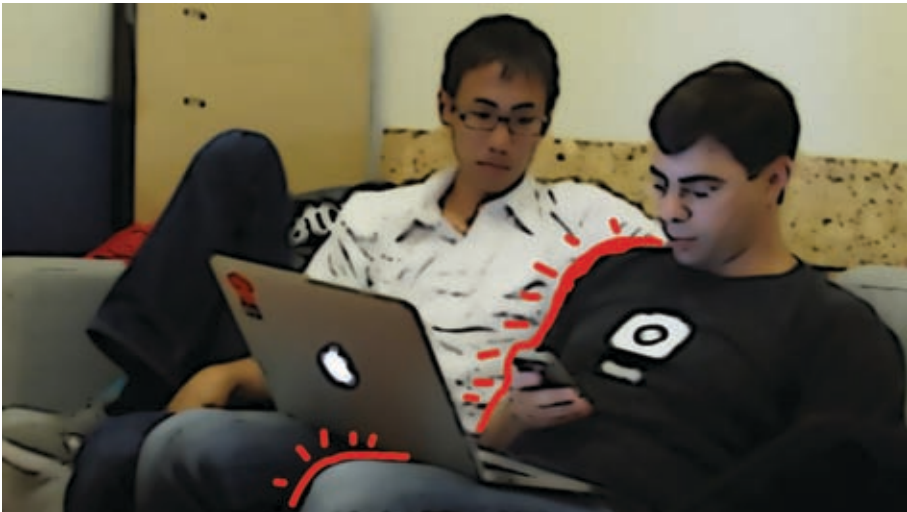
IMAGE CREDIT: © Sam Ladner

Sam Ladner is a sociologist who researches the intersection of work, technology, and organizations. She is a senior researcher at Microsoft in the Applications and Services Group, where she studies emerging productivity practices. She is also the author of *Practical Ethnography: A Guide To Doing Ethnography in The Private Sector.* sladner@microsoft.com | @sladner on Twitter

Pathfinder: An Adventure at the Intersection of Design and Business

ERICK MOHR
Truth

As the world becomes more complex the path from idea generation to execution becomes increasingly challenging. One of the main issues lies in the fact that in conventional strategic planning we tend to forecast what the future will be like, and build our business plans based on such predictions. However, in uncertain times it is very likely that our forecasts will be inaccurate, causing good propositions to get derailed very early on in the development process. How could we maximise our chances of success when developing new products and services? Pathfinder, a comics-style hero will take us through simple approaches that reduce the risk of failure, while enhancing the value that ideas can bring to businesses. By relying on design thinking and lean approaches, he will show how we can prototype and validate business models, ensuring we design propositions that are not only desirable, but also economically feasible.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

ILLUSTRATION CREDIT: © Roger Mason

Bob Moore is a sociologist at IBM Research - Almaden, where he examines work practice, social interaction and human-computer interaction. Previously he worked at Xerox PARC and Yahoo! and has studied search-engine interaction using eye-tracking, avatar-mediated interaction, face-to-face interaction in print shops and telephone-mediated interaction in survey call centers. rjmoore@us.ibm.com

Everyone´s Trash: Recycling in China

MOLLY STEVENS
Google, Inc.

Are we really connected to the steps and act of recycling and reuse? Is the modern American vision for recycling too clean and removed from the reality of our waste? Images are a series of observations about a single example of community, value-based recycling from Shanghai. The images challenge us to reflect on what we can learn from other approaches.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Molly Stevens

Molly Stevens has over 14 years of experience with user experience research and design. In her current role she investigates how Google employees can be happy, healthy and highly productive. mollystevens@gmail.com

Trapped in Traffic: A Story about Finding Connection on the Go

NORA MORALES
Autonomous Metropolitan University, Cuajimalpa. Mexico

While spending long hours of her everyday commuting in Mexico City traffic, capturing urban moments with her mobile camera lens and sharing them through social networks, the author reflects on emotions, inequality, beauty and time. How can someone be present and absent at the same time?, in this overwhelming traffic of people, machines, information and ideas 'on the move'. How does each object or character defines it's own cultural geography and tempo, constructing a new pervasive mode of mobilized social inclusion and exclusion. Is this a way to avoid boredom? Or has she found a way to connect in this mobility paradigm by opening a door that has not yet been completely explored.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Nora Morales

Nora Morales is an information design professor and researcher at Autonomous Metropolitan University in Mexico City. Her research interests include visual narratives and computer mediated collaboration for generating methods and tools in locative and time-based media. She also collaborates as a consultant at Insitum. nmorales@correo.cua.uam.mx

Service Designing the City

NATALIA RADYWYL
Fjord

From cataclysmic recessions to unprecedented climate disasters, our cities seem awash with unintended consequences borne of complex times. While city administrations grapple with developing systemic supports, our infrastructure, communities and individual wellbeing are increasingly succumbing to the strain. This paper examines a practice gaining recent traction for improving our cities' sustainable resilience: service design. As an inherently user-centered, reflexive and iterative practice, it develops service systems by drawing upon a range of disciplinary roles - from makers to strategists, and ethnographers to technologists. I examine three New York City-based case studies which each attempt to improve the services its residents use and need. While responding to the complex needs of the same city, these case studies illustrate the vastly different possibilities for improving broken civic services through institutional intervention: housing in civic service design, mobility in private sector service design, and online access, in what I term 'generative', community-based service design.

INTRODUCTION

On October 29, 2012, the grave fragility of New York City's (NYC) infrastructure was abruptly exposed. As the night wailed with Hurricane Sandy's ninety-mile-per-hour winds, New Yorkers were swiftly reminded they'd built a city atop islands. Storm surges of up to nine feet devoured shorelines and bloated the city's belly. Water swelled through underground cabling, the subway system, basements, apartments and streets. Trees reared and fell, while subterranean explosions marked the demise of neighborhood power. The winds eventually passed, leaving only the sound of lapping water. As the full moon's glow faded and the skies shone blue with a quiet dawn, impossibly, the big city had been silenced. Lower Manhattan, Staten Island, and parts of Brooklyn and Queens were waking up to a sodden, sad chaos. Those who had spent the night in the dark were now experiencing an information blackout, with phone batteries dying and the few functioning cell towers jammed. Communication was broken. NYC had clearly failed to cope with the unanticipated shock of a large climate event. It cost forty-eight people their lives, and left the city's coffers $US19 billion emptier (Blake et al., 2013).

Sandy was devastating, but not an unprecedented case of city system failure. From climate events to recent recessions, city administrations around the world are struggling to create systemic supports which sustain urban life. Ulrich Beck describes this as the legacy of 'reflexive modernization', a phase of modernity characterized by the dissolution of modern institutions. Existing systems are destabilizing, rupturing, and resulting in a slew of

'unintended consequences' (Beck, 1994). In this context, a city is best understood as a complex and adaptive system. Rather than a programmatic output of blueprints and policy, it is a whole comprising the ad hoc sum of its parts, and many non-linear, interacting elements (Alberti, 2008; Marzluff et al, 2008). This complexity challenges modernist assumptions of basic predictability and order, meaning that institutions, such as city agencies, need to adapt their practices to account for unpredictability (Snowden and Boore, 2007). Cities can also be resilient in problematic ways. When understanding resilience as the capacity of multiple, stable systems to maintain the same function, structure, identity and feedback while absorbing and reordering around systemic disruptions (Walker 2004), our cities' resilience actually reflects 'institutionalized unsustainability' (Westley et al, 2011).

Fortunately, within destabilized systems lie opportunities for innovation. As cities become increasingly networked and digital information more readily accessible, new forms of knowledge, practice and technologies come together in novel ways. In this paper, I propose that these are also the seeds for more sustainable forms of urban resilience. However, while technological development carries great potential, we need a more sophisticated understanding of the way technology can be positively harnessed. There is a risk in failing to. In recent years techno-centric rhetoric has been allowed a large and loud platform, promising big data and the roll out of the 'smart city' as magic bullets for improved urban living (Hollands, 2008). Yet these concepts are predicated upon efficient and smoothly running services (Antirroiko, 2013), which, at least in rhetoric, are hoisted upon the modernist, technocratic strategies now failing us (Greenfield, 2013), thus reinforcing the current state of unsustainable resilience. Moreover, these concepts often abstract the role of human relationships with the city and each other. Recent resilience research has shown that social relationships are just as, if not more important than technical systems for enhancing sustainability in cities. This suggests that resilience should be fostered as an everyday steady state, founded upon strong community networks and city-supported social infrastructure, irrespective of potential disasters (Fullilove, 2005; Klinenberg, 2012).

This paper examines one innovative practice for developing sustainably resilient civic services: service design (SD). While designing services may sound immaterial, services are indeed played out through the lived and material experiences of city dwellers. According to Lucy Kimbell, SD has taken two approaches to achieve this: a service engineering approach (designing the look and feel of a service as end result) and designing for a service approach (a social and material platform for ongoing action) (2011). The latter lends itself to complex system intervention, as the service system acquires value through all of the interactions it encompasses between provider, users, intermediaries, stakeholders, technologies, physical artifacts and other resources (Maglio et al, 2009). This approach reflects the strategic turn made by design fields aiming to tackle the complex 'wicked problems' (Rittel and Weber, 1973) characteristic of this era, and is the focus of this paper.

As a product of these times, SD is a wide field encompassing many disciplines, from makers to strategists and ethnographers to technologists. Design research is at its foundation, informing efforts to holistically design services by taking all components of the service ecology into account, from historically-grounded longitudinal views to the relationships which inform the current state. Therefore, broadly, SD is a user-centered, reflexive, empathic and often participatory process which generates rich data, uses elaborate

tools for documentation (e.g. service blueprints and user journeys), and produces system interventions using iterative, prototyping methods (Segeleström, 2009). In many ways it bridges anthropology and design practice by adapting methods from both. Ethnographically-informed social analysis becomes applied, and design is subject to a critical lens for the prototyping of design concepts, as well as implementation. Design ethnography also facilitates collaboration between multi-disciplinary team members and often cross-sector partnerships, as it provides a common point of focus – the system users.

I'll present three case studies which illustrate how the seeds of SD are taking root in various city sectors based in NYC: housing in civic SD, mobility in private sector-led SD, and online access through what I call 'generative' community-driven SD. While responding to the needs of the same city, they demonstrate the range of possibilities for enhancing sustainable resilience through institutional and infrastructural transformation. However, given SD is so nascent in NYC the case studies are not fully-realized expositions of the practice and lie somewhere between Kimbell's two distinctions. Rather, I tease out their emerging practices, and examine the challenges they face when trying to shepherd the design delivery of complex services: from teams evolving their research and design methods, to working with government agencies and engaging communities. By mapping the design teams' approaches and weaving in the voices of project leaders I interviewed in 2014, I'll appraise how modalities of SD can effectively disrupt service systems through user-centered strategies, and ultimately support more sustainable complex service systems.

CIVIC SERVICE DESIGN

Background: Improving the Housing Lottery Odds

For many New Yorkers, stable, affordable housing is increasingly slipping out of reach. Two-thirds, or almost two million of NYC households rent their homes. Rent burden is steadily rising. Almost a third of renters are 'severely rent burdened', spending 50% or more of their household income on gross rent. Unsurprisingly, low income renters are struggling most, with 78% rent burdened (Furman Center, 2012:24). The Department of Housing Preservation and Development (HPD) uses a lottery system to distribute affordable housing equitably, however historically, the service has been complex and inefficient. Service providers inherit poorly-filled applications, and many eligible New Yorkers don't even know to apply.

The Public Policy Lab (PPL), an NYC-based nonprofit organization dedicated to improving public services, and the Parsons Design for Social Innovation and Sustainability (DESIS) Lab, formed a partnership for Public and Collaborative, an international program dedicated to public policy innovation. The team approached the HPD to develop a project, for, as Chelsea Mauldin, PPL Executive Director, explains, they presented the best 'fit': "you need an in-house sponsor: an innovation or strategic planning unit which has the job of thinking about the future." The HPD's strategy division offered the greatest collaborative potential, as it was "interested in it as an experiment… and were willing to engage in the process in a substantive way" (Mauldin 2014). This included collaborating with the design team and making a good faith promise to implement the proposal. The twofold project goals

aimed to assist the HPD in delivering more effective, efficient and satisfying services, while exploring methods of community resident involvement in housing-related services, specifically in neighborhoods with significant public- and private-sector investment leveraged by HPD.

Process: On the Ground Empathy

The project followed what Bunt and Leadbeater (2012) call a 'creative decommissioning' process. The team firstly appraised the state of existing services by engaging a range of stakeholders, created prototypes to envision how the service could work, and then developed implementation and scaling measures. The appraisal commenced with an initial three month 'exploration' phase comprising loosely structured observations and interviews to refine the team's ethnographic focus. This became the Melrose Commons Urban Renewal Area, a former brownfield attracting recent HPD investment with plans for affordable housing, a new college campus, and commercial and community space. A second, more formalized and extensive fieldwork phase included structured observations (such as observing a lottery sorting event), ethnomethodological interviews and onsite workshops with HPD leadership, front-line agency staff, staff at community-based organizations (CBO's) offering housing assistance, affordable housing developers, and current or potential users of the agency's services. This phase aimed to reveal seeds for possible SD ideas, as Mauldin describes: "all of the work definitely evolved from what people told us about their needs or problems. We really tried to listen in this preliminary and then secondary research about what people are telling us" (2014). Here, 'listening' ensured that technical design ideas were borne of empathy and truly reflected user needs. This 'critical design ethnography' fosters trust-based relationships, informs socially-responsive design interventions, and supports sustainable change (Barab et al, 2004:264-265). Ultimately, it was this reflexive awareness which helped guide the design process, "figuring out when we hit the point where we've heard enough to be able to draw on… and create a construct of professional empathy… You can then go back to the office and do synthesis while holding them in your head and in your heart… And then enough engagement to see if you're getting it right" (Mauldin 2014).

Following synthesis of their ethnographic work, the team began exploring design concepts through a comprehensive participatory design (PD) process. PD is an iterative method which engages multiple project stakeholders through field visits and collaborative workshops, and invites users to coproduce design ideas through in-context activities. In best practice it is also a reflexive and empathic process. It builds a mutual respect for different knowledge (workers' and designers'), creates opportunities to learn others' knowledge domains (occupational and technical), enables joint negotiation of project goals, supports the development of tools and processes to facilitate participation, all the while building a sense of shared project ownership (Blomberg and Karasti, 2012). Given that civic SD typically works with disadvantaged communities, PD can be an especially powerful engagement tool, including voices often marginalized in efforts to design the systems of which they are a part. However, as important as reflexivity is for high-quality SD, it also reveals the limitations of project impact, an at times challenging realization: "what does one do about the fact that

people have problems and needs that the system can't actually address, or even accommodate? There's not much we can do about those terrible stories" (Mauldin, 2014).

One aspect of ethnographic synthesis involves examining the improvisations users make to compensate for system failure. For example, research revealed that some CBO figures were attempting to bridge information gaps by acting as on-the-ground 'ambassadors' for the service unbeknownst to the HPD. These figures had deep community relationships, which indicated they could become an excellent social mechanism for localized communications: "We wouldn't have known about ambassadors if not for observing and then talking to them – and this became a key design idea which is set to be piloted… Let's build this bridge with these people who are pursuing the same goals, and who don't currently have a relationship with one another - and facilitate that in a 'light' way" (Mauldin, 2014). The team then tested design concepts such as these through co-design sessions, held in-context to approximate 'live' considerations and ensure participant comfort: "they should not be asked to be in a context which is not their context. That would feel like a co-design of someone's lived experience" (Mauldin, 2014).

The PD outcome was a complex service system which provides knowledge-sharing infrastructure. This infrastructure would adapt to the dynamic and reciprocal exchanges of information between residents, community-based partners, housing developers, and HPD leadership and front line staff (Dragoman and Kühl 2013:9). The team produced four multi-stakeholder pilot proposals: new, user-centered informational materials, a strategy for encouraging hyper-local marketing by developers, supporting community-based 'housing ambassadors', and forming a street team for in-person HPD outreach. To date, the HPD has accepted all four proposals and is now implementing pilots, with support from PPL Fellows.

Resilient Agencies: Shifting Mindsets

This model indicates that the work of SD is less about designing artifacts than resilient 'action platforms', engaging all service stakeholders into "a system that makes a multiplicity of interactions possible" (Manzini, 2011:3). In this way, organizational silos can begin sharing laterally as 'learning organizations', producing and transferring knowledge through inclusive and horizontal networks, from communities to personnel. They influence community and organizational behavior based on this new knowledge and related insights (Anttiroiko et al, 2014). Yet promoting organizational change can be a sensitive proposition, especially with legacy institutions such as government agencies. For example, Mauldin noted that "a big finding for us was that agencies don't have a lot of experience with ethnography", yet at the same time "tend to believe they know their service users, claiming they hear the same stories and complaints all the time… but this is not the same as deeply understanding the context of these stories and complaints" (2014). The team found that their project partnership model, in which an agency partner works closely with the design team, helped resolve this challenge. Opportunities for informal and inclusive knowledge-sharing revealed the lived reality of the service's users, while also building trust between the team and agency. The agency's orientation subsequently shifted to "think about user experience… ways to capture user feedback… creating pathways for communication…That is definitely

something that's now more obvious to people in the agency than it was before" (Mauldin, 2014). This landmark realization allowed the HPD to begin envisioning social infrastructure as a real service strength, and ultimately conceive of itself as a user-centered service system. As explained by Kathryn Matheny, Chief of Staff/Deputy Commissioner of Strategic Planning, Technology & Administration, upon identifying expertise beyond their own, HPD administrators now recognize untapped potential: "Perhaps most important, our partners in this initiative have brought a single-minded focus on the experiences and perspectives of the real experts on the matter of public service delivery – the residents of New York City and the agency staff members who, on a daily basis, work with the public to improve housing conditions" (in Dragoman and Kühl, 2013:6).

PRIVATE SECTOR SERVICE DESIGN

Background: NYC On-The-Go

Navigating NYC's subways can be a frustrating experience for the most seasoned of New Yorkers, let alone visitors and irregular commuters. From temporary printouts of service disruption notices to incomprehensible overhead announcements, the current notification systems are inefficient for both commuters and service providers. To improve communications for commuters, the Metropolitan Transit Authority (MTA) launched 'On the Go!' kiosks in five locations in 2011. However they remained largely ignored, unintuitive and offered few compelling reasons for interaction. In early 2012 the MTA put out a request to redevelop the kiosk experience, and Control Group, an NYC-based technology and design consultancy, was selected as a project partner. By mid-summer 2014 fifteen of NYC's subway stations will be the new home for 90 one-tap navigation kiosks. They feature wayfinding, trip planning, realtime service updates, selected third party content and are enabled with video cameras, microphones and WiFi to facilitate two-way messaging and public communication.

Process: Testing Interventions

Unlike the previous case study, Control Group knew what kind of artifact they would be designing at the outset – a kiosk. However the technical requirements, interaction design and strategies for optimizing its use all required investigation. The User Experience (UX) design conventions the team most commonly uses emphasize rapid development cycles, with systems architecture and interface design evolving through repetitive testing. Yet this process often doesn't allow time for broader design research and analysis. The team therefore adapted largely instrumentalist ethnographic approaches, conducting precisely targeted fieldwork in a limited timeframe, and synthesis focused upon the rapid production of prototypes for testing. 'Quick and dirty' ethnography (Hughes et al, 1995) endeavors to understand work environments with short, focused studies while referring to previous context-building research. This framework allowed the team to better understand the institutional terrain they would be encountering, a necessary step in the creative decommissioning process, as Paul McConnell, Design Director, elaborates, "we are going to

be a part of a system which is also established… We need to know our place in the system" (2014). Stakeholder interviews also revealed unanticipated gatekeepers of passenger information, such as the rider experience team, whose influence was "huge for giving us a quality of information and team conditions… They deal with people all the time, they hear their problems, they hear their pain" (McConnell, 2014). 'Rapid' ethnography (Millen, 2000) selectively targeted participants, using multiple interactive observation techniques to increase the chance of capturing 'exceptional' user behavior, with a collaborative approach and triangulation supporting analysis. Here, observations of existing kiosks and short contextual inquiries with commuters quickly revealed fundamental information about how the kiosks were – or weren't – being used, and informed early design principles. For example, other than displaying train information, there was a need for integrating the subway experience with street-level wayfinding. The kiosks were also assessed as suffering poor interaction design, "dominated by advertising, using web paradigms and patterns, with placement in the stations which was not routine… It's not helpful" (McConnell, 2014)

A design objective therefore emerged to eliminate the 'friction' of people's use, "to give people the most amount of information with the least amount of effort" (McConnell, 2014). This involved designing for a variety of use cases: "how we create design depends on where you are in your transit journey…do they want to know that track work will be happening in a month, or is it about finding out information about 'right now'?", while also improving the interaction design, minimizing touches and surfacing context-appropriate information in pleasing ways: "[The old kiosks] look like Times Square… Motion for the sake of motion, it's kind of distracting" (McConnell, 2014). These use cases also informed how success and failure would be defined. McConnell found that "early on it was about understanding that the physical touch interaction with kiosks isn't the only sign of success" (2014). Where tourists and non-peak commuters might need a 'high touch' service with wayfinding and neighborhood information, regular commuters need only cast a short, cursory glance to confirm train arrival times. Yet, Chris O'Donnell, Partner and COO, emphasizes that the team wanted to move beyond utilitarianism, perhaps pleasantly disrupting habitual expectations: "New Yorkers will tell you that you're wrong. They like things a certain way. They have their commute, and stick to it. You need to sell the benefits in a different way" (2014). This insight formed the basis of a design principle to "have New Yorkers feel more like tourists, and have tourists feel more like New Yorkers" by creating interactions which both engage and inspire interest (O'Donnell, 2014).

As with the previous case study, a healthy collaborative relationship with project partners proved vital for building trust. The team found that their high-fidelity prototypes provided use beyond testing design concepts, helping articulate design value within the MTA's more technocratic and bureaucratic environment. As McConnell explains, "we fought hard for a simplified user experience. There were a lot of requests that might satisfy just a small number of people." Therefore when used within an iterative design process, instrumentalist ethnography, while at times criticized for failing to leverage ethnography's more complex social analysis and interpretive strengths, can offer additional strategic value by quickly producing artifacts which build stakeholder buy-in: "they gave us a lot of freedom and we've been able to build equity because they can see we have the best interests of riders at heart" (McConnell, 2014). This relationship also helped guide design priorities, with the

team shelving some sensitive ideas as they "could have put the e-brake on the project because it was a political issue" (O'Donnell, 2014).

An initial prototype was installed at the Bowling Green subway stop for six months to 'design-in-practice,' an emergent process which allows basic design intentions to be tested and through design (Kimbell, 2011). This site-specific installation helped map complex backend information architecture, from running new cabling to strategies for data download, as well as how to best site the kiosk to optimize commuter interaction. The Control Group team also worked with maintenance and construction workers to develop the kiosk's industrial design. While this process wasn't participatory, it did reflect empathic design, which typically involves observations, data collection, reflection and analysis, brainstorming and prototype development (Leonard and Rayport, 1997). This research exposed unanticipated findings into what would be required for the kiosks' long-term viability. For example, an anecdote revealed that one of the old kiosks had stood out of service, unnoticed, for eight months. At this point the team realized they weren't just designing a passenger experience, but would need to create a user-centered maintenance system by "making life easier, not just for the community of riders, but the people who can make your project live or die, helping them out" (McConnell, 2014). Empathic design with maintenance workers resulted in industrial design improvements and troubleshooting tactics, such as a maintenance FAQ sheet inside kiosks: "If we didn't show we were listening to those constituents, and listening to their pain points, [the project] would not have succeeded" (McConnell, 2014).

As with the HPD, the MTA's internal organization would need to evolve to better support the service. A complex service system providing a distributed information network requires 'connected governance' (Dais et al, 2008:377), by which common standards and interoperability allow the smooth sharing of data and knowledge. McConnell notes that "trying to create very digital organization with very silo'd channels… It's really about that system," meaning that multi-faceted use scenarios demand a sophisticated 'back stage' design, ensuring efficient service delivery through operations management and technological infrastructure. The demand for better-integrated relationships in complex service systems development is a general challenge with SD implementation (Patricio and Sangiorgi, 2014:43), particularly when working with legacy institutions. The MTA is no different, needing to resolve inconsistent reporting for existing digital signage and workflow challenges for content development and distribution. A further measure of this service's resilience will therefore be the MTA's aptitude for promoting collaboration between and within project teams.

With the final kiosks currently being rolled out, Control Group will be collecting analytics on backlog features and undertaking further ethnographic work and partnership with the MTA rider experience team. This process will inform design iterations through a co-realization process where the technologies are designed in use, integrating a strong analytical focus with empathic design (GrØnbæk et al, 1995). This long-term engagement between designers, service providers and users is often not a consideration in design projects. Design needs to be scoped longitudinally so it can be adapted to the complex system of which it is a part, including the unintended consequences it may yield (Simonsen

and Hertzum, 2010), a point McConnell appreciates, reflecting that "a lot has been a big experiment. We'll know how successful we are over the next few months, then we'll create the next iteration."

Resilient Infrastructure: A Distributed Information Network

Recently observing passenger interaction with the kiosks in this early rollout phase, some, seemingly tourists, linger to explore sites aboveground and experiment with wayfinding. Commuters watch on, curious, but keep their distance. A great deal more are oblivious, backs turned and trying to decipher overhead announcements and older signage. At this first implementation stage, much of the kiosks' innovation remains hidden from public view. In fully-scaled capacity they're are a complex service system providing resilient communications infrastructure. Designed as an adaptive, distributed information network, it's interdependent in both content and hardware, and responsive to location-specific needs. O'Donnell explains that they're intended to offer both hyperlocal as well as city-wide information to "dynamically tune the messaging to the situation…taking the experiences that are successful to the web and translating them to physical space" (2014). This element of network design was inspired by Hurricane Sandy, which showed "we do need public messaging infrastructure separate from mobile devices…Having our environment able to change in context to what's going on is really important" (O'Donnell, 2014).

Beyond short-term emergencies, the kiosks could play a further role enhancing local resilience in the longer-term through social and cultural programming. While ideas such as 311-style user inputs (a government service to report non-emergency information), civic engagement community boards, arts projects and two-way interactive installations are in the pipeline, this is still an open question given the project's business priorities. The MTA is covering installation and maintenance, while Control Group is funding development and hardware, and aiming to raise revenue through advertising. As McConnell quips, "you could say we're ready for the risks an entrepreneur would take" (2014). However some commentators view the private funding of public infrastructure with skepticism, fearing it will become "a smokescreen for ushering in the business-dominated informational city" (Hollands, 2008:311). Nonetheless, it would seem that social programming would fit well with Control Group's grand visions for the system's scaled potential, with the kiosks' integrating into a larger, citywide information ecosystem "so it's not a different experience… not a different system. It's the city" (McConnell, 2014).

GENERATIVE SERVICE DESIGN

Background: Community Connections

Despite being located barely 1.5 miles from some of NYC's most expensive real estate, Red Hook (RH), a neighborhood in southern Brooklyn, has historically been isolated. Excised by the Brooklyn Queens Expressway, and with the lumbering B61 bus one of few public transit options, it has also suffered underinvestment in local infrastructure despite its residents being among the city's most needy. Nearly 70% of its 11,000 residents live in NY

State's second largest public housing complex (Cohen, 2014), with 50% below the poverty line (González-Gladstein, 2013). The Red Hook Initiative (RHI) is a CBO and well-regarded presence in the in RH community, running social change engagement programs for local youth. Tony Schloss, RHI's Media Coordinator, was concerned that poor online access was further contributing to RH's isolation, while compromising opportunities to strengthen RH's tight-knit community and leverage their social capital. The 2010 census revealed only 50% of residents had domestic broadband access at home, while businesses are seriously disadvantaged by inhibitive broadband costs and poor infrastructure (Schloss, 2014). Rather than waiting for city agencies to bridge this gap, Schloss embarked on a plan to build a community-owned wireless mesh network. Mesh networks are generally more resilient than standard internet connections, being activated through distributed hotspots rather than central cabling. In Fall 2011 Schloss partnered with the Open Technology Institute (OTI), a non-profit, non-partisan public policy institute supporting open source innovation through inter-sector partnerships and then-Masters student, J.R. Baldwin, whose work focused on mesh networks. The result was a free network in the immediate surrounds of the RHI building, providing internet access and a digital platform for adaptively developing local applications and services.

Process: Workshopping Trust

Unlike the previous case studies, this project emerged without government agency input, and rather than consultant collaboration, was coordinated by a long-term RH resident and RHI employee – Schloss himself. This positioning allowed years of reflexive immersion to translate into informal participant observation: "the culture within public housing is super-specific, the way they conceptualize their physical area. It's amazing what I've learned over the years" (2014). While Schloss was embedded in the very community he would be working with and within the systems under design, he realized that PD would best "honor and use the expertise that exists in the community" (Schloss, 2014). Thus this case study represents an amalgam of the methods used in the previous case studies, from an instrumentalist approach concerned with building new Information and Communication Technologies (ICT) infrastructure (rapid concepting, prototyping and implementation) to reflexively cultivating a deep, empathic relationship with system users.

The first priority was quick technical testing of the wireless network components, with Schloss and Baldwin installing a single Uniquiti Nanostation on the RHI roof and a router inside the building connected via Ethernet. The first iteration of a community website, a 'shoutbox', was launched shortly after. Upon connecting to the internet users would be taken to the shoutbox, a portal with messageboard functionality which streamed RHI announcements and invited feedback and opportunities to participate in the project. This became an extremely valuable backchannel for gathering insight into user experience, and technical and social network sustainability. A year of PD workshopping with members of RHI's media programs focused largely on the development of this portal. It became Tidepools, a resident-generated, open-source collaborative mapping application which populates maps with place-based data (such as businesses, schools and restaurants), a local information exchange for events and social messaging. This concept emerged after the

workshop revealed that even long-term RH residents struggle to orient in their neighborhood, with building numbers often faded, obscured, or incorrectly listed in Google maps, as one resident, Khadija remarked, "...I've been here 21 years and I don't know every block" (Baldwin, 2012:37).

Similarly to the previous case studies, this early research phase revealed that the team needed to build trust. Despite Schloss' long-standing RHI presence, the workshops revealed deep community concerns about violation of trust and privacy, with some participants suspicious of the project and whether it really intended to benefit them. For example, the team hadn't questioned the use of avatars or making the map publicly visible online: "My assumption was put all the data out all of the time.. But just because you have the data doesn't mean you have to display it... The problem in the big data world is that... if you want to display it with integrity it's more intimate. The data belongs to the community" (Baldwin, 2014). This was compounded by the difficulty of demonstrating the integrity of their design intentions: "does the map allow people to tell their story or to infiltrate? You assume the benefits which media production can bring, but people have trouble conceptualizing why these benefits are benefits" (Schloss, 2014). Clearly, applied researchers must deal with a tension between prioritizing action while empowering participants, and negotiate between multiple participant views and their own individual biases (Collins and Cook, 2014). For this project, the tension began alleviating as the workshops moved towards prototype development. Once again, like the previous case studies, this process helped both advance design and build trust as participants saw their desires materialize: "when people are valuing your opinion, that goes a long way. We ran the workshops in that way" (Schloss, 2014). Informational probes strengthened this collaboration, as participants helped create materials for design (Crabtree, 2003) and refined design concepts. This informed the interaction design and usability objectives, as Baldwin recalls: "We had three computers set up, there was pizza... When they were able to add something to the app, they were ecstatic, being able to edit and redo... Is it something you can just pick up and use, or you can teach someone else really easily? They are primary to me" (2014).

Following the first year the mesh network was set to scale. A second Ubiquiti Nanostation was installed on a roof close to Coffey Park, thanks to a resident who donated electricity and allowed roof access. With these two access points in operation, the grounds for an expanded information network began to take form through the development of three community-centered civic apps: a digitized 'Stop and Frisk' reporting tool to contribute to city-wide data collection, a real time 'Where's the B61 bus' tracker, and using the city's API for 311-style civic issue tracking. The stakeholder partnership formalized with Baldwin joining OTI's staff, and OTI offering technical expertise and strategic support. Yet the true value of this new technical and social infrastructure was not revealed until the aftermath of Hurricane Sandy.

Resilient Communities: Supported Adaptations

Hurricane Sandy devastated low-lying RH. For many weeks serious flooding left residents without power, water or heat. By chance the RHI didn't lose power and the mesh network withstood the storm. In the aftermath up to 300 people a day used it to

communicate with friends and family, and seek recovery assistance. As Schloss explains, the value in having become a local hub for social and technological infrastructure had become clear: "everyone showed up here, our networks were deep in the community, and with organizations in the neighborhood. It's become super clear to me why we were successful" (2014). According to Baldwin, it was ultimately these relationships which made scaling the network possible: "that weekend we leveraged our social relationships… to get it to Coffey Park" (2014). Residents and businesses, including some who had been previously been reluctant to contribute, now supplied resources or their roofs for installing nanostations. As the Federal Emergency Management Agency (FEMA) designated Coffey Park a Disaster Recovery Center the mesh network gained increased utility. FEMA and the International Technology Disaster Resource Center installed a thirty-day satellite uplink to strengthen the network with a more robust internet connection. In the meantime Schloss and Baldwin, upon observing that residents were favoring SMS for communications, leveraged its use and designed an SMS plug-in for Tidepools. Sent SMS's automatically mapped sender locations and needs, connecting people to each other and relief efforts, while RHI sent curated news blasts across the network. RHI rapidly strengthened as an on- and offline hub, with strategic social media messaging attracting volunteers, donations and donors citywide. As volunteerism peaked in the post-disaster aftermath, not only did RH's community strengthen, but RH became more strongly connected to the city by having captured new public attention, resources and the spirit of citywide solidarity.

Yet now, close to two years after Sandy, RH's notoriety has faded. Residents are only just beginning to see a trickle of federal rebuilding funds, and public housing is still relying on temporary boilers and generators. The mesh network is suffering low awareness, although is undergoing a technical upgrade. Schloss is now focusing on strengthening the network's resilience from the perspective of social, rather than technical infrastructure. For Schloss, this means shifting governance and decision-making into community hands through what Michel Bauwens describes as a 'sharing platform.' This is a commons formed through social practices, in which a community co-constructs a common object of value (Bauwens et al, 2012). Schloss strategically partnered with the OTI to implement a 'Digital Stewards' program. It trains young RH adults in supporting both the technical and social sustainability of the network, learning ICT maintenance skills, becoming educators, and gaining confidence and networking opportunities. With one-third of public housing residents under 19 and an unemployment rate of 75% for 18-24 year olds (González-Gladstein, 2013), Schloss considers the program of almost greater value than mesh network, stating that "Digital Stewards have had much more effect on the community than the WiFi… WiFi will be more about the opportunities it creates, than being able to get online" (Schloss, 2014). The result has seen the Digital Stewards become a local community of practice (Wenger, 2002), with their participation generating a coherent internal architecture and sense of established membership, strengthened by the sharing of common concerns, knowledge and expertise. The project is currently a finalist for a $1 million Economic Development Corporation grant. These funds would allow the project to really embed, evolving more comprehensively into self-generated service system, thereby ensuring that it grows and adapts to community needs.

Reflecting on the project, Baldwin comments that "it's not about the technology, the

technology works and isn't going anywhere. Communities, on the other hand, fluctuate immensely over time" (Baldwin, 2012:11). This case study shows that generative SD is emergent, strengthened through trust-based, empathic local networks, where ultimately communities are empowered to design service adaptations based on their needs. It also shows that from the standpoint of developing civic ICT's, the design must be 'value-sensitive' (Friedman, 2008), where technology, rather than a design challenge to be solved, becomes a conduit for positioning human values at the basis of all design phases. This requires the design team to show iterative flexibility and leadership by developing strategies for meaningful user collaboration, for assessing impact, being mindful of how results are used, how success is determined and ensuring equitable distribution of those successes (Collins and Cook, 2014:39). In addition, as seen when FEMA offered large-scale institutional support, government agencies cld very promptly spark a project's scaling, if only to be more engaged with on-the-ground innovation and community needs through sustained programs. This would enhance both internal community and citywide resilience by way of connecting a distributed network of neighborhoods and communities. This case study has also shown that successful scaling in SD is about more than technical, geographic or longitudinal expansion, but also the growing social embeddedness of a project, strengthening the resilience of the civic realm through communities of practice.

CONCLUSION

In this era of complexity and disintegrating institutions, SD's value lies in evolving ossified agency practices. Upon surveying the cumulative efforts of civic, private sector and generative SD, a model for this institutional transformation emerges. Service institutions which are user-centered and adaptive in their practices fare well in complex environments. They can make a more sustainable impact: the more resilient an agency is, the better it can support the resilience of the public realm. We have also seen how the quality of a service reflects the organizational strengths and challenges behind its provision. This means ideally, SD affects organizational change in its effort to improve end user experience.

This paper has shown that by evolving into learning organizations, agencies can begin providing complex services. To achieve this, they need to enhance the interoperability of internal systems to help promote connected governance. This improves the quality and circulation of information between and within agencies and related stakeholders. Supported by a distributed sharing of information, agencies can more easily become action platforms, delivering services sensitively and responsively. They'll also be better placed to harness the strengths of one of its least-utilized resources, communities. The adaptive, self-organizing practices communities use to compensate for system failure indicate where complex service systems can be of greatest value, particularly where communities of practice have begun to formalize these efforts. If agencies supported generative SD by listening to the wisdoms of their greatest asset, the arising interdependent relationship would also strengthen the overall resilience of the civic realm. This requires engaging communities with greater transparency while protecting their privacy, for resilient services are trustworthy services. However, as the private sector case study suggests, the integrity of business models will also determine the extent to which this becomes possible. In short, citywide resilience emerges from

interdependent networks across sectors, by which communities of practice are supported by agencies. In this sense scaling means more than geographic and temporal expansion, but also refers to social embeddedness.

Yet the case studies also highlighted how working within or even without government agencies can be difficult, as legacy systems operate in silos. Creative decommissioning can help service designers midwife new, institutional practices with greater sensitivity. To achieve this the interdisciplinary and inter-sector lens of SD also aids the brokering of necessary multi-agency and multi-sector relationships. These relationships are essential for ensuring the needs and behaviors of agency partners inform value-sensitive design. They also enable designers, agencies and users to co-design the system they're a part of through iterative, participatory practices. In this sense, the quality and integrity of system intervention will reflect the quality and integrity of relationship between project partners and stakeholders. The role of the service designer consequently appears as complex as the environment being designed. They are change agents (Barab et al, 2004), bearing responsibility for the creation of artifacts, processes and new relationships. They must negotiate empathy, moral responsibility and professional judgment to develop the reflexivity required for designing system interventions. Yet somewhat ironically, the service designer designs their own obsolescence, "for the time when the designer is no longer an active participant in either enacting the service or being accountable for its outcomes" (Blomberg and Kimbell, 2014:31). This paper revealed building trust as a key theme for enabling this work, from on the ground networks to service providers, within the community as an outcome of their engagement with the project, and as a feature of the service.

For many New Yorkers the hurricane is long-forgotten. Life has resumed its usual rhythm and the city its habitual hum. Yet others are still displaced, or grappling with mould remediation and insurance claims, frustrated by the former-Bloomberg administration's slow bureaucratic wheels, and awaiting acceleration of Mayor de Blasio's catch-up promises (Powell, 2014). The coordination of efforts, professionalization of SD practices and building of trust system-wide are indeed nascent. Yet, as RHI Director of Training and Evaluation, Anna Ortega-Williams observes, "resilience is best nourished through taking action" (Karon, 2012), suggesting that these early cross-sector tendencies towards SD are indicative of a burgeoning potential towards a more sustainable city.

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Community Centered Design: Evolving the Mission of the Creative Industry

JACQUELINE WALLACE
Independent Design Strategist

Focusing on the mid-20th century, this paper explores the relationship between design and economics. Then, through the postwar emergence of user-centered design, it explores the positive and negative outcomes that this dominant approach has had on larger social relations, specifically asking: How are the motivations influencing user-centered design processes inherited by its products and their users? Using case studies and insights from design theorists, historians and practitioners, the paper calls for a new approach to industry lead design research and practices that evolves the question "how does this work for me?" to include "how does this work for us?"

DESIGN AND HUMAN BEHAVIOR

When we think about our present day life, we should ask if the way we live is the result of an obvious and natural sequence of events through history. Is our present reality inescapable or could things have gone in a fundamentally different direction? Posing these questions to people who participate in the creative industry brings another layer of complexity to the issue, as they are cognizant of the complex decision-making, research and prototyping processes that go into designing products that we use to live our lives, everyday. And, those of us who work in this field know that most of the things we have created could have turned out differently. The issue at hand is our ability to understand the transformative power that design, production and economics have in shaping our culture, our values and the way we live. While there is no formula for mapping social change through time, this paper presents a story of design and economics that seeks to understand design's influence on human behavior and vice versa in order to explore design's role in shaping our larger, social system.

Beginning with the Great Exhibition of 1851, moving to post-war consumerism in the US and ending with the present day, I trace the emergence of user-centered design, a practice that seeks to shape products that serve the needs of individuals, as a dominant approach in today's creative industry. Although user-centered design has had many successes, it has also played a role in the environmental and social problems that have been escalating through the 21st-century. Out of the shadow of user-centered design we may be seeing the emergence of the next phase of our collective design culture lead by businesses that are building community-centric products and services. These businesses, like Airbnb, are developing frameworks that integrate technological advancement and new user behaviors

to support sustainable economic exchange within communities and between peers. In so doing they are challenging political frameworks, broadening the possibilities of the human experience and charting a new path for the design industry through community-centered design principles.

THE MEANING OF DESIGN

Before we delve into history, it is useful to carve out a definition of "design" that we can use to ground our subject. Herbert Simon gives a useful definition in his book, *The Sciences of the Artificial*. He writes, "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones."[1] This description encompasses design's imaginative and transformative nature as the human capability and/or activity to improve the context in which we are situated. Through time we have used our design abilities to exert our will over nature and over each other, to identify opportunities for change and to bring that change into the world.

However, Simon's definition is somewhat lacking in our present design culture. As technology and social contexts have evolved to become more and more sophisticated, opportunities for people in differing socio-economic, cultural and political contexts to manifest "preferred situations" are not necessarily equal. Today, most people are dependent on the design industry to create tools, products and services that deliver preferred situations. This creates a situation in which designers and businesses decide what a preferred situation might look like and non-designers purchase the products that have been created to deliver it. This evolution of design comes with some consequences. One is that normal non-designer citizens move farther away from being designers themselves and become increasingly dependent on things being imagined and created for them. Another consequence has to do with the potential for a well-designed object to generate enormous economic returns, influencing market dynamics and business success.

If it is true that design work is executed behind the closed doors of design agencies, then the contemporary design industry is left in an awkward position. A position that opens up the question: is design responsible for shaping society, or do social needs and wants dictate design practices? The answer to that question depends on the opinions of the person confronting it. But for the sake of this paper, I will defer to Kevin Kelly's insight on technological development from his book *What Technology Wants*. Kelly writes,

> So what does technology want? Technology wants what we want—the same long list of merits we crave. When a technology has found its ideal role in the world, it becomes an active agent in creating the options, choices and possibilities of others. Our task is to encourage each new invention to its inherent good, to align it in the same direction that all life is headed.[2]

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[1] Herbert Simon, *Sciences of the Artificial* (Cambridge: MIT Press, 1999), 150.
[2] Kevin Kelly, *What Technology Wants* (New York: Viking, 2010), 269.

Kelly explains technology as the human vehicle of manifesting the best possible experience for all social actors. And through time, the way we design technology evolves and self-corrects to achieve the greatest social good. In this way Kelly outlines a design trajectory in which the rising tide lifts all boats, in which technology and society dynamically influence each other until a harmonious balance is reached.

In this paper, I posit that a cohesive view of design's role in shaping the present day must include a perspective on the economic motivations that influenced the development of the design industry in the 19th and 20th century. From this understanding, we can appreciate the emerging approaches that fold community-minded principles into the design of new frameworks. However, the role design has played in economic change over the past centuries are all but left out of its definition and is rarely the focal point of design history or the study of design disciplines. Nonetheless, evidence of this powerful relationship between design and economic effect surfaces as early as the industrial revolution.

THE MEN OF ART, SCIENCE AND COMMERCE

Henry Cole, British designer and organizer of the Great Exhibition of 1851, made one of the first mentions of the relationship between design and economics near the end of the Industrial Revolution in Europe. Taking place in London, the Great Exhibition was something like the first world's fair. Cole and Prince Albert of England invited the "civilized" nations to Hyde Park to display their greatest artistic and industrial achievements within the glass walls of Joseph Paxton's Crystal Palace. Queen Elizabeth opened the doors on May 1st and spectators came in droves to marvel at the roughly 100,000 objects on display, ranging from tapestries and sculptures, to printing machines, to Stevenson's hydraulic press that could lift a bridge, to McCormick's reaping machine. When the doors closed on October 11th, over 6 million people had gone through the turnstiles.

In 1852, the year following the Exhibition, Henry Cole reflected on the impact it may have had for the people he deemed responsible for the progress of the civilized world, "the men of Art, Science and Commerce". Cole saw the Exhibition as a Petri Dish of inspiration for these practitioners who prompted economic and cultural advancement in their respective countries. Foreseeing a new era of progress, Cole wrote:

> Thus, for the first time in the world's history, the men of Arts, Science, and Commerce, were permitted by their respective Governments to meet together and discuss and promote these objects for which civilized nations exist. The chief business of politicians, lawyers and soldiers, is professedly to protect the results of men's industry. The men of Art, Science and Commerce, have hitherto had but a very subordinate voice in the regulation of their own interests, which have been too much left to the professional superintendence of their bretheren of Politics, Law and War…I believe the recognition of this principle is of the first importance for the progress of mankind, and is one which will be likely to stand each nation in good stead as occasion arises.[3]

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[3] Henry Cole, *Lecture XII, Second Series*, Dec 1, 1852 (London: D. Bogue, 1852), 521-539.

He credited these men of "Art, Science and Commerce" as possessing the raw talent that would change the world through technology and design. As the Great Exhibition exposed them to each other's work and liberated them from their binding political leadership, it also positioned the "civilized nations" to begin competing on a global playing field, newly possible through industrialization and free trade. From Cole's observation on, technological advancement and manufacturing formed the early, industrialized design industry, which in turn began to change the face of society. While techniques such as user-centered design had yet to be developed, designers were flooding the nascent consumer market with highly stylized goods and citizens were enthusiastically purchasing the new products offered to them.

POST WAR USA

The design industry's monumental impact on everyday life in the United States blossomed during the post-WW2 period. Technology developed during WW2 was re-appropriated to create a variety of products that served the growing, newly moneyed and quickly reproducing middle class. The bar of lifestyle standards was raised higher and higher as people purchased cars, single-family homes, washing machines, dishwashers, televisions, microwaves, plastics and more creations that arose from the adaptation of war-related advances in technology. Consumerism was becoming a new way of life for America. The numbers speak for themselves:

> Between 1945 and 1950 consumer spending surged by 60 percent overall. And in the four years following the war, Americans purchased 21.4 million cars, 20 million refrigerators, 5.5 million stoves and 11.6 million televisions, and they moved into over 1 million new housing units each year.[4]

A problem arose when the pace of consumption caught up with technological development. As manufacturing processes scaled up, it was an economic imperative that consumers continued to consume. Wall Street Investor Paul Mazur wrote in 1953, "It is absolutely necessary that the products that roll from the assembly lines of mass production be consumed at an equally rapid rate,"[5] or as Vance Packard crudely put it in 1960, "the way to end glut was to produce gluttons."[6] Designers were faced with the challenge of creating products for consumers who were no longer thriving on lifestyle change while serving their clients who were poised to continue growing the largest and most advanced consumer market known to history. The answer to this challenge produced the research processes and design skills that dominate the design industry to this day.

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[4] Heather Rogers, *Gone Tomorrow: The Hidden Life of Garbage* (New York: The New Press, 2005), 109.
[5] Paul Mazur, *The Standards We Raise: The Dynamics of Consumption* (New York: Harper and Brothers, 1953), 19-20.
[6] Vance Packard, *The Waste Makers* (New York: Pocket Books, 1960), 25.

THE EMERGENCE OF USER-CENTERED DESIGN

By the 1950's there was already a handful of celebrity designers: Norman Bel Geddes was made famous for the streamline style; Raymond Loewy was known for the MAYA, or the "most advanced yet acceptable" approach; the Eames' were praised for developing American modernism.

While these designers gave shape and style to products iconic to a time of change and prosperity in the US, the designer who had the most influence on the direction of the design industry is - most likely - Henry Dreyfuss. In Dreyfuss's work we can trace the beginnings of user-centered design as a technique that incorporated an understanding of the human condition into product design as a way to improve the consumer experience.

Dreyfuss (1904-1972) began his career by studying under Bel Geddes and learning the ins and outs of industrial design. In 1929 he opened his own, very commercially successful, agency called Henry Dreyfuss Associates. His clients included the telecommunications company Bell Laboratories, the industrial farming business John Deere, the railroad company Twentieth Century Limited, the steamship company American Export Lines and his office designed products that ranged from telephones, to tractors, to passenger cars and locomotives, to fountain pens and more.

What made Dreyfuss influential in his field and known by history are not the designs he created as much as the research process he developed. Incorporating the work of physicians and psychologists, Dreyfuss developed systematic research methodologies and devised techniques that are still implemented in user-centered design today. One example is his creation of personas; Dreyfuss named his Joe and Josephine. He strove to see Joe and Josephine as full human beings, with all of the emotions and sensitivities of the people who would be holding the Princess telephones and Hoover vacuum cleaners he was commissioned to make. Of their delicate natures Dreyfuss wrote, "Joe and Josephine have numerous allergies, inhibitions and obsessions. They react strongly to touch that is uncomfortable or unnatural; they are disturbed by glaring or insufficient light and by offensive coloring; they are sensitive to noise, and they shrink from disagreeable odor."[7] From the drawing of their anatomy, the length of their reach, their posture, positioning, and more, Dreyfuss was committed to design products that worked well for people in ways that went beyond the superficial and into their psychological and emotional selves.

Today, Dreyfuss is credited with major contributions to the fields of ergonomics and human factors research. He published multiple books, including *Designing for People* in 1955 and *The Measure of Man: Human Factors in Design* (now called *The Measure of Man and Woman*) 1960. From the time Dreyfuss was outlining Joe and Josephine's forms up to today, designers and businesses have continued to strive to understand people, in deeper and deeper ways, to create products and services that would seemingly work more perfectly for them as complex individuals with specific sets of needs and desires.

USER-CENTERED DESIGN, THE GOOD AND THE BAD

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[7] Henry Dreyfuss, *Designing for People* (New York: Simon and Schuster, 1955), 26-44.

There is little doubt that user-centered design has given us many wonderful things. We have designed objects that are sophisticated, simple and beautiful. We have made computers that fit into the palm of our hand; that allow us to navigate the world with ease and discovery, that offer services attuned to our schedules, that allow us to talk to people almost anywhere in the world at any time.

But perhaps we should wonder if our gaze has been too narrowly focused on serving individuals, and the time may have come for us to pull back to inquire to the systems that have been created in conjunction with user-centered design's rise. Let's look at the current state of affairs.

The Environment

Since the 1850's we have invented many new materials, created many products and transitioned through many stylistic periods. In so doing, we have also become quite wasteful. This wastefulness results from the fact that disposability is a feature of many of the products we use everyday. Beyond this, beginning in the 1940's, planned obsolescence was a strategic technique used by manufacturers to sell more products. In her book about the waste management system, *Gone Tomorrow*, Heather Rogers writes, "After World War II, manufacturers applied the different types of obsolescence—technological or fashion— variously to stimulate market demand."[8] She goes on to quote a Whirlpool engineering executive in the 1950's commenting on the way the team adjusted a product's "design-life goal…from time to time as economic or other conditions change."[9] We have also developed inefficient and unhealthy manufacturing processes, destructive methods of sourcing raw materials and of creating energy.

Today, there are landfills that can be seen from space, there are thousands of workers monotonously assembling our high tech devices in foreign factories, the amount of plastic in the ocean comprises 40% of its surface.[10] New reports from the UN state that global warming will soon bring unavoidable and permanent change to our lives[11]. It is becoming an environmental imperative that we amend our creative processes so that our desire for a high quality of life does not draw a line directly connected to the end of life on planet Earth.

Those Outside of the Market Economy

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[8] Heather Rogers, 113.
[9] Vance Packard, 56.
[10] Charles J Moore, "Choking the Oceans with Plastic," *New York Times*, August 25, 2014, http://www.nytimes.com/2014/08/26/opinion/choking-the-oceans-with-plastic.html?emc=edit_au_20140825&nl=afternoonupdate&nlid=54633224&_r=1.
[11] Justin Gillis, "Panels Warning on Climate Risk: the Worst is Yet to Come," *New York Times*, March 31, 2014, http://www.nytimes.com/2014/04/01/science/earth/climate.html?module=Search&mabReward=rel bias%3As%2C%7B%221%22%3A%22RI%3A9%22%7D.

Although the market economy has grown since the postwar era, the percentage of the population that most design work is directed to serve is quite small. As shown by the Cooper-Hewitt's exhibition, <u>Design for the Other 90%</u>, most design processes create products that are only available to and/or affordable for 10% of the global population. And, most products of the user-design process are made specifically for individuals, intended to be purchased by individuals and used by individuals. How should we think about the people who are not in a position to make a purchase? Does the innovation that spurs economic development bring anything to their lives? Or is their existence outside of the concern or care of the great design minds of our time?

This creates a situation in which certain people, specifically those people who can participate in the market economy, become central to, and the focus of, design research. From a philosophical point of view, this undermines the design's human nature. As our everyday lives become increasingly artificial and the products that we create grow increasingly high-tech, is user-centered design leaving some (perhaps a great deal) of human beings out of the picture completely? And if these humans are left out of the design process, how are the rest of us affected by their absence? Additionally, the relationship between good design and purchase power may have deep social consequences as it creates a situation in which people that live in the same location have unequal access to technologies and other services. This imbalance may promote uneven social, educational and economic development and manifest various expressions of social unrest.

Design As A Political and Ideological Activity

This last issue has to do with the way our design of the world has affected the way we see each other and ourselves. In the book *Thoughtful Interaction Design*, authors Erik Stolterman and Jonas Lowgren write,

> Design is also a political and ideological activity. Since every design affects our possibilities for actions and our way of being in the world, it becomes a political and ideological action. With designed artifacts, processes, systems, and structures we decide our relations with each other, society and nature. Each design is carrying out a set of basic assumptions about what it means to be human, to live in a society, to work and to play.[12]

If it is true that design and economics have shaped the social conditions of our world, and we can posit that our design culture has been strongly influenced to serve the market economy, how has it affected our way of being in the world? When we use products that are designed by processes that see us as individuals – both in society and as economic actors – do we begin to see ourselves through the same lens, as a network of individuals to be valued for our purchase power instead of social beings with a shared stake in the future, all equally

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[12] Jonas Lowgren and Erik Stolterman, *Thoughtful Interaction Design: A Design Perspective on Information Technology* (Cambridge: MIT Press, 2004), 10.

dependent upon the same environment? Do we measure our quality of life and possibility of experience by what we can purchase, even compete with our neighbor to possess it?

Many of the issues outlined above are unintended consequences of design's success in shaping and stabilizing the consumer market over a 150-year period. As members of the design and business community we should not shy from these issues or ignore these questions. We should confront them by looking to our research processes and rethinking our approach to creative work as not only directed to user-centered design but broaden our view to include the next formation of human relations beyond the individual: the community. Our approach to design research should no longer stop at the question of "how does this work for me?" but it should go on to include "how does this work for us?"

THE EMERGENCE OF COMMUNITY-CENTERED DESIGN

Just as user-centered design emerged in the 1950's, we may be seeing the emergence of a design approach that is developing principles that reach beyond the *me* and towards the *us*. I am calling this: community-centered design.

No longer does the word "community" describe only people who live in the same geographical area. Since the internet has become part of everyday life in the US and social media has risen to prominence, the definitions of "community" have continued to change and evolve. Now, there are services and businesses engaging these new communities by using digital technology to redefine the relationship between economics and community participation. Most often grouped under the category of "the sharing economy", "service design" or the "peer-to-peer" network, the factors that come together to define the community-centered nature of their approach are hazy and lack clear indicators or terms. Instead, it makes sense to surface the principles that are guiding the design of their products, principles that may define the next phase of design history.

DESIGN PRINCIPLES FOR MANAGING COMPLEX SYSTEMS

Elinor Ostrom, the only woman to ever win the Nobel Prize in Economic Sciences, developed a set of design principles that she found to "characterize the most robust of self-organizing systems"[13]. Ostrom's research was directed to understand the way individuals engage with common-pool resources (CPR). Often dealing with resources such as farmland and fishing grounds, her work lends valuable insight to how we can think about design for the management of interactions of complex communities and digital platforms. Ostrom posited that there was no golden rule that could enable the just sharing of resources between groups of individuals, but there was a set of rules that could be cherry picked according to the circumstances of the system in question. She writes,

> By differing, the particular rules take into account specific attributes of the related physical systems, cultural views of the world, and the

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[13] Elinor Ostrom, *Design Principles and Threats to Sustainable Organizations that Manage Commons*, (Bloomington: University of Indiana Press, 2009), 1.

economic and political relationships that exist in the setting. Without different rules, users could not take advantage of the positive features of a local CPR or avoid potential pitfalls that could occur in one setting but not others.[14]

Synonyms for her "design principles", these rules work to drive the relations between individuals so that dynamic systems can function sustainably over long periods of time. The principles range from clearly defined boundaries, to collective choice arrangements, to conflict-resolution mechanisms. There is evidence of these design principles in the user-experience, business model and digital interfaces of many of the businesses tapping into this new community-centered approach.

AN EXAMPLE: AIRBNB

While there is no business that serves as a perfect example of community-centered design, Airbnb offers some valuable clues to how this approach may develop and the kinds of changes it could instigate on social and political fronts. For this reason, its business model and the design of its platform offer a fitting example for the community-centric ideas explored in this paper.

Founded in San Francisco in 2008, Airbnb describes itself as, "a trusted community marketplace for people to list, discover, and book unique accommodations around the world — online or from a mobile phone."[15] Essentially Airbnb acts as a digital marketplace in which "hosts" can rent property to "guests" based on requirements set and agree upon by the two parties involved. As of 2014, Airbnb has 500,000 properties offered by 350,000 hosts in 34,000 cities in 192 countries. On July 5th 2014, Airbnb had its biggest night ever with 330,000 guests staying in over 160 countries. The business is valued at $10 billion.

It is easy to let Airbnb's market value and business growth overshadow the innovative design of its service to users. On a basic level, it facilitates a digital agreement between two parties in which money is exchanged for the rights to use another's property. In this way, Airbnb has created a digital framework in which economic exchange does not equate ownership. Instead, one user pays and the other agrees to share. And, in almost all cases, the thing that is being shared is a person's home.

If we can assume that staying in someone else's house, or inviting a stranger into your home is not something to be taken lightly, then Airbnb promotes a level of intimacy that is not often shared between strangers. In the *New York Times* article, *Welcome to the Sharing Economy* Thomas Friedman interviewed Airbnb's CEO Brian Chesky and reported,

> While it sounds like Chesky is just a global rental agent with more scale, there is something much bigger going on here. Airbnb's real innovation is not online rentals. It's "trust." It created a framework of trust that has

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[14] Ibid.
[15] Airbnb. "About Us." Accessed August 20, 2014. https://www.airbnb.com/about/about-us.

made tens of thousands of people comfortable renting rooms in their homes to strangers.[16]

Of course not all guest/host stories are positive, but on the whole, the service is working very well and its strong user experience is not accidental. There is evidence of Ostrom's design principles in the way Airbnb engages its users, including: "clearly defined boundaries" which relates to the host consenting to the guest and having the final determination on the terms of the rental; "graduated sanctions" which includes hosts and guests reviewing each other in blog-like forums and; "conflict-resolution mechanisms" which would include the insurance policy that Airbnb uses to cover all of its host's rentals in case of a guest who does not behave as expected. Airbnb continues to grow everyday as more and more people see the value that it could bring to their lives.

AIRBNB IN NYC

As Airbnb is creating a digital community of global users, it is also challenging the political and social frameworks in physical communities, most prominently, New York City.

On a social front, while some NYC residents are enthusiastic participants of the Airbnb community, others are not. Of the NYC Airbnb hosts, 62% claim that the income they make by renting their residence allows them to continue living in the city, return to school, start businesses and work toward other goals. On the other end of the spectrum, housing advocates claim that Airbnb is causing landlords to raise rent as they realize tenants are generating income as Airbnb hosts. Does Airbnb bring long-term stability and economic growth to the community of NYC residents or does it make NYC more difficult to live in, thereby causing transience and economic hardship? The answer is unknown.

On the political front, New York government officials have made it clear that Airbnb has been inadvertently taking money away from the state. In 2010, two years after Airbnb launched, a law was passed in NYC making it illegal for a full apartment to be rented out for less than 30 days if the owner is not present. Eric Schneiderman, the Attorney General for the State of New York, began subpoenaing Airbnb for 16,000 of its NYC hosts' data in order to identify NYC residents who were operating "illegal hotels", thereby avoiding a 15% occupancy tax due to the state. After much back and forth, Airbnb agreed to share the data with the Attorney General after it had been scrubbed of all information that could be used to identify the host. After Schneiderman's team presumably analyzed the data, Airbnb agreed to share the names of 124 hosts who operate more than one listing, which Airbnb says, "represents a small fraction of its NYC hosting community – far less than 1%."[17] As regulators, business owners, users and citizens continue to fight for their rights, the future technology and design for Airbnb and other similar services will come into focus.

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[16] Thomas Friedman, "Welcome to the Sharing Economy," *New York Times*, July 20, 2013, http://www.nytimes.com/2013/07/21/opinion/sunday/friedman-welcome-to-the-sharing-economy.html?_r=0.

[17] Tom Huddleson Jr, "Airbnb to Reveal Names of 124 Hosts to New York's Attorney General," *Fortune*, August 22, 2014, http://fortune.com/2014/08/22/airbnb-to-reveal-124-hosts-identities-to-new-yorks-attorney-general/.

Social and political issues such that Airbnb is currently experiencing are emblematic of the trials and tribulations of other innovations throughout design history. Writing of Airbnb's place in changing the character of 20th century economics, Thomas Friedman said, "The 20th century was powered by big corporations that standardized everything because they never really know their customer," then quoting Chesky, "The 21st century will be powered by people."[18] On a basic level, this is what Airbnb does, it brings people together who benefit from each others resources. And, these innovations trigger all sorts of other changes. Attorney General Eric Schneiderman wrote of his struggle regulating companies such as Airbnb,

> Cyberlibertarians argue that regulators often lack the tools or the know-how to provide smart enforcement. They are not entirely wrong. But that doesn't mean regulation is unnecessary. Nor does it excuse those same critics for refusing to work with the government agencies that must develop those tools.[19]

Schneiderman's articulation of his predicament echoes Kevin Kelly's understanding of the path of technological development. In this case, Airbnb is on top and Schneiderman's team is struggling to regulate the social and economic change occurring through these technological advancements while wondering how these designs could serve their needs, which are becoming increasingly complex in a technology-driven society.

THE INDIVIDUAL TO THE COMMUNITY

Airbnb is just one example of the many emerging businesses and products that are beginning to carve out a space for community-centered design. Businesses like Uber are challenging the taxi industry by connecting drivers and riders, housing development companies like Lennar Corporation in Florida and Standard Pacific Homes in California are promoting multi-generational housing floorplans[20], and there are changes in many other industries, from energy to airlines and beyond.

We are part of a constantly evolving trajectory, we came from somewhere and we are going somewhere. As designers and business leaders, we should strive to shape that trajectory to serve each other and the planet to the best of our abilities and to expand upon the process of designing for the individual to include the complexities and relations of communities. We can begin doing this by using a biproduct of technological advancement:

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[18] Thomas Friedman, "And Now For a Bit of Good News…," *New York Times*, July 19, 2014, http://www.nytimes.com/2014/07/20/opinion/sunday/thomas-l-friedman-and-now-for-a-bit-of-good-news.html.·
[19] Catherine Yang, "How Tech Companies Are Changing the Rules in NYC," *Epoch Times*, August 24, 2014, http://www.theepochtimes.com/n3/906644-how-tech-companies-are-changing-the-rules-in-nyc/?photo=2.
[20] Paul Taylor, *The Next America: Bloomers, Millennials and the Looming Generation Showdown* (New York: Public Affairs, 2014).

data. There is data collected by government services and opened to the public (as Bloomberg did for New York City), data offered by other open source models, and data collected in client projects that we work on. As mobile becomes increasingly prevalent researchers will continue to have access to even more data. We should seek ways to leverage this material in our design and research processes to identify underserved communities, communities that operate below the radar of our current focus, and explore the design of products and services that appreciate and value their interconnectivity. Perhaps this is how we can begin using design to create behavioral change in a constantly evolving industry that affects and shapes the social nature of our global community.

Jacqueline Wallace is an independent researcher and design strategist. Focusing on the creation of digital systems, she works with designers and programmers to breakdown complex problems and build meaningful user experiences. Jacqueline has an M.A. in Design History from Parsons the New School for Design and the Cooper Hewitt National Design Museum and B.A.s from UC Santa Cruz in Literature and Philosophy. www.jacqueline-wallace.com

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Place and Small Businesses: Reflections on Ethnographic Research in and on Place

JOSH KAPLAN
Pitney Bowes, Inc.

This paper examines the often taken-for-granted role of 'place' and geography (cities, neighborhoods) in business ethnography, using research on small business as a case-in-point. Most studies of small businesses tend to focus directly on businesses themselves, eliding from consideration the social and physical environment in which they are situated. Yet especially for businesses that operate in an actual physical location, place infuses all they do: how they organize their operations, what they care about, the way they are perceived by customers and potential customers, the reputations they develop, where they cluster, and the kind of communication they engage in.

> "Standard textbooks and monographs in anthropology do not contain the word 'place.' It goes without saying."
> "No one lines up people and asks them to define 'place' and list three examples of it. No one really has a theory of it. No one imagines it is some sort of data set to be sampled."
> —Clifford Geertz

INTRODUCTION: THE MISSING PLACE OF PLACE IN BUSINESS ANTHROPOLOGY

The academic discipline of anthropology made its reputation on the study of *places* – famously, often far-away, exotic places, narrated by monographs emphasizing difference, peculiarity, or, 'placeness.' Anthropologists in industry, by contrast, are routinely sent to far-flung places – often the 'same ones' as their counterparts in other corporations, including the BRIC countries, East or West Coast market cities, and maybe the South. But in industry the sites in which research takes place tend to be more "incidental," as Ken Anderson (2012) puts it, a box to tick so that it can be said that the project was "global." The main object of study, whether gen x'ers on bikes or food entrepreneurs, takes precedence over the place in which it is studied. Rarely is place an object of study in its own right.

Much like the 'global' research that aggregates far-flung case studies of people or products, research on small businesses tends to focus on businesses themselves and therefore misses a number of driving forces that shape how they work, what they care about, their reputations, and where they cluster (cf. Venkataramani and Avery 2012). Drawing on ethnographic research situated in New Haven, Connecticut and conducted for a major corporation seeking to restructure its dealings with small businesses, this paper considers: how cities come to be perceived as having a certain character, reputation, or even "soul;"

how that reputation attracts some businesses, customers, and phenomena, and repels others;[1] how marketing departments of cities can shift directions of such reputations, accentuating certain elements and obscuring others; and how small businesses themselves take advantage of, and are often perceived as being part and parcel of, the "placeness" of the sites in which they are located. In this framing, entities typically elided from corporate research on small businesses take the foreground: economic development councils, city marketing departments, start-up incubators, venture capital meet-ups, neighborhood councils, incentives and disincentives.

At least for those small businesses whose work takes place in an actual physical location, "place" infuses all they do: how they organize their operations, what they care about, the way they are perceived by customers and potential customers, the reputations they develop, where they cluster, and the kind of communication they engage in. In most contexts, a deli is not just a deli, but 'my deli on Smith street in Cobble Hill,' or 'a little spot in Bridgeport by the train station.' Place is not just a backdrop, then, but a key frame for what small businesses are and do.

Attention to the place-specific drivers of small businesses is only more important in light of recent trends prioritizing the authentic, local, and rooted. Small businesses have helped build these growing business imperatives and now stand to capitalize on them. Products today often highlight authentic, *made-in-* origins (Peru, Brooklyn, Scotland, a local Indian village), while small business owners launch groups to market commerce in specific locales, such as the recently formed "Market New Haven." Many cities now have their own marketing departments, recalling older campaigns for promoting places that have been used by countries and cities for as long as there has been industry and tourism (think Jaffa as Bride of Palestine, Detroit as Motor City, or Paris, Capital of the 19th Century). But the look and feel and reputation of a city need not be directly marketed by a department in the city government. Like neighborhoods and companies, cities have reputations that circulate and affect beliefs about the people who live in them and what goes on in them.[2] And even within newly flourishing local business districts, struggling sections of town remain effectively shut out from revitalization, "across the tracks" or the "color line," as people often say. All this suggests that there are dimensions to the influence of place that business anthropologists would do well to explore and which are explored in this paper.

Trends and Definitions

On the one hand, places come to seem rooted, immutable, one of the few givens of life, not unlike the thought that 'when I wake, no matter what happens tomorrow, there will be

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[1] Heine's article on Savannah (2012) makes a similar point about how places with reputations for having good music scenes attract not only musicians but people and businesses that value music and the arts.

[2] As much as cities seem to possess distinct characteristics shaping local businesses, scholarship in sociology and geography points to strong commonalities across national boundaries among certain kinds of cities. For instance, the places Saskia Sassen (1991) identifies as "global cities" (e.g., New York, Tokyo, London, Sao Paolo, Hong Kong) have more in common with each other than they do with the countries in which they are located.

ground beneath my feet.' Places are the physical and experiential background to how we move through life (Cf. Feld and Basso 1996). At the same time, places are constantly invented and re-invented, transformed over time, and not infrequently, intentionally so. [3] In recent years, several elements appear to be at work, in something other than a direct, causal dynamic: the widespread appeal of the character of place (or the local) against the declining appeal of suburbs; the widespread appeal of locally-made and locally-produced against the decline in appeal (and caché) of mass produced; and the way that local and the locally-made have come to be associated not only with a refined sensibility (from locavores to small-batch bourbon) but a rejection of what is seen to have gone wrong in past decades (suburbs, big box stores, sprawl). It is no accident that the sort of people who disproportionately populate the sort of locations most associated with what we might think of as the new "place-ness" – those best known for purveying things local, like Brooklyn – also disproportionately occupy positions, formal and informal, in the new media which so quickly associate those places with their new characters (cf. Florida 2002). Far more evidence would be needed to demonstrate what has made possible the emergence of a new kind of imagining of place. Here it matters more to observe that concomitant with the decline in stature of suburbs has been a rise in stature of urban places, and with that rise in stature has come an influx of cultural elites who have at their disposal the tools by which micro-places and their stories can be made. At the same time, as their reputations have grown, these micro-places have attracted increasing numbers of like-minded people. The same can be said about the sorts of businesses that operate in these locations. (Thus Williamsburg, Brooklyn attracted food entrepreneurs, and once it became known for food entrepreneurship, has attracted even more food entrepreneurs and food entrepreneurship.) This much is uncontroversial.

Before proceeding any further, let us outline a working definition of place. For our purposes here, *place* is distinguished from *space* (the latter does tend to be an object of study in workplace or organizational anthropology and organizational design research, while the former does not). *Places* have imaginary and physical boundaries; have perceived 'characters,' often felt in personal ways by inhabitants or visitors; and come to be associated with stories or reputations, which can be shifted or disrupted. Each of these elements of place shapes the way resources are allocated and the way businesses are imagined, founded, and operate.

DIMENSIONS OF PLACE: HOW PLACE IMPACTS HOW SMALL BUSINESSES' WORK, COMMUNICATE, AND ARE PERCEIVED

"For it is still the case that no one lives in the world in general"
– C. Geertz

I. The missing place of place in small business research

As a way of illustrating the absence from consideration of place in research on small business, let us take as a starting point four common types of studies.

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[3] Anderson (1981) famously described how this works with nations and nation-ness.

1. *Market Sizing.* This work focuses on ascertaining the size of a given market, how much is being spent on a particular activity in a particular country overall, what organizations are the largest providers of a given product or service, and what proportion of the spend is made by small businesses (often defined as companies with less than a certain number of employees or below a certain revenue size). Country-level characteristics are often limited to overall spend in the particular market and recent and emerging trends that could affect that market.

2. *Design research for product development.* For an existing product or one in alpha or beta stage, this approach often entails a number of site visits or remote video interactions to observe the product-in-use. Most energy tends to be spent asking staff direct questions having to do with the product in question; with communication technology, for example: With whom do you tend to communicate and about what? What sort of technological means do you employ? Can you show me how you do that?

3. *Organizational design research.* Workplace studies sometimes give a great deal of attention to *space* – the arrangement of office furniture, the physical seating arrangements of teams, how organizational structure maps physical reality, and the effects of all that on collaboration and other desired outcomes.

4. *Marketing research.* This sort of research tends to focus on take rates for a particular product or service, tradeoffs between different sets of features and functions, breakdowns or interest level of responsiveness to messaging by industry or company size.

There are, of course, other ways of studying small businesses and other ways of handling the approaches characterized above. What matters for the discussion at hand is that qualitative approaches have generally attempted to arrive at the challenges and needs of small businesses by speaking directly with and visiting small businesses themselves; quantitative approaches have tended to focus on market sizes, market dynamics, and segmentation.[4] That a business is located in White Plains or Chelsea or Toronto or Mexico City more affects the logistics of fieldwork than the direction of the analysis, let alone the deliverables. In leaving from serious consideration the places in which small businesses operate and the way ideas about those places are perceived in manipulated, each of the major approaches to studying small businesses – macro and micro – misses critical dimensions to how small businesses come into being, how they conceive of themselves, how they present themselves to the world, and how the world, including customers and potential customers of these businesses, perceives them.

Each of the typical forms of studies described above – design research, market sizing, organizational design research, segmentation – has by now a fairly established method. Shifting the frame of analysis of small businesses from businesses themselves to the place-based contexts in which they operate raises a new set of questions as to which elements to

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[4] The rise of big data analytics has complicated the easy dichotomy between qualitative and quantitative methods, as has Patel (2011). Qualitative research now frequently makes use of data analytics (e.g. product usage data), and quantitative approaches always already required interpretation.

bring into focus. The sections that follow begin to describe what some of these objects – cities and types of cities, imaginary and physical boundaries, key actors and entities, and incentives and disincentives – might bring to light about small businesses.[5] One thread woven throughout is how places come to be associated with stories, how those stories impact the businesses that come into being in those places, and how both of these impact allocation of resources.

II. Cities and Types of Cities

An artist-entrepreneur who excavates beneath old buildings in New Haven believes the artifacts he finds for his collection tell the city's history, its story. "Cities have hearts and souls," he says. Cities matter for small business because small businesses are located in places with character, with reputations that attract or repel others (customers and potential customers), and incentives and disincentives (high taxes, low taxes, free space for start-ups, high rents, rent subsidies).

But the hearts and souls of cities do not come into existence on their own. Among many other ways this comes to pass, cities are often marketed as having certain identities. Winston-Salem, North Carolina, once a sleepy suburban town, is now described as the "city of the arts,"[6] and New Haven, long avoided by denizens of Connecticut's wealthier enclaves due to crime and decay, becomes the cultural center of Connecticut. In fact, many cities now have their own marketing departments, which promote certain neighborhoods and often mention certain small businesses by name. Small businesses are thereby affected by the marketing of cities both directly (by city marketing departments, neighborhood marketing associations and the like) and indirectly (by popular media and the broad circulation of stories that shape a city's reputation). Take for example, a promotional blurb for Market New Haven:

> The organization's overall strategy is to promote New Haven as a unique and attractive destination with "something for everyone" by continuing to reinforce the strategic positioning theme "New Haven. It all Happens Here" in all marketing and communications. By forming collaborative marketing events or executing direct marketing activities, Market New Haven heightens the awareness of New Haven's offerings, drives traffic to New Haven's entertainment options, and encourages local and regional consumers to spend in New Haven. (Market New Haven promotional blurb)

This is collaborative marketing meant to drive awareness and street traffic. Many small businesses gain publicity from the same marketing campaign(s) and, for a fee, can have their names specifically mentioned.

But the look and feel and reputation of a city can come about without being directly marketed by a department in the city government. Like neighborhoods and companies, cities have reputations that circulate and affect beliefs about the people who live in them and what

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[5] There are of course, many other dimensions to place that are worth considering but which will not be treated here, including some alluded to at this paper's outset.

goes on in them and those reputations can be deployed by small businesses for various ends. As a designer in a Greenwich, CT design consultancy put it to me when I asked her how her organization's physical location affects the business:

> I'm in the business of selling style. It's smoke and mirrors. It's a matter of manipulating people's perceptions—I work with really wealthy people. If I lived in Norwalk, they wouldn't want to work with me. When T. [her CEO] brings me in, he says, 'Oh this is S, she lives in Greenwich,' and he'll modulate his voice. All these people have a connection to Greenwich somehow, but not to Stamford, where I grew up.

Several points are worth emphasizing. Cities, and *places* really, (with the help of a host of actors within them) participate in their own invention in the form of a certain character. At the same time there is a tension between this fact and the narratives of their distinctness that come to circulate.[7] On the one hand, cities are marketed or perceived as having reputations as a whole; on the other hand, not only are they typically internally divided (by neighborhoods, districts, highways, train tracks), those divisions can shift. Such internal divisions and the way they come to seem natural or intractable is the subject of the next section.

II. Imaginary and Physical Boundaries: "Across the Tracks"; Highways that Cut through Cities

> "A neighborhood is a quarter mile radius, from centers and edges. The center might be a park; it might be more dense…Clusters of commercial areas a half mile

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[6] "Downtown Winston-Salem Partnership, a member and advocacy organization, is the lead organization implementing the downtown plan developed in 2007. Part of the revitalization plan includes the Restaurant Row Program, introduced by the city with federal and state support to help recruit and finance new eateries. The plan also calls for promoting Winston-Salem as the 'City of the Arts' and for attracting businesses in the design industry" (Kodrzycki and Muñoz 2009).

[7] "In the mid-1980s, Yale University, New Haven economic development officials, and business leaders got together to address service sector employment. Out of this came "New Haven 1990"—a marketing proposal that grew out of conversations among development, business, and neighborhood representatives, and with experts from other cities that had undertaken similar initiatives, including Baltimore, Boston, and Indianapolis" (Kodrzycki and Muñoz 2009). The title of the report documenting these activities is "Resurgent Cities." The very existence of such a report is an indication of how cities are perceived to be part of a common set, with common sets of initiatives meant to transform them, or bring about their renaissance or "resurgence." This duality – at once represented as unique in character, soul, heritage and at the same time part of a broad phenomenon (the rise of certain types of places, imagined in certain ways, and the concomitant influx of people, capital and publicity – mirrors the phenomenon of the rise of much larger places: nations (cf. Anderson 1981). Much has been written on that subject. It's relevance here is to underscore how places are at once imagined (made up, or just *made*) and real, in the sense of having real effects once imagined and experienced as real.

apart. *And neighborhoods have personalities that attract different kinds of people*" (emphasis added).
—Architect, New Haven, CT

Cities are divided by neighborhoods, blocks, districts—each of which have a different character that can be exploited or developed—and which facilitates the development of some types of businesses and inhibits others. On one end of Chapel Street in New Haven, Yale and a group of retailers in the central business district worked together to develop a common aesthetic for lighting. Now all the businesses in the district use it. The lighting in the windows unifies the feeling of certain blocks. The look gives a sense of festivity, shared community, and shared character of businesses (upscale, safe, within walking distance, all lined up in a row). Further down the same street, past a sort of invisible barrier, past a certain block, we enter another business district with a very different character, encouraging very different types of businesses, and in a sense, discouraging the more upscale establishments a few blocks away. "People don't go there because of the color line," the owner of an architecture firm tells me. Visible are mostly people of color, minorities, people who seem to have less money than a few blocks down. Signs of shuttered businesses left and right. People waiting for the bus in a place where riding the bus has a down and out connotation. The storefronts are wigshops, pager shops, tattoo parlors. On the other side of the invisible barrier lie the upscale strips of Chapel.

Such boundaries take physical, emotional, and imaginary form, but their effect is this: they come to seem natural, and the physicality of some of these boundaries – train tracks, highways, mountains, police precincts – accentuate this sense of seeming naturalness. People literally don't cross certain tracks (racial, physical—highways that inhibit crossing on foot or by bicycle). A man tells me his story of growing up in New Haven's the Hill (one of the city's poorest neighborhoods, one of the poorest areas in the state). He has a girlfriend in an upper middle class, more suburban neighborhood in Hamden, and he literally has to climb over East Rock, a small mountain, to visit her at night—to cross the tracks. Mountains are physical boundaries that here accentuate imaginary ones; and imaginary boundaries, once in place, can be difficult to shift:

> We bought this building seven years ago and wanted to do the conventional thing—rent it. But we haven't been able to. It's the street…People have this attitude—culture—and its hard to change. Six realtors couldn't imagine anything beyond a pager or a tattoo shop that would need more than 800 square feet on this part of Chapel.

Examples of how such boundaries affect how key individuals and entities act in a given city abound: the visitor who feels unwelcome; a small business owner who refuses to work with the EDC on a parking initiative; a Yale faculty member hosting a new hire who accidentally drives to the Hill (an impoverished neighborhood abutting Yale's campus) and curses out loud to himself, "I should not have taken you here!" In these and other ways, imaginary and physical boundaries affect: the sorts of businesses that emerge in certain locations, the sorts of people that frequent those businesses, and the way official entities organize their efforts to stimulate growth or revitalize.

III. Key Individuals, Entities, and Initiatives

In a city, key organizations, individuals, and entities can play an outsized role in shaping socio-economic, infrastructural and other conditions for businesses to thrive—or not. In the case of New Haven, these entities — such as the community and state relations office at Yale — have tended to focus on specific streets, blocks or neighborhoods. Some focus on types of industry or work: CTech, for example, provides office space, training, and access to venture capital for high tech and biotech startups. These entities may not be "customers" in the strict sense of purchasing goods and services from small businesses (though some do). They are, however, a key constituency that some savvy small businesses spend time communicating with, wooing, and possibly benefitting from their assistance or coffers.

Many cities now have an economic development council (an EDC)—certainly those cities aiming at urban and economic renewal. These tend to work closely with chambers of commerce and various offices in city government. As one EDC staff member put it to me, the city "trots out" certain business owners as success stories. And then uses these stories to attract foundation and federal funding; these stories are used, in turn, to attract entrepreneurs to apply for city programs for help. These efforts do not go unnoticed: "The good news is the City of New Haven has been very encouraging. And has helped promote [the organization] and championed the work we're doing here" (local entrepreneur).

As in many university towns, the major university there, in this case Yale, has a considerable influence on the micro-climate for small businesses. One example is Yale's involvement in the division of the city by business districts. The university owns the real estate on a strip of Chapel Street, which is devoted to upscale merchants and restaurants and is always kept up in appearance. Yale has not put the same effort into another district on the very same street mentioned above—where there are vacancy signs displayed every few steps. Such efforts (or the lack thereof) underscore the role that key entities can play in shaping the environment in which small businesses operate, and particularly in influencing the clustering of certain types of businesses in very particular areas, blocks and clusters of blocks.

And just as organizations, city, offices, or powerful institutions like Yale can influence the micro climates in which small businesses operate, so too can key individuals. Bruce Alexander, the Mayor, Yale President Levin and a handful of others — in cooperation with developers — have played a key role in the shaping of the new New Haven. Alexander helped give the shops on Chapel and Broadway their cohesive look. As one shop owner said to me, "Whatever you're doing, you eventually want to sell it to Bruce Alexander, because he's the retail person for Yale."

Among many other influences worth considering, these key players are pivotal in getting incentives earmarked for certain districts and not others. Such incentives and disincentives are the subject of the following section.

III. Incentives and Disincentives

Like reputations and the imaginary and physical boundaries with which they tend to align, there are a variety of concrete and material incentives and disincentives for small businesses

to locate, or relocate, in particular places,[8] and to stimulate the growth of certain types of businesses already there (e.g. biotech). These vary by city or state, and by neighborhood or even blocks within them. Examples include tax abatements and grants from incubators, interested parties (like Yale in New Haven), and from state funds earmarked to stimulate technology innovation and startups. Certain incentives, like abatements on income taxes and for equipment — are targeted by neighborhood or district where income levels are especially low. This is where economic development projects affecting small business overlap with anti-blight efforts. So in New Haven, neighborhoods with reputations for crime, poverty, and neglect, like Fair Haven and the Hill, tend to receive more abatements than the central business districts.

> One thing we do is help businesses with taxes—we meet with Aldermen and other politicians to abate the taxes of specific businesses…. I run interference with the state. One company that employs 90 people in Fair Haven and employs a lot of Latinos—the floor is all minority men. Last year we did this successfully for a different company. I'm delaying them paying their taxes and jerry rigging it so they can file late. There's no way a politician is going to let a business with 90 employees go under in Fair Haven. And we're doing this with another one in the Hill with 50 employees—they do ornamental lighting all over the world. (NGO staffperson)

Equally at work in affecting the number and character of businesses, and clientele, in a given location is the absence of incentives, not to mentioned disincentives—like high rents. A Yale School of Management professor remarks that her MBA students found that the Audubon district (right near Yale) is failing—businesses constantly in and out—in large part because the rents are so high. So it is not only the apparently struggling neighborhoods and districts impacted by the differential allocation of resources and incentives; in fact the struggling reputation can itself be a justification for incentives and development assistance. In so-called higher-rent districts, the attractiveness for new entrepreneurs is at stake in part precisely because of those high rents. For this reason, would-be entrepreneurs move elsewhere (to Bed Stuy, Portland, Detroit).

V. Conclusion: Implications for Business Anthropology

It should be clear by now that attempts to understand "small business" which focus their attention principally on businesses themselves miss a wide range of phenomena, entities, actors, and activities that shape the sorts of small businesses that emerge, how they work, the

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[8] Material incentives and disincentives are by no means the only drivers influencing where entrepreneurs choose to locate or relocate. Reputations of places themselves have incentivizing and disincentivizing effects. Thus the growing attraction of neighborhoods like Bed-Stuy in New York or cities like Portland, Oregon or Detroit for entrepreneurs feeling squeezed or intimidated by the high rents of New York and San Francisco.

visitors and customers they attract, and the sort of support they receive.[9] The stories and boundaries (real and imagined) surrounding a particular place impact the sort of entrepreneurial activity that takes place, the way it takes place, as well as the distribution of resources supporting it. At the same time, key individuals, organizations, social movements and marketing departments can come together to disrupt or redefine what seem like fixed boundaries, not to mention identities and reputations of places (so by making parking more accessible, improving the aesthetic of storefronts, supplementing police protection, New Haven's reputation for crime and decay has begun to erode, especially in certain central business districts).

There are many other elements of place that were not taken up in any depth in the foregoing discussion. Notable among these is the way small businesses increasingly employ stories about or reputations of place to promote themselves, or even to *define* what they do. Examples abound, particularly in my current home, Williamsburg, Brooklyn. The neighborhood's reputation for cool and entrepreneurial-mindedness attracts ever more like-minded entrepreneurs, and that reputation, in turn, draws visitors and customers from around the world. But my aim has not been to elaborate all the dimensions of place business anthropology could attend to or that matter for understanding small businesses or other targets of corporate products, services, and marketing. Instead, my aim has been to illustrate some of the consequences of leaving place out of typical frames of analysis in business research, in this case on small businesses—and to gesture to some of the advantages of bringing place more to the center of the frame. Indeed, a place-based approach could bring a number of benefits for corporations that sell and market to small businesses and those who seek to advise them with research:

1. *Target markets*. The character and reputation of a place, as well as the key entities involved in shaping them, play a significant role in the future of the small business landscape there. The relevant bounds of 'place' for understanding a company's particular target audience, such as small businesses, need not be national. Worth considering are neighborhoods, cities, or types of cities (global, resurgent, university towns).
2. *Method*. Along with the merits of observational research more generally, a place-based approach poses another challenge to the by now almost reflex assumption that the way to understand a marketing or product target (whether they be tweens or social entrepreneurs) is to talk to those targets. Such work would do well to consider

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[9] In addition to those described above, there are a host of other entities influencing the micro climate for small businesses in New Haven alone:

The Yale Entrepreneurial Institute: an organization that provides assistance with business plans and offers seed money to Yale students and faculty who have an idea for a start-up; YEI helped put out YouRenew, which recycles handhelds and has been a big success.

The Livable City Initiative (LCI): an anti-blight program that aims at revitalization, and, among other details, housing code enforcement. New Haven has been able to "surge" in part because it has been able to contain crime and make neighborhoods "look" more welcoming.

Project storefronts: the city pays 50% of storefront renewals or improvements up to $60,000. This initiative helps areas look more welcoming and prosperous, attracts customers and other businesses.

the broader social, political, geographical and cultural environments in which these targets are situated.

3. A more nuanced sensibility about the places in which small businesses operate could be a way for corporations to develop credibility with those businesses (which often tend to view big corporations with skepticism or even derision). As a corollary, such understanding could lead to different ways of segmenting small businesses (no longer employee size, revenue or industry), which in turn could correspond to new ways to message or position to those segments.

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Ethnography inside the Walls: Studying the Contested Space of the Cemetery

ANNIKA PORSBORG NIELSEN
IS IT A BIRD, Copenhagen, Denmark

LINE GROES
IS IT A BIRD, Copenhagen, Denmark

This paper discusses the merits and challenges of user-centered urban development projects, and what it means to apply an ethnographic approach to the study of urban spaces and the way people use them. We draw primarily on an ethnographic project carried out in two cemeteries in Copenhagen. The project focused on the involvement of local citizens – both everyday users of the cemeteries, as well as locals who do not use these urban spaces. We discuss the challenges and opportunities of ethnography in a complex space such as a cemetery, and consider additional ways to incorporate citizens into projects that have a direct impact on their lives. We conclude with a discussion of the project learnings and their implications for future urban planning.

INTRODUCTION

The paper discusses the merits and challenges of user-centered urban development projects, and what it means to apply an ethnographic approach to the study of cemeteries and the ways people use them.

Based on the study discussed in this paper we developed a range of recommendations, which are currently being implemented in the City Council's development plan for Copenhagen's cemeteries for the next 50 years. The context of the study, and the reason why the City Council initiated the work on an overall development strategy, is that the city's cemeteries now have more available green spaces than ever. A general tendency in the population towards cremation, rather than burials in coffins, is freeing up a great deal of space on the cemetery grounds. Space which is not being used for gravesites, and which could therefore be developed for alternative recreational purposes. The City of Copenhagen was therefore interested in understanding which new ways of using this urban space would be seen as acceptable, relevant and meaningful by its citizens – especially those citizens who live their daily lives in the neighborhoods surrounding the cemetery grounds. As a result, we were brought in to carry out an ethnographic study, bringing out the citizens' perspectives on the future development of their local cemeteries.

1) FIELDWORK IN THE CEMETERY: APPLYING THE ANTHROPOLOGICAL PRACTICE

The first section discusses the merits and challenges of doing ethnography in an urban space as inscribed with emotional significance, symbolic meaning, and conflicting interests as the cemetery. Our approach introduces the voice of the citizen, exploring his or her experience of the cemetery as a place of mourning, a backyard, or an oasis for escaping city life – or in the case of the non-users, a risky, inaccessible space they felt excluded from.

Methodology: mapping people's uses and perceptions of cemeteries

We draw primarily on an ethnographic project carried out in two cemeteries in Copenhagen: Bispebjerg and Vestre. We interviewed 12 respondents for the study – 8 everyday users of the cemeteries, as well as four youth who lived in the area, but who never used their local cemetery. We employed a combination of ethnographic methods, which allowed us to gain deep insights into the routines, thoughts and feelings of the cemetery's users. We carried out in-depth interviews with them in their homes, exploring their relationship with the cemetery space, what role it plays in their everyday life, and what their thoughts are on the future development of the space.

Also, we mapped their use of the cemetery by going for walks with them, asking them to show us their daily routines, their favorite spots, as well as the parts of the cemetery they tended to avoid. We brought maps along and used them actively as a way to compare our respondents' mental maps of the cemetery, with the actual layout and composition of the space. In our interviews with non-users we asked them to take us for walks in their neighborhood to get an understanding of what spaces they use, and why the cemetery was not a part of their mental map. Talking to the non-users was an important way of getting insights into why, for some people, the cemetery is an inaccessible and complicated place that does not invite exploration.

When planning our field work at the two cemeteries, we took several measures to prepare for the study of a physical space, that is both very important to its users and that demands a great deal of discretion and decorum. There are a lot of things you cannot do inside a cemetery. You have to be careful what you photograph, you must consider where you walk, and you have to think about which topics you raise and what questions you ask of your respondents while in that space.

Going in, we had some expectations that the ethical considerations about how to act in this space would be most important *vis-a-vis* respondents who were gravesite users, that is, people who had a loved one buried at the cemetery. The respondent group consisted of 50% gravesite users, and 50% recreational users (joggers, people who go for walks, picnics, visitors' tours etc.), and we expected the two groups to have rather different relationships with the cemetery space. We expected the gravesite users to have a somewhat stronger emotional attachment to the space, shaped by their experience of bereavement, grief and possibly comfort and closeness to the ones they lost. And thus we expected them to be sensitive to the ways in which other people behave in this space, in a way that perhaps recreational users would not be.

Insights: Understanding the Unpredictability of How People Use the Cemetery

What we found, though, was that these user categories made very little sense. Very often, people were both gravesite and recreational users at the same time, and the respondents who used the space purely for leisure would have just as strong concerns about behavior and conduct as the ones visiting their family's graves. The idea that visiting a grave corresponds poorly with using the space recreationally was not one that was recognized by our respondents. If anything, having a gravesite to visit would make it even more likely that they would afterwards go for a picnic nearby, or even lie down on a lawn to sunbathe. In fact, the more everyday activities a bereaved person could relegate to the cemetery, the better they often felt, because it gave them a sense of still including their lost loved ones in their everyday lives.

Furthermore, it turned out to be difficult to predict what was deemed inappropriate behavior within the cemetery walls. Often, the users who had someone buried at the cemetery would be eager to support new and unconventional ways of using the space. We went for a walk with a recently bereaved widow and her daughter, when somewhere on the route we spotted a grave with a few open bottles of bear and a pack of cigarettes. The widow noted how much she enjoyed the idea that the friends of the deceased person seemed to stop by often and leave their friend's favorite beer on his grave. She felt that although beer cans and cigarettes did not fit the traditional idea of what is appropriate on a gravesite, the most important thing was that the person's loved ones remembered him and made him a part of their everyday life.

In general, respondents who had recently lost someone seemed to greatly appreciate the diverse expressions of personality on other people's gravesites. In their eyes, it made the cemetery seem more lively and gave them an 'idea of who those people were, when they were alive'. It gave them a sense of the cemetery as a dynamic place, and a space shared by a community of people with whom they had something in common. In many ways, it made their own loss more bearable, because it made them feel they can be a part of defining the cemetery space, and that it is a place that can be incorporated into their daily lives in a meaningful way.

What Ethnography on the ground can teach us

What is particularly interesting about these findings is that they offer an insight into what is going on 'on the ground', in the concrete everyday use and non-use of an urban space. Many of our insights show us that the logics and patterns of how the space is used cannot be predicted and rarely follows the intentions inscribed in the planning of the space.

For instance, we interviewed a young girl who never uses the cemetery even though she lives right nearby, and although she felt that her neighborhood lacked green spaces for her and her friends to go for walks, play ball etc. When we asked her why they wouldn't use the local cemetery only steps away from their houses, she said they felt they would intrude, and they were unsure and nervous about how to act and behave, once inside the cemetery gates.

We took a walk on the cemetery later that day and she pointed out how the section closest to her house was the part of the cemetery, that seemed the most uninviting and scary to her. Since she would have to cross through that part to get to other areas that had green lawns and a lake, she had simply given up on the idea of going there. Interestingly, the space she saw as uninviting and scary was a fairly open space with very few graves, which the city council had envisioned would be just right for different types of recreational use. But because there were no graves, there were also very few people walking around and no caretakers in sight, which was one of the things that made the young woman and her friends feel that the space was scary and unwelcoming.

Thus, by directing an anthropological lens at the cemetery, and taking our cue from how users think and feel, we offer a perspective fundamentally different from that of the urban planner, the architect, or the landscaper. Our insights and recommendations point to a new understanding of the fact that the cemetery is more than its physical space, and lets us understand how this space is being appropriated and used in unintended and unpredictable ways.

The insights from the cemetery study in many ways echo results from another project we did about biking in the city. Here as well, ethnography on the ground challenged the more top-down approach of urban planners. In urban planning the focus is on making structures accessible – in this case bike lanes – rather than exploring the emotional barriers and motivations that affect people's choice of biking vs. driving. What we found was that giving people access to the structures was not enough, rather, having positive experiences with biking created ownership to this type of transportation. It motivated our respondents to change their daily habits, because they experienced biking as an added value in their daily life.

2) INVOLVING THE CITIZEN IN NEW WAYS IN URBAN DEVELOPMENT

Secondly, we would like to discuss some questions that arise from carrying out a project, which has public participation as one of its core aims. A classic pitfall of many participatory projects is the tendency to ask the involved citizens directly, what changes they would like to see implemented in the future. An obvious weakness of this approach is that firstly, users are often not able to articulate what they want. Secondly, if you ask users, citizens, customers what they want and need, you end up with a 1:1 wish list that expresses subjective wishes, needs and preferences.

The fact that people are not able to articulate what they want, certainly applies to the question of how to develop cemeteries. Had we asked people what they thought the cemetery should be like in the future, chances are they would have painted a picture not far from the place they know today. It is surprisingly hard to imagine groundbreaking and truly innovative change. We tend to think and imagine within the frames and contexts we already know. On top of this, the cemetery is a space narrowly inscribed with shared moral, cultural and social rules and norms, which makes it even harder to go against habitual thinking and imagine what could be. After all, a cemetery is a green space used for burials, isn't it?

Seeing Users and Citizens as Whole Human Beings

Instead of asking people how they would like cemeteries to develop, we took a broader more holistic approach. We focused on getting a deep and nuanced understanding of the cemetery space, and of the plurality of needs that must be balanced within this space. Instead of asking directly about wishes and preferences, we asked how people use the cemetery today. We explored the habits, routines and behavior that shaped their lives as a whole. Our approach is to see people not as users or citizens, but as whole human beings. We wanted to understand how their use of the cemetery fit the greater puzzle of their everyday life and their worldview.

When we did talk to them about how they felt the space should develop, we used cards, pictures, and maps, as a way to inspire and frame the discussions. Seeing as it is so difficult to imagine change that you haven't yet experienced, we gave our respondents a predefined context. A creative playground with concrete tools to make the discussions more tangible. For instance, we used a range of visual cues to discuss the boundaries of acceptable behavior and activities in the cemetery. The respondents would organize a range of cards with pictures and words, and categorize them according to how acceptable they were. Should picnics, football, or rock concerts be a part of the future of the cemetery? How did they feel about QR codes on gravestones that gave you information about famous deceased people? And what about weddings? Would that be acceptable within the cemetery space? This methodological approach yielded some very interesting insights. Instead of discussing who wanted more benches or better streetlights, we were able to move away from the subjective wish lists, and on to a far more important debate about what kind of space the cemetery is, and what we can and should do with this urban space.

From Abstract Intentions to Concrete Choices

What we also discovered is that if you ask people on an abstract level how their local cemetery ought to develop, they tend to be open to anything - "as long as there is room for everyone". That was a mantra we heard again and again. "This is everyone's space, everyone should be a part of it". But what does that mean? How exactly do we welcome all these new changes and innovative ideas, while also being respectful of everyone's different needs? Interestingly, as soon as we went from an abstract to a more concrete level, people were far more critical of certain ideas. Now they had to prioritize, to evaluate, and to choose. Suddenly, they had a very tangible and often provocative starting point to discuss from.

For instance, we included a picture of a parking lot. A flea market. Triggers that sparked heated debates, about why these things were so obviously unacceptable. This approach forced respondents to argue *why* it is unthinkable to have a flea market, but not a jazz concert? In this particular case, the flea market was a no-go, because it had a commercial aspect. Money – however little – was changing hands and that was not acceptable. A jazz concert would be okay, a pop concert too, but loud rock not so much. The challenge then becomes assessing exactly where the line should be drawn – when is a concert too loud? What genre or artist would fit the atmosphere of the cemetery? Who should be making these types of judgment calls and what should be the logic or criteria of assessment?

We discovered that there were certain criteria that people used for assessing new initiatives. For instance, cultural events like concerts and plays had to be sufficiently mainstream, not to alienate certain groups. An interesting illustration of this schism was people's reactions to a new dance institute that opened in the old chapel at Bispebjerg Cemetery. Our respondents seemed to agree that this initiative was in poor taste, and we initially thought it was the notion of people dancing in a chapel, that felt wrong to them. As we digged deeper we found that, rather, the problem was that the institute teaches hip-hop dance, which felt like a cultural expression that was too niche. Because our respondents felt that this activity was not aimed at the broader general public, many of them did not approve. They would, on the other hand, find it acceptable to have fitness sessions in the chapel, as they felt this was a kind of activity many different types of people in the neighborhood would be able to take part in. Thus, the idea of inviting physical activity into this space was not the issue – rather, people's concern was to make sure the cemetery remained a place for everyone.

Deep Human Insights as a Vehicle for Innovation

These discussions gave us great insights into the patterns and logics behind the seemingly subjective and idiosyncratic ideas of what is acceptable in a cemetery, and how this space can and should develop. Our approach allowed us to get behind what people say, when they express intentions and abstract opinions, and find out what happens when they are asked to choose between very concrete future scenarios, for a space they care about. We argue that this type of approach and methodology is needed, in order to truly achieve deep human insights that can give both content and direction to innovation processes.

If we really want public participation to be an integral part of these processes, we need to go beyond hearings that only produce lists of more or less random opinions and preferences, and that are often the result of a biased setting and an expression of unequal power relations. If public participation is to play a valuable and central role in urban development, we must use it to bring out deep, nuanced and robust insights into the dreams, frustrations, and hopes of real human beings.

3) THREE OPPORTUNITY SPACES FOR DEVELOPING COPENHAGEN'S CEMETERIES IN THE FUTURE

In this third and last section of the paper, we will outline the key recommendations that came out of the project. We identified five tensions in people's use of the cemetery today, and argued that the future development of this urban space needs to take into account and balance these tensions.

We argue that people's perception and use of the cemetery today is guided by the tension between the cemetery as:

1. A collective resource ↔ A personal space
2. Celebrating life ↔ Embracing sorrow

3. A space for everyone ↔ Not a space for all kinds of behavior
4. Feeling at home ↔ Feeling alienated
5. A timeless place ↔ A space that is changing

The key challenge for the city council, as we see it, is to develop the city's cemeteries while balancing these five tensions. We see the five tensions as guidelines that will ensure that the development of the cemeteries is addressing real human beings' concerns, needs, wishes, and frustrations.

In our recommendations to the council, we developed three opportunities, which each set a direction for the future of the cemeteries, and which each address a number of the tensions we identified.

The three opportunities in our recommendations are:

1. *Develop individual profiles* for each of the city's cemeteries
2. *Build partnerships with the local neighborhoods* surrounding the cemeteries
3. *Create behavioral zones within the cemetery space* to ensure that all citizens are welcomed inside while different types of behavior and usage co-exist harmoniously

We will now unfold each of the opportunities, discussing their potential for creating value and how they would help balancing the tensions outlined above.

Opportunity #1: Create a Clear Identity and a Distinct Profile for Each Cemetery

Cemeteries are different from most other urban spaces, in that we seem to have an abstract *a priori* idea of what we will find inside the walls, even before we enter the cemetery space. We often think we know what to expect in terms of the general look, function and atmosphere of a cemetery. Perhaps this is due to the fact that these spaces rarely focus on emphasizing their distinct individual features or characteristics. While almost every other corner of a modern city is defining its own flavor and style – and while different segments seek out the areas and neighborhoods that best match their identity – cemeteries are for everyone, and are therefore almost by default generic in the way they communicate about themselves. But in fact, these urban spaces each have characteristics that are very much their own. The difference lies in making a conscious choice to communicate this and put a label, so to speak, on the cemetery as a particular kind of place.

Based on the insights from our study we advised the city council to work towards more differentiated profiles for each cemetery. These profiles would be based on local citizens' perceptions of the cemetery, what role they think the place should play in the neighborhood, and how they would like to see it develop in the future. Furthermore, the profiles should build on both the physical layout and characteristics of the cemetery, and on the unique features they each have to offer to the area. For some of the larger cemeteries, that have patches of forests and a great botanical variety, a focus on a nature profile seems fruitful. While cemeteries that house old, historic buildings could emphasize their capacity as a space for learning about local history and architecture. Other more urbanized cemeteries might work towards communicating their role as a shared burial ground and meeting place for a

variety of cultures, ethnicities and social groups. Here, we envision a multicultural profile that emphasizes, for instance, the cemetery's role as a place to teach school children about different religions, rites and rituals.

There is a wide range of benefits in creating differentiated profiles for the city's cemeteries. Firstly, the cemeteries will become more visible and more present in the minds of people in the local community. This enables the cemeteries to tell the story of who they are and what they offer, in a way that makes them more relevant to both their current and potential users. A tension that we discovered in the way people used the cemeteries, was the tension between everyday users who felt at home there, and non-users who felt alienated. By being more visible in the neighborhood and communicating a clear profile, the cemeteries would invite the non-users in, and give them a reason to make this urban space a part of their everyday life.

Secondly, this heightened visibility will be supported by a clear visual identity that is communicated in the local library, in public buildings, and other key places in the local community. This will create a new situation where the users 'meet' the cemetery in the places where they live their everyday lives. As it is now, we are rarely reminded of the cemetery unless we are physically there. This is different from the way we think about other public spaces or institutions. For instance, you can have a clear vision of places like Tate Modern or Central Park, even though you've never visited. They have a distinct visual identity that can be communicated across borders. In the same way, the cemetery's profile should exist separately from its physical space.

Thirdly, if the cemetery is more present in people's minds, and if they have a clear idea of what the it offers and what it stands for, they are also able to choose a cemetery that suits their identity, their needs and their preferences. It used to be that you 'belong to' a cemetery based on geography. But why should this very fundamental choice not be based on emotions, identity and temperament, rather than where you happen to live? It is only fitting that the (post-)modern individual, so used to customized, tailor-made products and services, should get to choose from a range of cemeteries that each represent different experiences and values.

And finally, by communicating that a cemetery is, for instance, a nature cemetery you attract a certain type of user. Creating distinct profiles will be a fruitful tool for the city council to target the type of user – and thus the type of user behavior – that the cemetery wishes to encourage and promote. By doing this they will solve the tension between on the one hand, being 'a space for everyone', while at the same time sanctioning certain types of behavior on the cemetery grounds.

Opportunity #2: Build Partnerships with the Local Neighborhoods Surrounding the Cemeteries

Many respondents from our study did not see their local cemetery as an integrated part of the area or community they lived in. They tended to think and speak of the cemeteries as rather isolated physical units – both literally and figuratively separated from the surrounding neighborhood by thick impenetrable walls.

Our advice to the city council is that they should work strategically toward the cemeteries becoming active and shared resources for the local community. In order to do this, partnerships between the cemetery and a wide range of local institutions, organizations, companies and private groups must be established. The goal is to anchor the cemetery more deeply within the local community, creating ties and relationships that will further a dynamic and robust integration between this urban space and its neighbors. This approach will also guide the cemetery in communicating in a meaningful way with groups that are not currently using its spaces and resources, in order to find new ways of inviting them in. Again, this would address the tension between feeling at home and feeling alienated from the cemetery.

But furthermore, working with this opportunity would also help address the tension of the cemetery being both a collective cultural resource and a deeply personal space. By integrating the cemetery more closely with the local neighborhood, we could imagine interactions with local museums, libraries, and schools, highlighting the cemetery as a source of learning. Each cemetery is tied to its surrounding neighborhood by the local history the share, and by anecdotes about famous local citizens, and it is these stories that should be brought to life. Rather than hiding behind thick walls the cemeteries must interact with its neighbors, reminding them of the shared cultural resource that they have in common. This might also strengthen the identity of the neighborhood as a whole.

Bringing the cemetery's collective cultural and historical resources into play should be done, however, with a respect for the fact that the cemetery is also a deeply personal space. Every small plot of land that houses a grave, is potentially someone's space for mourning, and for performing daily rituals of remembering. Integrating the cemetery more closely in the local area should therefore always be done hand in hand with teaching its users to respect the boundaries of these small private spaces.

Opportunity #3: Create Behavioral Zones within the Cemetery Space

This brings us to the third and last opportunity, which is a recommendation for the council to work with the cemetery in terms of zones that encourage different types of user behavior. Working with behavioral zones would help ensure that all citizens are welcomed inside, while different types of behavior and usage co-exist harmoniously.

Our study showed that while most can agree that they do not want more rules for how to behave, they would like to be taken by the hand a bit more while visiting the cemetery. Many – especially the people who rarely use the cemetery – feel insecure and unsure of what is deemed proper and appropriate behavior. They are constantly afraid of stepping on people's toes, of acting 'the wrong way', or walking into areas where are not supposed to be. The cemetery space is guarded by strong cultural and social norms that are hard to decode for many, and this feeling of insecurity stops some people from using it as much as they would like to.

While making more rules does not seem to be a fruitful solution, behavioral zones represent a more subtle way of guiding users, of simply encouraging a certain behavior. This could be done by putting up posters or signs at the entrance, telling the user what is going on in certain parts of the cemetery, so they know what to expect. For instance, creating behavioral zones would address the tension of people wanting, on the one hand, the

cemetery to be a space where we celebrate life, while also keeping it as a place where public displays of grief is accepted and appropriate. We would make room for both these types of user needs by designating areas that were meant for quiet reflection, while other parts of the cemetery provided a space for art, music or other cultural expressions. Using the architecture and landscaping strategically is another way of guiding the visitor and suggesting a certain way of using the cemetery space.

By working with behavioral zones in the cemetery the council would allow for this space to be both a place that develops over time, while also keeping certain parts of it sacred and timeless. A clear insight from our study was the tension between wanting to invite new trends and developments into the cemetery, while also wanting it to be a space that never changes. Working with behavioral zones lets the users of the cemetery have both. Furthermore, it provides guidance and removes the fear of not knowing the 'secret rules' for appropriate behavior. Thus, this approach would open up the cemetery space and make it more accessible – especially to new users.

Annika Porsborg Nielsen is the chief anthropologist at IS IT A BIRD, a strategic innovation agency based in Copenhagen, Denmark. She has many years of experience working with user and consumer insights and giving advice on innovation and marketing strategies to international clients in a wide range of industries. Annika holds an MA and a PhD in social anthropology from the University of Copenhagen and Columbia University. annika@isitabird.dk

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Business, Anthropology, and Magical Systems: The Case of Advertising

BRIAN MOERAN

Copenhagen Business School and *University of Hong Kong*

Magic is one of the oldest subjects of discussion and theorizing in anthropology. From time to time, anthropologists, as well as other scholars from other disciplines, have suggested that magic is not specific to "primitive" societies, but is alive and well in contemporary industrialised societies—witness advertising. Such discussions have been more general than specific. This paper applies Mauss' theory of magic more precisely to particular examples of advertising—in particular, his distinction between magicians, magical rites, and magical representations. It also argues that advertising's system of magi—encompassing related concepts of alchemy, animism, and enchantmen—is reflected in other business practices, which have developed their own parallel and interlocking systems of magic. Certain forms of capitalism, the—fashion, for example, or finance—may be analysed as a field of magical systems.

THEORETICAL BACKGROUND

The word "magic" refers to a broad range of beliefs that include the supernatural, superstition, illusion, trickery, miracles, and fantasies. It is also a simple superlative (Davies 2012: 1), and is one of the oldest subjects of discussion and theorizing in anthropology. From time to time, anthropologists, as well as scholars from other disciplines, have suggested that magic is not specific to "primitive" societies, but is alive and well in contemporary industrialised societies—in particular, advertising.

Raymond Williams (1980: 193) was one of the first to make such a critique of what he called "the official art of modern capitalist society": "The short description of the pattern we have is magic: a highly organized and professional system of magical inducements and satisfactions, functionally very similar to magical systems in simpler societies..." Williams regarded advertising as a "magic system" because it transformed commodities into glamorous signifiers (turning a car into a sign of masculinity, for example, or a perfume into one of enchantment), which present an imaginary, and thus unreal, world in which we conveniently overlook the inhumanity and exploitation of labour in capitalist enterprises. In this respect, Williams traced the formation of modern advertising to the development of new monopoly capitalism and the increasing emphasis on the market as a system of control. He thus aimed to "disenchant" capitalism by showing us how it really works.

More recently Alfie Gell (1988, 1992) has argued that one way human beings distinguish themselves from other species is by their technological capabilities. We use—sometimes simple, sometimes comple—technical means to form a bridge between a set of "given" elements (the body, for instance, or a base material, or environmental feature), and a goal that we want to achieve by making use of these givens (the achievement of beauty, for instance, or the perfection of alchemy, or saving the rainforest).

One of the technologies that we often use is that of *enchantment*. The technology of enchantment is probably *the* most sophisticated psychological weapon we use to exert control over the thoughts and actions of other human beings, because it "exploits innate or derived psychological biases so as to enchant the other person and cause him/her to perceive social reality in a way favourable to the social interests of the enchanter" (Gell 1988: 7). Among its manipulations are those of desire, fantasy, and vanity.

Gell adopted a similar view to that of Williams when it came to seeing advertising as a magical system:

> The flattering images of commodities purveyed in advertising coincide exactly with the equally flattering images with which magic invests its objects. But just as magical thinking provides the spur to technological development, so also advertising, by inserting commodities in a mythologized universe, in which all kinds of possibilities are open, provides the inspiration for the invention of new consumer items. Advertising does not only serve to entice consumers to buy particular items; in effect, it guides the whole process of design and manufacture from start to finish, since it provides the idealized image to which the finished product must conform. (Gell 1988: 9)

He went on to argue that the "essential alchemy" of art—and I here include advertising, fashion, and beauty in this argumen—is "to make what is not out of what is, and to make what is out of what is not" (1992: 53). Technical virtuosity is the source of the prestige of advertisements, artworks, fashion items, and beauty products, as well as "the source of its efficacy in the domain of social relations" (1992: 56). This it achieves through:

> A wide range of imagery which provides a symbolic commentary on the processes and activities which are carried on in the technological domain… The propagandists, image-makers and ideologues of technological culture are its magicians, and if they do not lay claim to supernatural powers, it is only because technology itself has become so powerful that they have no need to do so. (Gell 1988: 9)

In this respect, we can agree with Baudrillard (1996: 266) that advertising is "a logic of fables and of the willingness to along with them. We do not believe in such fables, but we cleave to them nevertheless… Without 'believing' in the product… *we believe in the advertising that tries to get us to believe in it.*"

But why is magic found only in some activities, and not in others? For Malinowski, as for many others, magic is used in "the domain of the unaccountable and adverse influences,

as well as the great unearned increment of fortunate coincidence" (Malinowski 1954: 29). In other words, magic accompanies uncertainty (Gell 1992: 57): we do not find it "wherever the pursuit is certain, reliable, and well under the control of rational methods and technological processes" (Malinowski 1954: 140). Malinowski illustrates this proposition by showing how, for Trobriand Islanders, lagoon fishing and open-sea fishing resulted in totally different attitudes towards the interplay between work and magic.

> It is most significant that in the lagoon fishing, where man can rely completely upon his knowledge and skill, magic does not exist, while in the open-sea fishing, full of danger and uncertainty, there is extensive magical ritual to secure safety and good results. (Malinowski 1954: 31)

This uncertainty is taken up by John McCreery, who says that his job as creative director in a Japanese advertising agency was to:

> Sell ideas to clients whose decisions he cannot control. They in turn must sell their products to consumers who spend their money as they please. All the efforts of marketing science do not determine the outcome. In an effort to shape purchasing decisions, we generate images, chant incantations, and tell each other stories that we hope will appeal to clients' and ultimately consumers' emotions. (McCreery 1995: 311-2).

So, where does this take us? Any discussion of magical practices in advertising becomes part of a broader discussion of cultural production, as well as of those spheres of business where uncertainty prevails (for instance, the world of finance). All forms of cultural production are characterised by certain economic properties, one of which is that demand is uncertain (Caves 2000: 4). In other words, until a particular product is placed before a consumer, it is not at all certain how s/he will react to it because it is an "experience good." Market research can be undertaken, of course, to find out the likelihood of sales, but still success is unpredictable. It is this unpredictability that leads to "technologies of enchantment," which include rituals surrounding cultural activities (competitive presentations in advertising; six-monthly catwalks shows of fashion collections; the awarding of prizes at film festivals), as all those concerned tend towards trust in the efficacy of magical practices.

Before expanding on this argument, let me first lay out the "system of magic" that characterizes advertising, and then analyse particular examples of beauty advertisements to show how their structure closely approximates those of magical spells used in Sri Lankan healing rituals (Tambiah 1968).

ADVERTISING AS A SYSTEM OF MAGIC

For magic to constitute a *system*, three elements are required: magicians, magical rites, and magical formulae or representations (Mauss 1972: 18). This tripartite structure of the system of magic was initially made clear by Malinowski (1922: 403):

> Magic all the world over… represents three essential aspects. In its performance there enter always some words spoken or chanted, some actions carried out, and there are always the minister or ministers of the ceremony. In analysing the concrete details of magical performances, therefore, we have to distinguish between the *formula*, *the rite*, and *the condition of the performer*.

In other words, there should be certain people repeatedly saying and doing certain things, in and for certain social situations, in a manner that is accepted by public opinion in any form of community. In the advertising industry, magicians correspond to "creative" personnel (in particular, copywriters, creative and art directors, but also photographers, makeup artists, hair stylists, and others called upon to produce advertisements); rites to competitive presentations and the production of advertising campaigns; and formulaic representations to individual advertisements.

Before going any further, I should make it clear that there is not an *exact* analogy between magicians in so-called "primitive" societies and contemporary creative practitioners. The latter do not generally inherit their role as magician in the way that the former often do: it is not membership of a particular group that determines whether they will, or will not, become creative practitioners (Malinowski 1922: 410).[1] Nor do they necessarily have a "nervous disposition," regarded as somehow standing outside society (Mauss 1972: 32-3), although they may do so temporarily during the exercise of their creative processes (Moeran 2006: 88; Malefyt and Morais 2012: 81-2). Nor are they usually concerned with the nature of their "soul," which can separate from the magician's body and, like a shaman, create a "familiar" (Howells 1985).[2]

Nevertheless, in other respects there are noteworthy similarities between magicians and contemporary creative practitioners. Creative personnel possess magical powers, not so much because of individual characteristics they display   these may involve both physical peculiarities and extraordinary gifts   but because of society's attitude towards them: they are regarded as able to accomplish things beyond the power of normal human beings (Mauss 1972: 33). At different stages in history and in different parts of the world, certain professions have been (and still are) seen to possess magical powers because of their dexterity and outstanding knowledge: in particular, doctors and others in the medical profession; blacksmiths, and other craftsmen; but also actors, barbers, executioners, gypsies, gravediggers, priests, and shepherds. In the contemporary advertising, fashion and beauty worlds, this list now includes copywriters, creative and art directors; fashion and creative designers; accessories, hairdressing, and fitness gurus; stylists-in-chief; makeup artists; exercise honchos—not to mention the divas, muses, icons, and plain old celebrities who are

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[1] Dion and Arnould (2011: 509), however, make a case for the transmission of charisma in retail luxury brands by means of kinship and fictive kinship.

[2] In this respect, a strong argument can be made for a parallel between shaman and fashion designer who creates a "muse" (generally in the form of a model, actress, or other celebrity), a kind of "guardian angel" (the shaman's *emekhet*) who then provides the designer with peculiar qualities and powers. See, for example, Harlech (2009).

used by and sustain them. As Marcel Mauss (1972: 29) put it: "it is their profession which sets them apart from the common run of mortals, and it is this separateness which endows them with magical power."[3]

Magic includes one or more central operations in which the magician acts. It becomes, then, ritual action whose symbolic meaning is often associated with a liminality characteristic of "rites of passage" (Van Gennep 1960; Malefyt and Morais 2012: 38-40), as well as with "social dramas" (Turner 1974; Moeran 2006: 65-9). In advertising, the central operation is the regular ritual of the *competitive presentation* by an agency to a client. This is a magical rite, whose time and place are strictly prescribed, as *transformations* are brought about in a liminal space between agency personnel (account managers, creatives, market researchers, and media buyers), through use of a special kind of chant (the "pitch") designed to persuade a client of a creative team's ability as a collective magician to transform a product into a brand (often infused with animisti—and animalisti—qualities). Like magic in general, then, advertising initially tends not to be performed just anywhere, but in specially qualified places, with special materials and tools (Mauss 1972: 46). Its "rites are eminently effective; they are creative, they *do* things" (ibid., p. 19).

Magical rites can be both verbal and non-verbal. While competitive presentations in advertising are primarily verbal, fashion collections are quite the opposite. Non-verbal rites make use of two kinds of magic. One of these is *sympathetic* (or symbolic) magic, which assumes that there is a causal relationship between things that appear to be similar, so that imitation of a desired end causes that end to appear (the perfume *Happy* causes its wearer to be "happy"). The other is *contagious* magic, which is based on the premise that things that were once in contact always maintain a connection (continued happiness depends on continued use of *Happy*).[4] In particular, magic makes use of substances whose virtues are seen to be transmitted through contact and so provides the means of using objects sympathetically. Magic is cuisine, pharmacy, chemistr—the art of preparing and mixing concoctions, fermentations, dishes, and providing them with a ritual character which contributes to the efficacy of magic itself (Parfums Chopard: *The enchantment of the moment*) (Mauss 1972: 50-9).

Many rites, however, are verbal and make use of spells, which tend to be formulaic (consider, for example, the standardised use of headline, image, body copy, and tagline in an advertisement) and be composed in a special language (*Smashing Lashes*; *Drop Dead Nails*), but which are first and foremost composed as *actions* that achieve practical effects (Malinowski 1922: 423, 432).[5] One group of spells corresponds to sympathetic magical rites: they name the actions or things in order to bring about the sympathetic reaction ("Shades that don't

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[3] Witness fashion photographer Erica Lennard's description (2007: 528) of her work and its transformative ability: "maybe the magic of photography for me is how light can, at moments, transform reality. I don't want to lose that magic and be in a studio."

[4] Celebrity memorabilia epitomise contagious magic at work: witness the price of $350,000 paid at auction in 2009 for the white glove worn by Michael Jackson the first time he performed his "moon dance" in 1983. http://www.today.com/id/34084928/ns/today-today_entertainment/t/michael-jackson-glove-sells/#.Uy_mBaOwrcs

[5] Baudrillard (1996-7) points out that every advertising image is a *legend*, whose meaning is further narrowed by the addition of discourse, in the form of a subtitle which constitutes a second legend.

fade for eyes that wo—even 8 hours from now").[6] Sometimes the mention of a rite's name alone is enough to produce effect (*Clean Sensation*; *No Time to Shine*).[7] Verbal rites also comprise mythical spells which:

> "Describe the genesis and enumerate the names and characteristics of the being, thing or demon concerned in the rite. It is a kind of investigatory process by which the demon involved in the spell is slowly uncovered. The magician institutes magical proceedings, establishes the identity of the powers involved, catches hold of them and brings them under control by the use of his own power" (Mauss 1972: 56).

Magical representations, the third element in the system of magic, "are those ideas and beliefs which correspond to magical actions" (Mauss 1972: 61). Since ritual is a kind of language, it also translates ideas and representations of ideas. Here there is display of magic's *effect* (The Clinique *Happy* ad is illustrated by a wide-mouthed, laughing young woman looking happy). But every instance of a magical rite takes account of the general effects of magic, so that, no matter how different the results of each advertisement, together they are thought to have common characteristics involving a change of state. Either the objects or beings involved are placed in a state so that certain movements, accidents or phenomena will inevitably occur (*Persil washes whiter*); or they are brought out of a dangerous state (*Do you suffer from chronic halitosis*?) by means of a particular remedy (*Listerine kills germs that cause bad breath*) (cf. Mauss 1972: 61).

MAGICAL SPELLS

In "The magical power of words," Stanley Tambiah (1968) examined the use of words in ritual and the fact that the uttering of words is itself a ritual. Most ritual systems, he argued, progress from word to thought to power, and finally to dee—a *dénouement* that characterises the structure of cosmetics and skincare advertisements, designed to enchant and entice their readers, by means of words and images used as magical representations, to go out and buy actual products.

So far as Tambiah was concerned, verbal forms in ritual were in many ways "spells," whose power derived from their being uttered in a very special context.[8] The example that he gave to illustrate this was a Sinhalese healing ritual, which made use of three kinds of verbal form. The first, a *mantra*, adopted an archaic language of command—accompanied by a language of entreaty and persuasion—to summon the demons responsible for the disease. Then followed the *kannalavva* which "states why the ceremony is being held, describes the nature of the patient's affliction and makes a plea for the gods to come and bless the ceremony and to the demons to act benevolently and remove the disease" (Tambiah 1968:

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[6] Revlon Overtime Shadow.

[7] Both Cover Girl skincare products.

[8] For Malinowski, too, spells—with their "magical order of expressing" (1922: 432)—were by far the most important constituents of magic (1922: 403).

177). The major part of the ceremony was then taken up by highly lyrical and literary quatrains called *kaviya*, designed to define, objectify, and personify evil and disease, and to present them realistically, so that appropriate action could be taken to change the undesirable to the desirable—a necessary precondition of the cure. Finally, the ritual ended with a repeat of the *mantra* which enacted the expulsion of the demon itself.

The parallel between a healing ritual in distant Sri Lanka and many contemporary beauty-related advertisements placed in fashion and beauty magazines by corporate giants in Paris and New York is rather remarkable. Firstly, every advertisement carries a *headline* summoning a particular part of the body, which is demonised by omission for not being what it should be (*Lash Potion*™ *Mascara*, *Drop Dead Nails*). Alternatively, a headline will summon a particular effect sought by purchase of the advertised product without specific mention of a part of the body (c*an your smooth pass the second-day test?*). Or it will summon a product or product range (L'Oréal's *Magicsmooth Soufflé*).

Secondly, each headline is usually accompanied by a *sub-heading*, which provides an explanation of the "problem" addressed by the ad (*Discover instant smooth perfection*). This is followed, thirdly, by an advertisement's *copy*, forming the "body" of the written part of the ad. It defines, names, or at least by omission hints at, the affliction—dryness, lack of endurance, artificiality, imperfection, difficulty in handling, and so on—that the ad seeks to remedy. For example: "Start your look with skin-matching makeup—a weightless foundation that goes on white and self-adjusts to match your natural skin tone. In 5 shades with a flawless finish."[9]

Finally the closing *mantra* of every ad is the *tagline*, which is used to announce the necessary condition of the cure provided. Thus we find makeup mantras like: *The most unforgettable women in the world wear Revlon*; *Because I'm/you're worth it* (L'Oréal); and *For beautiful human life* (Kanebo).[10]

Tambiah (1968: 177-8) notes that, in Sinhalese healing rituals, the *mantra* is in many ways incomprehensible to ordinary people because it makes use of an archaic language no longer spoken by ordinary people. Again, there is a slight, though not exact, parallel here with advertising headlines, which are not always immediately or fully comprehensible, even though they clearly make *some* sort of sense: for example, *Drama Queen*, *Just Bitten*, or *Magnified Shine Feels So Divine*. Headlines, though, differ from body copy in ads in much the same way as sacred language differs from vernacular or profane language used in ritual. There is a sequence of forms which starts out by chanting aloud sacred words, moves to readily comprehensible vernacular language (short phrases, plenty of punctuation), and finishes with a combination of the two.

As in ritual, advertisers use language in ways that connote their power (over beauty) to exorcise the demons of unattractiveness. First, they are possessors of secret knowledge that they reveal to consumers ("A lipstick only Lancôme could create"). This kind of knowledge is expressed through *formulae* which, once voiced, act and influence the course of events

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[9] Revlon Beyond Natural.
[10] Wolf (1981: 108) also points out that advertisements "have used a mysterious language, the way Catholicism uses Latin, Judaism Hebrew, and Masons secret passwords: as a prestigious Logos that confers magic power on the originators of it."

(Tambiah 1968: 184). They are so special that they have aetherial or *magical qualities*: "At the heart of the success of Les Majeurs are Lancôme's exclusive microbubbles. These minute, supple spheres rest invisibly on the surface of the skin… The magic of makeup."

Next, cosmetics and skincare companies' specialized knowledge invites consumers to participate in a dream world of fantasy and *belief* (*Shades that flirt with fantasy*).[11] "Believe it. Revitalizing Makeup. Only by Maybelline." Both rituals and advertisements, then, make use of the magical power inherent in sacred words to persuade adherents to believe in what is displayed. Three notions form an interrelated set in each. First, there are magicians in the form of cosmetics manufacturers, who institute speech and classifying activity. Then there are the people—usually in the form of the fashion magazine women readers—who use this propensity. Last, there is language, which has an independent existence and the mystical power to influence the reality of beauty. Advertising is a heightened use of language that aims to combine word and deed (the persuasion to purchase and make use of a product) by using spells especially constructed to effect a magical transfer. As in many magical practices found among tribal peoples around the world, beauty advertisements isolate and enumerate "the various or constituent parts of the recipient of the magic" (a woman's eyes, hair, lashes, lips, nails, skin, and so on), and then make a magical transfer that enables them to become "dazzling," "healthy," "luscious," "kissable," "soft," "natural," and so forth (Tambiah 1968: 190). By building up these parts, we are able to form a realistic picture of the whole   a metonymic technique that lends realism to the rite of makeup, transmits a message about beauty through redundancy, and allows the storing of vital technological knowledge in an oral culture of women's gossip.

Moreover, in these rituals, verbal formulae are often accompanied by the manipulation of objects of one sort or another, which then become charged with special potency. This is similar to the construction of beauty advertisements, which make use of highly-charged images of beautiful women—in particular of celebrities, who make use of their own enchantment through *glamour*[12]—who show that the intended effect of the magical formulae can be achieved (Tambiah 1968: 190-1). In conclusion, beauty advertising, like ritual, attempts to:

> Re-structure and integrate the minds and emotions of the actors. The technique combines verbal and non-verbal behaviour and exploits their special properties. Language is an artificial construct and its strength is that its form owes nothing to external reality: it thus enjoys the power to invoke images and comparisons, refer to time past and future and relate events which cannot be represented in action. Non-verbal action on the other hand, excels in what words cannot easily do – it can codify analogically by imitating real events, reproduce technical acts and express multiple implications simultaneously. Words excel in expressive enlargement, physical actions in realistic representation. (Tambiah 1968: 202)

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[11] Lancôme, First Blush.

[12] *Glamour* derives from the old Scottish word, *gramarye*, once meaning magic, enchantment or spell, and now transformed into (*bombshell, drop-dead, film star*, or just *added*) glamour.

DISCUSSION

The argument presented has theoretical, methodological, and business implications. It also offers opportunities for analysis in empirical situations.

Features of Magic

First, as hinted earlier, the system of magic described and analysed here is applicable to other spheres of business: in particular, to those which, like advertising, are forms of cultural production in which uncertainty prevails. An obvious example here is the fashion industry, whose primary magicians are designers, ably supported by a cast of photographers, hair stylists, and makeup artists working together to weave magical effects upon models (whose features should, ideally, be not too pronounced to enable the magicians to transform them into chameleon-like characters). This they do primarily in seasonal collections and advertising campaign—those ritual occasions during which "fashion" is revealed to its public.

As I said earlier, magic both breeds and accompanies *uncertainty*.[13] The magician's aim is to substitute what is uncertain with something that only he (or she) knows and makes public through magical action ("When the cameras catch you, make sure you've got your best features on show—sleek, smooth hips and thighs").[14]

Magic also involves *revelation*, for through revelation uncertainty is overcome. In the fashion industry, this is the task of the fashion magazine ("Three stylish women reveal how they'll be updating their wardrobes for winter").[15] Revelation involves showing what is unseen, by means of secrets, illusions, tips, and tricks:

> A flawless complexion has long been the Holy Grail for beauty-seekers. But most of us need to create the illusion with cosmetic cover-ups. Emma Bannister reveals a fistful of products that you can rely on if you haven't been lucky enough to be blessed with perfect skin.[16]

Revelation also leads to *reincarnation*—either of a fashion item (*The rebirth of the twinset*),[17] or of style (*Replaying classic Parisian chic*),[18] or of a person (*Every day your skin is reborn through the wonder of SK-ii. Discovered by a Japanese monk, SK-II combines the magic of nature with the advances of science…*).[19] In this last case, reincarnation, or "the gift of rebirth," acts as magical potion and antidote to the perennial problem of ageing.

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[13] Gell, 1992, p. 57.
[14] *Marie Claire* USA, April 2001.
[15] *Vogue* UK, October 2000.
[16] "The cheat's guide to good skin." *Marie Claire* UK, April 1997.
[17] *Vogue* UK, April 1993.
[18] *Vogue* UK, September 2001.
[19] Advertisement for SK-II by Selfridges. In *Vogue* UK, May 2001.

Magical rites should have *immediate* effects ("surprisingly wearable looks leapt from the catwalk straight into women's wardrobes."[20] *New Year, new you*.)[21] They also effect *transformations* (*Figure flaw fixers*).[22] Mostly, these go together (*Get a better body by tonight)*.[23] Still, such transformations must be done in the *right* way by the *right* magician ("Don't let just anybody transform your body").[24]

However, the fashion magazine goes beyond particular instances of magical rites to create a general aura of magic in the fashion world. In *Pukka Party*, we learn that "Cartier International Polo at Windsor Great Park was one of the most glamorous events of the year. Not only did Cartier command a star-studded guest list, they somehow arranged for the sun to make a brief appearance, too."[25] As the anthropologist John Middleton (1967: ix) noted many years ago:

> The realm of magic is that in which human beings believe that they may directly affect nature and each other, for good or for ill, by their own efforts (even though the precise mechanism may not be understood by them), as distinct from appealing to divine powers by sacrifice or prayer.

Magic And Economic Properties

As I said, a similar argument to that presented here may be made for other forms of cultural production in which uncertainty prevails (which is why it is applicable to the world of finance, too). But at least four other economic properties mentioned by Caves aid and abet the development of a magical *system* in advertising, fashion, film, and elsewhere. One of these properties he calls *art for art's sake*; another *motley crew*; a third *infinite variety*; and the fourth *A list/B list*.

As Bourdieu (1993) noted many years ago, there is, in all forms of cultural production, an opposition between their "commercial" and "non-commercial" activities. This opposition acts as a fundamental, occasionally disavowed, structuring principle of the fields of fashion, music, film, and so on   a principle which then generates many of the judgements made about their products. The fact that both fashion and fashion magazines, for example, are products of "a vast operation of social alchemy" (Bourdieu 1986: 137) means that there is often no clear measurement between their cost of production and commercial value.

The opposition between "creative" and "humdrum" aspects of the field of fashion leads to a focus on interpersonal relationships, rather than on "the bottom line" characteristic of most industries (Moeran 2014: 119-40). As a director of *Elle*'s international editions put it during an extended interview:

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[20] *Elle* UK, January 2001.
[21] *Marie Claire* USA, January 1997.
[22] *Marie Claire* USA, January 2001.
[23] *Elle* USA, April 1998.
[24] Advertisement for Transform Medical Group, *Marie Claire* UK, June 2000.
[25] *Vogue* UK, October 2001.

> Relationships are the most crucial aspect of my work. And relationships
> with editors can be difficult because they are very, *very* special people.
> We are managers. They are *artists*.

This organizational preference is reinforced by the fact that demand is uncertain. But, in addition to the *market* uncertainty epitomised by the *nobody knows* property of creative industries in general, there is *aesthetic* uncertainty arising from the fact that copywriters, creative directors, fashion designers, photographers, makeup artists, and so on care about their work. As a result, they can rarely—if ever—be pinned down beforehand about the aesthetic choices that go into the design of a dress or the composition of a fashion photograph.[26] As fashion designer, Angela Missoni, once put it: "I start with the palette but I have no recipe, it just comes."[27] This aesthetic uncertainty (what Caves calls the *art for art's sake* property) stems in large part from the often unanticipated transformations of a concept as it takes on two- or three-dimensional form and is then re-used with its own internal transformations (*Summer's peacock feather skirt had morphed into a coq feather cape*). Just how an inner vision will materialise in a product partly explains the *nobody knows* property, but it also adds to its perceived magical quality.

Third, putting together an advertising campaign, film, music concert, or fashion collection requires diverse skills on the part of account executives, market researchers, directors, actors, designers, musicians, sound recorders, producers, layout artists, hairdressers, and so on. This is known as the *motley crew* property, and who is recruited for what purpose often depends on personnel availability within a desirable pecking order because of time constraints (the *time flies* property). From freelance professional to complex organisation, the advertising, fashion, film, music and other creative industries require all kinds of different expertise. Yet, because their products must all attain a certain level of proficiency and conformance, creative activity has what Caves calls a "multiplicative production" function: with every step along the way to completion, all the necessary personnel must come together and do their necessary work. This involves considerable negotiation among the different creative magicians about how best to persuade their audience to believe in the efficacy of their magical practices.

Fourth, since it is known that success is not guaranteed, and since fashion and beauty tend to have several dimensions along which people make their comparisons, their technologies of enchantment have *infinite variety*. This refers both to "the universe of possibilities from which the artist chooses," as well as to "the array of actual creative products" available to consumers. It guarantees the success of at least *some* magical practices, even if all others fail, and so sustains belief in the system of magic as a whole.

Fifth, because of the uncertainty of both demand and supply (in terms of the aesthetic choices made, combinations of personnel, and so on), and because cultural products differ in the quality of skills they display, "creative worlds" in the advertising, fashion, film, and other

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[26] This is a major difficulty facing every ad agency involved in a client presentation. As a result, participants study every facial, gestural, non-verbal and verbal reaction exhibited by members of the client company in an attempt to "read" which of their creative ideas they like, and which not.

[27] Suzy Menkes, "Face-off: womanly allure vs. sexy styles." *International Herald Tribune*, Friday, February 25, 2005, p. 12.

industries negotiate a ranking of its personnel: designers, photographers, models, hair stylists, makeup artists, associated celebrities, brands, and so on, for fashion. Known as *A List/B List*, this ranking of talent highlights one style of magical practice over another (as well as accompanying economic rewards for services rendered), on the one hand, and, on the other, is used to overcome uncertainty of demand. This uncertainty ensures the rapid turnover of peripheral magical personnel, such as celebrities and models.

In sum, although the argument presented here is based primarily on content analysis of advertisements, rather than on ethnography, the idea of a "magical system" can and should be used in the field, to find out how informants themselves regard their practices. In other words, this theoretical paper opens up possibilities for new directions in empirical business situations. After all, if many forms of business are little more than "fields of magical systems," are we as anthropologists then able to bring a sense of reality to business people and organizations who are mesmerised by the search for "profit" and "growth" at the expense of the environment and the future of mankind?

Brian Moeran is Professor of Business Anthropology at the Copenhagen Business School and the University of Hong Kong. He is also founding Editor of the Open Access *Journal of Business Anthropology* (*www.cbs.dk/jba*), and has written extensively on advertising, art marketing, ceramics, fashion magazines, the publishing industry, and smell marketing, primarily in Japan.

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Consulting against Culture: A Politicized Approach to Segmentation

MARTA CUCIUREAN-ZAPAN
Conifer Research

Because market segmentations are a familiar managerial artifact, it is easy to overlook the assumptions teams make as they construct these representations. Segmentations have become entrenched within companies because they are useful in navigating the complexity of the real world, but this generalizing tendency can also lead to stasis and misguided decision-making. As ethnographers we encounter additional limits in how the language, categories, and beliefs embedded in a segmentation affect our work. Anthropological theory on culture and representation offers a means by which to further assess our engagement with these artifacts. Based on emerging practices in two case studies, this paper argues for a politicized approach to segmentation – a critical stance to how and why they take on power as they are circulated within organizations.

INTRODUCTION

Market segmentations hide their assumptions through their familiarity. This paper argues for a politicized approach to these artifacts, defined as an attention to their power as they circulate within organizations. Segments structure how corporations see reality and the decisions they make in response. By analyzing segments as abstractions, ethnography can inform representative practices based on the politics of representation and consumption.

Ethnography and market segmentations cross paths when the former is sought out to inform, validate, or expand the latter. First, this paper summarizes the merits and limits of segmentation. The following section deals with the ethnographic response to segmentations, including previous EPIC contributions. I argue for reframing ethnography from a corrective to segmentation, to a means toward creating new representations of everyday practices. Segmentations have become entrenched due to their usefulness, but the generalizing tendency of these managerial artifacts can lead to stasis and misinformed action.

Anthropological theory provides directions for a critical stance on segmentation. Drawing on critiques from James Clifford and Lila Abu-Lughod on the totalizing effect of the concept of culture, as well as Pierre Bourdieu and Michel de Certeau on consumption and practice, politicizing refers to a deep engagement with the workings of power and identity in representing individuals and groups. Two case studies from the retail and food business are presented as a start to applying these theories. The final section explores some initial steps towards politicized abstractions of real world complexity. This paper seeks to contribute to the potential of ethnography to reshape representations of complex behaviors.

MERITS AND LIMITS OF SEGMENTATION

Usefulness of Segmentation Models

Ideally, a segmentation model is a heuristic for efficient decision-making. Lawrence Gibson (2001) describes the process by which data is shaped into labels: "The creative analyst reviews the complex data patterns and simplifies them with rich names for the segments, such as 'striver,' 'inner-directed,' 'foot soldier,' or 'socially conscious.' " Nation-wide segmentations like VALS and PRIZM market answers on demographics and lifestyle variables in the form of "Survivors" and "Big City Blues." Because these artifacts reduce the complexity of the market to a manageable set of target segments, they become the main way through which companies interact with the external world of the customer.

Segments can become social facts[1] because they address a variety of organizational needs: responding to the heterogeneity of the market, allocating resources, and developing marketing strategy as well as new products. In marketing literature, segmentations are a response to the fundamental heterogeneity of the market (Wind and Bell 2007). They are assumed to identify needs and wants that have a meaningful relationship with product and purchasing preferences. Cross-cultural research also describes how these models are used to manage complexity (Furrer, Liu, and Sudharshan 2000, Chang and Su 2012).[2] Secondly, segments are used to streamline decision-making. A key segment provides a shortcut for micro-level decisions such as packaging architecture and the prioritization of information in marketing. One client described how retailers are used to simplify action in a similar fashion: in response to questions on positioning, "Someone will say, 'Well, this is a Walmart product, and everyone else is, 'Oh, ok.' " Through well-intentioned efforts to stay true to the customer, these representations have disproportionate impact on strategy as they influence internal perceptions about what people like, want, or will buy.

Limits of Segmentation Models

Limitations emerge from the very usefulness of these models. First, segmentations are seen as an essential part of defining strategy, but workers and teams struggle in how to apply these descriptive documents to predictions about which products will succeed. Their size and formal tone also makes it difficult for decision-makers to connect with them emotionally and intellectually. This is part of the reason why companies turn to consultancies or internal innovation groups to "explore," "build an understanding," or "create a context" for

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[1] A segment can approximate social fact in that it exerts constraints over individuals and takes on an existence of its own within a company, independent of its original authors (Durkheim 1982).
[2] Much of this work is based on Geert Hofstede's concept of the dimensions of culture, articulated based on his analysis of a 100K+ multinational employee survey during his tenure at IBM. He defines culture as the "collective programming of the mind which distinguishes the members of one group or category of people from those of another (Furrer, Liu, and Sudharshan 2000:357).

segmentation.[3] Segmentations also create disadvantages when they become static. The time period during which the segment was authored is treated as eternally true and accurate in regards to the individuals that it describes. Correctives to traditional segmentation have already found a foothold in the business world through consumer culture theory (CCT). CCT is inspired by semiotics and practice theory, in particular Pierre Bourdieu's work on social and cultural capital. In contrast to what they describe as the "skeletal descriptions" of traditional approaches, proponents argue that products and brands have multiple meanings to consumers based on their social and class position (Ahuvia, Carroll and Yang 2006:35). Segmentations are representations by necessity, but their descriptive and static traits can put companies at a disadvantage when left unquestioned.

Segmentation models tacitly discourage challenges because they take a lot of time and investment to produce. This makes it all the more disturbing when the relationship between a segment and the users it is supposed to represent seems to break down. During a Microsoft project, Flynn et al. write, "Within days in the field, we knew something was terribly wrong – at least half of our participants did not fit into the segments as we had understood them" (2009:84). Later, they discovered that while the names of all the segments remained the same, the cluster analysis their vendor used no longer included usage variables. The experience of these researchers helps challenge the near-sacredness of segments and encourages teams to investigate their origin, in order to avoid errors in strategy that come from relying on the "black box" of the segmentation algorithm. The expense of a segmentation also means it is not constantly updated, so those that originally managed it may have since moved on. One client shared that most people only know a few bits and pieces, or "the general gist of it." Despite the incomplete knowledge of those expected to work with the market segmentation, the organization as a whole maintains an interest in its legitimacy.

Finally, segments take on a life of their own as they are used and circulated. Lawrence Gibson (2001) believes that these constructs can unproductively push clients away from the data: "The denotative and connotative meanings of the labels will be scrutinized… the labels, not the data, will drive marketing insights and strategies." The tendency to generalize also subsumes any variation among individuals perceived as being part of a certain segment. This happens in the field, where a reaction like "That's not our customer!" is framed in the terms of the segment rather than the individual experience. Similarly, Arnould and Cayla (2013) see a fetishizing of the consumer in statements like "We saw three Marys today." Segmentations create a sense of rightness, comfort, and common sense the more they are self-referenced. Although familiarity provides a common ground of shared beliefs, the danger is in effacing that the ground, or data, is shifting and complex.

THE ETHNOGRAPHIC RESPONSE

As ethnographers we are asked to respond to segmentations but we are not necessarily able to get beyond all their limitations in our work. While previous contributions describe integrating segmentations into a reflexive practice and working to alter them as representations, it is difficult to counter their assumptions because these models have such a

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[3] Language from recent RFPs and proposals.

dominant presence within companies. When we work with segments we negotiate and elaborate within their boundaries, but are less often able to question the categories or the efficacy and legitimacy of the model itself.

Previous contributors to EPIC have identified the role of segmentation as part of a broader focus on the role and identity of ethnographers as part of research and client teams. Segments are part of a reflexive approach, in that they reflect aspects of participant identity that interact with that of the research team. Examples include projects with researchers and participants of differing national, ethnic, and linguistic identity (Sunderland, Taylor, and Denny 2004, Thomas and Lang 2007). Segments, like culture to follow Abu-Lughod's (1991) earlier argument, are conceptual tools that create the other. By being reflexive, these authors engage with segmentation models not only through participants' identity, but also their own.

Additionally, because segments represent a large investment they have consequences for how research is planned, perceived, and received. "Clients can thus be quick to condemn as 'a waste' any interactions with respondents who do not fit the target profile" (Sunderland, Taylor, and Denny 2004:375-6). Companies also have a vested interest in maintaining the legitimacy of these artifacts and associated beliefs about the target user. Consequently, ethnography is positioned as a way to deepen, richen, and clarify these beliefs.[4]

The expectation that ethnography will fix or enliven an existing segmentation makes it that much harder to transcend the language and therefore the thinking embedded in these representations. The segments we are expected to expand on can seem impregnable from the very beginning of the project. Chang and Lipson describe how,

> Regardless of the client's own ability to recognize segments as approximations, caricatures, even, it is their broader audience within the organization, especially those far from the actual research engagement, who forget that they are idealized descriptions rather than real people, (2008:196).

Drawing on Marx and Durkheim, others compare the concept of the target user to that of a fetish, "the quasi-religious devotion that representations of consumers provoke within firms" (Arnould and Cayla 2013:389). The successful segment or persona, brought to life by ethnography, creates buy-in but takes on a life and power of its own.

The intersection of these two practices creates tension in our professional identity. Segmentation is a key part of the market research toolkit. The context ethnographers are asked to provide through their research can create a clash between corporate and anthropological knowledge systems. This unease has been lived and felt by many, and is evident in statements like, "We might not claim an 'authentic knowledge' of 'the field'; but our colleagues demand it from us," (Thomas and Lang 2007:79). As ethnographers co-inhabit multiple identities, segments demand adherence to doxa that cause discomfort when more closely examined in light of social science critiques.

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[4] "For us, ethnographic methods help to focus the quantitative data in many ways: understanding which of the statistics is the most relevant to differentiate segments, adding richness to help understand who these people really are and making the data digestible for engineers" (Flynn and Lovejoy 2008:243).

TOWARDS POLITICIZING REPRESENTATIONS

Our company, Conifer Research, is regularly asked to explore a client's highest value segment through ethnography. These are based primarily on large-scale quantitative questionnaires and occasionally focus groups and ethnography. The segments may be intended for marketing as well as product development, but often the former is favored over the latter when reviewing the documents in detail. While ethnography is used to inform future quantitative-based segmentations, the case studies below are investigations into pre-existing market segments. These projects highlight emerging motivations for a more politicized approach to representing users. In other words, the insights that proved particularly productive in these projects – as evidenced though buy-in from the client, concept ideation, and BASES testing – are linked to an attention to power, performance, and identity in everyday practice that contests the unitary meaning of attitudes and behaviors found in segment descriptions.

Anthropological theory and methods have more to offer in questioning the boundary between the external world of people using and buying products, and the internal world of corporate abstractions of these processes. Two directions emerge from the literature – challenging the reifying tendency of representations of everyday life and recognizing that consumption is an active, creative process. Although these are long-standing approaches within academic anthropology, they remain tacit and submerged in commercial settings. This paper aims to catalyze a conversation toward critical stance on segmentation.

Theories of Culture and Representation

The first direction draws on critiques of how ethnography not only represents, but also is itself implicated in creating cultures through written description. This approach is based on the work of anthropologists like Lila Abu-Lughod, James Clifford and members of the *Writing Culture* group. The reifying, limiting, and isolating effects of the concept of culture have direct application to segmentation. Uncritically viewed, cultures and segments are taken to be heterogeneous in attitudes and behaviors, assign differences in areas such as economic decisions and gender norms to cultural values, view the culture or segment as individual "personality writ large"[5] and rely on an objective, professional, and nearly anonymous expert presence in creating the representing text – the ethnographic monologue, final presentation, and segmentation algorithm.

In *Writing Culture*, rhetoric isn't just a matter of effective communication but a political act through which the ethnographer chooses one particular definition of a culture, eliminating other possibilities and perspectives. In response, Abu-Lughod argues that the neglect of feminist and "halfie" or indigenous anthropologists is a lost opportunity to address how "cultural difference is a problematic construction" (1991:163). Members of the discipline retain an identity as anthropologists by studying the other through the concept of

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[5] To draw on Margaret Mead's description of Ruth Benedict's approach to the concept of culture.

culture (154). She suggests a number of tactics to counter the reifying power of cultural representations. First, the concept of practice:[6]

> [Practice theory's] theoretical approach is built around problems of contradiction, misunderstanding, and misrecognition, and favors strategies, interests, and improvisations over the more static and homogenizing cultural tropes of rules, models, and texts, (1991:159).

Abu-Lughod also suggests that anthropologists should avoid the false neutrality of generalizing through ethnographies of the particular (160). Introducing the language of everyday life into a professional text creates risk by potentially calling one's own expert identity into question, but ideally creates a document, or a model, that is more dynamic in its representation of group attitudes, values, and behaviors.

Convenience shopping for a multinational energy company – As the company was planning to extend their brand of convenience stores across the U.S., they commissioned an update to their existing multinational segmentation. The study was conducted in two phases, one-on-one and group interviews with consumers in six countries in order to help build the list of consumer attributes for quantitative testing, and a second phase of online questionnaires conducted in 15 countries focusing on attitudes, behaviors, values and needs. In the U.S., approximately 3,500 questionnaires were administered. Five segments were identified, and the two in highest value became the focus of our project – these were individuals described as stopping at convenience stores to buy multiple items at an affordable price, as well as those who shopped there at least once a day for coffee, food, and other items. Although these were considered two distinct segments, the descriptions of behaviors and attitudes made it hard to differentiate which was which. For example, consider that for one group, "Gas stations offer food 24 hours a day, appealing breakfast items, fresh bakery items, and hot food that is available immediately," versus for another, "Coffee is the key draw. It is quick, easy, and affordable… They want food to be available 24 hours a day." As part of the expansion, Conifer was hired to look into on-the-go purchases and behaviors for individuals who typed into these segments.

This project illustrates how theories of representation can inspire more dynamic models of user behavior. One of the advantages of an ethnographic approach is that the methodology instills a focus on the thoughts and actions of particular participants. Instead of generalizing about the behavior of a segment, we discuss individuals and how their experiences compare and contrast in order to better understand who has typed into that group. This project also demonstrates a commitment to practice over segment – how people define, contest, and live what might be typically codified as variables in very different ways. Finally, identifying instances when individuals who type into one segment act like those in another draws attention to the constructed character of segmentations as models.

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[6] See also Pierre Bourdieu and Sherry Ortner, among others.

Abu-Lughod argues for ethnographies of the particular over those that generalize about an entire nation or people.[7] Her argument also applies to the artificial quality of market segmentations and the lived experience these documents subsume in their expert language.

> Showing the actual circumstances and detailed histories of individuals and their relationships would suggest that such particulars, which are always present (as we know from our own personal experiences) are also always crucial to the constitution of experience, (1991:162).

For example, while "family" in the existing segmentation was equally important to both types, this seemingly universal value played out differently in purchasing behaviors. One segment was more family-driven and the other more individual when making on-the-go purchases. Individuals within a single segment also shopped differently even though they were supposed to prefer a similar strategy. We identified two sub-types – a set of people who preferred one-stop shopping as the quantitative segmentation identified, and another who "trip-chained," or made multiple stops on the same trip – creating an awareness of a different mode of operation through which the client could gain share. In a sense, segments of the particular can create a conceptual space for differing perceptions of values and behaviors believed to be central and unitary.

In a second paradigmatic shift Abu-Lughod and others prioritize practice over culture as a driving force of analysis in order to avoid the false coherence of the latter. Focusing on practice over the unifying segment descriptions allowed us to recognize what Abu-Lughod describes as the "multiple, shifting, and competing statements" that are part of group life (159). One such instance was the relationship between food freshness, value, and quality. For participants identified with one segment, these attributes were intertwined, while the others thought of them as discrete entities. Many participants described themselves as attune to trends, but one group defined these as culinary and diet related, and the other to seasonal and product trends like the Pumpkin Spice Latte. Differing interpretations of what might be considered the same variable or motivator highlight the fallacy of thinking of segments as the same set of variables, just in different amounts – the same approach to "fresh food" or "on trend" would not account for a supposedly shared interest among segments.

These directions call attention to the heuristic nature of segmentation – artificial and abstracted even if necessarily so. Tracing contrasts and similarities reminded us that these individuals are not isolated, but rather live and consume in a world where they interact with others classified into a separate segment. The translation of reality to representation was also central in moments when we observed participants who typed into different categories behave in a similar fashion. In the morning, people acted most alike, as well as when they stopped for a physical "boost." For necessities, they used in-and-out attributes to evaluate a potential stop. User language to rationalize purchases, such as a "pick-me-up," "treat," or "escape," was similar. This suggested merchandising and designing spaces that spoke to customers regardless of their segment affiliation. Later on, we were also asked to help plan workshops for each of the product lines – bolstering socialization of the segmentation as

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[7] Abu-Lughod uses an example from her work, describing a family and their experience with marriage over homogenizing statements like the Bedouin's "institution" of polygyny (1991:162).

well as becoming part of creating the power and fetish of "bringing a segment to life," (Arnould and Cayla 2013:395). We became implicated in reproducing the segmentation, but in a way that at least made people account for its constructed quality.

Theories of Consumption and Identity

Bourdieu (1977) offers another critique of representations of the social world that are not realities in themselves, yet are treated as such. He deconstructs the oft-cited metaphor of culture as a map: "It is the analogy which occurs to an outsider who has to find his way around in a foreign landscape and who compensates for his lack of practical mastery, the prerogative of the native, by the use of a model of all possible routes" (1977:2). However, there is gulf between this abstraction and the actual journey, just as there is between a market segmentation and everyday practice.

Bourdieu's formulation of cultural, social, and economic capital is also relevant for our efforts. He argues that practices like language, education, and consumption are not neutral, but implicated in reproducing the interests, influence, and power of one group or individual over another. He explains, "It is in fact impossible to account for the structure and functioning of the social world unless one reintroduces capital in all its forms and not solely in the one form recognized by economic theory," (1986:241). Cultural capital, in particular, can take multiple forms through personal dispositions,[8] cultural goods, and institutionalized means like educational credentials. As described above, his critiques have been taken up by consumer culture theory, but have further potential for the political nature of consumption.

The politics of everyday practice are also at the core of Michel de Certeau's *The Practice of Everyday Life*. De Certeau redefines consumption as another form of production, albeit silent and dispersed. Theory must grasp how products are utilized, since statistics accounts for the material aspect of everyday practice, "but not their *form*; it determines the elements used, but not the 'phrasing' produced by the *bricolage* (artisan-like inventiveness) and the discursiveness that combine these elements," (1988:xviii). His work suggests that we cannot consider consumption as a one-directional narrative, but recognize it as a political act that has implications for how we position brands and products.

Homemade cooking for a food product manufacturer– This case study addresses a food and beverage company that used multiple segmentations at the category and brand level. To coordinate strategy, they sought out an overarching cross-category model. Their stated goal was a holistic understanding of food behaviors and beyond, including key attitudes, beliefs, values, and motivations. To create this segmentation, a sample of 5000 individuals was surveyed through a one-hour online panel. Seven segments emerged; the most valuable segment was described as the highest income, the most interested in homemade cooking, purchasing multiple in-category products, and also spent the most on grocery shopping by over one hundred dollars per month. Despite the apparent fit, offerings targeted to help people more easily prepare homemade meals – sauces and condiments – were not doing

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[8] The oft-cited habitus.

well. We were asked to look into how these users' needs connected with one brand in particular, as well as to come up with a set of design principles for product development.

Further motivations for a political approach to representation emerge from the role of purchasing and usage behaviors in this project. Reconnecting with usage, rather than just the purchase moment, demonstrated how consumption was a choice intimately linked to identity, class, and power for these individuals. The practices we observed and discussed – shopping, deciding on a meal, cooking, eating, and talking about food – instilled meaning to consumption that had been missing from the segmentation. Additionally, dealing with food, cooking, and related knowledge as cultural capital provided an entry to new marketing and product development opportunities for our client.

Returning to Bourdieu's contrast of the map versus the journey, the description of the target customer had become hard to apply to strategic decision-making because it did not connect with how people that typed into a segment experienced the meaning and role of food in day-to-day life. For example, our client believed they enjoyed cooking homemade food, but the particular meaning of homemade was not used to position their products – their "just add chicken" approach was falling flat. Participants defined homemade cooking as the result of transforming food with knowledge, effort, and affection, rather than assembling components of a meal on a plate. Craftsmanship was also important, because for them, a homemade meal was intentionally thoughtful in its variety of texture and flavor. This led them to avoid the perceived uniformity of more processed food whenever possible. Without reflecting their individual practices through the physical qualities of the product, the packaging, and the positioning, the company limited its own success with the individuals they had identified as their most valuable segment.

Purchasing and use behaviors begin linking to the exercise of social and cultural capital, adding context to how products are used to perform individual and group identity. Like the original description of the segment, we generated a long list of products these cooks had purchased. Unlike the online questionnaire, we were able to observe them select and use these products in person,[9] highlighting the polysemic meaning of products and brands as inspired by Bourdieu and de Certeau. These participants took pride in the cultural experiences and media consumption their class position and what they perceived as their personal interests engendered. Their culinary knowledge represented a form of cultural capital, so it was no surprise that they did not respond to products that did not reflect or respect this knowledge. Purchasing and usage behaviors further illustrated this insight. Participants gravitated toward prepped items that saved labor and time, but not processed as to remove demonstrations of their skill in interacting with ingredients. Cultural capital reframes the problem of homemade cooking from one of time and availability to one of performance and identity.

EMERGING APPLICATIONS

Segmentations have endured because they are useful, but theory suggests that there are ways in which to work with them to help mitigate their limits. These models are a

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[9] And the food products that they had abandoned, left unused in their fridge or pantry.

fundamental artifact in the commercial world, but are primarily re-examined as markets and technologies change, rather than for the way in which they construct knowledge and action. Within EPIC and the design research community, there is discussion of various models, personas, and profiles, and the discrete activities for which they are best suited. A similar approach to segmentation is needed. Early directions emerge from the case studies described above, as well as the types of choices we make during different steps of a project. From our interactions with participants and clients, to the representations we create as deliverables, the possibility emerges to co-exist with these models in a way that is more reflective of the politics of everyday practice and conducive of our own professional identities.

The User Context and the Performativity of Culture

Publications like Harvard Business Review, BusinessWeek, and Fast Co. describe culture in ways that adhere to Edgar Schein's (1984) influential definition as an organization's artifacts, behaviors, and "pattern of basic assumptions." This viewpoint is carried through in assumptions that segments represent a set of shared values and behaviors among their assigned members. But as Abu-Lughod and others argue,[10] this perspective drains agency from how individuals continually contest and negotiate meaning. Critical perspectives on market research further demonstrate the benefit of analyzing the interactions between the research team and the participant. Sunderland, Taylor, and Denny (2004) describe how the engagement between a multiethnic research team and Mexican American participants became part of their findings on how individuals negotiate their own national, ethnic, and cultural identities.[11] A reified user eliminates the sense of play, flux, and dissent from personal identity. Inspired by a politicized approach to representation, can we look for moments to share and co-create segments with users?

Consumption is a creative, political activity for Bourdieu and de Certeau, and CCT researchers similarly hold that, "The creation of a lifestyle has become an increasingly conscious and self-aware activity" (Ahuvia, Carroll and Yang 2006:38). During one project, Conifer interviewed and hosted co-creation sessions with women who had typed as struggling dieters. According to the segment description, their defining need was weight loss. The repositioning under consideration by the client was based on a tacit belief underlying the segmentation that these women wanted to be thin and were jealous of others who were. During co-creation conversations, we heard these participants identify with others who associated food with love, comfort, and social connection. While these self-identified dieters wanted to lose weight, the ultimate goal was to look better and feel healthier. By creating a social and physical space in which these women could discuss how they perceived each other's opinions and relevant media representations, the research team was able to suggest branding that connected with the core tensions of dieting, health, and appearance.

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[10]Also note the work of the cultural studies school beginning in 1960s, and Dick Hebdige's analysis of subculture and the performance of style in particular (1979).

[11] "[The] negotiation of identity between respondents and a multiethnic, multidisciplinary team structured the process literally and symbolically. This negotiation is examined in terms of research process as well as results" (Sunderland, Taylor, and Denny 2004:373).

The Client Context and a Reflexive Approach

Reflexivity refers to the inclusion of the role of the researcher and the methodology as project data. As *Writing Culture* and Abu-Lughod suggest, it is an approach that counters the reifying effects of abstractions like culture and segments by situating them in their historical and political context. In the corporate world, this tactic can be repurposed through analytical attention to the research and client context. Clients should be considered as participants and co-creators of project deliverables, most evidently because the firm's expertise will impact which customers will prove most valuable to them. But this is also important because the socialization of a model is just as relevant to its success as its form or content. Since we work with a variety of groups with different goals, such as marketing, user experience, innovation, and consumer insight, responding to the group and corporate context can address anxieties and assumptions through the structure of the research outcomes.

As described above, ethnography is constrained when framed as an addendum to segmentation, but a reflexive approach provides opportunities for teams to dissect the tacit assumptions underlying representations. For example, Flynn et al. (2009) assumed they all shared the same idea of who their target segments were – it was only when they seemed to have issues with recruiting that the team looked into how the segmentation algorithm eliminated current usage variables. New team members or situations create moments for questions that people may usually be reluctant to ask since they assume the answer to be generally understood and shared. Witnessing the research interaction can itself be an impactful moment. The principle of reflexivity suggests periodic forays into the field to reconnect with the practices a segment is supposed to represent.

Deliverables and Representative Practices

Ideally, our work becomes a part of producing belief and action within companies. In order to address the issues of segmentation as the dominant genre of representation, we can use a variety of models that champion the dynamic nature of user behavior. In a project about media consumption, we identified modes in which content was primary or secondary to the social interaction, along with which household members were involved in selecting the content. Media usage behaviors informed the design of new interfaces to support people as they moved from mode to mode. Tracing the connections between behavioral or user types and how individuals move between categories can help companies innovate around platforms or systems that consider the entire lifecycle of the user. In the convenience shopping case study described above, we indicated situations when individuals in one segment would begin to act like another. In contrast to the original segmentation, this allowed us to ideate concepts with an awareness of the dialectic relationship between segments. No single framework is appropriate to every design challenge, but a critical stance towards the boundaries, connections, and migrations between categories of a model can uncover opportunities for innovation around change and contrast.

A second evolution of representative practices is based on the choices we make in portraying everyday life. As we know, rhetoric and texts are not neutral, but assert assumptions regarding the subject at hand. For example, one possible choice is using photos

of study participants rather than stock photographs, as well as video whenever possible. This approach is also limited in how it creates the consumer fetish, but it reminds the reader that the typology is supposed to be connected to behaviors in the real world.[12] We can also whenever possible state insights and category descriptions in user language. Using the internal logic of emic categories can also inspire the factors on which the typology is based. Representative choices of models and how they are depicted can introduce small, incremental changes in how companies connect typologies to real world practice.

CONCLUSION

Taking inspiration from anthropological theory and applied work, this paper seeks to catalyze a discussion into the power of representations within organizations. Abstractions matter because companies base strategies, advertising, and material culture on models like market segmentations, which in turn shape the social world of consumption and behavior. The usefulness of segmentations in managing complexity and streamlining decision-making makes this a challenging task, but a necessary one that is close to the stakes of our professional and personal identities as consultants, ethnographers, and anthropologists.

Marta Cuciurean-Zapan is a senior associate at Conifer Research, where she studies behavior and emotion in order to create positive and significant interactions between people as mediated through material culture. Her background in anthropology and art brings pattern and meaning to questions in fields like education, hospitality, and consumer goods. marta.cz@gmail.com

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The Model of Change: A Way to Understand the *How* and *Why* of Change

JOHANNE MOSE ENTWISTLE
MIA KRUSE RASMUSSEN
Alexandra Institute A/S

Developing sustainable solutions within the energy sector requires a holistic, interdisciplinary approach. Interdisciplinary partnerships need common frameworks that enable dialogue and knowledge exchange between different perspectives. In this paper we present 'The Model of Change' as a framework for designing and evaluating different efforts in innovation projects. By insisting that effects of solutions have to be understood as a complex interplay of context, preconditions, perception, and interaction, The Model of Change becomes a tool to help us bring nuance to the simplistic cause-effect view that often dominates energy research. This type of contextual knowledge is essential to reproduce successes, improve failures and develop sustainable solutions that work.

INTRODUCTION

In this paper we share our experiences using a tool we call The Model of Change. We have developed this model as part of our work in different innovation projects within the energy sector to facilitate interdisciplinary collaboration and help us frame and understand the effects of our different efforts to change people's behaviour. These projects include the EcoSense and VPP4SGR projects where we work closely together with computer scientists and engineers, performing cross-disciplinary analyses, to understand and affect energy consumption in different settings. However, we have also found that the model is applicable (maybe even more so) in contexts where the collaboration is less frequent and our role more peripheral and this is the type of case we will be focussing on in this paper by showing how we used the model in the Proactive Energy behaviour project (Proac).

The Model of Change draws attention to the complex interplay of context, preconditions, perception, and interaction that scope the possibilities we have to affect change and thus helps us develop better solutions. Our work with the model is based on *Innovative Evaluation* (Dinesen and de Wit, 2010, 2013), an evaluation approach that integrates the macro level factors (resources, activities and output) of Logical Evaluation with Pawson and Tilley's focus on how and why these factors are interpreted, transformed and acted out at the micro level in peoples' everyday lives (Pawson and Tilley 1997). It bings attention to the *mechanisms* that promote or inhibit certain types of interaction with the activities and focuses on *what* it is in the activities that make them work the way they do (ibid).

The Model of Change as a tool in itself does not create any effects in our collaborations: It is *what* we do with the model, *how* we do it and *with whom* that makes this model work. We start with an empirical example of *how* and *with whom* we do *what* with The Model of Change in a specific context to show how the model: a) has the potential of creating a shared framework for design and evaluation, b) enables the generation and incorporation of new insights into interdisciplinary partnerships, and thus c) broadening the scope for solutions and qualifying outcomes. In the last part of the paper we reflect upon some of the main challenges and potentials of working with this type of model.

A MODEL TO FACILITATE INTERDISCIPLINARY WORK

Working as anthropologists within the energy sector, we are often engaged in interdisciplinary projects with computer scientists and engineers who want to develop feedback systems that can provide people with better data to help them make more informed decisions, and thus use less energy.

We often see our role as anthropologists in these projects as *exploratory*, questioning assumptions, broadening the scope, and offering rich descriptions of contextual factors. Anthropological methods and theories provide a strong approach for addressing the *why* and the *how* of the world through a contextualisation of micro-level aspects of everyday life and change, offering an understanding of behaviour as something contextual, shaped by people's concrete (sensory) engagements in the world (Ingold 2000, Howes 2004, Pink 2012). Our more technically skilled project partners mostly occupy a more *solution-oriented* role, finding the right solution for the problem and making it work.

Collaboration across these different roles or perspectives in projects can be quite challenging, because the different roles have diverse objectives and methods (Bauer 1990). Project team members have different ways of knowing (Harris 2007, Barth 2002) and often lack tools to facilitate knowledge exchange and negotiation of meaning (Wenger 1998). As Christensen points out, applying ethnographic data in a context of technology development requires appropriation and shared analytical frameworks that enable an open and systematic exploration, discussion and evaluation of the interventions we produce (Christensen 2013).

We introduce The Model of Change as one such shared analytical framework that enables us to talk about assumptions, interventions, and effects in a meaningful way that can accommodate the different types of knowledge and perspectives that partners bring to the table and helps generate new shared understandings.

Figure 1 shows the graphical outline of the model. It is divided into seven general categories that interweave the micro and macro levels of change. The headings are adjusted for every specific project or case in order to make it as meaningful as possible for the people working with the model. The one depicted here is the one we used in the Proac project.

MODEL OF CHANGE

CHANGE EFFORT OR INTERVENTION

WHAT DO WE DO WITH THE RESOURCES IN THE PROJECT? WHICH ACTIVITIES?

CONTEXT

WHICH PRECONDITIONS DO THE USERS HAVE TO ENGAGE WITH THE EFFORT? HOW IS THE INTERVENTION IMPLEMENTED? WHAT SURROUNDS THE EFFORT

RESOURCE & TECHNOLOGY

WHAT IS THE INPUT TO THE INTERVENTION AND CHANGE EFFORT?

EFFECT

WHAT IS THE LONG TERM EFFECT?

PERCEPTION AND EXPERIENCE

WHAT IS THE USERS PERCEPTION AND EXPERIENCE OF THE INTERVENTION? WHAT INHIBITS OR PROMOTES THE INTERVENTION?

(INTER)ACTION

WHAT IS THE USERS INTERACTION WITH THE CHANGE EFFORTS AND SURROUNDINGS?

OUTCOME

WHAT IS THE SHORT TERM OUTCOME?

FIGURE 1. *The Model of Change developed by the Alexandra Institute*

Generally the model can be explained as follows:

- *Resources and technologies* include both human and non-human actors such as economical, infrastructural, and technical resources available for the intervention.
- The *Context* for the intervention is e.g. buildings and target group descriptions.
- *Change Effort or Intervention* describes the activities in the intervention; what we do with the given resources in the intervention. 'Effort' can also be called 'Activities'.
- *Perception and Experience* deals with the perception, attitude and experience that a person has of the resources that are being presented or applied in a specific manner through certain efforts or activities in a specific context.
- The *Interaction* describes the (inter)action that a person may or may not have with the effort or activities.
- The *Outcome* is what we are trying to achieve, such as reduced energy consumption or a more 'soft' result such as satisfaction
- *Long Term Effect* can be change in legislation, societal discourse etc.

When we consider all seven categories in relation to a specific intervention, we get a complete set of assumptions about *how* and *why* change is created through an intervention. This set of underlying assumptions about what will create change is called the *change theory* (Dinesen & de Wit, 2010, 2013). The Model of Change is the practical tool that we have

developed, based on Dinesen and de Wits theoretical framework, to generate change theories together with partners. The change theories shape the design of solutions and evaluations in our projects. They are often not made explicit, which is problematic because different partners might have different change theories. This is why we need a framework, such as The Model of Change, that enables open negotiation and helps us build a shared understanding of what it is we are working towards and what will help us get there.

Having given a brief introduction to the challenges of interdisciplinary work and The Model of Change, we will now describe how we use The Model of Change in the specific context of the energy domain in the Proac project.

THE PROACTIVE ENERGY BEHAVIOUR PROJECT

The Proac project is a national Danish project funded by Realdania. The aim of the project is to develop and test different methods of visualising energy consumption for residents in social housings. The project started in 2013 and is expected to finish in 2015. The evaluation of the project is funded by the Danish Ministry of Housing, Urban and Rural Affairs.

The overall assumption (the change theory) in the Proac project is that the introduction of energy visualising technologies to residents in social housings will lead to reduced energy consumption. Underlying this assumption is the belief that using technology to make energy consumption visible for the residents will create more awareness, and more awareness will lead to reduced energy consumption.

Based on this change theory Proac has developed three different energy visualisation strategies that will be tested at three different social housing association sites:

1. Visualisation of energy consumption through in-house displays and web interfaces.
2. Visualisation of energy consumption through monthly reports, app, and web interfaces.
3. Visualisation of energy consumption through SMS, app, and web interfaces.

Each test site has its own partner group consisting of technology providers and a housing association. The partners in these groups are mainly solution-oriented, their role in the project being to develop new technological solutions. A project manager coordinates the technology tests across the different partner groups.

Kick-off workshop

We (the Alexandra Institute) were not part of the initial project group but were invited to join Proac by the project manager because of our background as anthropologists working with user-driven innovation in the energy sector. The project manager wanted us to advocate for the 'human perspective', which he believed to be lacking in the project. Our role in the project therefore quite naturally became one of challenging the existing solution and technology-oriented focus, with a more explorative and contextualising focus on how and why change is created.

When introducing The Model of Change, we gave a narrative about changing energy consumption through the introduction of technology, visually supported and structured by The Model of Change in the form of a PowerPoint slide like figure 1, and drawing upon a practice-oriented understanding of energy consumption (Entwistle et al 2014). Following our presentation of the practice theory and The Model of Change we used the presented insights as a frame for concept development in the workshop. Participants were divided into groups and asked to brainstorm on concepts using printed material that focussed on the contextual aspects of energy consumption such as the social, material and technological infrastructure surrounding and affecting the users and their energy consumption. Our role in the workshop was to facilitate partners in their concept development and document the results. We challenged their assumptions by asking questions about the statements they put in the different boxes of the model, and brought contextual aspects into the groups not focusing on these by themselves. The model helped us structure the discussions and made it easier for us to get the participants to also include factors they would not usually take into consideration. Following the kick off workshop the three groups developed and implemented the three solutions listed on page 4 at the three different test sites.

Change Theory Workshops

After the implementation of the three solutions we organised workshops with each partner group to facilitate an exploration and verbalisation of their assumptions about how to change energy consumption through the introduction of their specific (technological) solutions. We wanted to build something similar to what Dinesen and de Wit call a *Program Theory* (Dinesen and de Wit 2013: 66) with assumptions and hypotheses that we could use as a reference point for our findings in the field when we perform the evaluation. Before each workshop we analysed all the available case material and systematically wrote down the assumptions in it, using the Model of Change. The following is an example of our preparatory work with one of the concepts:

CHANGE EFFORT OR INTERVENTION

MONTHLY STATEMENT ON HEAT AND WATER CONSUMPTION, SHOWS BOTH UNIT AND COST. COMPARISON WITH AVERAGE IN BUILDING.

CONTEXT

IMPLEMENTATION: MEETING FOR RESIDENTS, CHRISTMAS LOTTERY, PAMPHLET.

RESOURCE & TECHNOLOGY

SMART PHONES, TABLETS, MAIL, AND PAPER.

EFFECT

-

PERCEPTION AND EXPERIENCE

THE MAIN INCENTIVE IS MONEY AND BEING 'NORMAL' LIKE THE AVERAGE.

(INTER)ACTION

-

OUTCOME

RESIDENTS FOCUS ON INVISIBLE WATER AND HEAT CONSUMPTION WITH AN EYE TO APPROPRIATE REDUCTION OF CONSUMPTION.

FIGURE 2. *The Model of Change, filled out with assumptions from written case material*

During the following workshops we encouraged the partners to fill out The Model of Change with their assumptions about the solutions that they had implemented at their test site. We wanted them to consider each category in the model as well as the correlations between categories. They started with the three 'factual' ones: Resources, Intervention and Result and then went on to the four remaining 'contextual' ones.

To avoid the same reductionist change theories as the one in Figure 2, we challenged the partners with our contextual and theoretical insights on the subject. The structure of the model made it easier for us to make the discussions concrete and enabled us to build chains of assumptions about what would work for whom under which circumstances (Dinesen and de Wit 2013). Figure 3 shows an example of such assumptions from a partner workshop. In the example we focus on the *Perception and Experience* and *Interaction* categories :

PERCEPTION AND EXPERIENCE

WHAT COULD INHIBIT THE INTERVENTION:

- LACKING IT COMPETENCIES
- NO PC, NO SMART PHONE
- INFORMATION IS NOT ADJUSTED FOR
  THE TARGET GROUP [...]

WHAT COULD PROMOTE IT:

- ECONOMICAL INCENTIVE
- BETTER INDOOR CLIMATE
- NEW KNOWLEDGE ABOUT CONSUMPTION
  AND POSSIBILITIES FOR ACTION
- IF THE RESIDENTS LIKE BO THE JANITOR,
  THEY WILL WANT TO DO AS HE ADVISES
  THEM TO
- RESIDENTS PERCEIVE THE SENDER AS AN
  AUTHORITY AND WANT TO FOLLOW THEIR
  ADVICE
- THEY UNDERSTAND THEY CAN DO THINGS
  DIFFERENT LY
  [...]

(INTER)ACTION

BEHAVIOUR CHANGE:

- ADJUST THERMOSTATS BASED ON DATA
- AIR OUT THE APARTMENT THOROUGHLY
  TWICE A DAY
- SAVE ON WATER (SHORTER SHOWERS,
  LESS WATER FOR DISH WASHING
- REACT ON WATER WASTE E.G. IF
  RUNNING TOILET WILL GO TO THE
  HOUSING ADMINISTRATION OFFICE
- BUY WATER SAVING DEVICES
- READS MONTHLY REPORT
- CHECKS OUT WEBSITE AND APP
- A TARGET FOR THE PROJECT COULD BE
  THAT RESIDENTS HEAT THEIR
  APARTMENTS TO 21 DEGREES AND AIR IT
  TWICE A DAY

FIGURE 3. *Results from change theory workshop*

This hands-on experience of going through the concepts step by step to build these chains of assumptions forces the project partners to be concrete in their statements and to consider all aspects of the solution.

Having given this brief overview of *how* and *with whom* we do *what* using the Model of Change in the specific context of Proac, we will now reflect further upon the potentials and implications of using the model to rethink evaluation, generate new insights, develop new solutions and create a shared analytical framework.

RETHINKING EVALUATION WITH THE MODEL OF CHANGE

The initial assumptions about change in Proac were highly dominated by a rational-economical change theory in which people always choose to rationally and economically optimise their situation. Furthermore, as shown in Figure 2, there seems to be no reflections on what these solutions actually expect residents to do in practice with the technologies or the information they receive. These types of change theories leave very little room for

understanding energy consumption as a mediated consumption, a consequence of everyday practices, formed by many different factors that lie both within and beyond the individual in his or her societal and material context (Entwistle et al. 2014).

To us as anthropologists, the idea that people will automatically change behaviour if they receive the right information is unsettling for a number of reasons. It implies a view of human behaviour as rational and intentional that seems incompatible with the anthropological understanding of behaviour as contextual, shaped by our concrete (sensory) engagements in the world (Ingold 2000, Howes 2004, Pink 2012). Understanding behaviour and practices in relation to energy consumption and how this becomes meaningful to people in their daily lives is no simple matter. Energy consumption and the different types of behaviour or practices associated with it is a complex phenomenon. Rooted in a practice theoretical approach (Bourdieu 1977, Reckwitz, A. 2002, Warde 2005) we understand energy consumption as a mediated hidden consumption affected by a set of interrelated factors that constitute meaningful practices in people's daily lives (Gram-Hansen 2009, Shove 2010, Strengers 2011). Designing and evaluating interventions that aspire to change peoples behaviour or practices is therefore not simple either. We need to take contextual factors into account and this is what we make visible through The Model of Change.

At the Proac kick-off workshop we challenged the Logical Evaluation approach by making it *visible* to the partners that the categories in their logical evaluation approach leave them with no understanding of *how* or *why* change occurs. It only focuses on the causal relationship between *Resource, Change Effort* and *Outcome* (Dinesen & de Wit 2013).

We took the partners through the neglected categories one by one, illustrating each category's importance in understanding change using empirical cases from the energy domain. The technologies implemented are situated in the context of everyday practices among a group of social housing residents that are generally characterised as being less resourceful than the average population, many of them live in buildings that are old and considered insufficient by the residents. Based on The Model of Change we showed how a deep understanding of these contextual factors is vital for qualifying the solutions implemented.

RETHINKING SOLUTIONS WITH THE MODEL OF CHANGE

Challenging the partners at the kick-off workshop using The Model of Change not only resulted in a new evaluation approach. It also broadened the scope for solutions by bringing new types of knowledge into play that helped partners qualify the design of their solutions. Our first impression was that most groups had a hard time integrating the new contextual insights and we were rather disappointed with the initial results of the workshop as the groups presented them to us. As our fieldnotes indicate it seemed that our presentation and contextual tools had not had much impact:

> [...] What generally characterizes the concepts developed by the participants in the kick-off workshop is that the user has to be active and act based on information provided by feedback technologies. The incentive for changing behaviour is generally economically and

> environmentally based, but for some also indoor climate. [...] (Fieldnotes
> from workshop. Translated from Danish)

However, there were also encouraging points in the concepts that lead us to conclude that the introduction of contextual insights did help broaden the scope. One was the idea of a physical 'filling station' where kids and residents can go and fill up on knowledge as part of a social activity. Furthermore e.g. competitions, social media and strengthening of the local communities were mentioned as part of some of the technically-focused feedback concepts. Moreover, after the kick-off workshop the groups further developed their ideas and it seems that the context has been considered and incorporated in at least some of the final concepts as well.

An example of such a re-thought solution is to combine energy visualisation technologies with the education of selected residents to be local ambassadors (usually residents who are members of the local housing association board). The ambassadors' role is to be proactive, meet residents where they are – e.g. the common laundry room – and share their knowledge about both energy reducing efforts and how to take part in the energy reduction project. This solution takes into account that the target group does not necessarily have the resources to engage in new technologies and energy reducing efforts on their own and may need more support and motivation than a financial benefit. This solution also considers how residents are part of a bigger social context and community in which some people have more 'symbolic capital' (Bourdieu 1994) and thus may act as first movers and initiators of change, while others may follow them.

Another project group re-thought their technical solution and added a practice-oriented campaign. They delivered bags of potatoes or toothbrushes outside the residents' door with the concrete advice of not leaving the tap running while cleaning the potatoes or brushing your teeth. They also delivered showerheads that consume less water. All of these efforts draw on insights regarding how the context for the implementation of the energy visualizing technology plays an important role for the residents' engagement with the technology. Furthermore, the concrete advice given to the residents shows insight into how energy consumption is the *consequence*, and not the *purpose*, of everyday practices in the home (Entwistle et al 2014).

The project manager of Proac has stated that our introduction of practice theory and The Model of Change with its focus on the micro level of context, perception and interaction has framed the rethinking of the initially technology-focused solutions in the Proac project. However, not all groups ended up with 'contextualised' solutions to the same degree as the two described above. As much as we appreciate the conclusion of the project manager, we are wary not to fall into the reductionist trap of explaining the effects of using The Model of Change in Proac (rethought solutions in the groups) by referring to our resource (the Model) alone. Other types of *resources* (such as time, money, the initial framework of the project, technology, access to different professional competencies) available to the three groups, and the *context* (e.g. earlier experiences with social scientists, organisational structures etc.) in which the model and practice theory have been applied affects the way it has been *perceived* and *operationalised* by the solution-oriented partners in the project. All these factors thus shape the solutions that they end up with. We will however

conclude, that our practice-oriented approach and use of the model have played a part and we hope to inspire further use of the model by others and research more on this use in the future.

GENERATING AND USING NEW TYPES OF INSIGHTS

When we use The Model of Change together with the partners in the change theory workshops we see how this work opens up new insights about the strengths and weaknesses of the solutions that have been implemented. Figure 3 is an example of how the project groups have several reflections on their concepts that they did not have in the written case material before using The Model of Change in the workshop (shown in Figure 2). This is partly due to the categories in the model itself, which encourage these reflections, but just as importantly we facilitate and challenge the partners when they fill out the model in the workshop thereby 'forcing' them to consider new insights and questions. By working jointly through the different boxes of the model, discussing the statements in each, it becomes clear where partners views differ. Simple as this may sound the hands-on approach makes a difference in facilitating the negotiation of a shared understanding to frame the work in these projects. The project group becomes a community of practice (at least temporarily) engaged in defining a shared understanding. This process makes the knowledge generated have a higher impact because they themselves actively engage in the formation and shaping of it.

The Change Theory workshops also turned out to play an important role in preparing the partners for a new type of contextual insight as relevant results of the evaluation. Through the workshop they themselves experienced how this contextual knowledge was essential for them to be able to explain why and how their concepts would (not) change energy consumption in social housing. Therefore, it was easier for them to understand and incorporate the types of knowledge that was generated through the field studies, showing the importance of looking beyond the individual and the technology in itself and consider contextual factors as well. We will briefly describe examples of these insights and the attention they have been given so far in the project.

Findings from our qualitative studies in the project point out that the state of the building that the residents live in (their material context) is key to their perception of and engagement in energy reducing initiatives, just as it has an important influence on their current energy consumption. When the building is perceived as being in a poor condition (e.g. difficult to heat), the residents have different coping strategies that affect their energy consumption in a negative way. Additionally, they do not see how or why they should engage in any energy saving efforts, because they feel that they are already doing what they can within the limited scope of possibilities they have in that particular building.

These key findings would not have been generated if we had not paid close attention to the context or if we had only looked at the resident's financial motivations or the qualities of the energy visualising technologies themselves. Figure 4 shows a matrix developed mainly by the project manager based on the findings described above. It shows the relationship between residents' motivation and the condition of the building they live in and underlines the importance of taking both aspects into account. It is thought as a simple guide to housing associations who want to initiate efforts to reduce energy consumption.
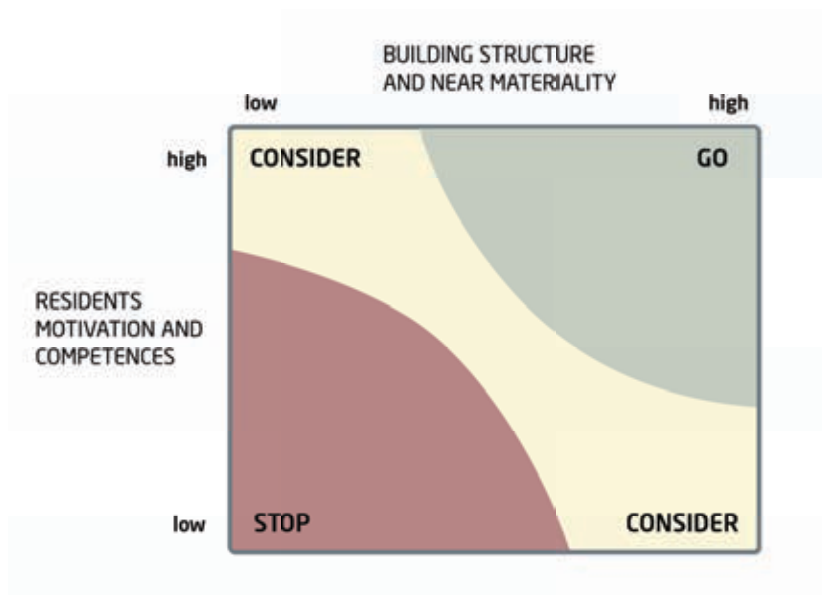
FIGURE 4: *Result from evaluation in the final reporting*

Focusing on both the individual human being and the context, Figure 4 is an example of a new type of evaluation result that challenges the simple assumption that has dominated the project from the beginning: technology leads to effect. Our experiences from previous similar projects shows that this simple assumption also leads to lack of interest in or ability to incorporate and *use* findings and knowledge that does not fit into the assumption. Findings as the ones described above are therefore not always easy to 'sell' to our solution-oriented partners. This, however, seems not to be the case in the Proac project. We believe this has to do with the inter-disciplinary collaboration that we have engaged in using The Model of Change. This work has prepared the solution-oriented partners for a new type of evaluation result that does not only focus on the qualities and functionalities of the technologies and (lack of) effects, but also consider the context and situated perception and use/non-use of these technologies. In Proac the project manager chooses to focus on these results in his conclusive reporting and recommendations from the project [will be publicly available in Danish in the Fall 2014].

It is too early to say how these results may affect the further development of solutions at the three test sites or in other solution-oriented projects. The effects we see in Proac have been generated in a specific context of e.g. a project manager who is positive and knowledgeable towards social sciences and with whom we have had an open, pleasant and mutually curious collaboration from the beginning. This might not be the case in other interdisciplinary projects, and as such the use of The Model of Change in other collaborations may lead to quite different results.

THE MODEL AS A SHARED ANALYTICAL FRAMEWORK

Using The Model of Change to bring forward change theories was not without obstacles. Through several of the partner workshops it became clear to us that some categories were easier to relate to and agree on than others. The macro categories *Resources, Effort* and *Outcome* seemed to evoke a higher degree of consensus and were easier to describe for the project partners. This is not surprising as these belong to the 'logical' evaluation model (Funnell & Rodgers 2011), which is well known to the partners. For some partners, the micro categories such as *Perception* and *Interaction* seemed too trivial and were harder for them to describe. In some groups, the partners struggled with being specific in relation to the required *Interaction* and wrote statements such as: *"residents should heat up their home optimally"*. These statements are very imprecise and do not take into account the key point that these are exactly the kind of 'objective' truths that human beings interpret and perform in so many different ways in their daily lives, depending on their knowledge, personal resources and concerns, and the social and material contexts in which they are supposed to *"heat up or air out their home optimally"*.

One explanation for the lack of concreteness and precision in these statements could be that our partners have not previously considered exactly *what* they expect their users to *do* with the implemented solutions (in this case technologies and feedback). Should the user turn down the thermostats half a degree? Is that what 'optimal heating' means? And 'optimal' for whom? The Model of Change helps make this otherwise hidden/inaccessible micro level visible and supports the partners in considering and describing these categories with the help of a facilitator. This attention to the micro level does not prevent the solution-oriented partners from maintaining their initial focus on the macro level, but by enabling a 'double focus' we believe that we are presenting the solution-oriented partners in the project with an *appropriate disruption* (Maturana (our translation from Danish) in Dinesen & de Wit 2013:27), a disruption that is not too big to accept and incorporate.

The visual joining of the different types of data in the Model of Change helps establish a common ground for both the explorative and the more solution-oriented foci and roles in the project and makes it visible that both parties and types of data are essential in carrying out a successful evaluation of our solutions. Working with the model also revealed differences in the partners' ideas of *what* the project was actually about and what the overall evaluation questions and success criteria were. When filling out the model, they did not all agree on exactly *what* in their solution would bring about a reduction in energy consumption. Making these differences explicit, and offering new categories to reflect on them, gave the group a chance to discuss and reach a shared understanding across the project group. In this way The Model of Change becomes a *shared analytical framework* (Christensen 2013). It enables dialogue, analysis and understanding across disciplines and roles even though we have different foci, methods and responsibilities in the project. We believe that this collaboration is essential for developing sustainable solutions.

CONCLUSION

Using models such as The Model of Change usually has both the purpose and pitfall of reducing complexities and framing projects narrowly, which may not go hand in hand with anthropological work. For us, however, using this simple graphical model continuously helps us maintain the focus of our partners on the contextual factors of change and thus enables us to actively work with exploratory change theories and evaluations in our collaborations with more solution-oriented partners. Furthermore we believe that our background as anthropologists plays an important role in *how* we use the Model of Change together with our partners and thus in understanding *why* the Model of Change works the way it does when we use it in interdisciplinary projects. For example, our practice-oriented understanding of energy consumption has played an important part in unfolding and challenging the limited change theories together with our partners. Another important feature is skilled facilitation of the model in workshops and presentations and the ability to communicate across disciplines, e.g. using cases and examples from the energy and technology domain, which the solution-oriented partners can relate to. Being anthropologists gives us the tools and interest in understanding other disciplines and applying these insights in our communication with them. Last but not least it is our experience that curiosity and interest for other disciplines are features that must be present in both ourselves and the partners we work with. All in all these are the enabling mechanisms that promote the Model of Change to work the way it does in Proak.

Together with our partners in the Proac project, we have worked actively with the Model of Change in several workshops and to sum up, the most important enabling mechanisms to a successful application of the Model of Change in such an interdisciplinary project are:

1. Facilitation and interdisciplinary communication skills
2. Domain knowledge (both empirical and theoretical)
3. Project partners who are open and curious to collaborations across disciplines

Having these three key factors present in Proac, the project group has managed to use the Model of Change to introduce a new way of evaluating, which broadens the scope of change and solutions in the project. So far we have seen the results in two of the four solutions that are currently being tested. Furthermore the Model of Change brings new types of explorative and contextual knowledge into play. We believe that we could have broadened the scope of change and solutions even further had we been part of the project from the beginning, when the project proposal was written and the initial assumption of technology leads to reduced energy consumption was formulated. However, when we use the model actively together with partners in workshops we find it enables discussions about the need to consider contextual, micro level aspects of change, and it enables us to negotiate the framing of the research within the project teams more openly and equally, moving the conversation to consider different questions, and ensuring that new types of insights are included as a resource in the design process as well as in the evaluation. As such the Model of Change becomes a shared analytical framework, which enables us to learn from our experiences in these projects and create more sustainable solutions.

Johanne Mose Entwistle is the principal anthropologist at the private applied research company, the Alexandra Institute in Denmark. She received an MA in Social Anthropology from the University of Aarhus in 2008 and has been working in the intersection of people, technology and energy ever since, doing interdisciplinary R&D projects and consultancy. Johanne.mose@alexandra.dk

Mia Kruse Rasmussen works as an anthropologist at the Alexandra Institute. She is currently engaged in several national and EU funded projects, within the domains of energy and smart city, where she explores the interactions between people and technology in different settings to learn more about the ways in which people consume energy. mia.kruse@alexandra.dk

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Quotidian Ritual and Work-Life Balance: An Ethnography of Not Being There

JO-ANNE BICHARD
Helen Hamlyn Centre for Design, Royal College of Art

PAULINA YURMAN
Helen Hamlyn Centre for Design, Royal College of Art

DAVID KIRK
Culture Lab, Newcastle University

DAVID CHATTING
Culture Lab, Newcastle University

This paper reports on current interdisciplinary design research that explores values held by individuals in their performance of everyday or 'quotidian' rituals in family life. The work is focused on mobile workers who may be away from home and family for extended and/or regular periods of time. During the course of the research, a key hurdle that has arisen has revolved around gaining access to families for the purpose of conducting traditional ethnographic studies. For many mobile workers who are separated from the family on a regular basis, the idea of having an ethnographic researcher present during what becomes very limited and therefore sacrosanct family time has proved difficult to negotiate. Therefore the design researchers have had to develop more designerly means of engagement with 'the field site' through a series of design interventions that effectively provide forms of ethnographic data when both the researcher and the researched are away from the field site, namely the family home.

INTRODUCTION

Despite the rise in information communication technologies affording flexible working lives, being physically 'in the room' is still a major part of working practice, and for many operating beyond a local scale such presence may be regional, national and/or international, requiring dedicated time away from home and away from the daily rituals of family life. This research explores how these periods of separation are managed within wider considerations of work/life balance, and how digital technologies are aiding these periods of separation where the rituals of family life may jar with work schedules of the flexible mobile worker.

Family Rituals 2.0 was born from a UK Research Council funded 'Creativity Greenhouse'[1] event that took place in July 2012. The project was initially developed when the research team identified the daily rhythms and behaviours of family life, namely family rituals, as key features of family experience that have the potential to conflict with workplace demands especially in the networked era of being on-line and available at all time. The researchers framed the project around the need to understand the evolving nature of family rituals in order to support work-life balance in the digital age.

Family Rituals 2.0 is an ongoing interdisciplinary research project comprising Human Computer Interaction (HCI) researchers (Newcastle University), interaction and product designers (Newcastle University and Royal College of Art), geographers (University of the West Of England and Bournemouth University) and social and design anthropologists (Bournemouth University and Royal College of Art) that is exploring, through ethnographic methods, the value of quotidian rituals in maintaining family life when family members are separated. The project is funded for 24 months by the UK's Engineering and Physical Sciences Research Council (EPSRC) as part of their Digital Economy Programme, and is due to conclude in April 2015[2].

Defining the Field

During the course of this research we have found it helpful to make clear the concepts we are working within. Therefore we provide a set of definitions that frame how we have conceived our research.

Mobile Worker

Current estimates for the worldwide 'mobile worker' population estimate that, as of 2008, it comprised 919.4 million people and accounted for 29% of the worldwide workforce. In 2013, the population of mobile workers was estimated to have risen to 1.19 billion and now accounted for nearly 35% of the workforce (IDC, 2010). However, the term for 'mobile worker' is noted as being somewhat nebulous, at most a quantification of the numbers of people who are working away from home is problematic to estimate as current UK national (Office of National Statistics) and international (International Labour Organisation) have no information on the numbers of people who are 'working away from home'.

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[1] Creativity Greenhouse was itself a research project run by the University of Nottingham, funded by the Engineering and Physical Sciences Research Council (EPSRC), which aimed to explore the use of virtual reality technologies for supporting research funding 'sandpit' meetings. A virtual reality environment similar in principle to Second-Life, enabled researchers to take part in a set of exercises to help define project ideas, pull together research teams and to make funding pitches. This was all played out virtually by our avatars in a digital space and a series of digital breakout and private rooms for closer collaborative discussions.

In contrast, business travel trends do provide some insight into the growth of a mobile workforce. Measured as a distinct sector for global tourist arrivals, figures show that in 2011 there were 983 million tourist arrivals of which 15% were for business purposes (UNWTO, 2012). In the UK the Office of National Statistics found that in 2011 business travel had grown by 3.1% (ONS, 2011). Yet these figures still provide only an insight into the rise of the mobile workforce, as not all business travellers will stay in hotels and be recorded. Some will use accommodation provided by employers, or make other arrangements, and are therefore hidden from the current representative figures. However, it can be suggested that the practices of working away from home and family is extensive and growing, not only in the UK but on a global level.

Family

The perception of what constitutes the 'family' is broad and shifting to encompass a variety of differing social structures and actors beyond those recognised in the western conception of the nuclear family (Chambers, 2012), yet 'family' is still considered the cornerstone of our social worlds. Although there is a distinct trend in modern industrial societies for single occupancy space and isolated living, for many people, the home is intimately linked to family, as we share space with those we form familial bonds with, regardless of potential kinship ties (Ibid, 2012).

Family Life

Nippert-Eng (1996) proposes that the boundaries between work and domestic life are becoming increasingly blurred, and that this is being accentuated by the rise of the networked society and the pervasiveness of digital technologies that impact on home life (Castells, 2009; Greenfield, 2006). Changes to patterns of living have also further exacerbated the tension between home and work with a shift towards increased mobility for the purposes of work and a somewhat nomadic arrangement within the home (Urry, 2007). Increasingly, family life may be disrupted by significant periods of absence in which digital technologies are used to mediate the between the absent family member and home life.

Family Quotidian Rituals

The study of ritual has a long history in anthropological literature, but has often focused on definition and taxonomy that suggest a concentration of descriptions around the construction of 'ritual'. Grimes (1985) notes that the focus on definition has produced an abundance of 'ritual types' that have left uncertainty in identifying rituals and their boundaries. Rituals have been framed in a variety of social worlds that include the religious and secular, political and civic, festivals and games, and whilst these typologies are important for organising the study of ritual, attention to more routinized quotidian ritual activity has become somewhat lost. The focus on defining ritual activity implies a definition of non-ritual activity, the distinction of which De Coppet (1992) argues is fundamental for shaping our values and social relations – this distinction is relative and hence 'assumes different forms in

different societies'. Given the complexity of the activity and actors, De Coppet suggests it is not possible to have a single universal definition of ritual.

Wolin and Bennett (1984) define family rituals as 'a symbolic form of communication that, owing to the satisfaction that family members experience through its repetition, is acted out in a systematic fashion over time'. Yet, they also identify the difficulty in defining the boundaries of where ritual begins and ends. Whilst notions of ritual may invoke concepts of the sacred and/or celebratory, etymologically ritual also invokes the mundane and the quotidian, as Caletrio (2013) asserts 'it is often the quotidian details that best reveal the vital pulse of the times, the sensuous, emotional and moral textures of everyday life at a certain historical time'.

Yurman *et al* (2014) find the 'grey area' of ritual boundaries a useful space 'to open design possibilities' and the Family Rituals 2.0 project seeks to explore how participation in domestic rituals of family life affects the absence and incorporation of the mobile worker. Our approach has focused on ritual action and practice to critically examine how meaning is derived from otherwise mundane activities. Our investigation has centred on how absent family members are integrated and incorporated into family life when away, so that they are seen as being 'present' in the family grouping through the process of ritual. Here the ritual practice not only reaffirms familial bonds but articulates relations of caring (Marouda, 2010), and aims to reveal not what people think about social relations but how they enact them in their daily lives.

METHODOLOGY

Seeking to critically understand the role of quotidian ritual in domestic and family life, the research has centered on understanding the ways in which ritual behaviour is impacted and other wise affected by digital technology. How do quotidian rituals accommodate work life balance and how can digital technologies be used to overcome barriers of engagement in domestic life when constrained by work-commitments? The research has been designed with adherence to value-centred technology design (Borning and Muller, 2012), which combines social science and design led methodologies, to explore the values held by participants in domestic ritual activity. The key ethnographic methods incorporated into the research include interviews, diary studies and participant observation combined with design led methods such as 'Cultural Probes' (Gaver *et al*, 1999).

The values held by participants and distilled from the field research are then used to develop (potentially low-fi) technology probes. These are bespoke artifacts, each created in response to the rituals identified within participants' families. These probes present the opportunity to be used reflexively to explore socio-technical relationships in our participating families, both in the role of ritual in family life and the impact technology has with regards to understanding of work/life balance.

The project includes a number of work streams incorporating a literature review, interdisciplinary research design including ethical considerations and recruitment timetables, a catalogue of existing technologies, stakeholder and family interviews, ethnographic case studies and design and technology probes. Each work stream has been designed to adhere to a timeline that incorporates traditional elements of academic research (including researcher

training), participant recruitment, ethnographic design data analysis and build of the probes and prototypes.

AN ETHNOGRAPHY OF NOT BEING THERE; THE RESEARCHER

Initially the research design was devised to recruit 30 families for in-depth interviews, with the aim of recruiting six of the thirty to take part in deeper ethnographic studies that incorporated design led methodologies (figure 1).
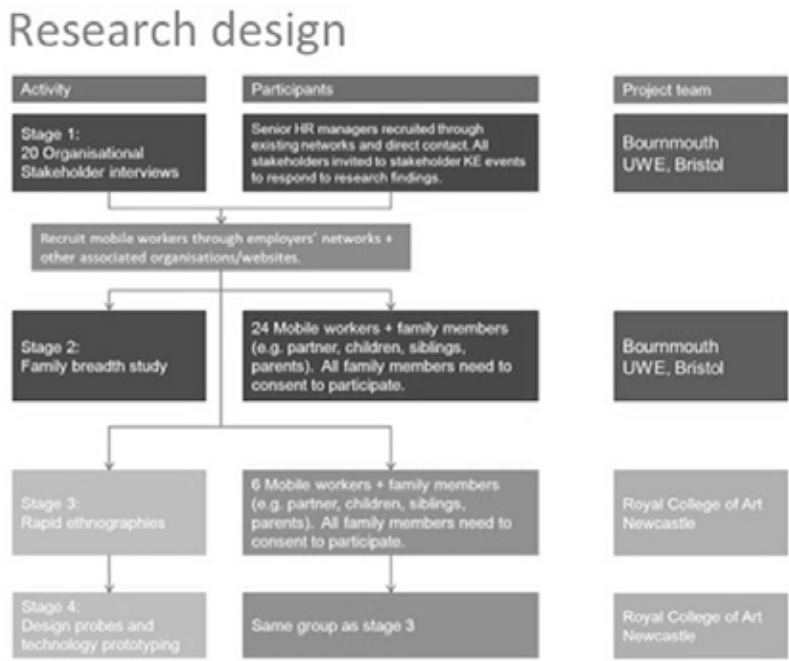
Figure 1. Family Rituals 2.0 Research Design. Jain *et al*, Family Rituals 2.0 2013

Access to families to take part in the interviews and ethnographic elements of the project would be gained from a series of 20 stakeholder interviews with employers in relevant 'mobile worker' sectors such as hotel, construction and technology industries. Yet, it soon became apparent that a number of barriers to conducting the research would have to be overcome. Firstly, the stakeholders as 'gatekeepers' to mobile employees showed reluctance to allow researchers to access potential participants. Whilst happy to discuss the issue of work/life balance from an organisational perspective, granting access to wider organisation members became problematic. As this access was set within a fixed schedule of research it became central to the research team that 'other' recruitment opportunities were

explored. Secondly, as we gradually recruited families for the initial in-depth interviews, it also became apparent that scheduling these encounters would be difficult within the mobile workers time commitments. This became a major issue for the project in which the methodology had sought to conduct in-depth interviews with families of whom a few would take part in the ethnographic and design lead research that would be undertaken when all family members were present as well as in periods of seperation. Having realised this form of 'snowballing' for recruiting research participants would not work in the set time frame of the project, especially when considering the design time required for the bespoke technology development, the research team felt there was no option but to recruit for our own specific work programmes.

From Cultural Probe to Ethnographic Probe

With the recruitment for the project now split between work programmes, the design research team from the Royal College of Art and Newcastle University explored a number of mobile worker networks to recruit families to take part in the project. We conducted a series of interviews with 10 mobile workers to gain an understanding of their domestic and work life schedules as well as with the aim to recruit six to take place in the deeper ethnographic engagement. Initially, we had planned a key ethnographic encounter around a form of participant observation with the researcher being present in a key family ritual, a Sunday lunch, or if within the time frame of the research, a birthday or other such event which the family observed. However, the interviews revealed that after periods of separation, family time together was private and that allowing the researchers 'into this private space would be a sacrifice difficult to justify' (Yurman *et al*, 2014). From these 10 interviews, two families agreed to take part in the design led portions of the research, albeit without the presence of the design ethnographer and the participant observation element.

This presented a fresh challenge to the design team, how does design led ethnography collect data when the ethnographer is not present? And for that matter should design-ethnographers concern themselves with the kinds of engagement that more traditional ethnographers hold as critical to their practice. Afterall, researchers have been suggesting for many years that as designers we should not uncritically adopt the methods and agendas of the social sciences (Anderson, 1994). Perhaps therefore, a more designerly way of ethnographically engaging with the field-site could be found.

Either way, the research design had specified that we would initially deploy 'cultural probes' to sensitise the design team to the design space of family life. Cultural Probes were developed by Gaver et al (1999) for the collection of 'inspirational data… to stimulate imagination rather then define a set of problems' for designers (ibid,1999; 25). The probes consist of packages that may include maps, disposable cameras and other materials that have been designed 'to provoke inspirational responses' (ibid, 1999; 22) from research participants. They are left behind and completed in the absence of the design researcher. They help designers understand the participant's culture, and to help create design outcomes that are not 'irrelevant or arrogant' (ibid, 1999; 23), whilst also not constraining designers to briefs focused specifically on needs. Cultural probes aim to lead a discussion with research participants 'towards unexpected ideas' but not dominate the discussion (ibid, 1999; 23).

For the Family Rituals 2.0 design led research it was suggested that the cultural probes might be effectively redirected to become more ethnographic-like probes. This suggested that the kinds of information that they derived might move beyond the purely inspirational and aesthetic but give some insight as to routines and practices enacted by our participants. This required their acting in absentia of the ethnographer to capture both elements of the mobile workers' time away from home and of family life when they are away and reunited. The design of the probes for the mobile workers had to adhere to a number of specifics. The probes had to be portable and not contravene any baggage restriction for travel outside of the UK (i.e. involve liquids, flammables etc.), and were directed at exploring three phases of family life;

- What a family's life is like when they are together
- What life is like for the mobile worker when they are away
- What life at home is like with an absent family member

Exploring the first two points has been undertaken using our ethnographic probes consisting of a booklet with specific questions (figure 2), a list of photographs we would like them to take, a list of house rules and a like /dislike stamp with post-it notes so that they can identify items around the home that they like or dislike (figure 3).

Figures 2 & 3. Booklets for the mobile workers to fill in when away from home and Like / Dislike probe. Photo Credit: Kirk, Family Rituals 2.0, 2014

By identifying items in the home, the research team are given a glimpse into the relations family members have with material objects in the home, their aesthetic sensibilities and a sense of what may be acceptable and unacceptable for the design of the technology probes. This is a key factor as it is important that the technology probes are accepted within the family and used within the research programme. To not consider the wider material artifacts in which the probe will be placed risks its rejection by the users.

The third point focusing around life at home without the family member/mobile worker has been more speculative in the design of the ethnographic probe. To gather this information the design team created a more interactive probe, which displays questions to the family when the mobile worker is away. The questions require written responses that the family write down and deposit in the probe and that are then collected when the absent family member returns. There is also an option for the answers to be e-mailed to the design team.

The shape and character of the probe has been changed throughout the project (figure 4), offering a range of interactive behaviours; from the obvious and predictable to ones more mysterious and random, in which messages may only be displayed for an hour, resulting in some being missed or ignored. The structural form factor changes, which are allowed by prototyping rapidly in low-fi materials such as cardboard, also allow the design team to experiment with the aesthetics of the probes allowing us to create objects which will resonate with participant's sense of style. This increases acceptability of them as slightly intrusive objects in the home.

Figure 4. Interactive probes change of shape and character. Photo Credit: Kirk, Family Rituals 2.0, 2014

The interactive probes have allowed the researchers to 'poke' into the way families might respond to technology, their perceptions of its acceptability, as well as experiment with ways to elicit participant responses. The interactive probes offer a more reflexive lens in to family life than the traditional cultural probes, and allow the design team to respond to emerging events in the world or within families to help foster a more reactive relationship with participants. This helps to build trust and empathy between the family and the design team and increases the participating families' sense of intrigue in participation around the notion of engaging with a new critical technology during the later technology probe phase.

A second ethnographic probe has also been developed to explore family life whilst the mobile worker is away. This probe focuses on a 'geography of emotion and activities'. Island and lake shaped cards along with a gridded blue poster were given to families to fill in based on the feelings and activities at home. Family members assigned emotions experienced and activities undertaken to the cards, which where then placed on the poster creating a family map of family life when the mobile worker is absent (figure 5). In addition each family member is asked to place a representation of themselves (by using a toy piece) and note their co-ordinates in the map. Here there were records of family members being in 'the island of boredom' at the beginning of the day but in the land of 'tea by the sofa whilst waiting for potatoes to boil' at the end of the day. This activity provides the research team with fragments of information about their disposition, the values that they place in everyday activities, as well as a sense of the families' attitudes to ambiguous open tasks, their creative input, emotional vocabulary, and the broader routines of family activities and quotidian rituals of their domestic lives.

Figure 5. Ethnographic probe into the 'geographies of emotions or activities'. Photo Credit: Yurman, Family Rituals 2.0, 2014

AN ETHNOGRAPHY OF NOT BEING THERE; THE FAMILY

The ethnographic probes serve to act in absentia of the design ethnographer by collecting information that serves as creative inspiration for the design team, but also provide the research with an understanding of how to engage the families taking part in the study and what they find stimulating to do. Understanding these contexts has informed the design of the technology probes. Our initial findings suggest that regular separation and reunion can create a form of elastic distancing and approximation of home life that offers family members periods of reflection and an opportunity to see family life with a fresh

perspective. Given the continued periods of time away from family life for the mobile worker, such reflection takes place at regular intervals. Whilst certain aspects of family life are reflected upon, there is also acceptance that some significant events are missed, but that separation can offer opportunities to arrange key family rituals that may be difficult to do when the family is consistently together.

We also noted distinct rhythms of family life dependent on the length or frequency of absence of the mobile worker (figure 6). These cycles involved; preparing for separation, separation, preparing for re-union and re-union and re-adaptation to family life together, and appear more frequently for mobile workers who frequently travel, then those who travel less often but are away for longer periods of time. By mapping these rhythms the research highlights that, similarly with the complexity of defining ritual, the complexity of defining a mobile worker are equally tenuous, with distinct rhythms applied to each mobile worker and their family.
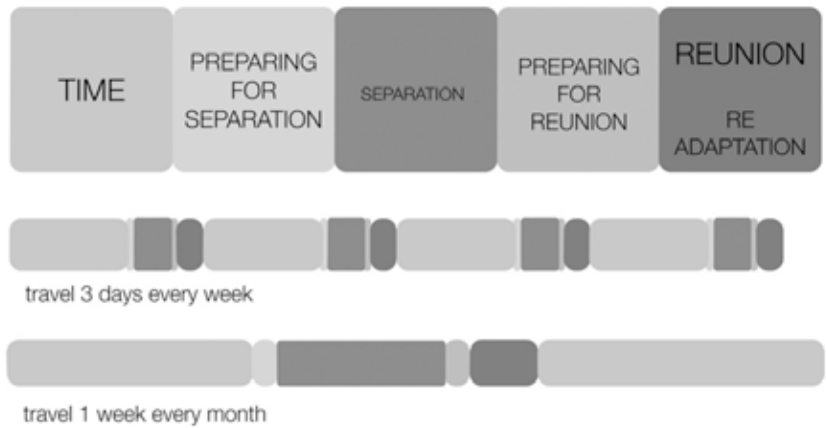
Figure 6. Rhythms of Mobile Worker and Family (Yurman et al, 2014).

There is also flexibility within these rhythms, with some mobile workers shifting from being away for short periods and then long periods. Creating a standard pattern and routine for some mobile workers maybe difficult and hence the quotidian rituals of family life may provide key anchors that allow for the elasticity of separation and reunion.

From Ethnographic Probe to Technology Probe

At this time of writing, we have received information from our ethnographic probes from four of our participant families. The more interactive probes are still with two of the families and we are actively recruiting a further two families.

'Cheers'

Our encounter with our first family, a husband and wife with a young child, the husband being the mobile worker who travels extensively in the United Kingdom revealed shared pleasures and frustrations during periods of separation. This family shared their pleasure in socializing together through drinking (figure 7), and the frustration on being separated of not being able to 'drink together', especially when the mobile worker is away and has the opportunity to be more 'social' whilst the partner takes care of the home and their young child. For this family our technology probe has, from insights gained from the couple's sense of humour and playfulness, sought to bring them together whilst apart.

Under the working title 'Cheers' the technology probe comprises a bottle opener that will be used by the mobile worker within his own quotidian ritual of having a drink after work, send a signal to the family home to be picked up by a unit to dispense a glass of wine to the partner (figure 8).

Figure 7. Montage of ethnographic 'like/dislike' photos from family 1. Photo Credit: Family Rituals 2.0
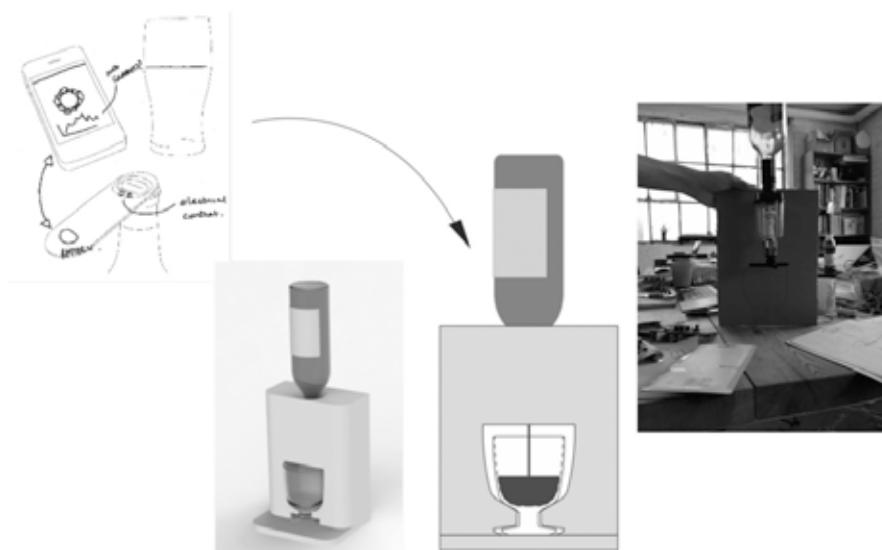
Figure 8. 'Cheers' technology probe development and prototype. Photo Credit Yurman & Chatting, 2014

This probe is currently in the final stages of testing and will deployed to the family to live with them for a period coinciding with the mobile workers absence from the family home.

'Anticipation'

Our second family comprised of a same sex couple of which one travelled frequently abroad for work purposes. Family two had a specific sense of design, which suggested a modernist aesthetic; their flat was orderly and displayed a preference for co-ordinating monochrome decoration. When asked what they disliked about their flat they were quite taken aback and initially responded that there was nothing in there they disliked. On further reflection they did reveal elements they were not entirely pleased with. Interestingly, their periods of separation revealed an anticipation of being reunited and doing so through a trip away from the family home that they would take together.

For family two we have taken 'anticipation' as the trope from which to focus the technology probe. This will be reminiscent of a airport departure board but will display a countdown until the family are reunited and take their own trip away. This countdown will also be conveyed to the mobile worker through his mobile phone (figure 9).

Figure 9. 'Anticipation' technology probe development and suggested placing in the home. Photo Credit Yurman & Chatting, 2014

REFLECTIONS TOWARDS A CONCLUSION

As this work is currently ongoing, it would be somewhat premature to make conclusions at this stage. The aim of the research has been to understand the nature of quotidian family rituals for mobile workers and the role digital technologies can and do play. It is worth noting that all the families so far involved in the design work have access to smartphones and regularly use social networking and Skype to keep in touch.

Each family has revealed a specific family life and prominent characteristics based around the movements of the mobile worker and their specific family unit (with young children, with older children, with no children). The ethnographic probes have sought to reveal the family's attitude to separation – is it an opportunity to do things they don't do together or is it disruption of family life? Each family involved in the project will receive a bespoke design based on the creative information collected from the ethnographic probes, which may reveal new patterns of communication. The technology probes are not conceived as solutions, rather they are tools to help the research bring materiality to themes, insights and patterns that may lie dormant within the families of mobile workers.

The ethnography of not being there also highlights the difficulty of undertaking research within the private space of the family. The research investigators have extensive experience of working in ethnographic research, often in sensitive and highly personal areas (Bichard's work on personal experience of toileting, Marouda's work in perceptions of death), yet have found the sanctity of the family and the privacy of the home hard to

penetrate. The project does offer 'incentives'[3] for taking part, but has not proved an incentive against valuable and sometimes limited family time. For the research team this has proved problematic given the timeframes in which the research and design development has been set to take place, under the stringent guidelines and timetables of UK Research Council funding.

To collect information in the absence of the ethnographer we have re-focused cultural probes to act as ethnographic probes that serve two functions; firstly to collect data on the everyday activities of the families including emotional aspects. Secondly, to provide that data in a form that can be used creatively by the design researchers, from product and interactive design, within the team. These have proved invaluable in achieving a research methodology that has proved to be difficult to negotiate, whilst also providing useful insights that might not have been revealed in the standard participant observation method.

Jo-Anne Bichard is a Senior Research Fellow at the Royal College of Art and leader of the Helen Hamlyn Centre for Design's Work and City Lab. She works with designers in creating ethnographic encounters for participatory design, lectures on Design Anthropology and is completing a PhD in Architectural Studies. Jo-anne.bichard@rca.ac.uk

Paulina Yurman is a Royal College of Art Helen Hamlyn Centre for Design Research Associate on the Family Rituals 2.0 project. She is a designer / researcher, and is currently undertaking a PhD in Design at Goldsmiths College that explores design speculations in the material world of parenthood. Paulina.yurman@network.rca.ac.uk

David Kirk is Senior Lecturer in Experience-Centred Design, at Newcastle University's Culture Lab. He is Principal Investigator of Family Rituals 2.0 and holds a PhD in Computer Science. His research focuses on interactions between people, digital technologies and the environments, and designing new kinds of interactive computational technologies and services.

David Chatting is a Research Associate at Newcastle University's Culture Lab. He is a designer and technologist, who is interested in the "mundane future"; working in software and hardware, to explore the impact of emerging technologies in everyday lives. David.Chatting@ncl.ac.uk

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[3] We offer our participants vouchers from a store of their choice and to a value of £100 for taking part in the project.

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Saving Journalism from Churnalism

GORDON BATY
Gannett Co. Inc.

In keeping pace with online trends, news is being churned out to meet quota and to satisfy website metrics. When putting out content becomes more important than it's quality and value for the local community, it's called Churnalism. Fortunately, ethnographic research reveals an alternative path. It tells us that news outlets hold a special place in the community due to their heritage and trusted position. Being relevant and valuable isn't just about reporting news but being champions of passion topics and community matters. Journalism plays a part in the vibrant relationship people have with their city. Enroll local news people in ethnography and an innovation process means they can not only tap the epic stories of their city but also try out possibilities for them to break out of their traditional role.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Gannett Co. Inc.

Gordon Baty works for Gannett's Center for Innovation and Design where he leads innovation research and product incubation projects with cross-functional teams across USA Today and Gannett's local news properties. Prior to Gannett, Gordon worked at Marriott International and British Telecom where he led high profile digital design teams. gbaty@gannett.com

How Being rather than Doing Can Add Value

MARLISA KOPENSKI CONDON
Design Concepts, Inc.

When the currency of business is "doing," how do we embrace "being?" When tight deadlines and budget cuts drive us, how can we pursue something you can't see or measure? How can we cultivate a culture of patience when we don't get smoke breaks anymore?

How Being Rather Than Doing Can Create Value in the Business World offers the bold proposal that business forget about filling all available time and space with action and allowing, even encouraging, time for employees to BE. Like artists who embrace white space in their work, people who take time to ruminate, to pause, will make fewer brush strokes. And those they do make they do make are that much more articulate and powerful.

Learn how to be brave and find those small moments of white space in your business life.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

IMAGE CREDIT: © Marlisa Kopenski, Artist

Marlisa Kopenski Condon was voted Most Creative by her high school classmates and went on to earn an MBA from the Kellogg School of Management, disappointing everyone. She is currently the Director of Business Strategy at Design Concepts, a product innovation and strategy firm in Madison, WI. Marlisa.kopenski@design-concepts.com | @MarlisaKopenski

On Empathy, and Not Feeling It

TIFFANY ROMAIN
Ricoh Innovations

TRACY PILAR JOHNSON
Nurun

MIKE GRIFFIN
Ricoh Innovations

Recently Tracy was asked whether a plan to have everyone in the office go about their day with an "impairment" would be a good way to "practice empathy" and learn more about assistive technology usage. Her response was that while wearing prosthetics demonstrates the shock of becoming impaired, it is questionable what it reveals about living a full life with an impairment. "Empathy" is getting around, especially in the worlds of design thinking, start-ups, and technology. But in these varied contexts, what does empathy really mean? Such questions led us to explore empathy as a method, attribute, and commodity, in turn raising more questions. When we generate and spread "empathy," are we participating in creating a veneer of care that obscures tensions between consumers and businesses, and ultimately, value extraction? If so, can we improve how we inspire the corporate imagination, and the ends to which that imagination is applied?

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

IMAGE CREDIT: *bagogames*

Tiffany Romain is Advisory Research Anthropologist at Ricoh Innovations where she investigates assemblages of people and technologies in healthcare, retail, and workplaces. Before Ricoh she researched reproductive cryopreservation and cryonics as means for managing life's beginnings and endings, and the timing of life in the middle. tiffany@ric.ricoh.com

Tracy Pilar Johnson is Director of Ethnographic Research at Nurun, Inc., where she leads a team of anthropologists and designers in articulating a human centered digital design vision. Before Nurun she directed ethnographic consulting projects for Context-based Research, working with such clients as Google, TWC, FedEx, and the Associated Press. tracypilar@gmail.com

Mike Griffin is Director of User Experience at Ricoh Innovations. He works with a team of anthropologists, designers and engineers to ensure that Ricoh's new products and services come to market informed by a reasonably holistic understanding of the human systems with which those offerings are entangled. mike@ric.ricoh.com

Well, That Was Awkward! The Value of Discomfort

MARTA CUCIUREAN-ZAPAN
Conifer Research

EVAN HANOVER
Conifer Research

The awkward pause, the impolite topic, and the embarrassing moment are occupational hazards for the ethnographer. Rather than shun these uncomfortable moments and get back to the smooth, seamless business of research, we should embrace and reflect upon them; they can be invaluable. In this presentation, we will present a study focused on developing and improving resources designed for students who are visually impaired. In the course of this project, we encountered all manner of discomfort as we found our fully sighted understanding of the world challenged by our participants' experiences. This proved to be a major empathy hurdle, which we only began to resolve once we accounted for our own discomfort as data, and not simply an inconvenient emotional side effect to be swept aside to achieve a kind of ideal objectivity.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.
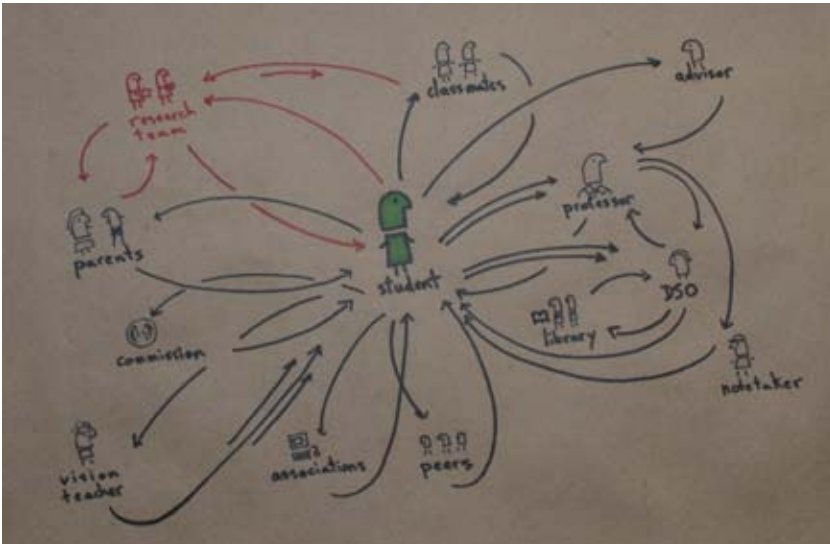
IMAGE CREDIT: © Marta Cuciurean-Zapan, illustrator, in collaboration with Ksenia Pachikov and Megan Fath

Marta Cuciurean-Zapan is a senior associate at Conifer Research, where she studies behavior and emotion in order to create positive and significant interactions between people as mediated through material culture. Her background in anthropology and art brings pattern and meaning to questions in fields like education, hospitality, and consumer goods. marta.cz@gmail.com

Evan Hanover is the Director of Research for Conifer Research in Chicago. He uses his combined interests in linguistic anthropology, photography, and performance in leading research teams at Conifer to unpack how people construct, embody, and communicate meaning and value through language and consumption. evan@coniferresearch.com

Collateral Revelation

PAUL RATLIFF
Independent ethnographic researcher and design strategist

Our work of investigating experience is rarely directed at personal transformation. The impact we seek to create is not specific to our participants or intended for them alone, if at all.

We don't go into the field to midwife individual discovery or revelation, and this may be why we don't notice how often it happens. We change people. We change their minds, their behaviors, their understanding of themselves.

We use the tools of our trade – curiosity and empathy, questioning and watching and listening – to cultivate the conditions of discovery that serve our objectives. But what gets discovered and by whom is not bound by our intent, and what results can be surprising.

This Pecha Kucha uses the experiences of participants and practitioners to examine our role as incidental change agents and explore what this says about the value of our work.

Save entire document in MS Word with the following file name: yourlastname_EPIC-2014-PechaKucha_proceedings.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

PHOTO CREDIT: © Paul Ratliff

Paul Ratliff is an ethnographer and design strategist. He joined E-lab in 1996, and was Senior Manager of Experience Modeling for Sapient London. Since 2002 he has been an independent design and innovation consultant. He currently lives in Los Angeles. paul@paulratliff.com

i remember you NOW. i remember you HOW:

SARA JO JOHNSON
Savannah College of Art and Design

My mom's recent death left behind a heartbroken daughter who could not fathom the huge vacancy in her life—amidst a societal expectation that one can rapidly move on. Instead of my grieving process tidily expiring shortly after the funeral, I was saturating myself in her: wearing her clothing, jewelry, boots, purses, scent; driving her car; and embarking on multiple related research projects. My actions seemed intuitive and natural, yet I felt overwhelmed in an autobiographical silo. I decided to explore what other people actually do and "why". I developed a cultural probe—sending it through social media, receiving myriad responses that spanned generations, cultures, circumstances of death and time-elapsed since death. This study captures the rituals, activities, artifacts and interactions that people create to keep their loved one's memory alive. These stories are especially poignant since no one is left untouched.

Please visit epicpeople.org to view a full-length video of this Pecha Kucha.

i remember you *now*

i remember you *how*.

THANK YOU for participating. My mom recently died. This project is keeping me both *necessarily* busy and *determinedly* connected to her. —SARA JO JOHNSON

IMAGE CREDIT: © Sara Jo Johnson

Sara Jo Johnson is a writer, graphic designer, design strategist and professor of Design Management at SCAD. She teaches classes on design research, innovation and sustainability. Her mother's recent death led her to attempt to single-handedly redesign the death care industry. Instead, she followed this project of the heart. *sarajojo@gmail.com*

Making Change: Can Ethnographic Research about Women Makers Change the Future of Computing?

SUSAN FAULKNER
Intel Corporation, Intel Labs

ANNE MCCLARD
Intel Corporation, New Devices Group

Two ethnographers from different parts of the same technology company set out to explore the role of women and girls in the worldwide maker movement. We wanted to know who is currently participating in the maker phenomenon, how they became makers, what motivates them to continue making, what kinds of things they make, and what their hopes are for the future. Most importantly, we investigated why women are underrepresented in the realm of tech making with the explicit goal of being change agents and triggers of transformation both within our company and in the broader technology landscape.

WHY DO WOMEN MAKERS MATTER?

In an effort to better understand who technology makers are, what motivates them to make, and how our company can facilitate their making experiences, we undertook a multi-phased research study to help Intel meet the makers, and we focused primarily on women. Our research revealed there is more than one path people take when becoming makers. Data shows that makers fall loosely into two categories: about half come from a technology background, mostly hardware or software engineering, and half do not. The non-techie half often come from an art, craft or design background and approach making with a very different perspective from their more engineering focused fellow makers. For them, technology is a means to an end as they pursue their passion for making; they are more interested in what technology enables, rather than in the technology itself. They are accidental technologists. Makers of both genders follow this non-technical path, but women are more likely than men to come to making this way. Accidental technologists matter to us because they are a large portion of the maker population and they are underserved by current products aimed at makers. Additionally, if making is an activity that excites non-technical people to engage with technology, and if that engagement leads to greater interest in science, technology, engineering and math (STEM) courses and careers, then making may be able to change the long standing gender imbalance in the tech industry.[1]

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[1] Bureau of Labor Statistics and Harvard Business Publishing, via National Center for Women & Information Technology: http://www.ncwit.org/sites/default/files/resources/btn_02282014web.pdf

This paper is in the emerging practices and methods section of EPIC not because of how we did our research, but why we did the research. What's new and different with this project is the intent. We want to do more than influence business groups at Intel to design products that make making easier for everyone, although we do want to do that. We want to make a difference in the way makers are perceived by our company – who is considered a maker, and what type of making is taken seriously. We also want to see if by understanding less technical makers, the accidental technologists, we can attract more women to making, and through making, attract them to technology. Then maybe, if our hunch is correct, a passion for tech making will lead to more interest and involvement for women in STEM-related courses and careers. What makes this project different for us is that our goal is to change the future of computing so that women play a greater role.

Men are the majority of members in most hacker and makerspaces. Studies indicate that men make up as many as 81% of all makers, a percentage that is similar to the gender breakdown of major tech companies.[2] We determined that by focusing our research on women and girls we could gain a deeper understanding of the portion of makers who come from a non-technical background – the part that was not being well-served by our company. If Intel wanted to expand the market for our products it would be crucial to address the needs and work styles of these less technical users. Of course many women and girls are deeply technical, and come to making with engineering backgrounds, computer science skills, and a love of science. Similarly, many men come to making from a non-technical, art, craft or design background. Our goal in concentrating on women was twofold: to learn how to appeal to the group of non-technical makers who represent a potential market for Intel, and to see how and if we could attract more girls and women to making, and possibly to STEM courses and careers.

We heard skepticism about our research from colleagues within Intel, and from industry associates, who wondered why we care if women are not better represented in the maker movement. One internal colleague said, "If women aren't makers, then they aren't our target market, why should we pay attention to them?" This colleague defined the users of Intel's maker products as the people already using or most likely to use the products. Kris Cohen has pointed out the problem of design researchers drawing on a narrow band of already identified users.(Cohen 2005: 7) When we don't look beyond the current users of a product we are ensuring the user will remain narrowly defined.

Similar concern was voiced at an industry conference where people asked of our research topic, "Why does this matter? What needs to be fixed?" If we are in the dawn of a new age of computing, as many people believe, and a majority of innovations and products will originate from individual makers rather than big industry players,(Hatch 2014: 5) then a vast pool of less technical talent is poised to be left behind. Many of the people in that untapped pool are women. As Fisher and Margolis say in *Unlocking the Clubhouse,* "If *boys invent things, and girls use the things boys invent,* a cyberspace culture will inevitably reflect the desires and sensibilities of males to the exclusion and often denigration of females."(Fisher and Margolis 2003: 12)

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[2] Make: and Intel Corporation, Maker Market Study, April 2012

Women will be purchasers and active users of the products that come from this revolution in hardware innovation, so their inclusion as research subjects – both as device users, and as potential device developers – is of paramount importance. By ignoring one gender we would, as Cohen says, proceed "on the basis of exclusions which are resident in concepts (our theories and methods) but manifest in designs (in the products we create). Sometimes those exclusions will hardly matter; sometimes they will matter a great deal."(Cohen 2005: 9)

If the make-up of makers continues to directly correspond with the current gender ratio of people in large and small tech companies, then the future of tech making will perpetuate longstanding status quo inequalities. Our objectives were to determine the actions needed to attract and retain women in this new and important sector of hardware innovation, and ultimately, to ensure that women will play a vital role in the future of computing.

WHO ARE THE MAKERS?

The number of makers worldwide is small, but growing. The Meet the Makers online quantitative survey, which was conducted by Harris Poll on behalf of Intel, shows that approximately twelve million adults in the U.S. are Tech Makers, about 5% of the population.[3] For the purposes of this study, we defined Tech Makers as people who make physical objects with electronic tools for their own purposes or with their own designs, as opposed to including every type of maker – weavers, knitters, woodworkers, welders – regardless of their use of technology. To be screened into our online survey, makers needed to have used one of these tools in the past year: microcontroller, laser cutter, computer development board, open source robotics, 3D manufacturing tools, or a 3D printer.

Running counter to the belief that most makers are trained techies, the survey found that 41% to 48% of women polled in the US, China and Mexico came to making from an art or crafts background, while 65% of men queried in the US and Mexico (about 50% in China) have engineering or physical sciences backgrounds.[4] US women are also more likely to identify strongly with terms related to art and creation such as: creator, designer, artist, crafter and inventor, while men were more likely to relate to terms such as: tinkerer, hobbyist, DIY-er and engineer.

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[3] Harris Poll national survey of 2051 adults conducted in April, 2014
[4] The Meet the Makers survey was conducted online by Harris Poll on behalf of Intel in April, 2014. Survey data are unweighted and therefore representative only of the individuals surveyed.
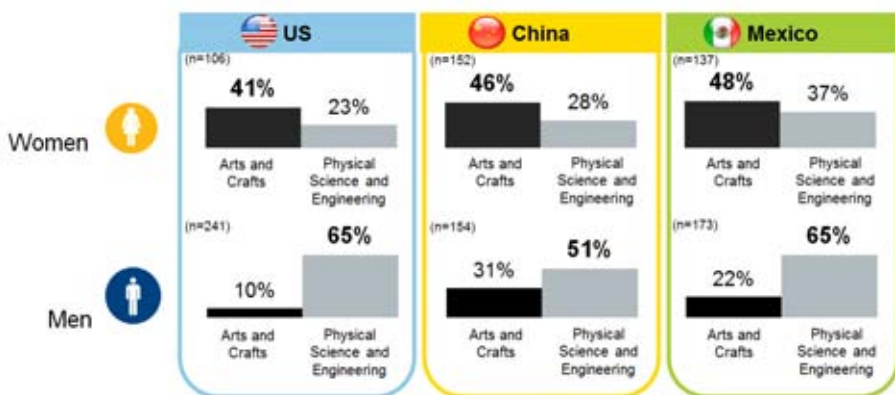
FIGURE ONE. "Which of the following best describes your path to becoming the creator/maker that you are today?" *From the Meet the Makers survey conducted online by Harris Poll on behalf of Intel, April, 2014.*

The Maker community is comprised of a wide-range of people, many of whom do not come from an engineering or technology background. The path that people take as they become makers is important when thinking about how to design products for all makers. We know from the work of Fisher and Margolis that some boys appear to have a "Magnetic Attraction" to computers. "It is as if they fell in love at first sight, and from then on they knew that this would be something they would like to spend the rest of their lives doing." (Fisher and Margolis 2003: 16) From childhood many men are drawn to technology for the sake of it – they hack for the love of hacking, and tinker for the love of tinkering. The technology itself is a passionate interest. For many women and certainly some men too, technology is a means to an end. They did not have the same experience of falling in love with technology at an early age. According to Fisher and Margolis, "Computing and tinkering had not been (women's) main childhood activities or focus, but one interest among several."(Fisher and Margolis 2003: 17)

Makers with non-technical backgrounds think less about the tools they use, and more about the object they want to make. They create art, crafts, jewelry, or try to streamline a process in their everyday lives, and the use of technology comes about as a result of finding the best way to achieve their goals. Their passion for technology comes from their passion for making. They are accidental technologists – people who love what technology can do, and are eager to try every way to make a light blink or a motor turn, but who came to that love through trial and error, example and exposure, and are a little surprised to be working with technology at all.

WHY AREN'T WOMEN MAKING IN LARGER NUMBERS?

Our observational research in the US and China found makerspaces are dominated by men. Why aren't women going to makerspaces in larger numbers? The Meet the Makers survey shows the top challenges for women are the same as they are for men. Lack of money, mentorship, information, and access to tools and materials are the most common hurdles for all makers. For some women, their co-ed makerspace is a welcome relief from workplaces rife with sexism and "horribly inappropriate" behavior, as one software engineer explained. For her the co-ed makerspace she attends four or five times a week is a "no creep zone" where members are "vetted" and "you don't feel stupid for asking questions." But for other women, makerspaces and hackerspaces are not so welcoming. Women feel excluded, they find some makerspaces "creepy" or unsafe, and they face cultural prejudices against women using technology. In cities such as San Francisco, Seattle, Tucson and Portland, women have started their own makerspaces to avoid these issues. Liz Henry, one of the founders of Double Union, a feminist hackerspace in San Francisco, explains why women aren't going to maker or hackerspaces in larger numbers in her city.

> If we (women) aren't at hackerspaces, it isn't because we don't make things, don't code, or aren't technical enough. It's because men act like the space is theirs. Women face harassment ranging from assault to much milder, but more constant, come-ons and innuendos. Our geek cred is constantly challenged or belittled. You might be there coding, and you want to stop for a while and draw in your notebook and think, but if you're not staring at a black and green screen or, like, melding your brain with an Arduino every second, some dude is going to come up to you and act like you need his expert lessons in how to hack.[5]

In these spaces, many women find their work styles are undervalued or misunderstood – sketching and thinking are taken as signs that a woman needs help when she's just using a different work process. Art projects are not seen as being as serious as other, more technical, projects. There is a gendering of technology at play in these environments. Technology is culturally construed as masculine and art as feminine. Our culture, and many other cultures, places a higher value on the masculine. Technology trumps art, and an engineer trumps an artist. While both men and women can fall on either side of the equation—some men are artists, and some women are engineers—masculine categories of work are valued more highly than feminine categories of work. (McClard 2005) The result can be a feeling of not belonging, not being good enough, and not really being a maker. This is a big problem since making is often an community effort – even if a project grows out of one individual's personal interests, it often takes shape when that person can exchange knowledge, tools and expertise with a community of supportive fellow makers.

Studies show that female technology students lack the communities and mentors enjoyed by their male counterparts, making it harder for women to remain in the field. (Fisher and Margolis) Makerspaces are one way to provide this type of support for women. Makerspaces can connect them to other women in the field, and provide them with the community they lack in traditionally male-dominated spaces. The collaborative knowledge

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5 http://modelviewculture.com/pieces/the-rise-of-feminist-hackerspaces-and-how-to-make-your-own

building in makerspaces may be an even more important factor in motivating continued participation than the high-tech tools available to participants. (Barniskis 2014)

PROFILES OF WOMEN AND GIRLS WHO MAKE

We met a range of accidental technologists during the qualitative phase of our research. Becca Rose first majored in architecture, and then literature and the history of art, in a UK university while spending all her spare time making things. She had a loom in her house; she weaved, was an avid knitter, and started to work with puppets. Through the creation of paper shadow boxes her work became more interactive and she began working with circuits. She says it was, "A way of making a small world that people could kind of experience, and touch and feel…And I realized the only way that I could do it was I had to solder, and I had to make the circuits myself because it was quite bespoke." She created objects using craft materials and electronic circuitry, and became masterful at using paper puppetry to tell magical stories through light and shadow. Becca is currently teaching making in high schools in the Bay Area through Maker Corps, and is planning to go back to school for a degree combining illustration and circuitry.

FIGURE TWO. *A multi-layered, lighted forest by Becca Rose*
Photo credit: Anne McClard

Tenaya Hurst, an actor and dancer, performs one night a week in the San Francisco Follies. She has always sewed, knitted, done cross-stitch, and made projects out of soda can tabs, rubber bands, and anything else she could get her hands on. She says, "I've always been a maker, I just didn't call myself that." In 2013 she went to Maker Faire, discovered Arduino, the popular open-source electronics platform, and started creating jewelry and clothing with embedded electronics. She began teaching others how to use Arduino, and now teaches workshops for adults and camps for kids, geared toward making objects with electronics. Tenaya's own making is focused on self-expression and wearable technology. She says, "For me, being excited about electricity and electronics goes directly to 'I want to wear it,' because I am sort of a showy, actress-y person. I could make something that sits on my table or that I bring out to show a friend – a cool robot car – but if I wear it, it's already there to start the discussion."

FIGURE THREE. *A necklace made of Atmel© microcontrollers by Tenaya Hurst. Photo credit: Susan Faulkner.*

Both Becca and Tenaya are makers without engineering or technology backgrounds whose love of creating beautiful, interactive objects led them to working with electronics. They represent a different entry point to technology use from the typical Intel developer.

We also spent time with kids enrolled in after-school programs and summer camps. In Oregon we visited a Computer Clubhouse, an after-school learning environment for kids to explore their own interests and learn about technology, and we met Carla who is entering

eighth grade. She was described by the clubhouse director as a "major maker." Carla and a few of her club mates made a little village using Makey Makey, an invention kit that turns everyday objects into conductive touchpads. She likes science and math, and told us she wants to be a veterinarian when she grows up. She and her friends like the social aspect of making, and Carla says, "When you're on the computer you work by yourself. When you make stuff you work with people." When we asked about the difference between making things in the Computer Clubhouse program or in science class in school, her energy level dropped. She said in school the girls do the writing and the boys do the experiment. "The boys grab stuff and do it, and the girls write the description." We heard a similar story from girls in a coed high school robotics club – girls tend to fill a communications role (which requires both a deep understanding of how everything works and the ability to communicate that to other people), and they rarely take the job of driving the robot.

How can we empower girls to "grab stuff" in a challenging school environment? How can we give them the confidence and drive to take charge of a coed science activity? Makerspace studies show that female participants become more engaged in learning new technology-based skills when they are incorporated into more traditional craft skills. (Barniskis 2014) Instead of changing the way teachers and boys act in middle and high school, can we bring more craft making into the classroom?

Like the makers we met who come from a more arts-oriented background, the girls we met in after-school programs are interested in projects to which they have a personal connection – a project of their own design. They come up with an idea for something they want to build, for instance a dancing trash can or an underwater sea creature, and technology is a means to that end. Mitchell Resnick says, "Children become most engaged with new technologies, and learn the most in playing with these technologies, when they work on projects growing out of their own personal interests." (Resnick 2006: 48)

We saw this first-hand at a middle school in San Jose, CA where we met some of the TechGyrls, the Silicon Valley branch of a highly successful nation-wide YWCA after-school empowerment program that provides girls with opportunities to increase their skills and confidence in the use of technology and engineering. There were about 15 middle-school aged girls in the group we met, and they had been given the freedom to come up with a concept for what they wanted to make. Almost all of the teams' ideas fell into two categories: unicorns or rainbows. One team made a stuffed unicorn with built-in intelligence. When two unicorn horns "hook up" they light up to show the unicorns are happy. Another team built a rainbow iPhone case that lights up.

When provided with an open-ended, girls-only experience that is less possible in the formal education system, these kids chose to make colorful, girly projects for the sheer fun of it. The TechGyrls demonstrated the personal connection discussed by Resnick. They were more motivated, and delved deeper into the technology, than they would have in a school classroom.

FIGURE FOUR. *Happy Unicorns at MakerFaire made by a team of TechGyrls. Photo credit: Susan Faulkner.*

DESIGN CHALLENGE: MAKING FOR MIDDLE-SCHOOL AGED GIRLS

Designing products with unicorns and rainbows isn't the answer to reaching all girls and women (what works with some 12-year olds will repel others), but having a sense of what the current fads are within an age set might be useful for helping to engage them in activities like coding and making hardware that could otherwise seem boring. We decided the key was finding a way to make making easier, so we set out to provide a kit that would help kids make anything they wanted to make, including rainbows and unicorns.

A team of designers at Intel made a tinkering kit prototype expressly for middle-school aged kids. The kit is made up of tech components and lots of craft materials plus a white cardboard box and two Ping-Pong balls. The idea was for the kids to make an interactive creature of their own design. The concept started with Connect Anything, a tool developed by Intel Labs that allows makers of all skill levels to easily connect inputs to outputs and quickly build simple prototypes in real-time on Intel's Galileo development board. The first time the Intel team took Connect Anything to a girls' after-school program, some sensors got "cooked," there weren't enough connecting wires to go around, and an attempt to cut and multiply the existing wires backfired. But the main issue was that the girls found the

wiring of the electronics – the tangle of cords going in and out of a circuit board – to be confusing and intimidating. The next iteration of the concept is called the Tinkering Kit and it aims to simplify that part of the process. It is comprised of a simple connection shield that snaps onto the Galileo and allows sensors and actuators to be attached with standard connectors.

In the workshops we found that starting with the craft, and giving kids the freedom to come up with a concept for what they wanted to make, was the best way to engage them immediately. Every kid could jump in and participate in the craft activity. The creature became the focus, and when the technology was introduced it was a means to make the creature move and light-up. We also found that incorporating storytelling was a great way to further engage the kids. Each team created a story about their creature and its abilities. Several teams knew what they wanted to make, and worked toward a specific goal such as Gary the Snail from SpongeBob, a creature called Bella, named for one of its creators, and a one-eyed carnivorous monster.

We found it is important to leverage the playful aspect of tech making to captivate kids who might not be interested in technology otherwise. The exercise expanded the kids' concepts of what technology is – they could invent and create, not just *use*.

INSIGHTS AND CALL TO ACTION

Within Intel the research has influenced colleagues whose idea of a "maker" was an engineer with a love of circuits and resistors just like them. We have broadened the definition of what a maker is, and now include people who come from less technical backgrounds like art, design and music. A software solutions group that is designing maker kits for developers has expanded their definition of a "user" to include accidental technologists. We are increasing our efforts as a corporation to reach out to middle-school aged girls and excite their interest in making at a young age. The Labs' team continues to refine the Tinkering Kit, and is putting together a new kit aimed at kids for the Start Making program, part of the Maker Education Initiative (Intel is a sponsor along with Maker Media, Pixar and Cognizant.)

We know that programs and activities organized around making are a great way for children and adults to become excited about creating objects using technology, and that many of them become passionate about technology while working on projects they care about deeply. But does an interest in making influence interest in science, technology, engineering and math? Through this research we have identified big questions we want to pursue in a multi-year longitudinal study of a large group of kids. When non-technical people become passionate about making things with electronics does that lead to a broader interest in technology? Does a passion for making lead to an interest in STEM academic courses and careers? Can girls' passion for making be sustained past middle-school, the age at which many young women lose interest in science and technology-related courses? If the girls' interest in making remains, will that translate into interest in STEM? Is making a path toward bringing more girls and women into STEM? Can making change the gender ratio of the people creating technology? If the hands-on, open-ended, and personally meaningful attributes of making attract girls and women, and other underrepresented groups, to STEM-

related academic fields and careers, companies can move toward a more gender-balanced board room, leadership team, and overall employee roster. Maybe through making we can change the configuration of the makers, developers, hackers and users who will bring the next wave of computing to life.

Susan Faulkner is a Senior Researcher in the User Experience Research group in Intel Labs. Her work has focused on media creation and consumption, the role technology plays in people's daily social transitions, and the role of women in the community of makers that are transforming the way physical objects are created. susan.a.faulkner@intel.com

Anne McClard is a Senior User Experience Researcher at Intel Corporation in the New Devices Group. Although an anthropologist by training, Anne's work is multidisciplinary. Throughout her career she has sought to understand technology trends in the context of cultures, and to influence design of new products based on insights derived from research. anne.p.mcclard@intel.com

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You'll Never Ride Alone: The Role of Social Media in Supporting the Bus Passenger Experience

PAUL GAULT
University of Aberdeen

DAVID CORSAR
University of Aberdeen

PETER EDWARDS
University of Aberdeen

JOHN D NELSON
University of Aberdeen

CAITLIN COTTRILL
University of Aberdeen

The paper discusses a study of social media usage within the context of a public transport operator. This involved fieldwork within three subsidiary companies of FirstGroup alongside a content analysis of the individual Twitter feeds they operate and the conversations they generate through them to engage with passengers. A refiguring of the notion of social is taking place within these companies through their emergent strategies for utilizing social media. The findings showed how the companies address this by pursuing a persistent conversation with customers, facilitating the provision of real-time information and carefully managing their Twitter identity.

INTRODUCTION

This paper discusses a study of social media usage within the context of a large public transport operator. This study involved fieldwork within three subsidiary companies of FirstGroup alongside a content analysis of the individual Twitter feeds each subsidiary operates, and the ways in which these led to passenger engagement via conversation. The wider role of social media in public transport will firstly be discussed in order to provide context for how it is currently being used elsewhere. Further background information about the transport operator that forms the case study for this paper will then be described. Following this is an explanation of the study methodology to develop an understanding of social media in a transport operator context. The discussion will then move on to refiguring notions of social through emerging strategies for utilising social media in relation to dialogue,

information and identity. Finally, a set of recommendations for other transport companies utilising social media will be provided.

THE ROLE OF SOCIAL MEDIA IN PUBLIC TRANSPORT

Recent years have seen an explosion in the use of social media as a means to communicate public transport information. A recent survey (Accenture 2013) noted that passengers desire more frequent communication from, and greater access to, transportation providers via social media. By utilising such channels, operators can gain valuable insight into the passenger experience including their attitudes and behaviours, while travellers can alert others to delays and disruption at an early stage – often before the operator even becomes aware of a problem.

There has been previous work on understanding the passenger experience for long-distance coach trips from an ethnographic perspective (Ochs, Gaudron, and Cruz 2013) but this did not consider how social media would compliment the service offering. Another study explored the use of social media with focus groups involving rail passengers exploring how Twitter is increasingly important as an additional channel of information during disruption (Passenger Focus and Abellio 2012). This approach used a series of example tweets and scenarios to gather passenger opinions but did not evaluate the passenger experience whilst in use. Further work has sought to use social media as a means to predict the journey planning demands of passengers (Alesiani, Gkiotsalitis, and Baldessari 2014), inform transport policy (Grant-Muller et al. 2014) and facilitate the travel operator's response (e.g. cancelling or rescheduling services) during a major disruption such as a natural disaster (Guan and Chen 2014).

Social media is now being used by many transport agencies to support communication with their customers. Analysis of usage appears to indicate a preference for Twitter rather than Facebook as Facebook is often considered too personal and social (Passenger Focus and Abellio 2012).

TRANSPORT OPERATOR CONTEXT

FirstGroup were the focus of this study, the world's largest public transport operator in private hands, which is headquartered in Aberdeen, UK. Within the UK, FirstGroup provide both bus and rail services; in the USA and Canada they operate school buses and inter-city bus services. Their UK bus operation consists of 18 subsidiary companies that operate independently of each other providing local and inter-city services. The subsidiary companies that were the subject of this study were First Aberdeen, First Glasgow and First South East and Central Scotland; they are based in Aberdeen, Glasgow, and Edinburgh respectively. First Aberdeen serves an urban population of on average 50,000 customers a day from a single depot in the city with 160 buses. First Glasgow also has an urban setting but serves a much greater population from multiple depots situated across the city using over 1000 buses. First South East and Central Scotland serves a population of on average 87,000 customers per day, distributed over a much wider geographic area including rural areas and a large city (Edinburgh) from two depots with 420 buses in operation. The areas covered from services

operated by these subsidiaries dictate the information needs of passengers in the various locations (Pender et al. 2014). For example, in a rural setting there is less infrastructure so not all bus stops are easily identifiable and there is limited information detailing the service provision. Regardless of the area, making use of the real-time and two-way nature of social media can be beneficial for passengers. Twitter is the main form of social media being used by these operators to communicate with their passengers due to its strength in facilitating real-time communication and less personal nature of material posted in comparison to Facebook (Passenger Focus and Abellio 2012).

STUDY METHODOLOGY

A mixed-method approach was adopted to gather data for the study. An analysis of the Twitter feeds operated by the three First subsidiaries could have only shown the outward facing identities provided by the operators; however, a comparison of material showing what the operators are outwardly communicating against their strategy and day-to-day running of the social media accounts was desired. In order to achieve this, it was necessary to supplement the data gathered online with field data from multiple rounds of workplace interviews and observations. This also provided an exciting opportunity to compare the data generated from the three different company locations.

The workplace interviews were designed for the operators of the social media accounts so included questions on the usage of Twitter, the account operator's practise, crafting of content, identity management, audience and the implications for the wider company. The rationale for these questions was to understand the company's strategy for the use of social media and how real-time travel information flowed through the organisation. The questions were initially developed by engaging in an informal chat with a representative from FirstGlasgow's marketing team and then returning for further visits with a more defined interview protocol. Additional follow up interviews with other staff at First Glasgow and those at First Aberdeen and First South East and Central Scotland helped to further refine this protocol as particular topics started to move into the foreground.

The use of content analysis was deemed appropriate for studying the Twitter feeds as it helped to categorise and understand a large dataset of mainly qualitative material obtained from the tweets on the operator's accounts. It was recognised from the beginning that storing outgoing tweets from the operator's account alone would be insufficient for understanding the full interaction between operators and passengers, so the other side of the conversation involving the travelling public would also have to be captured. These were the public messages sent directly to the operator using the '@mention'[1] mechanism of Twitter. A first round of storing the operator's Twitter conversations for each of the companies was carried out over a weeklong period. This was achieved through tracing back all the conversations the operators had engaged in over that time through their Twitter profile page and extracting this data into a spread sheet. This was used to help define an appropriate schema for categorising the tweets and to generate requirements for collecting the content

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[1] An '@mention' is a public tweet directed at a specific account.

on a larger scale using the Twitter API[2]. As part of this research a Twitter Monitoring Infrastructure was developed to collect the tweets sent from and mentioning the accounts FirstinGlasgow, FirstAberdeen, and FirstScotland. These tweets were stored in a database containing the message content and all of the associated metadata such as the tweet author's username, location (if available), Twitter client used to send the tweet, and tweet time. The tweets were then manually classified using a key to indicate the themes of both the individual tweets and the overall conversations. The key was created using a grounded theory approach and contained four categories, which were 'promotion', 'feedback', 'travel information' and 'response'. Each of these categories had many subcategories so for example promotion included 'morning greeting', 'sign off', 'press release', 'chat' and 'happy staff'. The individual tweets were assigned to two categories where necessary. Additionally, the full conversations between the operator and the passengers are assigned a further category. The key was generated through multiple iterations of data analysis and helped to indicate the thematic range of conversations taking place.

FIGURE 1. *Word cloud visualisation of the FirstinGlasgow Twitter feed.*

A triangulation activity was carried out after the fieldwork and content analysis had taken place. This enabled the staff who operate the Twitter feeds to compare the understanding generated through the fieldwork activity with the outcomes of the content analysis. Some of the content analysis data for the triangulation was presented as a word cloud visualisation showing the Twitter feed from each account (an example is shown in Fig. 1). The themes that were generated from the content analysis were also discussed with the individual operators to understand how they related to their work.

REFIGURING NOTIONS OF SOCIAL

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[2] API - Application Programming Interface used to directly access and record data from the server that has not been preformatted for viewing as a web page.

The use of social media in a transport context can push away from mere marketing usage and towards customer support, aid, care and possibly more meaningful customer engagement. One key aspect of social media is its ability to build a relationship with customers that extends beyond the duration of their actual journeys to span across multiple service touch points. The provision of real-time travel information to customers via this channel is also a significant advantage as it can facilitate a fast response to events from the operator. Further, the identity with which the operators portray themselves is particularly important due to the public nature of the customer interactions taking place. The next three sub-sections will describe these aspects of social media usage from a transport operator's perspective.

Persistent Conversation

Real-time social media conversations help transport operators accompany passengers during their journeys. The Twitter feeds strive to humanise the passenger's experience of the transport service rather than simply acting as a commoditised service with which the passenger interaction is purely functional. This aspect was something that all of the companies who were involved in the study shared experience of.

This persistent conversation with passengers provides a daily dialogue to accompany them on each journey they take. The bus network consists of the multiple routes the buses run on; the nature of this bus network and staff scheduling means that the bus drivers (i.e. the actual people on the road whom the passengers meet when boarding the bus) will frequently change the routes they are driving. As a consequence, passengers are unlikely to encounter the same driver during bus journeys on different days. However, the people operating the Twitter account are the same regular team of people. In the subsidiary companies studied, this consists of four staff in Glasgow, three in Aberdeen, and one person in Edinburgh. The company philosophy of FirstGroup states that they are, "committed to our customer – we keep our customers at the heart of everything we do." The regular contact with the Twitter operators through social media seeks to enable passengers to build a strong relationship with the company via their interactions online than otherwise might be possible with the drivers on the road. This requires the marketing team to take internal ownership of the company brand (Abbing and Gessel 2008) to help inform the content of the tweets and frame the relationship the company aspires to have with their passengers. Through this active engagement on Twitter, the company is then equipped with a human-like identity and a familiar virtual face by its staff conversing with passengers through this social media channel.

There has been a collapsing of internal roles within the company through the use of Twitter. This means that whereas the use of social media was originally designed to act purely as a marketing channel, it now also extends into the provision of both customer service and real-time travel information. This shift in roles illustrates that the twitter operators have to be adaptive and provide personalised responses including travel advice along with travel information. Despite this expanding remit, the people allocated to staffing the Twitter service still chiefly consist of people from a marketing background. These

employees have highly specialised skills for dealing with the general public but their implicit role within the company is being enlarged beyond traditional marketing via a social media platform to encompass richer, prolonged interaction with passengers.

The role of marketing in a transport and social media context is to increase public awareness of the operators using available online channels of information. This could include objectives such as publicising improvements to the network, increasing awareness of the brand and building stronger links with the communities the operator serves. A Tweet exemplifying this marketing role is as follows:

> FirstAberdeen: FirstGroup announces 70m bus order ...
> http://bit.ly/1gU8LTn

This tweet provides a link to a press release for the parent company FirstGroup detailing an investment being made in a new fleet of vehicles.

The role of customer service in a transport and social media context is to facilitate a passenger experience that sets it apart from other operating companies. This includes dealing with both positive and negative feedback from passengers, then feeding this information through to other parts of the organisation. A positive example of this occurring was described by one of the marketing team at Aberdeen where a passenger had tweeted about a particularly helpful driver. The team then forwarded this to the network manager so the positive feedback could be relayed to the driver and his line manager. This is a particularly important element of social media as the initial main points of contact are in a public domain so the conversations are visible for all to see. A more negative example instance of a customer service interaction with a passenger is as follows:

> PassengerA: @FirstAberdeen what is the point in a timetable if drivers ignore it? Bus was meant to leave at 2107 but it left at 2055. Really helpful.

> FirstAberdeen: @PassengerA Hi PassengerA, sorry about that. Can you email us the details to customer.services@firstgroup.com and we'll investigate. Thanks

The user PassengerA (name changed to preserve anonymity) has sent a message addressed to the FirstAberdeen account to make a complaint about a bus leaving earlier than scheduled. The passenger then signs the tweet with a sarcastic phrase. The FirstAberdeen operator responds by offering an apology and requesting further details to be sent to the customer service e-mail address. This demonstrates the strategy of taking any negative comments away from a discussion in the public domain to an alternative channel of communication as soon as possible. This strategy within FirstGroup limits the potential damage to the reputation of the company through engaging with negative feedback in this public channel.

The role of real-time travel information in transport and social media is to provide passengers with current information detailing the arrival and departure times for the journeys they wish to take. As location-aware technology has become increasingly widespread in recent years, passengers now expect to know where the bus on which they wish to travel on

is and when it will arrive. The more accurate and timely the information is, the more it enables passengers to make informed decisions regarding their travel arrangements. An example tweet detailing some real-time travel information is as follows:

> FirstAberdeen: It's Friday Aberdeen! Yay! 2 minor RTC's at Nigg and Mounthooly are causing some delays to services 18 and 11,20 & 23 at the moment

This tweet was provided at the start of the day as part of the signing on routine with an initial positive message about the imminent weekend. The tweet then uses a very industry specific term RTC (Road Traffic Collision) to inform passengers about some minor delays to the service. The bus routes affected by this minor delay are then detailed. This is an example of real-time information being proactively pushed out via Twitter. The next section describes alternative strategies for dissemination of such travel information.

Provision of Real-Time Information

We found that the three companies were approaching the provision of updates via social media about unplanned disruption to the network in two very different ways. These can be classified as either proactive or reactive. FirstAberdeen proactively pushed out updates about known issues on the bus network even before there had been a request for information from the travelling public. First Glasgow had a more reactive strategy and were only providing information when passengers encountered a delay on the network and queried FirstGlasgow via Twitter. FirstGlasgow do not specifically report on unplanned disruption, but rather leave it to the travelling public to find out if the bus service they are using will be delayed. First South East and Central Scotland uses a balance between these two approaches by making frequent use of the retweet function to push information from other transport agencies as it becomes known.

The scale of the operation was a big factor influencing whether unplanned disruption information should be provided or not. The FirstAberdeen bus network is much smaller than the others, meaning there are fewer disruptions to the network and when these do emerge, information about them can be published via the Twitter feed. Conversely, FirstGlasgow has a much larger operation (in terms of number of services and passenger journeys per day) so those managing the feed do not deem it practical to alert passengers to every unplanned disruption known on the network. The Edinburgh company does inform passengers about unplanned disruptions to the bus network but they do so less frequently than in Aberdeen. This indicates that the size of the operator is a factor in defining their approach to sharing information about unplanned disruption. A gradual role out of information being provided therefore appears to be the preferred solution so when the operation is larger in size, the transport network could be broken down into smaller, more focussed associated social media feeds based on particular areas or individual routes. This also reduces the amount of irrelevant tweets any followers would see, which would otherwise potentially reduce the utility of the Twitter feed.

The availability of information within the companies at each of the locations is also a factor influencing the dissemination of disruption information. As there is only a single

depot in Aberdeen, the network controller is situated immediately downstairs from the Twitter operator in the marketing office. This facilitated more opportunities for dialogue between the network controller and Twitter operator to easily share new information as it became known. The proximity of the marketing team to the network controller is a key factor influencing this flow of information. In contrast, FirstGlasgow operate six depots across the city but the marketing team, who are operating the Twitter feed, are situated in an entirely different location to the network controller. Although they could easily telephone them if a passenger had queried an issue, they did not have the same immediate access to real-time updates about the network, as they did not work in the same space. A member of the marketing team at FirstGlasgow stated their desire to have access to the same stream of information that is available to the network controller. First South East and Central Scotland had a timed-release strategy that required the network operators to report information about unplanned disruption at a specific time of day. This helped to streamline the reporting of disruptions but did not provide a continually open channel of such information.

The argument within the operators for not proactively pushing all updates on unplanned disruption is that it does not reflect well on the company to publicise deficiencies in the service. One of the marketing team at FirstGlasgow explained that there is a debate inside the company about just how much information on service problems should be pushed out onto Twitter. The strategy of withholding such information unless a problem is queried is sympathetic to a marketing perspective that wishes to portray the company in the best possible light. However, this lack of transparency leaves passengers uninformed about potential issues on the network until they encounter them when attempting to travel.

The ability of the transport operators to respond to the queries via social media is also limited by the work hours of the staff members operating the accounts. The standard work hours of 9am to 5pm are not necessarily peak times when unplanned disruption are likely to occur on the bus network. It is during the peak travel times from 7am to 9am and 4pm to 6pm when commuters are either going to or travelling from work that the service is potentially most useful. There was some flexibility in this as workers could be at their desks earlier at all three of the companies. There is a daily routine of the Twitter operators 'signing on' to post first thing in the morning to let passengers know they are open to answer any further tweets. This was often complemented with a 'signing off' at the end of the day to make passengers aware that their tweets will no longer be answered for the day. The response to queries outside of the standard work hours was approached cautiously as it could potentially provoke an expectation from the customers that the Twitter service had extended availability.

FirstGlasgow and FirstAberdeen both employ a team of staff to help maintain their respective Twitter accounts, while only a single person is responsible for the South East and Central Scotland account (see Identity Management section for further discussion on the implications of managing this situation). The teams were not staffed for posting to the account outside their standard work hours and as the task was shared, no one took responsibility for doing so. However, the single person at South East and Central Scotland did post outside of work hours and took much greater ownership over the identity. The Twitter operator here had a belief that in order for the account to be most useful, it needed to be maintained on a continual basis. The timeliness, accuracy and personalisation of the

response are key factors in how effective the real-time travel information is that is delivered (Papangelis et al. 2013).

Identity Management

The transport operators had very different strategies at each company for managing their Twitter identity and the persona that is communicated to the passengers through this. Each company emphasises engagement with the people behind the operator's Twitter feed who communicate with their passengers rather than merely acting as an emotionless corporate identity. However, the identity of the people behind the feeds is entirely constructed by the marketing teams to fit how they wish to portray their company's brand. All of the feeds made use of three-letter names to be used as a signature for their tweets. Whilst it is unsurprising that these names were aliases, the ownership of the aliases was managed in very different ways.

FirstGlasgow had four different people who took turns to manage the Twitter feed. These people had marketing roles within the organisation, except one who was an on-street inspector checking passengers held a valid ticket for their journey. Each person had their own alias and a persona to match. The (three-letter) persona names were Eva, Jim, Kim and Abi. The staff took ownership of these names as a public facing persona they could use to communicate with their passengers. The public in turn became attached to these different personalities with favourites even being judged through a competition at one stage. The feedback this generated from passengers helps illustrate this sense of attachment:

> @FirstinGlasgow: Vote for your fav twitterer & you could win some chocs. 20 winners will be chosen by the winning twitterer. #yummmm
>
> PassengerX: @FirstinGlasgow Has to be Eva. Helpful, informative, does what she says she says she's going to do. Oh, and a wee bit of a sense of humour.
>
> PassengerY: @FirstinGlasgow to Eva you are a wee gem listening to all our grumps x

The different personas were assigned roles for the types of service they provide. For example, the Jim persona was used to specifically offer technical information about the bus service to passengers. The person behind the Jim persona stated he had received feedback from customers who believed he was a software 'bot' rather than an actual person. The reason for this was the manner in which the Jim persona communicated by relaying factual information rather than conversing using a friendly tone. This resulted in the person behind Jim changing how he communicated in order to provide more light-hearted messages intended to help engage with the passengers. The team maintaining the FirstGlasgow account used the web interface for Twitter with updates mostly being posted from a desktop computer. Some members of the team used their personal mobile devices to keep track of the feed - but did not post to it when they were not at work.

The company in Aberdeen had three different people to maintain the Twitter feed; their organisational roles were as follows: marketing manager, network manager and network operations manager. As the network consists of the routes the buses run on, these managers are responsible for planning the routes and ensuring all of the buses are running to schedule. All three individuals use a single shared outward facing persona called Jen. The network manager updates the account most frequently (around 80% of the tweets). However, this person had no specific training in terms of dealing with the public, so the tone of the messages was more serious and less light-hearted. The range of duties the network manager does in relation to the day-to-day management of the bus services has potential to conflict with the requirements of maintaining the Twitter feed. This resulted in some tweets appearing rather argumentative in response to passenger complaints. The female gender of this persona is perhaps inappropriate as the person answering most of the tweets is in fact male. The decision to use a female persona was taken, as it was believed passengers would be less likely to argue with a female. This account was also chiefly administered using the Twitter web interface running on a desktop computer. Again, the mobile app based version helped the team members to monitor the account but this was mostly used for viewing. Therefore any tweets were composed whilst being situated at the desks in the marketing office. This indicates tweets are purely based on information they are relaying from sources internally rather than first hand experience from on-board the buses.

First South East and Central Scotland had only a single person behind the account as there were fewer resources devoted to it due to the rural setting of the majority of their bus routes; this is consistent with experience elsewhere (Pender et al. 2014). This person had the role of marketing manager for the company and used a Twitter persona called Amy to tweet. As one person was doing all maintenance of the account, the personality projected through the identity did not have as much character in comparison to FirstAberdeen and FirstGlasgow. There is not a predetermined character for that persona so it is based more on the individual operators personality rather than a constructed one. The marketing element of the account was very well executed with timed release of tweets to synchronise with other channels (e.g. the network update page on the company's website). There was also much greater use of the retweet function for other accounts that have provided travel information relevant to the geographic area. However, the engagement between the operator and the customers was limited to a much more functional relationship with less general chat and more direct answering of queries. This account was maintained using Hootsuite[3] web software on a desktop computer alongside a mobile device to post to the account when the operator was elsewhere.

In summary, the strategy for managing the personas in each location is very different. The ownership of the personas is greatly improved if the individual responsible for portraying each one is expressive in how they communicate but also aware of how their messages could be perceived in the public domain. When setting up personas, operators should carefully select the gender of the persona name. While female names may be considered to be less argumentative, operators should be aware of possible loss of trust from passengers if they become aware of a gender mis-match between the persona and person

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[3] https://hootsuite.com

behind it. The identities portrayed through the social media accounts can influence the ways in which passengers engage with this channel of information. The interaction with passengers through the personas, as demonstrated by the good nature of conversations at First Glasgow, helps to facilitate a closer relationship with the travelling public.

CONCLUSION

The social media usage at these three companies has revealed very different strategies related to their use of social media. Although the marketing teams who operate the Twitter feeds do communicate with each other at monthly meetings, their approach to the utilization of social media is widely varied. There are many factors influencing these alternative strategies such as knowledge of the passenger demography including their usage of social media, the geography of each company's operating area, scale of the service they operate and the experience of good or bad interactions with passengers via this channel.

There is no clearly defined shared practise for using social media across each of these locations. Each company has defined their own strategy through the experience of the staff members and the information needs they have defined for the service. Much of the current approach to using it has been learned through extending marketing knowledge into the social media channel and evolving how it has been used over time. There has been no explicitly organised activity by the company to most effectively utilize social media channels. The evolution in usage has been dependent on individuals learning through their practise within these organisations. This does have challenges, as it is a fast paced and very public platform meaning mistakes are difficult to hide. The speed in which other media outlets can pick-up on an issue and the ability for examples of poor communication to spread around the web require a cautious approach.

Our findings indicate that other transport operators using social media as a real-time information channel should factor in the three key themes this paper has highlighted when defining their strategy for deployment on this channel. These were persistent conversation, provision of real-time information and identity management.

The persistent conversation is the communication occurring between passengers and a set of personas through Twitter. This means that a relationship can be built up with their customers over an extended period of time than is otherwise possible with the bus drivers providing their service. This relationship construction reflects an important role that social media can play as it helps reintroduce a social element of customer engagement that is otherwise lacking from the service.

The provision of real-time information relates to the ways in which information on an unplanned disruption is communicated through this channel. The alternative strategies for doing this were described in terms of being proactive or reactive when disseminating such information to passengers. The scale of the bus network and proximity to the bus network managers are major influences on deciding which approach is adopted.

The identity management relates to the ways in which personas are used to communicate with passengers, and their configurations are largely dependent on the resources available within the organisation. The ability for the transport operators to build a

meaningful relationship with their customers can be influenced by the ownership the Twitter operators hold of these identities.

Further work is necessary to explore with passengers the impact their usage of Twitter has on the travel experience. The assertions made about passengers throughout the paper have been based either on the second hand accounts during interviews with the marketing team or a reading of material available through Twitter. There has not been any direct participation of passengers with this study in order to gain their perspective and confirm or deny such assertions. More activity to address this would further evaluate the notions of social involving dialogue, information and identity described in this paper. Additional activity within the three companies would involve a workshop to explore the themes that have been highlighted through this study and help articulate a shared strategy for best practise.

Paul Gault is Research Fellow at the dot.rural Digital Economy Research Hub at the University of Aberdeen, UK. His research focuses on developing methods for distributing consumer experience research across groups of non-specialists in large organizations. He received his PhD in Design Ethnography from the University of Dundee, UK. p.gault@abdn.ac.uk

David Corsar is a Research Fellow in Intelligent Information Infrastructures at the dot.rural Digital Economy Research Hub. His research focuses on knowledge engineering, semantic web, provenance, and quality assessment in systems that integrate humans with artificial intelligence algorithms and big data. He received his PhD in Computing Science from the University of Aberdeen, UK. dcorsar@abdn.ac.uk

Peter Edwards is Professor of Computing Science and Director of the dot.rural Digital Economy Hub. His current research interests are focused around intelligent information infrastructures, with particular emphasis on provenance, information quality, and trust; these are explored in the context of applications built using linked (open) data. p.edwards@abdn.ac.uk

John Nelson is Professor of Transport Studies, Director of the Centre for Transport Research and leader for Intelligent Mobility in dot.rural. His research interests include: user requirements of both passengers and public transport operators and evaluating the impact of an enhanced information ecosystem on trip planning, activity patterns and longer-term behaviour change. j.d.nelson@abdn.ac.uk

Caitlin D Cottrill is Lecturer in the department of Geography & Environment at the University of Aberdeen, UK. Her primary research focuses on the use of data and technology in encouraging active and public transport modes, and in the protection of personally identifying spatiotemporal data via policy and design. c.cottrill@abdn.ac.uk

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Digital Trust: An Analysis of Trust in the Adoption of Digital Support Services

EMILIE GLAZER
SP+EE Ltd.

ANNA MIECZAKOWSKI
SP+EE Ltd.

JAMES KING
SP+EE Ltd.

BEN FEHNERT
SP+EE Ltd.

Adoption of digital support services is mediated by varying experiences of trust. This paper deconstructs the notion of trust in technology through a design-led research project on the long-term adoption of a telehealth service – a context at once complex and fragile. The investigated daily experience of patients and healthcare practitioners in the UK and Germany revealed negotiations of trust that blurred boundaries between domestic and medical, and between system smartness and individual responsibility. Implications extend to the role of technology in changing healthcare landscapes, what trust means in developing digital support services more generally, and how appreciating the fragility of trust can bring both risk and hope in uncertain and evolving worlds.

DECONSTRUCTING TRUST

Digital technology is ubiquitous. Daily rituals of the most mundane kind are enacted through smartphones, tablets or laptops. Through apps and platforms we connect, create and consume; we collaborate, we construct identities, we heal illness and we learn anew. With Internet access growing at staggering rates, it is more important than ever that the digital spaces on which we so depend are ones that we can trust.

As a notion so seemingly vital, trust however is slippery, nebulous, and fragile. Studies in Human Computer Interaction (HCI) that examine trust in technology favour functional models where trust is an enclosed transaction between an individual and digital service (McKnight, 2002; Wang, 2005; Wiedmann, 2010). Sociologist Gambetta (1988) builds towards a useful definition. "A device for coping with the freedom of others" (Gambetta, 1988 : 219), trust depends on probabilistic cost-benefit estimations of another's future

action. It is intimately connected to ambivalence, reliance and hope in the face of uncertainty and risk.

In every encounter the meaning that the concept of trust takes is inherently historically and culturally situated. Structures of moral accountability and knowledge management shift across place and time (Jimenez, 2011; Luhman, 1988) to determine where and how risk and trust are located, valued and experienced. For Gambetta (1988), research on trust is therefore most interesting in spaces where trust breaks down, intersects with culture, or emerges in complex or unexpected environments.

To fully understand how trust plays a role and is constructed in adopting emerging digital services, an investigation must begin by acknowledging its complexity and contingency, and explore this at the extremes – where boundaries pushed reveal the limitations of people's experience and the possibilities for engagement therein.

Healthcare is a landscape where these dynamics are especially pertinent. A realm of clinical trials, peer reviews, stringent regulations, and ethical boards, this is a forum which welcomes deep scrutiny, and in parallel where the importance of trust is acute. Patients are extreme versions of lay users, clinicians extreme versions of professional users, and data shared is of the most sensitive and personal kind. When it comes to medical technologies, narratives of progress and hope (Good, 2001) clash with concerns about power relations, and infringements on personal safety, privacy and agency in doctor-patient relations (Grimen, 2009). Developing a new medical technology becomes an extreme version of a design-led research challenge.

To scaffold any kind of understanding here, Latour's (1987) Actor Network Theory (ANT) and recent anthropological thinking on material culture offer compelling frameworks. In Latour's (1987) ANT every research field is composed of an interconnected web of actors, where inanimate objects play an active role. Ingold (2007) and Holbraad (2011) go further: the active role of a thing is not just about how people appropriate it, as Latour (1987) suggests, or how it is imbued with social properties, as Appadurai (1988) and Mauss' (1954) seminal work exposed, but how its inherent materiality (Ingold, 2007) endows it with agency all to itself, that can shape theory and behaviour (Holbraad, 2011).

Thus, for any digital health design-led research challenge, medical technologies operate in the relational matrix of healthcare. As a research landscape it has the potential to unravel the dynamics of trust in the adoption and immersion of digital support services more generally, and through this, contribute to a broader conceptual understanding of what trust is and whether it even matters at all.

DIGITAL TRUST IN HEALTH AND HOME

This was the backdrop for a project led by SP+EE Ltd. in 2013 – a collaboration between design-led research centre Eclipse Experience and design studio Science Practice, with a focus on design-led research and innovation in healthcare. Working with Swiss pharmaceutical company Novartis Pharma AG (Novartis), we sought to develop a home-based telehealth system targeted at self-management of Chronic Obstructive Pulmonary Disorder (COPD).

Derided for implicitly controlling vulnerable and marginalised patients (Cutchin, 2002; Bareiss, 2011; Cartwright, 2000), and celebrated for configuring more balanced patient-doctor relations to give agency, power and an active voice to the ill (Ahlins, 2011), telehealth is an already contested sphere. At the extremities of health and technology, it presents a fertile case study. The insights that emerged spanned multiple levels across adoption and immersion amongst patients and healthcare practitioners, with implications for design and self-management. Here our focal point is the role of trust in this matrix.

Design-led ethnography

Our methodological approach was rooted in agile and iterative design-led research and user-centred participatory design. To begin, we established a set number of questions based on our ultimate aims and to guide our process.

Many of our questions revolved around how the service could be designed to engage all actors involved, and how the system could mediate patient and doctor relationships over time. We worked with naturally occurring care groups – with a set number of patients and the practitioners who regularly cared for them. We identified participants across geographies in London, UK, and Berlin and Frankfurt in Germany.

Sensitivity to the contextual environment meant that we gathered behavioural experience alongside attitudinal and usability data. Our mixed-methodological approach was grounded in real-world settings – the home, the GP surgery, the hospital – that acknowledged the complexity of the condition and the health care system within which we were intervening, as well as the fragility of how trust is negotiated across these plural spheres. Semi-structured interviews, diaries and observations happened in all of these places at two-week intervals over the course of eight weeks in two phases of research.

We nested a working prototype directly in this flow of care. It was designed as a home-based GSM connected device for patients, as a clinician-specific interface available on desktop and mobile devices, and with the ability to be tested through clinical trials and regulatory and standardisation bodies.

As we embedded the telehealth system in daily life – sitting in patient home kitchen-tops, living room tables, and GP surgery desks – the stimulus that we presented was always made to feel real in order to elicit a reaction that would be as just as possible to everyday experience. Design was thus actively used as part of the research process, in parallel to shaping the product itself.

We were also aware of our agency as researchers. We acted as IT support, taking on a role that was integral to the service itself, and using impromptu visits to fix digital bugs as chances for informal observation. Instances of hospitalisation broadened the field further, and as neighbours dropped by, care worker conversations were joined and routines were revealed. In this way, as roles blurred between service delivery and service research, the researcher's position extended towards interventions of an active and engaged ethnographic kind, much like the practice of 'correspondence' that Ingold and Gatt (2013) describe. Whilst ours was not classic participant observation, elements of our process echo this ethnography that is a holistic and transformative project.

Following this, participants' experiences also intentionally informed the research and design process. Through a continually reflexive exercise, their perspectives enabled us to challenge and reassess assumptions and directly adjust prototype designs with each iteration. The process draws parallels to the practice of design *with* anthropology that Gunn and Donovan (2012) speak of: rather than one discipline in service of the other, design and research acted in a mutually constitutive dialogue alongside participants, whose agency equally shaped the outcomes, bringing about more sustainable forms of engagement.

Everything was documented through film, field notes, and audio recordings and captured in a multi-media online platform. Anecdotal real life stories were then collated with quantitative usage data from software analytics to give a textured narrative. It revealed rich contextual understandings, meaningful designs and facilitated regular open conversations with the commercial, technical and research teams at Novartis.

The everyday life of COPD

The patients who participated in our project represented the typical COPD profile in primary care: men and women aged 50 to 95, with COPD categorised as severe or very severe.

Like many with COPD, a number of patients suffered from other illnesses (Boeckxstaens et al, 2012). Daily routines involved streams of medications administered, care workers in and out of the home, hospital appointments puncturing otherwise uncluttered calendars on the wall. Co-morbidities blended into one another. When we first met, some patients were unable to distinguish COPD symptoms or medicine from those related to other ailments.

However, COPD was a constant presence both inescapable and irrevocable. The daily effort to breathe and irreversible nature of the condition generated apathy towards exercise or smoking – the former known to prevent exacerbations and the latter the leading aetiology. Patients were adamant to 'get on with life'. Homes drew windows closed to stave off cold air sharp to the lungs, capturing in the smell of cigarettes – ash trays hidden though butts and ash trailing surfaces. While COPD was seen to constrict possibilities, it was also dismissed; a presence, though ubiquitous, met with passive disengagement.

Amongst this older demographic, technology use was constrained. Although we saw a range of competencies, despite familiarity with emerging technologies many patients were novice digital users.

In the stories that follow, we focus on a few specific patients. All are given pseudonyms, and personal details are amended for anonymity.

The lifecycle of trust

During this project anecdotes of telehealth adoption, immersion, and rejection emerged to shape an image of technology and self-management engagement with ambivalent and multiple experiences of trust.

To hang our findings, we suggest thinking of trust as existing on a continuum that extends from faith (Hart, 1988), familiarity and confidence (Luhman, 1988) and tends towards uncertainty, scepticism and distrust. It depends on conditions environmental (e.g.

cultural, societal, physical, political), behavioural and psychological. At each point, benefits and risks are balanced in evaluations that reinforce or erode trust.

Along this trajectory, six key insights emerged:

1. 'As if' trust
2. Mediating expectations
3. A portal to social relations
4. Supporting healthcare practitioners
5. Domesticating the medical
6. Active self-management

These are elaborated in full below.

'As if' trust

From the start patients' engagement with the service measured scepticism in the unfamiliar with motivation for self-management. Doubts revolved around technical competence, as well as concerns about data privacy.

But for most patients the device promised a hope they had never before been given: the possibility of slowing illness deterioration, of independence – otherwise slipping away. And for many, this was incentive enough to begin service use.

Samuel lived alone in a South London estate, with a community of neighbours who looked out for each other. Having suffered from COPD for years, Samuel thought that no assistive technology could support him beyond his existing routines. Still, when describing his needs Samuel defiantly spoke of how the service could return the independence he so craved, "*I like to be independent and I'd like to be able to put in that I did it, instead of people doing that for me.*"

Adam lived in a similar setting. Occupying a single flat in London's East end, Adam's COPD was very severe. When asked if the involvement of a pharmaceutical company worried him he said, "*If it helps me, of course not!*" It could be that Adam's dismissal of privacy risks was less due to deliberate calculation and more reflective of a deference towards the healthcare system, common amongst this older generation (Campbell et al, 2001). Clinicians, on the other hand, did acknowledge the potential threat to privacy and questioned the motivations of a pharmaceutical company's involvement. Nonetheless, Adam's response hints at a simple determinant of service engagement: the answer to the question, "will it help me; is it worth it?"

Both Adam and Samuel thus began using the service. They willingly shared personal data about their condition, as did other participants. So, even though trust might not necessarily have been present, motivation was sufficient to act as if it was there. This leap of faith echoes Gambetta's (1988) study of the Sicilian mafia: when the conditions for trust are absent players act 'as if' trust exists to ensure fluid social worlds.

Here, patients' tentative first steps led to service use into following weeks. Acting 'as if' trust opened up the possibility for a deeper form to eventually be forged.

Mediating expectations

Patient engagement was further determined by expectations about what a digital service should deliver and how it would deliver it. An awareness of connected devices, touch-screen technology and personalised apps led to anticipations that the system would be similarly advanced: the system should be smart and it should be personalised to them. In fact, for many patients, the outcome of system smartness was a tailored service.

On a daily basis, this meant that intelligent analysis of patient inputs (answering questionnaires about their condition, selecting icons to represent activity completed that day) should enable the system to learn about them and personalise messaging and advice in return.

When the system did not do as expected, patients remained sceptical: a lack of personalisation was a signal that the system was not smart. Samuel, for instance, spoke with frustration when the system failed to acknowledge personal daily experience, "*I'd like to be able to add more, like what you've done. I'd like to say that I've been able to go to Iceland [a low cost supermarket].*"

Conversely, when patients observed interactions that resonated, familiarity and responsiveness nurtured trust. Asked about service accuracy, one patient said, "*Yes, it is good. For example yesterday it was back in the normal range again. Three days before the scores had worsened. No wonder, because I could not breathe well and it is good if you always fill that in.*" And you think it understands that? "*Yes, you notice the differences.*"

Equally, however, fulfilment of expectations also brought a risk: when the service demonstrated smartness, personalisation, and successful self-management, some hopes were fuelled so much so that telehealth was seen as able to abate exacerbation patterns altogether.

Adam was hospitalised during a cold rainy week in November. When he returned home, he talked of his disappointment in the system. "*It didn't spot my exacerbation (…) the machine should do that – alert to the fact that something is wrong and say 'I think you better seek medical advice'*". And yet, Adam picked up service use immediately when back from the ward. Experience of being let down was balanced with hope for the future, and the latter won. In his ambivalence – between his words and later action – Adam showed himself to have simultaneously lost trust and yet act 'as if' he trusted still.

Samuel also experienced an exacerbation that led to a week in a hospital lung unit. He spoke about the ensuing apathy, "*For a day or two when I came home from the hospital I wasn't up for it, just not in the mood for anything.*" Before this interview, Samuel was smoking a cigarette. Bashful, he explained, "*I even started smoking. Just from boredom, I'm fed up*". Samuel's receding trust in the system linked to this broader loss of motivation.

At the beginning of the project, and during each scheduled interview, the premise of the service had been repeated to patients – so the overreach of expectations was not a matter of lack of awareness or education. Perhaps, however, given the patients' generation, lapses in memory occurred, or previous digital experience was so limited that far too much hope was invested in this new piece of technology – regardless of what might have initially been promised.

Moreover, neither instance should be seen as unique. In COPD exacerbations are inevitable. Depression rates are especially high (Schneider et al., 2010), hinting at weaker

motivation for self-management and greater incidences of exacerbation (Quint et al., 2008). So if additionally faith in telehealth soars beyond the capacity of the service, at some point trust will be lost: it's not a matter of whether this will happen but when. The daily reality of living with the device will always be evaluated against expectations. At times – even for the same individual – the comparison may generate a perfect fit. At others it might reveal a gap that begs to be filled. Any digital support service for COPD must therefore continually mediate and build in sensitivity to the diverse expectations and experiences that a single patient – let alone the breadth of a population – will have.

A portal to social relations

Beyond its core functionality, the system took meaning in patients' lives because it was integrated in care networks. The service only worked when appropriately embedded in social relations.

Many patients gained reassurance just from knowing that they were being monitored by someone who cared; even if no action was taken, even if that person was unknown.

This was very much the case for Charles. Living in a single London council flat, few friends and family out of town, he kept blinds closed and was mistrustful of his carers. Nevertheless when asked who had access to the information he provided the system he said, "*I haven't a clue! (…) It'd be nice to know that someone is looking after you, even if it is on the other end of the cable."* Despite its abstract level, the clinical relationship symbolised had clear impact.

Little value was seen in the service if this connection was not felt. When both Samuel and Adam were hospitalized, for example, part of their disappointment revolved around a perceived failure in the system to facilitate immediate support from their care workers. During these instances of potential lapse, patient re-engagement was all the more dependent on healthcare practitioners adequately responding to their role in the system.

This was expressed in an exchange with a UK pulmonologist, *"I think it's getting people that they trust back involved and in contact. So ultimately if they are already in a care group, they know [community nurse] very well then that phone call makes a huge difference […] I think having that personal touch is very important".* Patient interactions with the digital service mirrored the growth of trust and social relations with their healthcare practitioners in the real world.

Given that the device also sat in people's homes, it became part of informal social networks as well. A novel thing, an intrigue, it was a focal point in discussions with neighbours, friends who were informal carers, and family members. Some even helped the patient interact with the system directly. Samuel had problems with his eyesight; on most days a neighbour would sit with him to read messages and make daily entries. As a home based self-management system, telehealth acted to collectivise care as well as put it in the patients' own hands.

Supporting healthcare practitioners

Clinicians' trust in the service also depended on how it connected them to patients and gave value to the day-to-day.

At first they were concerned that telehealth would undermine their relationship with patients and automate their role in the care system. Some clinicians feared it would add

further administration to paperwork already weighing them down. As a new technology infringing on their profession, the telehealth service posed a threat to their sense of power and control.

A doctor in Germany voiced this reticence, *"Isn't the relationship between the patient and doctor still most important, without an intermediate device in between?"* A UK nurse similarly stressed the importance of maintaining a human connection, *"With patients with COPD, when they have exacerbations, what they need is reassurance, somebody to be there, somebody to talk them through the exacerbation stage when they're scared that they can't breathe. Would this be able to provide this for them?"*

What many clinicians found, however, was that instead of replacing their job the service helped them do their job. According to a German doctor, *"First I was worried - 'Oh my goodness, what have I got to do every evening?' But it wasn't like that, it was brief and clearly laid out […] For this message, 'didn't take meds for 5 days', I would need to know it more precisely, has he been delayed for 5 minutes or 5 hours? This makes a big difference."*

Once healthcare practitioners began using the system they saw it as a new source of knowledge. Beyond reassuring them about job security, valuing the system for its information demanded trust in patient reported outcomes. Clinicians who doubted the accuracy of patient reports were equally in doubt about the service itself. The design of the clinical interface therefore aimed to imbue trust in it as a valuable tool: clear and efficient overviews of patient data along with granular detail gave clinicians a sense of control in analyses, and as a result enriched understandings. At face-to-face interactions clinicians were then able to have more meaningful conversations with patients based on knowledge of their recent condition history – data that otherwise might have passed unknown.

Domesticating the medical: the meaning of telehealth in everyday households and lives

With the device firmly integrated in social care networks, the home environment within which interactions took place shaped patient sentiments. Domestic settings were already filled with medical technologies. Pillboxes and prescriptions covered living room tables; oxygen tanks sat next to sofas, and beds, baths and toilets were wrapped in assistive technologies more akin to hospital rooms than the home. The invasion of material artefacts from the clinical sphere into home life was all too familiar.

Compared to these explicit medical things, the system seemed far more neutral. Looking more like an iPad than a clinical monitor, it adopted an informal tone of voice and spanned generic topics (e.g. physical activity, the weather) in addition to symptoms and medication. As a medical service that appeared less medical than the usual, it was perhaps more easy to accept. Charles at first said, *"I'll give it a go, it's just like a normal routine thing."*

After three months within this domestic environment, telehealth became a part of daily routines and seemed to act as a companion – almost anthropomorphised. Thinking about the prospect of no longer using the system, Charles observed, *"I'm used to it […] I'll miss not doing it. I look forward to that light coming on at eight o'clock."*

Like Charles, Edward lived alone in a London flat. He often mentioned his family who lived abroad. A sprightly 70 year-old man, Edward's COPD was increasingly a daily burden. During a later interview, Edward looked at the device fondly and said, *"strangely enough the*

[telehealth system] has been a comfort for me and I feel I have a contact (…) you feel you've got an outlet (…) I still think of it as an old friend."

Both socially isolated, the service filled a void in the lives of Charles and Edward as a social entity in itself. The tangible qualities of the device – its informal look and tone, its aesthetic similar to lifestyle technology brands – enabled it to become a part of the home ecosystem. As the device was creatively appropriated as friendly companion the medical was domesticized. Even Samuel echoed this sentiment. Asked if he would miss the device, he admitted, "*nobody will miss it except for me*".

Active self-management

Embedding the system in daily routines led to new routines created in turn. Now a positive habitual presence, patients' trust in the system developed into a form of self-confidence in their own ability for self-management. Along the way telehealth became a conduit for education and behaviour change.

Patients spoke about how the service helped them exercise more. In a conversation with Edward, he said, *""this sort of kick-started me into becoming more active"*; it was "*giving me new ideas*" about how to manage COPD. Encouragement from the service supported every new step, *"it gives me a certain amount of satisfaction (…) at the end of the week it's like a pat on the back."*

Patients did continue to rely on the system somewhat passively: a desire for system smartness and personalisation meant that they expected it to do a significant amount of work for them. Still, interactions came to develop new meaning, where the locus of responsibility for COPD management tipped in favour of patients' on control. Over time these became moments where patients took a more active role in their healthcare – discrete periods of intervention which evolved to permeate regular life. The daily psychological and physiological reflexivity that the service brought opened up the possibility for patients to change routines to improve their condition, to gain more knowledge, and to feel more empowered that they could do something as a result – all the while engendering a greater sense of agency, control and awareness of their bodies and their selves.

TRUST IN TELEHEALTH

The stories collected here tell a narrative of hope placed in medical technology, of inherently social foundations in healthcare, and of the possibility for transformations of the self. Experiences of patients and healthcare practitioners offer a lens to look at what healthcare means in the 21st century and how trust operates in this sphere.

Telehealth mediated not just a functional transaction of trust but a highly affective experience. Similar to how Hart (1988) understands friendship as a facilitator to trust, as the telehealth device came to be seen by patients as a friend, trust originally enacted 'as if' it was there began to consolidate into deeper sentiments. Contrary to Foucault's (1967) early medicalization critique, what we found was closer to Good's (2001) concept of the 'biotechnical embrace'. Rather than telehealth acting as a utilitarian object of institutional control, the effect on patients was tied to caring relationships and a warm affinity to the technology in itself, welcomed for its comfort and promise to heal.

Trust in telehealth thereby enabled patients who were far more active than what the Foucauldian (1967) discourse suggests: going beyond a model where medical technologies are disciplinary tools of clinical surveillance, where dominant structural powers (e.g. Western ideals of illness and health, embodied in the modern medical system) manipulate the bodies of the weak. Rose's (2004) perspective on medicalization refreshes the original term and chimes here. Medical technologies can enable new identities, here in part by shifting the balance of power between patient and doctor. Whilst differentials inevitably still prevailed, patients from a characteristically trusting generation developed control over their healthcare management and an empowered sense of personal agency.

Crucial in these experiences was the system's immersion in domestic and social environments – in terms of product development this meant embedding both local and concrete contextualisation. Nestled in these landscapes the service became a material embodiment of care in a mutually transformative entangled 'assemblage' (Latour's, 1987). As trust emerged amongst patients and healthcare practitioners, the service both took and endowed agency. In ways that Ingold (2007) describes about encounters between people and things, interactions with the device were creatively interpreted, contested, and embodied by individuals in unanticipated ways. The material properties of the system had agency, too (Holbraad, 2011). A familiar domestic design, friendly tone of voice, and simple interface acted to reassure and set novel patterns in the lives of patients and healthcare practitioners.

The outcome of trust in these new digital actors was a system both more individualised and collective: care became more personal but it also drew in and depicted social networks through virtual platforms and data generated. The locus of where healthcare was also distributed across daily life. Healthcare provision became enmeshed in the domestic, the material mediators and habitual routines created as mundane as a television set or making a cup of tea. As Lupton (1997) notes, preventative health avoids medicalization in a clinical sense and takes another more pervasive and personal daily form. With increasingly sophisticated sensor technologies, this might become all the more the case. In 21st century healthcare, boundaries blur between lifestyle and healthcare, medical and domestic, patient and carer.

CONSTRUCTING TRUST

The insights from this project are tethered to a healthcare context, but they translate across a far wider range of fields.

What we propose as a model of trust puts emphasis on it as dynamic, non-linear, mutable and contingent on time, place, and culture. Although interconnected with hope, faith, and confidence, trust distinguishes itself through the decision, deliberate or not, and dependent in part on the benefits and risks perceived and experienced, to behave in a way that involves a risk, to act so that one's self – one's own information, identity, safety or health – is placed into someone else's hands. Trust is experienced in different ways across individuals and instances. It can extend from low levels where it exists as a shadow, 'as if' it was there, to then be consolidated more strongly once benefits begin to show. Losing trust can happen in an instant, especially when risks are viscerally felt. Throughout, trust depends on socio-cultural, political, historical and physical environments, and on previous and lived

experience just as much as the quality of the thing itself. It includes cognitive elements as well as affective ones. Even if on the surface dynamics appear passive, trust takes resources to create, maintain and re-build – all of which are involved acts, socially embedded and creatively appropriated, interpreted and transformed.

Trust in digital support services can mediate new kinds of assemblages. Emerging education technology, for instance, enacts itself in multiple settings where the role of teachers blend with other social actors, the classroom expands into physical environments beyond school walls and digital artefacts generate novel forms of engagement. To gain trust the platform must acknowledge individuality; adapt to personal experience all the while constructing affordances towards familiarity, hope and reassurance. No matter how challenging it might be from the standpoint of software design, it must connect to social actors who matter – educators, peers, and mentors – in a way that reflects the profound impact and fluidity of real world interactions. Inbuilt must be mechanisms to teach new skills and understandings.

Throughout, however, the spectre of potential risk always lurks. This goes for behaviour in digital technologies across education, finance or government services as well as in health. The inherently fragile nature of trust though is no bad thing. Hesitation, trust 'as if', or even distrust implies a thoughtful engagement with implications, without which blind trust or misplaced confidence could lead to any number of dangers. Elusiveness enables agency, resistance and control just as much as trust can do. While in the past, neoliberal institutions might have concealed knowledge and information underneath sheaths of technological jargon and corporate management (Jimenez, 2011), our observations depict an alternative where resistance and creativity call for more direct and visible modes. In doing so, perhaps the particularly Western sociological interest in trust as an issue (Jimenez, 2011) might even erase itself. If emerging technologies make risks fully visible and give people greater, clearer knowledge and control, it might be that the implications of trust become shared and seen across known social actors and so its management at a structural level is less of a concern. Importantly, this puts the onus on services to be designed mindfully and sustainably with and for those who use them. Only in so doing can a new thing be created to answer hopes and validate expectations.

In each instance, the value of getting these intricate nuances right applies to every actor in any given network. People can connect to others and things in more meaningful ways; extensions of trust create the possibility for rebalanced power relations, self-transformations, novel understandings and behaviours newly formed. Ultimately, however it is negotiated, contested, and created – and in whatever way it might morph across future geographies and time – trust in all its plurality will continue to shape the experience of everyday life. It is up to us to continue to question it, to examine it, and to discover ways to mediate it in ways that are ethical and sustainable in full.

Emilie Glazer – Design Researcher, Eclipse Experience. Emilie's work explores the intersections of science, medicine and technology, environment and society, with an interest in design anthropology as a practice to actively and sustainably engage in these spaces. She also runs an inter-disciplinary innovation competition for young people in the UK. emilie.glazer@eclipse-experience.com

Anna Mieczakowski is a Design Research Lead at Eclipse Experience. Anna's work focuses on unravelling the intricacies of users' socio-psychological factors in adoption and sustained usage of interventions in healthcare, education and telecommunications. She is also an honorary Industrial Fellow in inclusive design at the Cambridge University's Engineering Design Centre. anna@eclipse-experience.com

James King is the founder of Science Practice and co-founder of SP+EE. James is a designer with an interest in science, medicine and technology. James' work has been exhibited and published internationally and has been added to the permanent collection at MoMA. At Science Practice, James works with scientists to connect their research to the world outside the lab. At SP+EE James collaborates on the design of healthcare interventions that are effective, engaging and safe. james@science-practice.com

Ben Fehnert Founder of Eclipse Experience and co-founder of SP+EE. He is interested the role of design-led research in decision making and meaningful change across education, healthcare, mobile technology, public services and shared spaces. Ben's work in healthcare focuses on contextual and behavioural input into clinical studies. ben@eclipse-experience.com

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Little Data, Big Data and Design at LinkedIn

JULIE MARIE NORVAISAS
User Experience Design Research Manager, LinkedIn Corporation

JONATHAN "YONI" KARPFEN
Senior User Experience Researcher, LinkedIn Corporation

LinkedIn's User Experience Design (UED) Research team is relatively small. The data we gather is even more drastically outnumbered. LinkedIn's design and product development process is steeped in behavioral data, real-time metrics, and predictive models. Working alongside teams generating and focused on big numbers, our group of qualitative researchers helps decision makers understand how our products fit into members' lives, envision future experiences, and take a peek behind the numbers. We'll share how our team discovers and uses "little data" to inform and inspire, in the context of a company driven by "big data."

INTRODUCTION

LinkedIn's UED (User Experience Design) Research team is "little" (8) relative to the company (6000+). The qualitative data we gather is even more vastly dwarfed, by orders of magnitude. A UED Researcher might target and interview 12 people for a project, while her counterparts in Product and Marketing are measuring interactions in the millions. Like many global companies, our product design and development process is built on a foundation of behavioral data, real-time metrics, algorithms and predictive models. In a word (or two) "big data." In this environment, our team has established a strong foothold for our work alongside our big data counterparts, squarely in the realm of design.

Big data holds undeniable power. It informs and increasingly shapes the products and services that make up our world. In this paper, we use the term "little" playfully, in the David and Goliath sense. In practice, it's not us against them, and it's not even a battle. Our small team of qualitative researchers has an outsized impact because of the inherent power of the approach, and our single-minded focus on impacting design. Because we sit within the UED group, alongside Interaction Designers, Web Developers and Writers/Editors, our ability to create impact in design is secured. Our team's is a success story, but not without the occasional plot twist. We would like to boast that collaborations always result in mutual alleluias and allegiance. In reality, however, at times both sides must exercise diplomacy at the border where big and little data meet. Though at first our work may seem to defy logic to those worshipping at the big data altar, and vice versa, open minds benefit greatly from an approach that has room for both.

DATA AND DESIGN

Big data is gathered, discussed, debated and leveraged in a number of ways.

Big data is traded as an asset or a commodity. Abby Margolis talks about our "digital exhaust" being traded and monetized, suggesting that many people are "convinced that big data will become the world's most important resource, the fuel for the next economy." (Margolis, 32) This is most often experienced as targeted advertising.

Another way big data impacts our lives is in the increasingly mainstream "quantified self" movement. In 2010, Gary Wolf talked about the proliferation of mobile devices and biometric sensors, which allow us to increasingly capture data about our habits and behavior to "reflect, learn, remember and improve." (Wolf)

He also suggested that, beyond contributing to self-knowledge, these personal data sets combine with social networks and distribution platforms to create interesting opportunities to contribute to public health research and biometric security.

> Perhaps the most interesting consequences of the self-tracking movement will come when its adherents merge their findings into databases. The Zeo, for example, gives its users the option of making anonymized data available for research; the result is a database orders of magnitude larger than any other repository of information on sleep stages...this type of database could help to redefine healthy sleep behavior. (Singer)

We observed a recent example of what this looks like after the recent South Napa earthquake on August 24th. Data Scientists from Jawbone aggregated data from thousands of local UP users who were tracking their sleep that night.

> Our data science team wanted to quantify its effect on sleep…Napa, Sonoma, Vallejo, and Fairfield were less than 15 miles from the epicenter. Almost all (93%) of the UP wearers in these cities suddenly woke up at 3:20AM when the quake struck. Farther from the epicenter, the impact was weaker and more people slept through the shaking. In San Francisco and Oakland, slightly more than half (55%) woke up. (Mandel)

Big data as a design input

While these uses of big data provide some context on some of the variety of ways that massive quantities of gathered data can be utilized, in this paper, we are specifically addressing the relationship between big data and design. Between big data and product development, strategic thinking, innovation. It is common for behavioral data, A/B testing, analytics and predictive models to serve as the exclusive inputs for design.

This trend is attracting some attention. In a recent Forrester report entitled, "The Data-Driven Design Revolution," Tony Costa addresses some of these trends and outlines examples of how data is influencing the world of design, declaring:

> we have entered a new age….a new era in which vast numbers of
> employees are given unfettered access to customer data and the tools
> needed to explore it, test out hypotheses, and inform the decisions they
> make daily. This new approach to data management is driving a
> fundamental change in experience design. (Costa, 1)

Later in the paper, Costa suggests that, to counter the limitations of a strictly data-driven approach, customer-facing employees ought to serve as ethnographers.

> Because of their constant, direct interaction with customers, frontline
> employees represent an invaluable source of customer data. Moreover,
> the knowledge frontline employees possess is vital to the interpretation
> of quantified customer data. Customer-facing 'employees can provide
> the color needed to interpret other types of customer data'…these
> insights help CX pros understand the 'why' behind the data — a critical
> issue because quantitative data is highly prone to incorrect assumptions
> regarding context and motivation. To complete this picture, CX pros will
> increasingly call on frontline employees to provide the context and
> insights required to make sense of quantitative customer data. (Ibid, 10)

Costa neatly points out the limitations of data-driven design, but misses the mark on which function is trained and positioned to bring this level of insight to the table. Even better than front-line employees serving double-duty as ethnographers would be actual ethnographers.

Enter our UED Research team, purpose-built to enhance the big-data-driven approach with insights from in-depth interviews, diary studies and contextual inquiry. Our techniques are individual-centered to the extreme, based in intimate ethnographic principles and hands-on, collaborative design thinking practices. We work throughout the development cycle, but our primary insertion point is at the front end – opportunity and product definition, as well as early concept testing. This is territory where behavioral data does not exist.

Allying ourselves most closely with Designers, we embed and work in close physical proximity with cross-functional product teams, deployed like a strike team on high-impact, strategic projects. Interestingly, over time, we serve as much as an internal empathy engine as a generator of actionable insight. Teams report a longitudinal effect from collaborations with the UED Research team: understanding context, motivation, and opportunity over a number of projects helps Product Managers, Designers, Developers, Engineers and Marketers interpret the data that surround them, and in some cases reframe their approach altogether.

Support from leadership is critical to making in-roads; LinkedIn's VP of User Experience, Steve Johnson, is a firm believer in our work, and has given us room to grow. Two people at the beginning of 2013, we are now eight. Over that time, we have built credibility and demonstrated impact. Our still-growing team thrives at this inflection point, where little and big data harmonize. We will share lessons we've learned, and some practical approaches we've adopted to infuse meaning, drive innovation, and shape strategy beyond (or, more accurately, alongside) the numbers.

THE LION AND THE MOUSE

Just as qualitative practitioners can be quick to point out the limits of big data, big data adherents sometimes doubt the validity of little data. We encounter those who do not immediately perceive "little data" as *actual* data. Scale trumps story; insights based on ethnographic research run the risk of seeming anecdotal.

Aesop's fable, The Lion and the Mouse, nicely illustrates a useful approach for us. The story goes like this: the lion is going to kill and eat the mouse. The mouse begs for its life, promising to help the lion someday. The lion is so amused by this notion that it spares the mouse's life. Soon after, the lion becomes caught in a hunter's net. The mouse gnaws through the net, freeing the lion and proving its worth.

One "net" that big data gets caught in is negative space. One must think about what's not in the data set as much as what is. Kate Crawford referred to this effect as "signal problems," or biases. She suggested that, "with every big data set, we need to ask which people are excluded." (Crawford) We regularly (but gently) remind teams that behavioral data is absent context and culture – and, by nature, reactive. We can only click on what is there. By the same token the less active a LinkedIn member is, the more of a mystery they are to us. We are left to fill in the data vacuum with assumptions, guesses and inferences.

Another "net" we can help free the lion from is abstraction. Large data sets are abstractions of humanity, and proxies for assumed emotion. Click-throughs and return visits that resemble addiction are interpreted as positive emotional experiences.

Ajran Haring, a technologist and behavioral scientist, put it this way in an interview in the web magazine, Medium:

> Companies started to use 'user engagement' as the core metric that they built around. Engagement is all about usage: how often someone uses the product and how long they use it for… getting people in your product as many times as possible, and for as long as possible, became the barometer of success. (Hreha)

But what does this sort of engagement feel like for the user? Our team works to add depth of understanding, culture, context and, ultimately, the "why" behind the numbers. On that note, however, Curran warns us against naively assuming that uncovering the "why" is the exclusive jurisdiction of the qualitative researcher: it would be a mistake to believe that "qualitative approaches are positioned within an elite creating game changing insights while Big Data is less capable of doing this." (Curran, 68) Understanding the "why" must be seen as a collaborative endeavor, as should the process of defining success metrics.

Simply asking Product Managers, Data Scientists, Designers and other stakeholders in a genuinely curious manner what they believe lies behind the numbers, and what their questions are – in other words, where they are trapped – can create openings. We sometimes frame these as data "mysteries." People start to then wonder how they might solve these mysteries, and we are there to apply our methods, provide an additional level of insight, and point to opportunities.

Profile Photo – One example of such a mystery arose in regard to the LinkedIn profile photo. The project team set a goal of increasing the percentage of members who upload one. Having a photo materially increases a LinkedIn member's odds of being viewed by a recruiter. Improving this number would result in a win for the member, and a win for our ecosystem. The team hypothesized that usability issues were the key to improving this number, and so the process was made simpler, more elegant and optimized. While these were notable improvements, the expected changes in the numbers were slower to follow.

The UED Researcher embedded with this team, Elysa Soffer, started asking what else we know about why some people don't upload photos, and the team was left to guessing. Hypotheses lacked a deep understanding of the core reasons. She interviewed a small number of our members, at a very low investment, and detected patterns suggesting that the problem went beyond usability. Study participants were carefully targeted to represent people who seemed very much like members who might or should upload a photo. Yet, they hadn't. Research revealed a host of very human reasons why not. A lack confidence in appearance. No suitable photo. Uncertain what is appropriate. Doesn't want to open himself or herself to bias, discrimination or stalking.

These actionable insights fundamentally reframed the way the team approached the feature. Designers incorporated image previews, while writers found ways to address members conversationally, and with more empathy throughout the upload process, to guide them and clearly spell out the benefits. This investigation led to further explorations and a deeper understanding of the barriers preventing people from making a variety of updates to their LinkedIn Profile, which are currently informing long-term product strategy.

THE TROJAN HORSE

In The Odyssey, Homer told the tale of the Trojan Horse, the ultimate subterfuge. A greatly outnumbered battalion gains entry into a city protected by numerous troops and an unassailable wall by pretending to be a gift.

The UED Research team has been known to employ this tactic. Earlier this year, a team engaged Researcher Yoni Karpfen as they redesigned a webpage to better communicate our suite of subscription-based products to LinkedIn members. This is not typically a project that we would take on, as we generally focus more on front-end initiatives, but we sensed an opportunity. The team's goal was to organize the page to optimize click-through and drive conversion to paid products. We knew that deeper issues would be surfaced through conversations around this design. Yoni partnered with the designer to set up exploratory research wrapped in concept testing. After just a handful of interviews, the patterns were strong enough for the team to begin rethinking their approach and even revisit the suite of products entirely. The project evolved from prescriptive to existential. Months later, the design that resulted is outperforming designs derived from big-data-driven optimizations.

DOUBTING THOMAS

A Doubting Thomas cannot rely on faith. He must see with his own eyes to believe. A big data adherent can be convinced of its limitations only through examples.

The Research team dabbles in big data ourselves from time to time, most often for targeting and recruiting participants. Data gurus help us reach out to targeted members to participate in research. They extract data from our enormous database of members.[1] Sometimes these efforts wind up almost comically off base, failing to reflect intent, context, or even in some cases the most basic demographic information. These failures become examples to mention in passing to a Doubting Thomas.

A couple of examples from the recruiting front lines: we recruited people who had been members for less than thirty days for a New Member Experience study, only to find that a handful of participants had actually been members for years, but recently inadvertently created a duplicate account. For a separate study, to better understand the experiences of people actively looking for work, we recruited members who appeared to be extraordinarily active job seekers based on their behavior on the site, only to find that some were looking for jobs for their spouse or child.

This type of data disconnect does not inform product design or strategy, necessarily, but it does provide us with surprising examples to sprinkle into conversations. When we expose these stories to product teams, a seed of healthy skepticism and/or curiosity germinates. People start to realize that we can't rely on big data or metrics wholesale to define and understand people. We are serving people, not numbers, and people are complicated. As much data as we have about people, people defy being defined by them.

Global Navigation – When LinkedIn set out to redesign its global navigation system in 2012, our team supplemented A/B testing with a series of group interviews, which were essentially in-person A/B tests. While variants of the design were tested on the live site, Researcher Julie Norvaisas met face-to-face with members for purposes of comparison. For each of these supplemental groups she recruited three members with very different profiles (i.e.: a senior executive, a person in their first job, and a student), in order to provide contrasting perceptions and engender conversations. Each participant took a turn signing in to their LinkedIn account; we gave them temporary permissions to play with each of the new navigation bar designs. As participants explored and experienced the designs, which were projected onto a large monitor in the room, we discussed reactions and relative merits as a group.

The global navigation is particularly interesting territory organizationally, because teams vie for top tier representation, and feel strongly about the terminology, order and hierarchy. Many of our colleagues watch these metrics very closely. All of the stakeholders convened to review the results – both quantitative and qualitative. Some team members were very interested in our companion qualitative work, others less so. But everyone perked up when Julie shared one basic but important piece of data that was not found in A/B test results: people *liked* the new simplified designs compared to the current design at that time. Both of the designs – A and B! This proved helpful in framing the numbers, as we weren't in the dark about the emotional reaction to the new designs. We could talk about performance and feelings at the same time. Having established that, we were able to contribute additional

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[1] LinkedIn Research and Marketing functions operate under very strict privacy and terms of service standards when contacting our members to participate in studies.

insights about responses to changes in wording, search features and notifications in both designs.

That was an experimental approach, which turned doubters into believers. One Product Manager remarked later that he would not have known that he was missing a layer in his interpretation of the metrics had we not been involved. Because we were able to provide our inputs simultaneously with the quantitative A/B testing results; discussion and decision-making were equally influenced by both.

Endorsements – Another example: our team did work on LinkedIn Endorsements that proved useful in turning stubborn minds on to the value of qualitative research. Endorsements performed extremely well when the feature launched in 2012. Based on engagement with the feature, LinkedIn members were quite keen to publicly vouch for one another on the basis of individual skills. Endorsements rapidly multiplied as members paid forward the social proof of each other's skills. Within just a few months, over a billion of these gestures were registered across the network. Measured in clicks, satisfaction with the feature was through the roof!

At the same time, all of the Researchers on the team started hearing unsolicited criticisms of Endorsements in our work on unrelated topics. The fact that Endorsements were so engaging was contributing to their credibility issue. Members reported receiving Endorsements for skills they did not feel they possessed; for which they did not want to be known; or from people without the requisite knowledge to endorse them for a given skill. Interviews with Recruiters confirmed our suspicions: while they viewed LinkedIn as a key source of information about candidates' skills, the rapid proliferation of Endorsements caused them to question their trustworthiness.

Colleagues following metrics and engagement numbers were celebrating Endorsements success as we conducted a study and drew our conclusions. The data were telling two very different stories. When critical stories emerged in the press, and Endorsements made it onto the *Meh List* of the New York Times Magazine, (Staley) we were ready with answers and ideas. Findings led the Endorsement team to implement a series of improvements and downshifts to the experience. In some cases these changes had a negative impact on the numbers; our team's work helped us become more comfortable with that outcome as an organization.

DAVID AND GOLIATH

We started our paper with a reference to this Biblical tale, and we will return to it for our last story. If Goliath is big data, and the UED Research team is David, the rock in our slingshot is empathy.

Field Day – The majority of our non-research colleagues rarely have an opportunity to observe or engage with users of the products they create. It is easy for teams to lose touch with the needs and experiences of their customers. Once a quarter, we assemble fifteen teams of our colleagues to venture out into the wild to interview users in their homes or workplaces. Small teams from across the organization – Product, Marketing, Business

Development, Finance, Sales, Legal, Customer Service and beyond – spend the morning interviewing members, followed by an afternoon exchanging stories and developing themes. We call this quarterly event "Field Day." It's not uncommon for our colleagues to tell us, at the conclusion of a Field Day, that this was the first time they've ever spoken directly to a member (at least, a member who is not related or well known to them) about the product, or seen a member interact with a product they work on.

These empathy exercises extend to every level of the organization. In late 2013, LinkedIn began exploring concepts for a mobile application devoted exclusively to job searching.[2] As a professional network, we were perfectly positioned to launch such a product. Yet our experience and historical data provided little guidance on how to best address our members' needs for such a narrow use case, and exclusively on mobile devices.

Given the strategic importance of this project, our executive team took a particular interest in its execution. As a result, we decided to focus our Field Day for that quarter on mobile job search, and dubbed it "Executive Field Day." Every member of the executive team attended, providing them with a rare glimpse into the daily lives of our members.

At a company All-Hands meeting later that month, our CEO, Jeff Weiner – who is known to be relentlessly data-driven – emotionally emphasized the value he got out of the interview he attended. The team he went out into the field with, led by Julie, interviewed a young professional woman in San Jose, California. They had met the participant in her grandparent's home, where she lived with them. Jeff shared with the company that, during this structured 2-hour interview, he gained invaluable insight into the young woman's career ambitions, her skills, and her perceptions of LinkedIn. He spoke about how experiences like this help us question our assumptions, and how important that is. He had internalized her struggles, related to her ambition, gained respect for her sophistication as a user. He left energized to continue to build products that serve her well, with a renewed sense that a seemingly small thing can actually have big impact. That energy was transmitted to the company, with Jeff encouraging every employee to take part in a Field Day. We now have our Principal Researcher, Donna Driscoll, dedicated to running Field Days, so that we can include as many of our colleagues as possible.

CONCLUSION

On a daily basis, our team's aim is to prove measurable product success based on our work. We've made progress as change-agents by working collaboratively; engaging product managers, marketers, developers, writers, data scientists and designers at a grassroots level; developing iterative design processes; telling compelling stories; and organizing cross-functional events that "go viral" within the organization. Often, research success, while contributing to business goals, has the added benefit of introducing empathy and removing people from the comfort of their "bubbles."

The little guy besting the behemoth is an ancient trope. It's hard to feel anything less than honored, and a bit amused, to contribute to this narrative. We've had fun with this construct during this paper. But in reality, keeping up the deceit required setting up a

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[2] The LinkedIn Job Search App officially launched in the Apple App Store in June 2014

dichotomy that is a bit disingenuous. The David and Goliath metaphor actually falls apart upon examination, for our aim with our empathy missiles is not to take big data down. The effect on our colleagues, teams and executives is not harmful at all, nor is it experienced or celebrated at the expense of the value of quantitative data and behavioral metrics.

The truth is that, in close collaboration with our sophisticated big data colleagues, we continue to evolve the interplay between qualitative, quantitative and big data as an organization. One of LinkedIn's Principal Data Scientists, Xin Fu, himself a former User Experience Researcher, put it well: our collective goal is to create "successful end-to-end stories that demonstrate the power when you combine the best of both camps."

The success of our UED Research team in a data-driven organization ultimately requires shifting the narrative to one of data-parity. Moreover, this shift is required to enable our design team to function at maximum potential, to best serve our members. We must understand, *and* we must measure.

Being open and a bit self-deprecating ultimately creates an environment friendlier to our work, so that when we detect that teams are making too many assumptions or missing opportunities we can play that card, and work with teams to uncover mysteries, and discover surprises and insights that big data alone can't address. We anticipate with glee the companion paper from one of our Data Sciences colleagues, describing their close encounters with folks on our team, and techniques they use to bring us around.

Julie Marie Norvaisas is the Manager of User Experience Research at LinkedIn. She is focused on growing the team and developing a member-centered practice that informs, infuses and inspires designs to connect the world's professionals to make them more successful and productive. Before joining LinkedIn she applied the principles and practices of design thinking around the world, delivering insights to teams working on products that ranged from toilet paper to hospital medication management distribution systems. She majored in Art History.

Jonathan (Yoni) Karpfen is a Senior User Experience Researcher at LinkedIn. He leads UX research for the company's monetization group, collaborating with product and marketing teams to deliver business solutions for enterprise hiring, marketing and selling needs, as well as consumer solutions for job seekers and aspirational professionals. Yoni's consumer insights and user experience work has spanned diverse topics and industries, from federal government policy making to online and mobile gaming.

NOTES

The views expressed in this paper do not represent the official position of LinkedIn Corporation.

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Anticipatory Ethnography: Design Fiction as an Input to Design Ethnography

JOSEPH LINDLEY
DHRUV SHARMA
ROBERT POTTS
HighWire Centre for Doctoral Training, Lancaster University (UK)

Here we consider design ethnography, and design fiction. We cast these two approaches, and the design endeavor itself, as forward-looking processes. Exploring the means by which design ethnography and design fiction derive their value reveals the potential for a mutually beneficial symbiosis. Our thesis argues that design ethnography can provide design fiction with the methods required to operationalize the practice in industry contexts. Meanwhile design fiction can provide design ethnographers a novel way of extending the temporal scope of the practice, thus deriving actionable insights that are applicable further into the future.

> "While we are more than ever aware of both the promise and the threat of technological advance, we still lack the intellectual means and political tools for managing progress."
> Andrew Feenberg

INTRODUCTION

Design is a success story. Since the industrial revolution, design's influence has spread far and wide into every corner of the world. It is also the success of design as a world-shaping practice that has helped to produce a progressively complex set of problems. Increasingly design and designers are tasked with creating solutions to address the 'wicked'[1] implications of the designed world we now inhabit.

All design looks to shape the future, designers have a suite of tools available to help them do this. In this paper we focus on two such tools: design ethnography and design fiction. In the first part of the paper we review our terms of reference: we describe how ethnography has been reconfigured under the banner of design ethnography. Next, we discuss how the practice of design fiction has emerged in recent years, as part of the speculative design movement. In the latter sections of the paper we explain why and how design ethnography and design fiction can work together for mutual benefit. Ultimately we name a new practice: *anticipatory ethnography.*

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[1] See http://en.wikipedia.org/wiki/Wicked_problem for an overview of wicked problems.

Through defining our terms of reference we aim to expose the key strengths and weaknesses of each practice. We highlight how design ethnography has helped designers understand "use before use" (Redström, 2008 p. 421) therefore abetting design's prospective nature. For design fiction the core strength we focus on is how it derives value from creating fictional worlds. However we also highlight problems within each practice. We argue that design fiction is immature and in need of rigorous methods to facilitate its application in real-world settings and that design ethnography will always have a limited temporal scope so long as it relies on traditional notions of "situated" (Suchman, 1987) observations. We believe design ethnography and design fiction can be configured to work together so that the problems of one are solved by the strengths of the other, and vice versa.[2]

This paper describes, in scholarly terms, how the practice of anticipatory ethnography can be imagined *in theory*. If we consider the three ways that design and research crossover described by Frayling (1993 p. 5) then this paper should be considered as "research *into* design". However we believe that the value of this work, for both design and ethnography communities, lies in exploring anticipatory ethnography's use and usefulness in terms of Frayling's "research *though* design" and "research *for* design". In our view there is a need to explore practical applications of the theory, so in the final part of the paper we use examples to describe how anticipatory ethnography could be operationalized in a number of different ways.

TERMS OF REFERENCE

Our proposition is a conflation of design ethnography and design fiction, so it is important to clearly define these practices before attempting to join them together. Through defining the practices, points of connectivity will become visible.

Design

Design is a process as opposed to a fixed point, a process that is inherently concerned with looking to the future. The act of designing draws together insight from our contextual environment with our knowledge of what has passed. In doing so it reconciles past understandings with present conditions in order to mediate between now and the future. Design transmutes ideas, as they exist in a plurality of possible futures, into specific tangibles that exist in the present. As Simon puts it, "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones" (Simon, 1969 p. 111). Core to our thesis is an appreciation of design's need to operate within the liminal space between 'existing situations' and 'preferred situations'.

"To start with you see the thing in your mind and it doesn't exist on paper and then you start making simple sketches and organizing things and then you start doing layer after layer... it is very much a dialogue." [3]

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[2] In part this strength/weakness configuration strategy is inspired by Ezio Manzini's work, e.g. *Making things happen: Social innovation and Design (2014).*

[3] Santiago Calatrava, quoted in *Engineering design methods: strategies for product design* (Cross, 2008).

Across the many different facets of the design discipline there are many different approaches, each with particular properties, strengths and weaknesses. These approaches are suited to the context in which they operate. Across this spread of approaches there is an equally diverse menagerie of tools employed by designers to understand and bridge the gap between what exists and what is preferable. Design fiction and design ethnography are two of the tools readily available to designers, each with their own quirks and nuances.

Design Ethnography

Born in the anthropological household, ethnographic practice has been shaped by its engagement with the design family. Since ethnography's inception, as seen in Malinowski's work, the practice has come to be associated with research activities where the intent is to provide a comprehensive and rich account of everyday life and practices, often with the intent of uncovering *actionable* insights (Segelström and Holmlid, 2012).

However, ethnography's initial encounter with design was marred by "angst", documented in Salvador et al.'s commentary. The observation that, "people who could most benefit from our work in a corporate setting are also the most likely to question its relevance" (Salvador et al., 1999 p. 35-36) hints at the nature of this angst. The authors built a strong case for using ethnographic insights to aid design processes. The use of ethnographic practices in design has come to be known as *design* ethnography. According to van Dijk, design ethnography is firmly rooted in the design process itself, or "ethnographic qualitative research set within a design context" (2010 p. 1).

Design ethnography needs to operate over shorter timescales than ethnography in social science research, as a result of the rapidity of design life cycles and commercial pressures. To this end it is a 'reconfiguration' of ethnography appropriate for design processes (Crabtree et al., 2012). Ethnography has demonstrated malleability and ductility in response to the hammering it received from the stress of industry and through the demanding relationship with design, and design ethnography continues to evolve, appropriating tools and techniques, adapting them for specific contexts (van Dijk, 2010).

Design ethnography and 'the future' – Design ethnography emphasizes the future (Aiken, 2012) and helps in designing 'use before use'. As a future-shaping endeavor, design per se frequently looks to design ethnography for assistance (Kelley, 2007, Crabtree et al., 2012, Forlano, 2013). Design ethnography though is not without criticism in this area. Dekker et al (2003) quoted by Crabtree et al (2012 p. 170) highlight the temporal limitations of ethnography, "The charge reads that design is all about the future... yet ethnography only focuses on how things are 'here and now' and in turn 'privileges the status quo'". Design ethnography's ability to transform situated observation into understanding of the near future, while also being hamstrung by its reliance on the present, is key to our formulation of anticipatory ethnography.

The nature of 'situatedness' – Design ethnography derives insights by observing 'situated' (Suchman, 1987) phenomena as they occur in the present (Segelström et al., 2009). Anderson

points out that ethnography's "emphasis on importance of context for social action" is key (1997 p. 10). This thinking acknowledges the difference between our intentions, actions, and how we renegotiate, interrupt and disrupt plans through our mundane interactions and practices. Context is always a "major part of the study" (Parthasarathy, 2008), so ethnographers are always interested in "situatedness" (Rohlfing et al., 2003).

"Situated activity is not a kind of action... not merely a claim that context is important, but what constitutes the context... To be perceiving the world is to be acting in it... so that what I am perceiving and how I am moving co-determine each other".[4]

However, designers can find it difficult to use ethnographically informed "situated action models" to provide design-related conclusions (Nardi, 1996). To address this issue, designers have relied on ethnomethodological variants of ethnography in order to translate insights from situated activities into actionable design insights (Randall et al., 2001, White et al., 2004, Crabtree et al., 2012). Ethnomethodologically informed ethnography warrants legitimacy to the phenomena being observed such "that the description of the situated organization of that activity in its detail makes that real worldly activity mutually intelligible." (White et al., 2004 p. 114). Practically speaking, this lends a layer of believability to the insights that inform design choices because it draws on observations of mundane interaction. It factors in the emotional and practical dimensions of everyday activity, in doing so ethnomethodological approaches help to suspend designers' suspicions.

Design ethnography's ability to produce actionable insights, and the role those insights play in design processes, is of direct relevance to anticipatory ethnography. We contend that design ethnography produces insights that help designers understand the future, however it follows that those insights can only be applicable to relatively near futures so long as they're derived from observations of the present. The tie to the present is a function of design ethnography's inseparable relationship with *situated* observations.

Design Fiction

Although all design flirts with the future, a group of design practices that we collectively refer to as 'speculative design' have a more explicit relationship with the future and are the product of a wider 'speculative turn' in the design world.[5] The various approaches united under the banner of speculative design include critical design, futurescaping, design futures and design fiction (Raford, 2012). *Traditional* design practices reflect Simon's (Simon, 1969) vision of design as a tool for getting from existing to preferred situations through incremental steps "up and to the right" (Bleecker, 2009). This traditional model of design invariably arrives at a *singular* 'preferable' outcome. Speculative design is distinct in that it strives to open up a discursive space that is underwritten by the

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[4] Quotation from: Clancey J. N. 1993 p. 95. Situated action: A neuropsychological interpretation response to Vera and Simon. *Cognitive Science*, *17*(1), 87-116.

[5] Although somewhat intangible the 'speculative turn' is hinted at by the rise of speculative design (see Dunne & Raby's *Speculative Everything, 2013*) and referred to elsewhere by influential writers, e.g. http://www.wired.com/2011/12/design-fiction-digital-creativity-special-issue-on-design-fictions/

unavoidable plurality of the future. As Dunne & Raby put it "the idea is not to show how things will be but to open up a space for discussion" (2013 p. 51).

Where Carlson's (2006) model sees design as a process constructed by both idea, and a resultant artifact, speculative design approaches are almost entirely focused on the *idea*, the plurality of the idea, and the associated connotations of that thinking. This is not to say that speculative design doesn't involve the making of things, as it does, however these artifacts are considered as provocations or stimuli rather than preferable outcomes in their own right.

The particular speculative design approach we're interested with is design fiction. Design fiction looks to achieve the goals of speculative design by designing *with* fiction. To be clear, the use of the word fiction does not refer to designs that are 'made up' or unreal (although they may be). Rather, design fiction refers to designing *with* stories, or within the world of a story. Creating a believable and relatable story world allows design fictions to first represent and then explore the nuances and 'mundanity' of future circumstances. A healthy design fiction 'situates' the viewer in a prospective future so they can envision it in a meaningful way.

The 'diegetic prototype' – Futurologist Bruce Sterling defines design fiction as "the intentional use of diegetic prototypes to suspend disbelief in the future" in an interview with *slate.com*[6]. We will unpack this definition in order to highlight what design fiction is and what its specific value proposition is.

First of all, let's consider prototyping. Prototyping is a key part of many design processes, often employed by designers as an 'internal stimulus' to a project. It is an incredibly powerful tool, allowing designers and design teams to understand how the product of their divergent, creative, or "designerly" ways of knowing (Cross, 2008) *might* manifest themselves in a finished product. Tom Kelley calls prototyping the "shorthand of design" (2001) allowing designers to 'play' with ideas before committing to one. If we refer back to our vision of design as an inherently forward-looking process, then one of the roles that the physical prototypes play is to allow us to go beyond mental models of the future. By prototyping, in the traditional sense, we can touch, feel, and interact with possible futures. In many ways prototypes allow designers to have 'situated' interactions with concepts.

But what is a *diegetic* prototype? As alluded to above, the fiction element of design fiction refers to stories, it is from this foundation in stories that the term diegesis comes into play. Diegesis is the 'world of the story'. Any story's diegesis is constructed from anything that exists within that particular story world. So, if the characters in the story can hear it, touch it, or see it, then it is likely to be diegetic. For example the orchestral scores added over the top of dramatic battle scenes in Saving Private Ryan are *non*-diegetic because the characters cannot hear the music. However, the men on the beaches, the crashing waves, the sounds of the guns; these are all diegetic. Anything that is diegetic may be considered 'real' in

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[6] Quotation from
http://www.slate.com/blogs/future_tense/2012/03/02/bruce_sterling_on_design_fictions_.html

terms of the world of the story and everything that is diegetic is *contextually consistent* with every other element of that diegesis[7].

The concept of the 'diegetic prototype' then, is anything that is being prototyped within the diegesis of a story. Leveraging the value of prototyping, but doing so in a fictional world, diegetic prototypes don't need to exist in reality and must only be consistent with their own diegesis. As such virtually all design constraints are removed. One such constraint that is negated by using diegetic prototypes is that of time, hence why design fiction is particularly compelling for speculative design. Diegetic prototypes can transcend the time horizon of the present and begin to address McLuhan and Fiore's contention that we "attach ourselves to objects, to the flavor of the most recent past. We look at the present in the rear view mirror" (1967 p. 74-75). Using diegetic prototypes, packaged inside design fiction artifacts, we arrive at a compelling approach to design practice, free from temporal constraints.

Design fictions are usually manifested as films, which is not surprising when you trace the roots of diegetic prototyping and design fiction back to sci-fi film and television (Kirby, 2010). However, increasingly design fictions are moving beyond the medium of film.[8] Non-filmic approaches may well enrich design fiction's potential relevance to anticipatory ethnography, however that discussion is beyond the scope of this paper, and for the sake of simplicity we will continue with the assumption that these dieges are the story worlds created inside film-based design fiction artifacts.

The diegetic prototype is not a new thing; traces of diegetic prototypes exist within DaVinci's inventions, in works of fiction from Jules Verne's *The Time Machine* to E.M Forster's *The Machine Stop*, right through to comic books like Stan Lee's *X-men* and television series' such as *Star Trek*. In almost any science fiction work some form of diegetic prototype exists. However it has taken the huge acceleration of change resultant from times of modernity to actually show us the persuasive character of diegetic prototypes to predict, and arguably shape, new sociotechnical directions. This process, at first delivered through science fiction novels, series and films is beginning to happen before our eyes, powered by the networked information age that we live in (Lanier, 2014).

Noting this fascinating phenomenon, David Kirby posited the value of using diegetic prototypes as a way of understanding and generating insights from fiction that can be applied directly to science: "Movies have provided many film-makers and scientists with the opportunity to create diegetic prototypes establishing the necessity, viability and minimization of risk associated with space travel" (2010 p. 65). Embracing Kirby's idea, the design fiction movement has taken it upon itself to do precisely that. Returning to Sterling's definition of design fiction, a central point is that designers are now using diegetic prototypes *intentionally*. Whereas in examples from literature, film and comics, diegetic prototyping occurs as a byproduct of the storytelling and entertainment endeavor, designers

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[7] Film studies scholar Stephen DaVega's video, 'Diegetic Non-diegetic', gives a more in-depth discussion of diegesis https://www.youtube.com/watch?v=juVb1SDHWrk

[8] For example: Superflux's 5th Dimensional Camera (http://www.superflux.in/work/5th-dimensional-camera), Winning Formula (http://winningformula.nearfuturelaboratory.com/) and an interview with Nicholas Nova (http://savageminds.org/2014/02/14/anthropology-design-nicolas-nova/).

and practitioners of design fiction now are mobilizing diegetic prototypes intentionally for the purposes of informing design processes and projects.

Although the phenomenon that is diegetic prototyping has many exemplars in science fiction, which appear to demonstrate its value, simply applying it to design problems is not straightforward. Julian Bleecker recently commented, almost exactly four years after his influential essay on the subject, that "I don't think we've figured it out" and "studying it, understanding it and trying to devise some of the principles - of what we're calling design fiction - is what we're trying to do" (2013). This raises the question, if design fiction is a tool to explore the future then it is a means, but to what end? Design fiction needs theories and methods from which designers can operationalize the powerful phenomenon of diegetic prototyping so the resulting insights can become part of real world design challenges. This paper paves the way for one such method.

JOINING THE DOTS

So far we have introduced the constructs that are necessary in order to theoretically build the practice we're calling anticipatory ethnography. In this section we will explicitly describe how the relevant properties of the two constructs (properties that we refer to as 'dots') may be joined together (as with 'join the dots' picture books) thus allowing the full 'outline' of anticipatory ethnography to emerge. Our dots come under three headings, explained below.

Temporal Constraint

We have posited that all design processes attempt to move from existing situations to preferred situations. Design fictions are interested in the preferable too, but by virtue of the diegetic prototype are temporally disinhibited when compared to traditional design. This quality is one pillar supporting our vision of anticipatory ethnography.

Design ethnography's primary goal is to explore the present with a view to producing actionable insights that will inform the near future. Although not a clear-cut debate, our position is that the further into the future insights derived ethnographically try to look, the weaker the 'signals from the present' will be. In other words if a design team attempts to understand the 'preferability' of futures based upon observations of now, there is a limit as to how far design ethnography can look: design ethnography is temporally constrained.

Our contention is that these two facets of each practice can be configured to work together. So if we accept that design ethnography is temporally constrained, and then align that position with the understanding that design fiction is not, then it would appear logical to assume that design fiction may well be a viable means of temporally unbinding design ethnography. Conversely, if such a formulation were possible it would simultaneously serve design fiction's need for firmer methods and modes of analysis.

Suspending Disbelief

Design fiction uses diegesis, in the words of Bruce Sterling, to "suspend disbelief in the future". The implication of this phrase is that the diegesis of any particular design fiction

should describe the future in believable terms i.e., in terms that are suitably mundane as to allow the audience to become 'situated' in the diegetic reality of the design fiction. In this way, diegesis serves to 'situate via proxy'.

The related design ethnography dot is contained within the concept of situatedness. The way in which we interpret and understand the world isn't just about activity, it isn't just about context, but it is an amalgam built from both together (Clancey, 1993). As applied to design problems this can be seen as ethnographic insights becoming more *believable* when backed up by context. This allows insights to become 'mutually intelligible' to both ethnographers and designers, thus suspending the disbelief of the design team.

We posit that the use of diegesis and situated observations both add value by providing a means to suspend disbelief. The *difference* is that design fiction does it in the future based upon fictional scenarios, whereas design ethnography does so based upon observations of the present. Although there is this temporal contrast, in most other ways we believe the concepts are interchangeable.

It would be fair to say that design ethnography's relationship with situatedness, is in effect, the act of studying the 'diegesis of reality'. In other words a conflation of context, process, and action that come together to form a believable story. We therefore believe that both design fiction and design ethnography derive their value in the same way.

Insightful Dialogue with the Future

We argue that the insights produced by design ethnographies are in *isolation* not immediately useful entities. Instead, it's through a dialogue *about* these insights that true meaning emerges, which can then be 'actioned' by designers. Because design ethnography is a relatively established field, it has developed methods to not only use situated observations to produce actionable insights, but also to facilitate interactions between designers and researchers about those insights. These interactions exist within a 'discursive space' from within which a meaningful dialogue about a near future can be had. The nature of this discursive space is akin to the properties of design fiction artifacts.
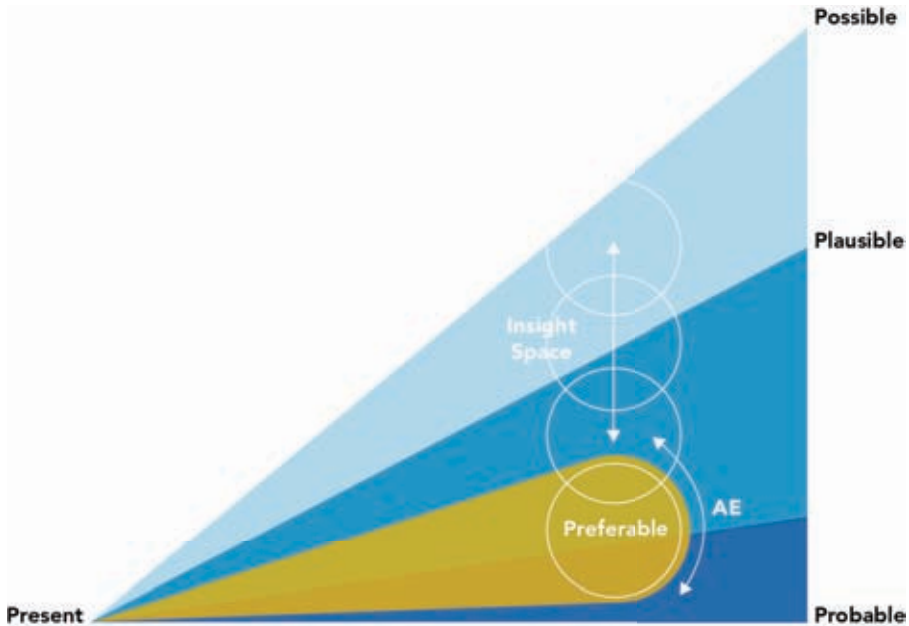
The diagram shows how anticipatory ethnography allows an actuation of the 'band of preferability' that sits atop the spectrum of possible futures, thus facilitating insightful dialogue about the future. This diagram is adapted from Stuart Candy's Cone of Possibility Space (2010) and Dunne & Raby's PPPP (Speculative Everything, 2013 p. 5).

To reiterate our position on speculative design and design fiction: these practices do not endeavor to didactically indicate singular visions of the future, but rather to forge an environment conducive to conversations. These conversations are intentionally questioning and ultimately want to arrive at new questions which in their own right will help to understand where preferable outcomes sit on a spectrum of probable, plausible, or possible futures. So as with design ethnography the underlying value of design fiction is the insightful dialogue about the future, and that dialogue is an emergent property of the discursive space.

In Summary

It is by defining this parity between these various properties of design fiction and design ethnography that we believe creates the theoretical space to intellectually envision anticipatory ethnography.

	Design Ethnography	Design Fiction	Anticipatory Ethnography
Temporal Dimension	Based on the present	Unrestrained	Inherited from design fiction
Source of Context	Situatedness	Diegesis	Diegetically situated
Ouputs	Actionable insights	Discursive space	Insight space
Methods	Well developed	Nascent	Proposed

Summary of the joined properties alongside the corresponding emergent properties of anticipatory ethnography.

COLORING BETWEEN THE DOTS

Having explored various theoretical frames for why anticipatory ethnography is a theoretically viable practice, here we explore some practical ways of enacting the theory. At this stage we cannot make an incisive argument for the 'best' way of conducting anticipatory ethnographies. Empirical work is certainly needed to address questions such as at what stage of design processes should anticipatory ethnography take place, and how to configure the idea for different design contexts? Rather than suggest we 'know' how to proceed we've tried to paint a picture of a fertile landscape that is ripe for development and here we present examples to clarify the potential of that landscape, beginning to make it tangible. These 'modes' of doing anticipatory ethnography may be used as blueprints for further exploration and as seed ideas for those looking to expand upon or test the concept.

Examples of Anticipatory Ethnography in Action

We suggest looking at design fiction prototypes as a painting (in harmony with our 'joining the dots' metaphor). There are three parts to this metaphorical painting, corresponding to three approaches to anticipatory ethnography:

- Studying the *process* of creating a design fiction (ethnography of the paint, brushes, and making of a painting).
- Studying how an *audience* interacts with or perceives a design fiction (ethnography of people viewing the painting).
- Studying the *content* of a design fiction (ethnography of the painting itself).

We have equated the 2013 film "Her" directed by Spike Jonze, to a design fiction for the sake of our examples. A Hollywood movie, sitting within the sci-fi, drama and romance genres, *Her* also exhibits properties that qualify it as a design fiction: emphasis on the future and an affecting diegesis together give the film the potential to suspend disbelief. We acknowledge that the amount of resources dedicated to making *Her* (a budget in excess of $20m, for instance) are not readily available to the majority of design projects, however this

doesn't preclude the film from being an efficient vehicle to articulate how anticipatory ethnography may be enacted[9].

Studying the Process of Creating a Design Fiction

In terms of our metaphor we describe this mode as doing an 'ethnography of the paint, brushes, and making of the painting'. In practical terms we suggest employing elements of design ethnography's toolkit and applying them to a study of the creative team behind design fiction productions. Writers, directors and actors can become very close to projects. Can this proximity allow them to become 'situated in the diegesis'?

Spike Jonze purportedly realized while producing the film that "[Her] isn't a movie about technology. It's a movie about people" (Vanhemert, 2014), hinting at Jonze's 'interior' relationship with the diegesis of the film. In another interview about the film Jonze says "When something felt weird, when Joaquin was uncomfortable with something, I knew it meant there was some place I had cheated or hadn't thought through or hadn't gone deep enough. His flinch is always worth listening to." (Harris, 2013). The second observation indicates that the actor (Joaquin) was so 'situated' within the diegesis that the director used the actor's insight to sense-check his production decisions. Together these sentiments suggest that the *process* of making a design fiction may be a suitable site for anticipatory ethnography.

Studying How an Audience Interacts With or Perceives a Design Fiction

In this mode of anticipatory ethnography we suggest employing the concepts of audience ethnography (La Pastina, 2005) or in terms of our metaphor 'an ethnography of the people viewing the painting'. Two possible approaches are by using the 'afterglow'[10] or through more structured techniques such as diary studies, generating scenarios, task-focused scenarios or accompanied viewing with audience members (Quirk et al., 2009).

We want to highlight that the audience can be considered situated via proxy, within the story world of a design fiction. This supposition pivots around the strength of the diegesis; it must be believable and relatable to the individual realities of the audience. Referring back to *Her*, the production team went to considerable lengths to make the fictional future depicted in the film appear familiar, even mundane. The team strived to make the technological parts of the film's diegesis easy to follow and not intrusive. In the words of the production designer this served to "undesign the design" (Vanhemert, 2014), or said differently to allow an effortless suspension of disbelief. This 'undesign', if done well, situates the audience vicariously within the world of the film. Assuming the audience is situated in this way, we can infer that they also harbor the knowledge necessary to glean ethnographic insights from them.

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[9] Wired's article, *Why Her Will Dominate UI Design Even More Than Minority Report* (http://www.wired.com/2014/01/will-influential-ui-design-minority-report/) hints at Her's design fiction qualities.

[10] Here we refer to observations of audiences immediately after they've engaged with a design fiction artifact.

Studying the content of a design fiction

This final mode of anticipatory ethnography we believe to be the most attractive both theoretically and practically speaking. In terms of our metaphorical view of anticipatory ethnography this can be considered an 'ethnography of the painting itself'. Where our first two modes require working with either the production team behind a design fiction film or the audience interacting with a design fiction film, in this approach the ethnographer *directly* engages with the artifact. This mode could be conducted on any design fiction artifact, whether the researcher was involved with its production or not.

Very simply put the idea is to immerse oneself in a design fiction with a design ethnography 'hat' on and gathering field notes that pertain to the content of the film. This hinges on the ability of the diegesis to conjure the effect of situatedness by in order for this mode to work properly. However in contrast to the other modes, allowing the ethnographer to *directly* engage with the diegesis makes the proposition less challenging.

Film reviews of *Her* exemplify the richness of the film's story and appear to contain insights that we frame as being 'sub-ethnographic'. For instance, in his analysis Scott Myers "goes into the movie" (2014) and provides a glimpse of his raw observations that bear an uncanny resemblance to an ethnographer's notes. Jason Farago has gone *beyond* raw observation and towards insights, "You can ask, too, about the value of Theodore's love for Samantha… not only as legitimate but as morally improving" (2013). In this mode the ethnographer becomes immersed in the design fiction such that they are 'diegetically situated' and the methods of design ethnography become immediately relevant.

Reflections on the Finished Painting

These examples allow us to reveal how the theoretical relationship between design ethnography and design fiction introduced in our 'joining the dots' section can be brought out of theory toward practical applications, thus we hope to build confidence in the proposition. The crosscutting principles of these examples is how design ethnography's reliance on rich context (Geertz, 1994) is comparable to design fiction's reliance on diegesis. It follows that anticipatory ethnography, therefore, relies on diegesis. Beyond reliance it is also true that a design fiction can only really be considered a suitable site for anticipatory ethnography if its diegesis is a truly affecting one.

Our objective in framing anticipatory ethnography in this way (to define our terms of reference, then to explain how the 'dots' can be joined, and finally how to color the space between these dots) is to leave the reader inspired by the concept alone, but also to provide some clarity around how it may be done in practice.

CONCLUDING REMARKS

In this paper we have discussed how design ethnography and design fiction are tools to aid and abet design processes. By reviewing these practices, we have established that they have common goals and furthermore there are some similarities in the ways that they work

toward these goals. We hypothesize that these similar properties can be linked in a way that is mutually beneficial to both endeavors. Once these properties are connected, anticipatory ethnography emerges as a nascent practice.

Anticipatory ethnography addresses design fiction's need for methods, capitalizing on design ethnography's richer methodological history. Building on an ability to adapt and reconfigure itself there are benefits for design ethnography too. By subverting traditional notions of situated observation design ethnography achieves a new temporal liberty.

In light of the pace of change in the 21st century, along with the increasingly vivid notions of 'future shock' and 'wicked problems'[11], we feel that new ways of understanding and preempting the future are more starkly compelling than ever before. The vastness of the problem space that we're concerned with requires a suitably bold response, by presenting our position on anticipatory ethnography we have taken steps towards such a response.

In order to see the vision become a reality further research is needed. We call upon the design fiction and design ethnography communities to come together in order to develop these ideas, extend the concept, and demonstrate the merits, shortcomings, relevance and scope of this work, through empirical investigations.

Joseph Lindley is a PhD researcher at the HighWire Centre for Doctoral Training at Lancaster University (UK). He has a range of professional experience working as a technologist, artist, musician and photographer. His current research is in the field of speculative design and design fiction. joseph.lindley@gmail.com

Dhruv Sharma is a PhD researcher at the HighWire Centre for Doctoral Training at Lancaster University (UK). He is an anthropologist and a design ethnographer with design research experience in the industry as well as academia. dhruvsharma101@gmail.com

Robert Potts is a HighWire PhD at Lancaster University. Trained in visual communication, he teaches and researches design. As a creative director, he consults on design projects and makes innovative films. His research uses narrative to explore collaboration across boundaries in creative and critical environments. r.potts@lancaster.ac.uk

NOTES

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[11] *Future Shock* is a book by Alvin Toffler (1970) discussing the effects of rapid change on societies and individuals. The concept of the 'wicked' problem describes interlinked, contradictory, and shifting requirements (see http://en.wikipedia.org/wiki/Wicked_problem).

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Transforming a Financial Institution: The Value of UX Professionals

ERIN O'LOUGHLIN
Experientia

GINA LUCIA TAHA
Experientia

MICHELE VISCIOLA
Experientia

Application of a user-centered approach rooted in ethnographic methodologies facilitates a major European bank's transition to a business strategy based on understanding people's needs, behaviors, values and motivations. Three UX case studies conducted over three years illustrate our educator, moderator, partner framework for collaborating with large enterprises in flux.

INTRODUCTION

Personal banking is in a state of strong transition, impacted by the continued reverberations of the global economic crisis, and innovative technologies. The same factors are impacting how people manage their finances, crucially altering mental models, expectations and behaviors. A Youbiquity Finance #1 report notes that "more consumers are looking to financial providers for help, but they are attitudinally less loyal to them," (Avaya & BT, 2012). In 2013, Accenture found that young people trusted banks less, considered changing banks and account types more often, and were more likely to use digital technology for banking tasks (Winch, J. 2013). But while popular, mobile banking and other digital technology seems to increase the loyalty gap – as user-friendly technology replaces branch visits and customer service centers, the bank-customer relationship becomes less personal, and feelings of loyalty are diminished (Winch, J. 2013). This poses a huge challenge as banks are required to provide more digital services on more channels (Avaya & BT, 2012, pg. 11), and engage more deeply with customers to build relationships and brand loyalty.

Within this framework, in a market where differentiation is increasingly important, financial institutions recognize the need for change. Partly as a response to successful examples from other players and new entries in the market, including non-bank parties where the experience is a greater focus of the offer (e.g. mobile and online offerings like Square, Simple, Paypal, etc.), banks have been turning to user experience (UX) design companies to try to re-engage customers. However, the deeply ingrained traditional focus on transaction and product performance often hampers the transition into building holistic

offers focused on user experience instead of on the design of individual products (Smith, D, 2013). In addition, high-effort legacy systems can make it difficult to implement new technologies, as do digital-tool legal obligations addressing information privacy and security concerns. Finally, institutional cultures resist close collaboration between UX professionals and internal business planning and strategy departments. New mindsets and approaches must filter through innumerable levels of management and departments and achieving buy-in from internal stakeholders at all levels is a demanding task that requires a strong vision and commitment.

Decidedly, UX consultancies must change approach to give their concepts the best shot at becoming reality. This requires flexibility, eagerness and capacity to adapt to new practices and develop new models of thinking, whilst simultaneously dialoguing with banks to accustom them to implementing a user-centred design approach. Between 2012 and 2014 our UX consultancy, Experientia, collaborated with a major European bank on a series of projects (referred to here as Bank X). Over this time, we slowly shifted from consultancy to partner, discovering the subtly different roles UX consultancies need to play when dealing with conservative industries like finance. We needed to change our mindset from service providers for a client already convinced about the value of UX design, to educators about our methods, moderators between different institutional departments, and finally, partners in a long-term business strategy. These three roles created a "framework for value" that facilitated our collaboration and the transformation of Bank X's approach to product and service development. It also gave us opportunities for growth, through the application of new methodology mixes, and the challenge of using leaner and more agile processes.

Approach – the diverse roles of UX professionals as agents of change

In this paper we present three projects conducted with Bank X: an ATM interface, a Personal Finance Management (PFM) tool and a mobile-service system with a strategic roadmap. The first two of these were commissioned by internal departments to address departmental, not organizational, goals. These commissioned the work independently from other departments, operating in information silos in which they were unilaterally exploring the value of UX design. The projects met the kind of constraints frequently found in large institutions: bureaucracy, organizational inertia, and reluctance to share departmental proprietary business reports which would have had value for our projects. Our user-centered approach was seen as providing a fresh perspective free from internal politics, but it was nonetheless often misaligned because it aimed at holistic change that could create a coherent and cohesive offer, company-wide. We often found ourselves working to satisfy isolated objectives that might not be able to create a strong impact on the overall perception of Bank X's offer. Milestones and business objectives were frequently based on hunches, or on competitor's developments (a strong "me too!" approach to innovation), rather than an overarching strategic plan for the company. Working with departments in this way is somewhat like throwing pebbles into a river one by one and hoping they create a wave.

Educators

The first challenge in developing a working relationship with Bank X was understanding how they viewed us and our services. The bank needed to be convinced of the added value that qualitative research would bring projects. Our added value as UX consultancies is not simply that we create a bespoke design rather than a boilerplate approach – our designs are closely integrated with research insights, meaning a greater understanding and focus on the customer/user. However, when dealing with research, Bank X was accustomed to quantitative methods and were hesitant to leave the comfort of numbers behind for the unknown benefits of qualitative data. Therefore, the first role we found ourselves playing was that of educators. Through ethnography we uncovered findings that more traditional research approaches hadn't elicited, such as the finding that many people were "willing to pay for banking services if [they] felt recognized." We presented this as a mental model that the bank were unaware of, and showed how it was relevant to developing profitable extensive service models going beyond isolated go-to-market strategies. We uncovered a mix of values and expectations that people held around personalization and contextual services and showed how tapping into these values could lead the bank in new service provision. These kind of easily understandable and actionable insights helped to establish us an authoritative voice, able to cut through misconceptions or outdated perspectives Bank X might have about its customers. This was not a one-off activity – it was a role we found ourselves continually playing.

Moderators

One reason for this ongoing educator role was the fragmentation of Bank X's approach to customer service. Like any monolithic agency, Bank X is driven by multiple departments, each with its own targets, goals and activities. The services we were proposing involved more than one department (and sometimes a third agency for development and technology as well). Because of this, we found ourselves in our second role, that of moderator, leading slow-growing dialogue that could bridge inter-departmental divides. This was frequently done through participatory design and stakeholder engagement workshops, and facilitated meetings, where we brought different groups together to catalyze discussions. Our persistent engagement efforts sparked multi-departmental conversations where individual project goals were brought together in interconnecting design solutions. It also helped us break down departmental barriers, and overcome information silos – as outsiders, we could occasionally garner greater cooperation from "rival" departments than if requests had come directly from colleagues.

A part of our evolution as moderators was the realization that we couldn't rely on a standard approach when working on multiple projects with the same client. Different departments had unique structures, workflows and perspectives, and we had to adapt our educator or moderator role to these each time. One size doesn't fit all – even within the same organization.

Partners

Building on the trust achieved through transparent rapport and tangible results, we began to craft our role as a partner. That is, more value was placed on our recommendations

than previously, since we had finally won a certain level of trust – that our methods led to strong outcomes, and that our strategic advice emerged from a deep understanding of business needs. However, as in any good relationship, a partner needs to know how to compromise, and this was something we steadily became better at doing. Compromises such as scaling back ethnography in the ATM project or including quantitative research for the PFM project, did not threaten project visions, but made it easier for various groups to accept each other's approaches and methodologies. Instead, for the client, compromises involved investing in technologies that the research revealed as important. Giving and taking ultimately smoothed the way to better partnership where an aligned approach solidified our role.

METHODOLOGIES AND ACHIEVED RESULTS

2012 Case study – ATM redesign

In 2012, Experientia and Bank X began to collaborate on a new ATM interface design. The project resulted in an ATM interface that drives service uptake and relieves pressure on local branches and staff.

The ATM is one of the main touchpoints for customer interactions (Avaya & BT, 2012). These days, it is used for much more than simple withdrawals – it's a service portal where people can make deposits, subscribe to services, pay bills, top-up mobile phones and more. However, Italy has one of the lowest annual per capita uses of ATMs in Europe. In addition, the way people interact with ATMs in Italy has not significantly changed in many years. New services have been added to existing frameworks, but our research showed that many functions are so hidden that people are unaware of them. Bank X had observed that there was low uptake of many of their service offerings, and wanted to drive uptake through redesign. They approached Experientia as recognised and local experts in interaction design with previous experience in financial kiosk designs.

A new approach to design – Right from the proposal and planning stage, we discovered there was a mismatch between the client's expectations and our approach. Bank X wanted to commission a new ATM design and seemed to expect a process where they told us their goals, and we produced graphics. However we felt that for the project to result in successful outcomes, research on people's attitudes and beliefs about finance was crucial.

We took on the role of **educators,** engaging the department that had commissioned the project to explain how the best way to improve service uptake via ATMs was dependant on going beyond technical definitions of what was possible with ATM technologies. Despite our sharing of case studies and metrics from other projects, we found that the bank needed greater than usual reassurance and were not ready to jump blindly into ethnography. This was probably both the first compromise that we made in our relationship and the slow starting point for an integration of people's perspectives into the company's culture, where qualitative research meant conducting spot interviews, e-mail surveys and client stakeholder interviews and workshops.

Educating also occurred from a design perspective. For example, Bank X's design guidelines had been devised when print communication was the dominant paradigm. These mandated certain fonts and company colors as main design features. However, our heuristic evaluation showed that many of these were ill-suited to screens, with research showing many people actually didn't choose certain services because they faced difficulty with on-screen reading. Armed with visual examples from real Bank X ATMs, Experientia had to physically demonstrate the current guidelines' low legibility and understandability, proposing alternative solutions that would work better on-screen than their paper standards. This visual demonstration of the improvements convinced those in charge of Bank X branding to depart from the print style guide. This was an important victory for the project, because it ensured that the final design could be optimised for screen communication, maintaining the highest standards of usability and accessibility (not to mention aesthetic appeal).

Managing challenge – We quickly learned the difficulty in gathering information in such a fragmented framework, and how important it is to ask seemingly obvious questions when working with such a large institution. In this sense, the bank was also educating us: several months into the project we were made aware of Bank X's vendor contracts and complicated supplier networks which included differing resolution ATM screens as well as an established ATM device base by over three device manufacturers on over 12 different ATM models. This was a challenge to our typical iterative design, prototype and test method, and required a much more intensive testing phase.

Another challenge became balancing the bank's desire to propose offers with the customer needs and behaviors that emerged during the research phase, ensuring that the final design did not compromise the user experience. Our research showed that many users found advertising disruptive to the ATM experience (which should be quick and highly goal-driven), but including advertising was a crucial objective for the bank. In this way we moved into moderating, as sales-department goals were juggled against the commissioning departments' goals to arrive at a conclusion that could satisfy all parties. Acting as a departmental tightrope was something our consultancy had to adapt to, as was finding the right mix between upholding people's desires and generating income for Bank X. The final ATM design conceives the ATM as a touchpoint for personalised advertising displays in an ad hoc space, utilizing CRM data for individualisation and trust-building.

Outcomes and impact – Besides the GUI (Graphic User Interface), we delivered a complex roadmap for implementations and improvements which were the subject of a "feasibility study" by the bank. This was followed by iterative stages of design, testing and redesign, with frequent recourse to the educator-moderator-partner roles described, to ensure that the client was on board with developments.

The new interface was implemented smoothly across Bank X's main territory, on over 6000 ATMs, thanks to a large and comprehensive testing phase that ensured the design ran well on the various ATM models in use. Offering a full range of services, the ATM also boasts a number of innovative features: in addition to geo-localization, it personalizes certain options and content to the current user, partly based on CRM data, and partly learning from the user's most frequent behaviors. There is a significant decrease in time to complete

common tasks, highly improved navigation and information hierarchy, and full-touchscreen interaction.

The installation and operation had a less than 1% failure rate and all goals were achieved within the timeframes set (and sometimes even in advance). At a usability level, reactions during the first year of use (beta-testing to full roll-out in early 2014) have been extremely positive. Initial customer satisfaction was measured by questionnaires sent by the bank to its branches, showing high satisfaction level with withdrawal functions, findability of previously hidden services and task completion. The inclusive design has reinforced design solutions for diverse customers and we have found that people from all walks of life have used the interface with no learning time needed.

If we consider the design a success from the people-centered (and therefore also reputational) point of view, further commercial success now needs to be measured over time against the project KPIs, such as whether the ATM ultimately drives service uptake.

Relationship outcomes – In addition to the concrete outcome of a successful and well-designed ATM, this project established Experientia as a trusted collaborator for Bank X. It positioned us as a potential partner for future strategic innovation in the field of multi-channel banking. However, as illustrated in the PFM and Mobile TV case studies below, this did not mean our roles as educators and moderators were finished. Instead, we had unknowingly developed a framework for how to work with Bank X, which involved a continual engagement in these three roles, adapting them to each new project and department we worked with. In this way, we continued to develop UX capacity within Bank X, and to embed the UX perspective increasingly deeper in the company culture.

2013 Case study – PFM design

Throughout 2012 Bank X had conducted proprietary quantitative research that demonstrated an emerging need for a financial management platform. In the wake of the financial crisis, more than a third of bank customers worried about making ends meet and wanted more control over their spending, while more than 50% of people managed their finances with paper tools. A new service could increase existing customer satisfaction and potentially expand the bank's current client base. The bank's research also concretized the looming importance of Big Data, hinting at the possible benefits to be gained by shifting from a model where departments own data to aqueous sharing, breaking down internal information silos. The Personal Finance Management platform (PFM), as well as helping people execute more control over their finances, would also link Customer Relationship Management and other disparate departments, bringing the bank's individual digital initiatives together into a comprehensive robust offering.

Unfortunately, one of the hardest truths for researchers and UX practitioners acting as suppliers to large institutions to swallow, is that the design (or even redesign) of a product or service can be faster than the redesign of an institution's culture. Having worked extensively with sister-departments on the ATM, it would have been ideal to have discovered that the ATM team had exchanged processes and relevant business goals with other departments to create a more unified strategy; that the executives we had worked with in the past would

have internally preached the value of a user-centric approach, and that ethnographic research would have been commissioned early enough to impact design and prototyping.

Unfortunately, this was not the case. By the time Experientia was brought on-board, the PFM business unit had already signed development contracts for the platform's staggered roll-out, even possessing a fleshed-out prototype that included information architecture, graphic user interfaces and interactions. These had been designed as a response to statistics from banking employees and call-centers instead of according to a deep understanding of people's behaviors, their mental models and their value drivers. It was a signal to us that although Bank X felt that there was relevance to a UX approach, they had not yet really understood how to integrate it into existing systems and processes, or its real value.

In addition to encountering a "finalised" visual solution, Experientia's researchers and designers found a plethora of incoherent features and functionalities within the platform that responded to individual departmental needs, but that didn't necessarily convey customer-facing value. For example, the Cross-Selling department aimed to create greater visibility around new banking products, which was interpreted as the need for advertisements within a financial management tool. This seems almost counter-intuitive from a user perspective. There was also already an implementation roadmap for the platform, in which feature and function implementation relied not on what would be more useful for people, but on the developer's internal workflow management: if during one phase their whole staff were present, more features would be realized. If there were fewer staff members available, fewer features would be completed.

An iterative educational approach – Within these several challenges, the biggest was educating Bank X on what it really means to adopt a UX approach. From our previous experience with them, both parties knew that it was important to provide people with products and services that satisfied their needs and desires. However, what still wasn't clear was that a UX approach didn't mean having an agency create a design "to-order", nor incorporating user-centered methodologies into the blank spaces nestled between internal business planning and strategic department milestones. Unfortunately, due to the length of time the project had been running, it was impossible to "start over" and so in our role of educator we led negotiative meetings where we explained what could still be done, why it was important, and how in future projects this awareness could lend a competitive edge.

In our experience, when presenting user-centered processes to financial institutions, UX practitioners can greatly benefit from "hard" numbers or quantifiable results, which are naturally more familiar to them. In this sense, the role of educator goes beyond lecturing, as practitioners have to be able to demonstrate the business benefits of planning projects from a UX perspective, instead of retrofitting it.

Therefore, one of our first steps of involvement was a business meeting in which various groups – not only the department managing this project – were invited to understand the difference between user experience research and market research. As a team, we could determine the benefits provided by different methodologies, and decide which ones would be particularly useful to their already-developed strategy with regards to milestones and set objectives. A second workshop goal was to create a rapport with bank executives, hoping that with time we could be more than UX preachers. From the ATM

project we had learned that once executives meet the people in charge of executing the work, they are more likely to listen and be open to recommendations, as a handshake goes much farther than an email signature.

Balancing UX methodology with banking mindsets – Several methodological compromises were made in light of the process executed up to this point. The first was the size of the participant sample to interview: typically ethnographic inquiry is conducted on a small sample, but this strayed too far from the quantitative research approach most executives had followed their whole careers, and in this regard, Experientia's approach contradicted their mental models! Banking executives felt they could create bigger impact company-wide and better substantiate any potential changes to the platform if they had a bigger sample in which at least some questions could be quantified.

The second was to approach information architecture from a "lean" perspective in order to gather quick results that could directly impact the design of the experience – with less focus on the design of the deliverables. As there was very little time to plan an in-depth card sorting exercise, researchers gathered information on the areas which seemed the most crucial to test. This mini card-sorting activity became a part of the formative evaluation across all research locations, providing quantifiable results that were still deeply rooted in a people-centered approach.

The third compromise came about when re-designing the implementation roadmap from a UX viewpoint. Experientia's initial deliverables, including a behavioral model derived from the ethnographic interviews, and personas, served as powerful leverage tools to explain what the platform's overarching structure needed to be, and provided guidance on short vs long term service implementations. However as Bank X needed to ensure that multiple other stakeholders within and outside of the bank were also aligned and supportive of UX, Experientia was asked to lead dialogue between two external agencies besides ours, across 2 countries, and loop in Bank X's legal and regulatory departments (to review research protocols, scenarios and concepts) – all of which seemed to go beyond our normal consulting responsibilities. For Bank X though, delegating the management of communication to us seemed fitting, as we were the UX experts. Soon we found ourselves presenting interview artifacts (such as video footage) at inter-departmental meetings to explain people's perspectives. Unknowingly we were growing in our partnership with the bank by acting as a moderating, constructive partner who must give and take to achieve success.

Experientia had assumed that because we had previously completed work for the same bank, successive projects would become easier. While this was true in some respects (e.g. ethnographic research was now more readily accepted as important) a crucial learning point for us was to realize that major organizations have as many departments as sand in the sea, and so the role of teaching the value of a user-centered perspective never ends. Through educating and moderating, our internal researchers and designers learned that a quantitative approach can add business value, and that applying business terminology to present insights or ethnographic praxis methodologies doesn't necessarily mean that we are betraying our professions or backgrounds – but rather employing a different kind of empathy. Tangibly, Experientia was able to employ a leaner approach that resulted in the framework of a major

European personal finance management platform, launched in Oct 2013. Since the first release of the service has been online, 27% of its users are repeat bank customers. This value is significantly increasing each month and is considered a strong validation and encouragement to now accomplish a more comprehensive design of the services. As a consequence, this has created more space for the bank's continual application of a user-centric approach and more focus on people behaviors and usage models of the services.

2014 Case study – Mobile banking strategy

In the introduction, we mentioned that one of the other drivers for change right now in financial industries, as well as in people's mental models and behaviors, is technological innovation. Multi-channel access is being increasingly demanded by tech-savvy consumers, who want to access banking services as seamlessly as they access other services via smartphones, internet, and other technologies. With sensors and wearable technology rather closer than the horizon, banks need to have a strategic long-term vision of how to integrate mobile technologies into banking ecosystems.

Thanks in part to internal dissemination of customer feedback and proprietary statistics regarding the success of the ATM redesign and the PFM implementation, other Bank X departments began showing interest in the UX approach to design services and experiences. Experientia's persistent engagement efforts had effectively started to shift the bank's internal strategic project planning dynamics, and unknowingly, also our role. In 2014, the directors of multiple departments (rather than individual departments) retained us to create new mobile business models based around people's needs. While middle-managers were deeply influenced by the overarching walled-garden culture, characterized by limited interdepartmental co-working and sharing, departmental directors had accepted a UX approach and were looking to implement it from the top-down. Initial efforts to establish trust and prove that user-centered methodologies could complement and meet business objectives, and two years of working together, including the messy parts of collaboration, had set Bank X on a path to change. Slowly, the gears of the machine had begun taking on more of an internal educational and moderating role, creating a bigger need for a strategic partner. We were not only known, but our demonstrated ability to compromise showed that we acknowledged the limitations of an institution in flux. So finally, for this project, we were challenged to do what agencies were created to do: provide strategic consulting.

The value of an external, authoritative voice – The specific goals for this project were a direct response to new mobility and smartphone behaviors in Europe. Internal statistics showed that "nearly 50% of online consumers in Germany, Spain, the UK and USA have a smartphone" and that 50% out of the 2,000 people surveyed for the study "like mobile banking because they can check the account balance before making a purchase." These statistics showed great potential and opportunities for innovation that the bank had not yet successfully tapped into. They had developed smartphone and tablet apps, and their proprietary research showed that these were being downloaded but were used only infrequently, if at all. These findings are corroborated by publicly released research divulging the pivotal reason for the project's commissioning: "Consumers are enthusiastically adopting

mobile banking solutions (24% have tried using a mobile banking application at least once) [but] persistency of usage is lower than some predicted." Although increasing the adoption and usage of the bank's existing offer was a primary goal, executives felt that a user-centered perspective was crucial to gain the reverberating effects they aimed for. From a business perspective, a user-centered mobile services project would gain more internal support if it clearly provided insight into how services would meet each departments' business goals, such as reducing cash in circulation, a considerable expense within financial institutions. Therefore, gathering information about related in-progress projects and future business-objectives was fundamental to overcome departmental communication roadblocks, and leverage the agency's voice as an external collaborator more effectively.

Experientia planned several stakeholder engagement workshops to be held in a neutral environment, outside of banking offices. These gave managers the opportunity to lower barriers through a careful balance of business and participatory design. Activities were designed with intermittent individual engagement, to put participants at ease and comfortably gather multiple goals, from research and development, innovation and technology, and core business teams. Based on our previous learnings, planning would encompass technical implementation and feasibility, simultaneously airing "obvious" details and any legal and regulatory issues that might arise.

Unsurprisingly, we discovered that some competitively advantageous mobile banking concepts were already in development and that several future concepts showed great service experience potential. Although this meant that within this project too there would be some retrofitting, it was mostly stepping on the bricks that had already begun to create a foundation — not trying to instill user value into an existing construction. In fact, some of these concepts were already so richly able to link multiple touchpoints, it was much easier to create a service framework around them, even if they revolved around a freemium model. The value of being an outside authoritative voice was that now, as we were seen as a more strategic, consulting partner, we could influence high level decision makers to think about sequences of implementation, not just having people pay for specific features.

Methodological workarounds can still lead to success – The final deliverables for the project were a UX Roadmap to guide technical implementation efforts, mobile service-system concepts and usage scenarios merging online and offline touchpoints. Although to deliver these, we had to step outside of the textbook description of a smooth UX design process. For example, with little-to-no budget for in-depth ethnographic inquiry we conducted guerrilla ethnography to help identify quick but still meaningful insights to feed the conceptual phase. In addition, researchers and designers selected innovative service apps for self-applied cognitive walkthroughs, with results from both activities leading to important insights about mobile finance management, mobile payments and how mobiles affect the in-branch banking experience. Despite the fact that this approach was greatly appreciated by the client as there is a high cost stigma related to UX research, and one reason why so many organizations turn to traditional market research when looking for people's perspectives, critics may state that the compromises made and the lean approaches taken could be detrimental to user-centered processes or even to the field of ethnography.

But without employing a certain level of flexibility and understanding, of viewing the client with the same attitudes as we do users, UX practitioners risk stagnation.

It's important to realize that in many large enterprises, concepts/goals have to be set in place before the project definition in order to achieve internal consensus and, consequently, funding. To help large institutions move towards more user-centered processes, practitioners need to be willing to adapt the same quick-witted, limber thinking that happens on the field. Fieldwork, by definition is chaotic, but we adapt and think on our toes, modifying as we go along without losing sight of the objectives. Naturally, we are trained to apply a certain level of creativity to our processes, which makes applying that very same creativity to whole approaches, projects or clients within our reach. The application of creative problem-solving, which at the end is what agile/lean approaches are, will become a greater requirement moving forward if we commit ourselves to helping large organizations and legacy sectors such as education, healthcare or finance embrace evolution.

MOVING FORWARD – CONCLUSIONS

The experience of working with Bank X has been challenging, rewarding and at times frustrating. It has forced us to adapt our working styles and processes in unprecedented ways, and made us confront our own established attitudes towards UX methods. Recently we received a new RFP from the bank, in which they overtly stated the intention to adopt a UX approach, but still struggled with what stage in the project to include UX and how to derive the full value from it in terms of product and service development. That specific RFP was commissioned by an individual department, showing that there is still a strongly compartmentalised approach internally, which will need to be addressed and re-addressed by consultants in each new project they take on, for quite some time to come.

Change is most definitely slow, and while our collaboration has resulted in several strong product and service outcomes, with a real impact on how Bank X approaches product and service development and company strategy, there is still much work to be done in each of the aforementioned roles.

As UX professionals we can play a vital role in large institutions' and complex systems' evolution toward a culture that is equally focused on user experience as on products' financial performance. But this role as agents of change is not a straight-forward process. We believe that multi-disciplinary teams have a strong value when creating user-centered business strategies, but that the "pollution" of methodologies needs to flow both ways, with the consultancy committing to a flexible, empathic approach to the client's traditional working methods, in order to move from mere educators to trusted partners. To be effective educators, it is important to offer the client the respect of understanding their mental models, history and training, and making an effort to catalyse a process of change while meeting them halfway. Henry Bauer, an emeritus professor of chemistry and science studies, recounts an instance where sociologists rolled their eyes in disregard at philosophers, remarking that they were "more likely to wage war on other tribes than to regard them as equals worthy of meaningful collaboration" (Bauer, 1990). In other words, the 'battle of the disciplines' is not only found between disparate disciplines, but also within the disciplines themselves, which is why we need forums for discussion such as Epic. To be educators to

institutions, we have to learn about different disciplines' mental models, learning cross-disciplinary comprehension and empathy– crucial to the future application of service design thinking to business challenges (Madano Partnership, 2012).

Instead, moderators require a behavioral change approach to adaptation and adoption, which gently nudges the subject to desired behaviors. This can be achieved through emails, phone calls, meetings, collaborative workshops, and various other forms of engagement where UX practitioners themselves embody the behaviors they would like to instill. As moderators we can gently guide institutions to redesign how they distribute business units and organize departments, by bridging communication gaps. Persistent engagement efforts can connect multi-departmental business goals and have a transformational effect on corporate professionals and their organizations. Our actions should be exemplary, in order to prove that a real UX approach is not about inserting interviews into linear procedural projects; that really thinking about people requires organizations to shift from dated assembly line models where individual departments have singular tasks with singular objectives. This process is slow, with consultants incrementally moving one step forward each time, building on the moves already made.

Even though banks are starting to reach out to UX consultancies, barriers to implementation of UX services and products remain, and UX consultancies must change approach to give their concepts the best shot at becoming reality. This requires flexibility, eagerness and capacity to adapt to new practices and develop new models of thinking, whilst simultaneously dialoguing with banks to accustom them to implementing a user-centred design approach. Within this change process, a framework for adding value can be that provided here: educators, moderators, and finally trusted partners, who can compromise as well as evangelize, to achieve the best outcomes possible in the context.

Erin O'Loughlin is a writer and storyteller for Experientia, a UX consultancy in Italy. She writes about the many facets of user experience design, touching on themes like sustainability, participation, and behavioral change. She works with Experientia to craft narratives about the UX discipline and its applications. erin.oloughlin@experientia.com

Gina Taha is a senior ethnographic researcher. Her industrial design master's degree focused on UCD, which she uses to bridge research and design at Experientia. Her research interests focus on the intersection between culture, technology and behavioral change, and how user-centered design can be leveraged for social innovation in healthcare and education. gina.taha@gmail.com

Michele Visciola is President and one of the founding partners of Experientia. He is an international expert on usability engineering, human computer interaction and user-centered innovation. Michele has specific interests in new interfaces, notification systems, scenario design and the usability-aesthetics relationship. michele.visciola@experientia.com

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Valuable Connections: Design Anthropology and Co-creation in Digital Innovation

METTE GISLEV KJÆRSGAARD
SDU Design, University of Southern Denmark

RACHEL CHARLOTTE SMITH
Centre for Participatory Information Technology, University of Aarhus

This paper explores challenges and potentials for innovation and co-creation within an increasingly interconnected and digitalized world, and its affect on ethnographic practices within the field of design and business development. Our discussion is based on material from an interdisciplinary research and design project with a leading computer game developer, exploring opportunities of involving online gaming communities in innovation processes and product development. Based on our case, we argue that in a world with increasingly blurred boundaries between physical, digital and hybrid contexts, as well as design, production and use, we might need to rethink the role of ethnography within user centred design and business development. Here the challenge is less about "getting closer" to user needs and real-life contexts, through familiarization, mediation, and facilitation, and more about creating a critical theoretically informed distance from which to perceive and reflect upon complex interconnections between people, technology, business and design, as well as our roles as researchers and designers within these.

ANTHROPOLOGY, DESIGN AND THE DIGITAL

Recently Blomberg and Karasti (2013) have argued for a renewed perspective on ethnography in design and development of new technologies, relating to the shifting contexts of the contemporary world. They point to the new opportunities and challenges of ethnography and participatory design relating to sustainable and long-term involvement with sites and participants of design, the spatial scaling of distributed environments and digital information systems, and the increasing spread of collaborative design encounters beyond commercial settings of user involvement. It is in this context, we argue, emerging perspectives on design anthropology may play a role in extending discussions of ethnography and anthropology in design and business development (Gunn *et al.* 2013; Smith 2013; Kjærsgaard 2011).

Ethnographers and anthropologists have been involved in design, innovation and product development for more than 30 years, adopting and developing various roles and interdisciplinary approaches. Some have worked from more traditional ethnographic positions, using fieldwork and ethnographic descriptions to render real-life settings and

practices accessible for design (Button 2000; Heath & Luff 1992). These researchers tend to operate through a clear division of labour between ethnography and design describing 'what is' while leaving the 'what might be' to designers. Others have emerged themselves in participatory design processes taking on roles as mediators and facilitators of co-creation activities, as part of an interdisciplinary collaborative pursuit (e.g. Halse *et al.* 2010, Clark 2007). Others again, have been more preoccupied with how understand and work with emergent relations between designed objects and use-practices, experimenting with various ways of combining understandings of and interventions in "use-contexts" (Blomberg *et al.* 2003; Suchman *et al.* 2002). What the different approaches seem to share is an interest in *proximity* and in minimizing *distance* between contexts of use and design, creating familiarity and empathy with 'the Other', in the form of *user, informant* or *design partner*, drawing things closer in order to see connections and create understandings of "real world" contexts.

The critique of much literature on ethnography in design is that even if collaborative approaches have become more sophisticated and understandings of the value of cultural insights more complex, ethnography in and for design is often based on a much too narrow and predefined conception of ethnography which tend to neglect its anthropo-logical roots (Otto & Smith 2013; Dourish 2007; Anderson 1994). The consequences of this limited scope on user experience and real-world context have entailed a mechanic under-standing of people's needs and life-worlds, and predefined ideas of what ethnography can deliver to the design team. As a result there has been a disproportionate focus on developing methods and techniques for research and collaboration (around the "implications for design"), while disregarding the potential of anthropological analysis and theory within larger contextual and socio-cultural frameworks.

With increased interconnectedness of various kinds (digital, economic, ecologic) the ethnographer's challenge is less about getting access to information and perspectives from a distant 'Other' in 'fields' separate from our own. Rather, the challenge we argue is progressively about creating an analytical distance from which to observe and understand not simply the 'other point of view', but the situated, complex and increasingly blurred relations between us and them, 'insides' and 'outsides', design and use.

In recent literature on human-computer interaction perspectives on culture have become increasingly important in the design and development of technologies (Dourish & Bell 2011; Rogers 2012; Smith 2013). Digital technologies and interactions are increasingly embedded across distributed physical and digital divides to form hybrid ecologies that merge both face-to-face interactions, and geographically distributed and fragmented interaction (Crabtree & Rodden 2008). Focus is no longer limited to the technological artifacts or interfaces, but incorporates the extended spaces, relations and environments in which technologies are developed and integrated. This affects not only the scope and context of ethnographic research in design but the whole notion and understanding of the *object of design*. As Balsamo maintains, "technologies are not merely objects: they are best understood as assemblages of people, materialities, practices and possibilities. To transform them requires the employment of a framework that can identify the complex interactions among all these elements" (2011: 31).

A design anthropological approach to digital technology and hybrid environments, we argue, can incorporate such extended perspectives using both theoretical frameworks and

material design interventions to transform and reconceptualise relations between ethnography and design, technological development and use in complex contexts. This is done through both ethnographic approaches and material encounters between present realities and future opportunities.

BEING CLOSE AND BEING CONNECTED - THE ETHNOGRAPHIC ENCOUNTER

The move from a focus on *ethnographic closeness* to the value of *anthropological distance*, prompted by the digital technologies, is evident in our case study into the world of a leading computer game developer, hereafter called 'Games'. As part of a design and research project on community-based innovation we conducted a four-month case study with Games aiming to investigate how online gaming communities might contribute to product innovation and business development at Games. Our studies were to inform and inspire on-going design activities within the company striving to develop a new kind of idea bank through which gamers would be able to help inspire and improve product development within Games.

Our research and design team consisted of two computer consultants, a sociologist and an anthropologist working closely together with community managers at Games. The case shows how moving from a focus on users and fans as a group or community in itself shifted attention towards the interconnections between use and design, community and company, and the various relations and structural logics at play between them.

At Games the boundaries between use and design have become increasingly blurred and relations between customers and company gradually more complex. Online gamers today no longer see themselves as passive consumers of pre-designed products but as active co-designers of the gaming experience. They organize in online communities where they discuss the game and exchange tricks, challenges and ideas for an improved gaming experience. Some of these communities have even gained a degree of presence inside the Games company who has hired people to monitor activities and manage relations with the communities. Games have a large online community of fans with whom they communicate on a regular basis, and whose discussions employees follow to learn about user practices, opinions and ideas.

In a classic ethnographic style we intended to study the on-line community of one of Games' most popular computer game series; a single player first person shooter game. It turned out that the community was not as coherent and easy to locate as we initially imagined. In fact there were various online social media sites (Facebook, Twitter, etc.) and fora in various languages based around this game. The company hosted some sites while others were initiated and managed by fans. We decided to focus our attention on a particular community run by fans and generally recognized as the 'unofficial official' forum. It was an English-speaking forum, which had attracted fans worldwide for more than a decade. Despite its estimated 40.000 members it was not the biggest of Games' communities, but probably the most active, well respected and influential among hard-core gamers as well as developers within Games.

We initially set out to conduct a kind of "netnography" (Kozinets 2010; Boellstorff *et al.* 2012) of this online forum, following discussions on the site to understand the workings of

this community while attempting to identify its assumed innovative potentials. As outsiders glancing in we had a hard time making sense of it all, with so many people engaged in various discussion threads on a broad range of topics in an engaged but often rough language. Albeit there was a sense of community, of being friends joking, exchanging insights and helping each other with game related issues. Segmentation, disagreements and various forms of positioning and hierarchy pervaded discussions and interactions within this community, as members attempted to push their own agendas, while competing for attention, recognition and influence. Each profile was explicitly ranked in terms of points and years of seniority. And while these numbers affected each member's status and influence within the community, less tangible qualities such as social manners, style of writing, level of argumentation, and knowledge of the game(s) also mattered in trying to make a name for oneself within the community. Cultivating a successful profile (Miller 2011) thus required both passion, social and technological skills, and a lot of work in order to balance the particular mix of friendship and rivalry holding this community together.

The forum discussions often involved suggestions for improvements of the game, and discussions of new features to the games experience. Although it could be a tedious job to locate potentially valuable ideas hidden within the discussion threads, it was common for developers at Games to follow these in search of inspiration, or to get a better feel for their 'users'. What to the researchers seemed to be interesting stories and ideas from 'the field', hence were often trivial to the employees at the company who had been following the communities and their discussions for years. Although our initial attempts to understand this 'user group' was a necessary first step for us as a design team, we quickly realized that our discoveries on the practices and perspectives of 'the natives' were hardly news to developers and community managers within the company. Often these people had been in touch with these forums for years and even participated themselves before turning their passion for games into a profession. They already knew far better than we, as outsiders with limited time and access, what made these people tick as gamers and community members. Through fora and social media of various kinds (Facebook, Twitter, YouTube) they had access to data about the users, their opinions, their play-throughs and their suggestions for improvements of the game experience.

But how might they deal with all this information and these potentially valuable connections? Ethnographically informed knowledge of the users alone would not help us answer those questions. For Games the challenge was not about getting access to people and their ideas, or understanding their everyday worlds, but about the blurred boundaries and proximity between design and use, business and community, and how to navigate this unexplored territory of potentially valuable connections. Our design anthropological contribution therefore was not to bring new insights about the users, but to provide a theoretically based analytical distance from which to understand, re-frame and experiment with the digital and physical relations between fans and company, development and use.

BUSINESS AND COMMUNITY - ANALYTICAL DISTANCE

Shortly after we began our work with Games they hosted a community event where they invited twelve fans (young men from 18 to 30 years of age) from around the world to

visit the company, hangout with the developers and test out a newly developed game shortly before its public release. The community event was a special occasion, not only for the invited fans and community of friends eagerly awaiting news about the upcoming game at the other end of the cable. But also for the developers and community managers at Games who had never done this before. For the company this started off as a marketing stunt, a staged peek 'behind the scenes' designed to create a feeling of exclusivity and a hype around the new game. But it developed into an experiment with the company's relationship to the community, and how this might be of value to them.

For us as designers and researchers the event was special too, to be treated as a kind of design experiment, an extraordinary occasion. Like a ritual it might not have shown us the everyday life of the people involved, but provided a glimpse into the structures and logics at play in their complex relations. The community event facilitated a shift of focus from the digital online forum as an ethnographic 'Other', to a focus on situated and embodied relations between community and company, and a design anthropological concern with how we might (re-)frame these relations.

Co-dependence - Blurred boundaries between company and community

The community event provided a chance for us to talk directly to the gamers, and observe interactions between the gamers, as well as with developers and community managers at Games. Below is an excerpt from our field notes:

> …one senses that both game designers and fans get something from this meeting. It is clear that they share a passion for the game, but also that Games depends on this group of 'lead-users' to create a positive vibe around the forthcoming release. The event seems to provide the developers with a welcomed opportunity to be celebrities for a day telling 'war stories' from the battlegrounds of game development in front of an appreciative audience. Everyone seems to enjoy themselves. Interactions between developers and fans are characterized by an understated idolization combined with a sense of equality. In fact fans and developers come across as quite similar, and one gets the impression that the developers are but passionate gamers who grew up to become game designers.

During the event it became clear to us that something interesting was at stake in the relations and interactions taking place at the *intersection* between community and company, and that the *boundary* between the online 'virtual' community of gamers and the 'real life' company might not be as solid as we had originally imagined. The ethnographic 'other' was not really 'an-other'. Borders were blurred in many ways. The company had both a direct and indirect presence within the community, not only did employees at the company take active part in conversations within the community. There was also a sense among community members of company representatives 'listening in', even when not explicitly contributing to conversations. When fans talk amongst themselves, they often do so with this invisible audience in mind. As one of the fans said:

> I always assume that they [people from the company] are reading it [the forum posts], that they will read it at some point. Sometimes you forget, because sometimes, especially on certain topics where they can't talk about it, they won't contribute with their own posts. Sometimes you start to think, maybe they are not reading it, so you repeat yourself a couple of times. (Nitro, interview).

Similarly, the community has a presence and a voice within the company. Community managers employed by the company have a bridging role between the official company and community, in making sure that voices from the community are raised within the company. They follow activities within various communities, partly to protect the company's brand from rumours running wild, but also to sustain an interest in the game during long spells between game releases. Sometimes community managers will 'leak' inside information about an upcoming game to create a hype, but they also simply hang-out and listen to complaints, ideas or assist with game related problems. In the community they are seen as less official than other representatives from the company, almost like friends, but with a particular authority to verify or falsify information and rumours about the game. Community managers and game developers have a kind of celebrity status within the community whose relationship to them resembles that of sport-fans to a football team. The company depends on the support and recognition from their fans, and on their ability to keep the brand alive over time. As an independent community their credibility is strong among other gamers, hence their opinions and game reviews matter, often more than official reviews. As a collective the community is able to assert some degree of influence on the company. This became clear when the company wanted to change the voice of a central character in the game and a strong and persistent critique from community made them change their mind.

Marcus' (1998) argument about complicity; that the 'insides' and 'outsides' are implicated in one another is a condition of fieldwork in a modern and connected world, became very clear in our fieldwork. In this setting it meant that community and company were intertwined in many ways, and could not be studied and understood in isolation. As design anthropologists to make sense of these hybrid, yet situated, relations we had to move beyond a focus on empirical *use* contexts to include the wider contexts of design and business development and the connections between these.

Co-design – Blurred boundaries between design and use

The blurring of boundaries between company and community extended beyond individual connections and interactions to the relations between product design and use, as community members seemed to engage in various ways in the design process. Not only did the Gamers offer critique and extensive lists of ideas for improvement of existing games at the forum, they also shared individual creative ways of playing and tweaking the games. Design seemed to continue in use (Suchman 2007), as players gave each other challenges or modified the game in various ways. In fact, an original feature in the recent edition of Games' most popular game was inspired by such innovative usages. In this context, gamers

tend to see themselves not simply as consumers of pre-designed object, but as co-designers of the gaming experience, as Nitro (one of the fans) so eloquently puts is:

> ..with a game it is sort of almost an agreement between the developer and the player, the developer says 'here is a set of rules that we are giving you, and you play within those and you make the best experience you can for yourself ' … But the way I think about it when I play a game; I try to imagine that someone is watching me play and I want to put on the best show possible, and it is me and the developer working together to put on that show... with other forms of creative art where it is really the artist vision that you as an audience, you take it or leave it. But here you are working together with the artist and the audience to make something together.

Hence it makes sense to see the fans not only as 'users', but as a kind co-designers if not of the product, the actual software, then of the gaming context and experience. Suchman and Ingold have in various ways described the difficulties involved in distinguishing between design and use, pointing out how design continues in use (Suchman 2007) and how objects and forms continuously grow out of and are changed through our material engagements in the world (Ingold & Hallam 2007; Ingold 2012). With digital products like computer games such distinctions between community and business, use and design seem even more fickle.

Framing relations - Between market economy and gift exchange

The connections described above are interesting, because they challenge our preliminary assumptions about company, community, design and use, and the relations and boundaries between them, and open up for new ways of understanding these relations and their potentials. Rather than understanding community and company as separate entities, worlds, or 'others' it seems more interesting to approach them as neither separate nor one.

Inspired by classical anthropological theories of exchange (Mauss [1925] 1990; Bohanan 1967; Appadurai 1986), we might think of community and company relations as played out through and formed by interactions within and across different spheres of exchange and different regimes of value (Appadurai 1986:15). One sphere primarily operates according to the practices and logics of market economy, while the other follows the principles of gift exchange (Mauss [1925] 1990). Exchanges take place and relations are formed within and across these spheres, as employees within Games work towards maximizing company interests through developing the brand and the business, while fans strive for recognition and social capital (Bourdieu 1986) through cultivating their profile (Miller 2011) and building a name for themselves at the Forum in ways resembling those of the Trobriands engaged in the Kula exchanges (Mauss [1925] 1990; Appadurai 1986).For the fans the increment being sought is "in reputation, name, or fame, with the critical form of capital for producing this profit being people rather than other factors of production" (Appadurai 1986:19). Employees at Games and community members might have different goals and base their actions on different logics, but they are able to use each other in their different pursuits. Thus street credit, social capital, recognition are *exchanged for* ideas, engagement, branding

work and loyalty in an arrangement that seems to work to everyone's benefit and satisfaction.

Close but not too close – Borderlands and moral dangers

Being 'close' and being connected was valuable to both company and fans, if for different reasons. The closer the better it seemed, as this meant more recognition, inside information and stardust to the fans and more loyalty, insights, hype and ideas to the company - at least up to a point. One could also get too close, so as to threaten the very classificatory distinctions upon which these connections and exchanges were based, as a fan, Quinn, discovered after the community event. In a heated dispute on the forum some fans felt that with the new game the company had let them down and sold out on 'core values of the game' in order to attract a broader market. When Qiunn, who had been at the community event (and posted extensively from it at the forum) defended the game he was accused of having become too close to the company and their business interest. Fans insinuating that he had been bought with money, merchandise or attention at the event. His credibility was at stake, and his status as an independent and 'pure' (in Douglas' (1966) sense of the word) fan was questioned. Although exchanges took place and relations were formed across different spheres and value regimes, these remained morally and classificatory separate. As Appadurai, Bohannan and Barth have pointed out conversions of 'objects' between different exchange spheres and regimes of values presents entrepreneurial possibilities, but they are also charged with moral dangers (Appadurai 1986: 27; Bohannan 1967; Barth 1967). In this case navigating these borderlands was thus a matter of finding the delicate balance involved in being close but not too close, or in being *neither separate – nor one*.

The community event made us aware of the blurred boundaries between company and community and the need to extend our focus beyond users and use context to include the company and business context. In the following we describe how we introduced material design activities into the setting, in order to further explore the company's opportunities. Working theoretically as well as practically with the joint development of analytical frameworks and design concepts we were able to establish the analytical distance needed to critically explore and (re)frame community and company relations, their values, potentials and challenges.

RESEARCH AND DESIGN - MATERIAL EXPLORATIONS

Through a series of workshops with gamers and company employees, we developed a set of design concepts, in the form of prototypes and scenarios. These prototypes were as much analytical and exploratory tools as product ideas. Working with the prototypes was partly a way for us to conceptualize (in a tangible and material way) what was at stake here, as well as to re-frame and challenge taken for granted assumptions about community, company, design and use and the relations between them. Our design concepts served as way for us to engage in a material dialogue with 'the field' about our understanding of it and of its design potential.

Our design task was to provide Games with ideas as to how they might involve on-line communities in game design and business development. The dream was some sort of idea bank where fans could post suggestions for game improvements, and where the good and popular ideas could easily be located and 'harvested' perhaps through some sort of voting system. Based on insights from our initial studies we developed 3 design concepts to be further explored through workshops and interviews involving both fans and employees. Our interest was with the blurred borders, complex relations and situated exchanges between *community* and *company,* and the way they might be framed as *neither separate nor one.* To be able explore this phenomena our prototypes challenged traditional borders between game and use, company and community in order to provoke reactions and discussions on this topic.

There were three interconnected design concepts. The first was called *'feedback mode'.* This concept suggested that the original computer game could be played in two different modes, as a regular game, or in 'feedback mode'. In feedback mode it would be possible to leave tags directly in the game for the company or other players to see. Tags could be comments on the game, new ideas, challenges for other players, or whatever gamers might come up with. With this concept we were trying to make explicit how product and community, design and use where not necessarily separate phases and realms. In 'feedback mode' game, community and user generated contents were mixed. Here we played with the idea of gamers as co-creators rather than simply consumers, exploring how collaborations and exchanges taking place in 'feedback mode' might become valuable within and across the different spheres and regimes of value.

Tags created in feedback-mode did not simply belong within the game, but also with the person who created it. It could be extracted from the game and serve as objects of exchange to be shared with friends and other gamers across various social media platforms and communities. All tags would also be accessible via a central hub called *'the tag collector'* serving as a more traditional kind of idea-bank and discussion forum. Here gamers might comment on tags and vote for the ideas they liked. Ideas that seemed particularly interesting and attractive either to other gamers or to the company might then be selected and taken to '*the greenhouse'* where a selected group of gamers and employees with special interest and expertise regarding this particular idea could work together to develop it into a more substantial concept and eventually a new feature, game, product or service.

As material engagements with the 'field' our design concepts served three purposes:

- They provoked (re-)actions and eliciting insights into current affairs and future potentials, by making implicit ideas, practices and perspectives tangible, visible and discussable.
- They re-framed understandings and changed conversations within the project and the company
- They facilitated collaboration and co-creation

The gamers reactions, discussions and modifications of the design concepts gave us a more nuanced understanding of the gaming community, their classification of various sorts of community content, and the people they might share it with. For gamers information and ideas exchanged were inalienable and closely linked to the people sharing it. Hence, it

mattered who the sender was, and it was important be able to divide people and content accordingly. This lead us to the co-development of various forms of filters and groupings of both tags and people within 'feedback mode'. Through our design activities it became clear to us, and to the company, that for gamers exchanging ideas, tagging and posting was all about the social, about the relations, interactions and recognitions vis a vis other players and the company. What made 'feedback mode" appealing to the gamers, was not the ability to provide 'feedback' and good ideas to the company, as much as the social interactions and co-creations of experiences and content that it opened up for. As in Kula-type exchanges what really mattered here was not the 'objects' exchanged as much as the building of relations and reputations that such exchanges facilitated. Being heard, seen and recognized by the company and by other gamers was important. As one gamer said about the possibility of getting recognition and feedback for contributing with ideas:

> To be able to get ones name in the game would be awesome...just to be part of it somehow, I mean, even if it was just written on a pack of noodles by the sink" (comment from gamer in the workshop)

Expressing an interest in the Greenhouse as a concept that challenged more traditional idea-bank type approaches to involving user in business development another gamer commented:

> This is clearly what I find most interesting, this is also what would make me want to invest [my time] in it, the thought of being able to enter into some kind of dialogue, or something that goes beyond simple feedback that might or might not be read (comment from employee at Games).

With concepts such as 'feed-back mode' and the 'greenhouse' relations between company employees and gamers were re-defined as reciprocal long-term investments based on different motivations and intents, involving but distinguishing between both *social values* and *economic market values*. Through theoretically informed and materially engaged (re-)framings our initial inclination to focus our attention on the community as a separate entity and an 'ethnographic other', gave way to a an interest in the forming of relations across interconnected spheres of exchange and a more nuanced understanding of relations between company and community, design and use as being neither separate nor one. Our design task changed accordingly. It was no longer about finding ways for the company to extract knowledge and ideas from the community through the development of an idea bank, but about exploring ways in which relations, ideas and products could grow from interactions between gamers and company in a way that might become valuable to both if for different reasons.

The design concepts facilitated a dialogue with 'the field' and re-framed ways of thinking about relations between design and use, company and users, which contributed to changing perspectives and conversations within the project as well as within company. With these frameworks and insights in mind the company now continues their work, developing business strategies, relations and products at the intersection between company and community, use and design.

RE-THINKING THE ROLE OF ETHNOGRAPHY IN DESIGN AND BUSINESS DEVELOPMENT

Our case suggests that within a world with increased interconnectedness and blurred boundaries between design and use, company and users, us and them, 'insides' and 'outsides' we need to *rethink the role of ethnography within design and business development*. Through our case we have illustrated the value of analytical *distance* combined with material *engagement* of a design anthropological approach to co-created innovation. Here we extend the focus beyond ethnographic *closeness* to users and 'real life' contexts, to connections and *points of discourse* at the intersections between use and design, community and business, expanding the role and opportunities for anthropology in design. Our approach may be framed as a holistic and critical approach to research through design - or design through research:

- Which extends beyond empirical use contexts to include the contexts of design and business development and the complex and potentially valuable connections between them
- Where material engagements and design activities serve as ways to explore and understand both current and potential connections and their value.
- Where the value of (design) anthropology is not simply located in the end product, but in its ability to reframe connections and challenge discourses on a more fundamental level with effects in a design or business setting.

As we see it the aim of design anthropology - as field of practice, research and knowledge production situated between anthropology and design (Gunn et al. 2013; Otto & Smith 2013) - is not ethnographic description, workshop facilitation or user advocacy (even if this might be part of the methodological approach), rather it is establishing other points of discourse (Kjærsgaard 2013, Rabinow et.al 2008) by engaging critically, theoretically and materially in the design activities and conversations (Kjærsgaard 2012).

Mette Gislev Kjærsgaard is Associate professor of Design anthropology at SDU design, University of Southern Denmark, and co-organizer of the Research Network for Design Anthropology. The past fifteen years she has worked with combinations of design and anthropology in industrial as well as academic contexts. SDU design, University of Southern Denmark, Universitetsparken 1, 6000 Kolding, Denmark, mgk@mci.sdu.dk

Rachel Charlotte Smith is Assistant Professor of Design Anthropology at the Research Centre for Participatory Information Technology (PIT), Aarhus University, Denmark, focusing on social anthropology and interaction design. Smith is co-organizer of the Research Network for Design Anthropology and co-editor of Design Anthropology: Theory and Practice (2013). Center for Participatory Information Technology (PIT), Aarhus University, Helsingforsgade 14, 8200 Aarhus N, Denmark, rsmith@cavi.au.dk

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Iterating an Innovation Model: Challenges and Opportunities in Adapting Accelerator Practices in Evolving Ecosystems

JULIA KATHERINE HAINES
University of California, Irvine

Startup accelerators have expanded worldwide in recent years, fostering the development of technology startups and spreading Lean practices and Silicon Valley values to all corners of the globe. These accelerators clearly create value—for the teams whose development they foster, the products they create, and the larger ecosystems they build. But there are also a number of challenges arising from the model and how it is implemented in different contexts globally. Through fieldwork at accelerators in Singapore and Buenos Aires, I investigate the global expansion of this innovation model. In this paper, I discuss the most salient challenges and discuss potential opportunities emerging from these challenges, and how other methods and practices such as design thinking, intensive user research and flexible, bottom up-approaches can add value to the accelerator process. I also highlight mutually beneficial ways the EPIC community can become more involved in startups ecosystems.

INTRODUCTION

A combination of infrastructure developments, accessible platforms and easy to use tools has dramatically lowered the barriers to entry for technology startups in recent years. Alongside this, innovation models have spread the "know-how" of doing a startup, making the processes more accessible and uniform. Seed accelerators, incubators that foster technology startups, provide such soft infrastructure. They bring together cohorts of international startups to develop their teams and products and learn from and connect with others in the ecosystem in a limited-duration "bootcamp," based on Lean models of innovation (Ries 2011). The initial seed accelerator, Y Combinator, started in 2005 and has spawned innovative companies like DropBox, Airbnb, Reddit, and Code Academy. Since then, accelerators have been expanding globally, with an estimated 200+ in 33 countries now (Christiansen 2013). While the startups fostered through accelerators focus on developing innovative sociotechnical solutions, the accelerators in which they participate are, broadly put, critical sociotechnical systems themselves. At the same time as accelerators and the startups they foster seem to be exploding globally, discourse around digital innovation seems firmly centered around Silicon Valley's ecosystem and whether it "can be copied" through such, with many suggesting it cannot.

The goal of this stream of research is to better understand accelerators as sociotechnical systems enabling innovation and to explore the impact they are making globally. What value is created through accelerators? What are the implications of this global expansion of the accelerator model and Lean? What matters about the place in which an innovation ecosystem is created? On a practical level, how are accelerators impacting the technology landscape- and how innovative are the results? I have been exploring these topics *in situ* through ethnography at two different international field sites-- an accelerator in Singapore and another in Buenos Aires— complemented by interviews with other accelerator participants (startups) and personnel globally, including North America, South America, Africa, Asia, and Australia. Accelerators clearly create value—for the teams whose development they foster, the products they create, and the larger ecosystems they build. But there are also a number of challenges arising from the model and how it is implemented in different contexts globally. I will highlight the most salient challenges and discuss potential opportunities emerging from these challenges, and how other methods such as design thinking, user research and bottom up-approaches can add value to the accelerator process. I also aim to bring to the fore a broader discussion about innovation and value creation in startups, and how we can both contribute to and learn from the startup scene.

BACKGROUND – ACCELERATORS AS SITES OF INNOVATION

Accelerators as Sociotechnical Systems

While the startups fostered through accelerators focus on developing sociotechnical solutions, the accelerators in which they participate are, broadly put, critical sociotechnical systems themselves. Accelerators function as a social system. They provide the soft infrastructure, the "know how" of doing a startup. They also help support a larger ecosystem, enabling connection and cross fertilization between entrepreneurs and mentors, angel investors and venture capital partners, universities, service providers, government, and other parties. We draw from the work of JFDI co-founder Mason (2014) in describing the role accelerators for startups (excluding other activities and functions in the larger ecosystem). An accelerator:

- fosters and selects startups in competitive process;
- stages a limited duration program: a "boot camp" for startups, typically 3 to 6 months;
- brings together cohorts of startups to develop teams and products;
- coaches, trains, and supports these teams
- supplies access to needed resources and initial seed funding
- provides guidance, metrics, milestones based on Lean models of innovation
- connect networks of mentors and investors with founders
- culminates with a "Demo Day" to present startups to investors

Definitions vary on some elements, with the main divides being in the following areas: collocation vs. partially remote; idea-based vs. team-based selection; local vs. global product market perspective; external mentoring vs. in-house partners; and private vs. public funding.

Within the accelerator programs themselves, Lean methodologies, based on Ries's works on *Lean Startup* (2010), form the core curricula and overall direction. The work centered on Lean Startup helped spur a startup mania around the globe; it was the first model put forth to describe startup creation as a science. This structure helped to fuel the propagation of accelerators globally, as there was finally a sort of soft infrastructure model to begin to support the development of technology startups on a larger scale.

Lean: Background & Practices

Much of the actual practice involved in accelerators is based on the Lean movement. The concept of Lean traces its roots back to Lean Production, a term coined in the 1990s at MIT to describe the Toyota Production System (TPS) (Holweg 2007). TPS is a socio-technical system that combines a distinct management philosophy and practices. According to the Toyota group that teaches these (Toyota 2014), it is based on four core principles: put the customer first; the most valuable resources are people; a focus on the workplace itself; and kaizen, meaning "good change" in Japanese, which Toyota uses in the context of "continuous improvement" as a philosophy. TPS describes itself as "a culture of problem solving at every level of the organization"; TPS skills are learned by doing, not by concept. Following from Lean Production, others have borrowed the term to emphasize a focus on reducing waste and continuous refinement, although the term is often confused with meaning small teams or low monetary cost.

Lean Startup, coined by Ries (2011), is a methodology emerging from Silicon Valley that focuses on two concepts: customer development (Blank and Dorf 2012) and continuous deployment. Using the Build-Measure-Learn framework, a startup can focus on reducing the time and labor involved in developing the product. The Minimum Viable Product (MVP) is the bare minimum product (or non-technology-based experiment) a team can build to use and test a number of assumptions. By testing this with early adopters, startups can continue to iterate, using Agile development practices such as Scrum or other Kanban (a signboard/scheduling system) principles to conduct short product development sprints. Thus, customer development processes help teams define the scope of the product, while Agile development allows teams to realize the product in a defined time frame. While the form of the product may change through Lean process, the motivation and overarching vision of the team should remain intact.

APPROACH – MULTI-SITED ETHNOGRAPHY

This work presented in this paper is part of a larger, multi-sited study of the global expansion of the seed accelerators currently in progress. This research includes ethnographic fieldwork at two international accelerators as well interviews with other participants and personnel from accelerators in every major geographic region. The work in this paper draws

primarily from in-depth fieldwork conducted at JFDI.Asia, a Singapore-based accelerator and NXTP Labs, a Buenos Aires-based one.

Both JFDI.Asia and NXTP Labs run for 100 days and are geared to guide startup teams from ideas to fruition of an investment-level product. Both have a highly competitive application process through which a handful of teams are chosen to form the cohort, and the accelerators connect these teams with a large community of over 150+ mentors and investors. They both offer pre-seed investment for an equity stake, which can vary per team.

JFDI is the longest-established seed accelerator in Southeast Asia. The program focuses on creating "mobile and digital products and services made in Asia, for Asia." It has run four programs with batches of startups since 2012. I observed the third batch, which took place September through December 2013. Applications have come from 58 different countries. The cohort of 10 teams I observed comprised individuals from Canada, France, Germany, India, Malaysia, the Philippines, Singapore, Taiwan, Thailand, the US, and Vietnam.

NXTP Labs was founded in 2011 by a group of 80 angel investors and is one of the three largest and best-known accelerator programs in Latin America. I observed its sixth edition, from March through June 2014. Much like JFDI, NXTP's program focuses on a regional area: the Latin American market. The 17 teams I followed throughout the program came from all over Latin America, as well as from the US and Europe. In addition to NXTP's co-located program, it also invests and fosters several startups that remain in their home locations around Latin America, rather than attending the program in person. There were an additional 8 teams in this situation.

I took a participant-observer approach, conducting extensive observations of the day-to-day activities of the startups throughout the program, such as weekly check-ins with each team, workshops, mentoring sessions, investor meetings, and pitch sessions and participating in certain activities, as well as larger, community-oriented events, like open houses, special events, and Demo Day. Detailed fieldnotes were taken throughout all of these activities and are augmented by informal and semi-structured interviews with the teams and accelerator personnel, consultations with the management, videos, photos, and other documents and digital artifacts produced over the course of the programs. Supplementing all of this are semi-structured interviews conducted with other accelerator personnel and participants from a range of other programs, based in North America, South America, Europe, Africa, Australia, and other parts of Asia.

THE ACCELERATOR MODEL: CHALLENGES AND OPPORTUNITIES

Accelerators clearly create value-- for the team, the product, and the ecosystem. They have been described many ways, such as factories, schools, or guilds (Miller and Bound 2011). Regardless of the metaphor used to describe them, they play a very important role for startups, especially in less-developed ecosystems. If we look at accelerators as Bourdieu (1986) looked at education, as institutions that reproduce the social order, we can begin to unpack their influence through the forms of capital that they provide. Bourdieu initially delineated three types of capital: economic, social, and cultural. Using this lens, we can see that accelerators are arbiters of all three: economic capital, through seed-funding; social capital, through the building and curation of networks of founders, mentors, investors,

service providers, and others involved in the startup community; and cultural capital, through the explicit and implicit propagation of certain values, norms, and beliefs.

But while accelerators definitely provide value- for the team, the product, and the ecosystem- they also face many challenges in fostering innovation. Exploring the development of technologies at accelerators on a social and processual level, I identify some of the challenges inherent in the current structure of accelerators, their Lean principles and practices, and the contexts in which they have become embedded globally. I draw on research conducted *in situ* at accelerator programs, examining the following three main challenges and discussing opportunities to iterate on the model to address them:

- Process: Lean and the Role of Metrics. The Lean principles embedded in accelerators impose a very metrics-driven focus. While this is powerful in many ways, it also neglects a more empathetic focus that enables understanding a broader context and possibilities and limits decision-making to a narrow focus, rather than exploring lateral alternatives.
- Product: Revolutionary or Evolutionary Innovation. While accelerators often say they focus on disrupting innovations, they are very much structurally suited to iterative development and building a user focus from early adopters. This can impact innovation, with teams either struggling to find a valid use for a new technology or bringing an established solution to a new market.
- Impact: Global Reach versus Local Value. Accelerators come from a very Silicon-Valley-oriented model with a focus on valuation. When translated to different contexts, this often remains the primary focus of teams, meaning that their products are often focused on being a global, scalable technology rather than focused on creating value for the local community—addressing local problems and needs.

Process Challenges and Opportunities: Lean and The Role of Metrics

Accelerators' value for the teams they foster is clear. The economic capital they provide lengthens the team's runway—that is, the time that they have to work on their idea without running into financial concerns. Accelerators on average provide $20,000-22,000 pre-seed funding, which is used primarily to fund living expenses for founders, who often have no other form of income. This allows the team to focus on building the product without worrying about their immediate financial well-being. In terms of social capital, the network that the accelerator builds around itself is crucial to the providing the teams with access to key decision makers, partners, and investors. The mentor and investor network is the core of the accelerator program itself, as it connects each team with a larger community of practice, wherein they learn new skills and garner advice on directions to take moving forward. Accelerators also provide certain cultural capital to the teams, particularly in the form of certain methodologies and ways of "being" in the startup world. They provide this cultural context for the teams through the explicit and implicit teaching of certain values and norms. On the more explicit end of the spectrum are qualities that are propagated through direct instruction and coaching. The use of Lean Startup practices, customer development

principles, and other forms of guidance and process impart specific cultural elements, such as experimentation, extraversion, accepting imperfection, and imputing confidence in their product. Implicitly, other values are imbued, such as taking risks, accepting failure, valuing openness, collaboration, and a flat hierarchy, being honest and resourceful, and having a sense of equity and a pay-it-forward mentality, etcetera. Accelerators try to institute much of this ethos through embedded processes and structures, with the aim of preparing teams to be culturally adept in the larger startup world.

But there are complications to this. The Lean methodology accelerators use is very much rooted in the scientific method. Thus, it relies on establishing a hypothesis *a priori*. In order to build, measure, and test their ideas, founders must focus on metrics to benchmark progress and make sense of data collected in the field. These metrics include things like acquisition (the percentage of views that result in conversion), activation (the percentage that starts using the product), and retention (the percentage of users that return to use the product or service again). These are all "good" metrics on which Lean focuses, although there are also "vanity metrics" that many argue against, like monthly or daily active users (Doshi 2013). These metrics play a large role in teams' decision-making process and shape their understanding of their product and its use.

The problem therein is that metrics are based on assumptions. Thus founders approach continuing development of their idea assuming they know and understand the complex system in which they are introducing the product. And with such complexity in the world, it's clear that the direction would not be linear. But the metrics focus on linear growth and projections to measure progress. And that leads to the biggest danger: over-simplification. Metrics don't expand one's matrices of thought around solving a particular problem or developing potential solutions. They only act as a scale to measure how successful or not one potential solution has been. And even at that, they are often not indicative of anything beyond a binary. That is to say- we may know that, yes, users returned. But we do not necessarily know why. Thus, this focus on scientific method leads to two challenges in terms of being innovative. First, it leads to exploring only one potential solution or idea at a time— either confirming the current product direction or invoking a pivot. And secondly, it only evaluates numerical criteria. It does not lead us to know in any depth the users themselves, the use of the product, the dynamic contexts surrounding its use, or the complex systems of which it becomes a part. These reasons present an opportunity for design thinking to play a larger role— to be combined with the use of Lean and its metrics to both explore and learn from the complexity of the world.

An Opportunity for Combining Lean and Design Thinking – Design thinking and Lean and their connections and potential conflicts have only recently begun to be explored. The two often seem at odds epistemologically-- in methods, data, and approaches. One is normative or "scientific", the other interpretive. One is metrics-driven, the other design-driven. Lean's cycle focuses on build-measure-learn (Ries 2011), while design thinking's cycle is: define, research, ideate, prototype, choose, implement, and learn (Simon 1996). And their focus on and treatment of the user are often very different. But there are synergies to be found in the two as well, and in particular, addressing the shortcomings of Lean's focus on metrics. Namely, that design thinking allows patterns to emerge first, before pursuing a

design direction. And, secondly, it actively focuses on the role of empathy and the dynamic context of the problem.

Design Thinking is rooted in combining the context of the problem and empathy—in many ways, not dissimilar from what Customer Development preaches. However, the philosophy and the approach are grounded. This grounded-theory approach provides a structure for patterns to emerge; it allows innovators to arrive at conclusions per observations *a posteriori*. Thus it sets the stage for alternatives to be examined and experimentation and metrics to be used in a valuable way. In a complex environment, this allows experiments to be more focused on producing order, which Anderson et al. suggest is key: "the system is now too complex for *a prior* [sic] comprehension and thus the product launch is itself an experiment about order or arbiter of order" (2013). In the accelerators I followed, despite the intense focus to build-measure-learn, several teams struggled and moved to pivot to an entirely new direction, rather than considering design alternatives. While determining if and when to pivot is a purpose in using Lean methods (failing faster), it seems that design thinking could not only help inform product development from the onset, reducing frustration and waste of time, but also enable learning of a different sort: identifying patterns to inform how to adapt the product, rather than abandoning a product based on metrics. And it could help in exploring other problems to address if a team does, in fact, pivot. Lean might be useful to focus on an *ansatz*, an intial estimate of the solution and combined with design thinking to then be a guide forward, with lateral exploration of alternatives and a focus on synthesizing the best parts of alternatives together.

Beyond the front-end structure of the cycle, design thinking is also powerful in terms of its focus on empathy throughout. While the Customer Development aspect of Lean emphasizes the need to empathize with potential customers, the purpose of experimentation is to collect data to make an informed decision based on metrics, so the focus on empathy gets lost somewhere in the process. Re-centering the process to focus on research data and artifacts that go beyond numerical data is vital to making better product decisions. This isn't to say that metrics should be abandoned. They certainly help quantify effect sizes and show certain measures for benchmarking progress— particularly as it relates to evaluating design alternative. But they also provide structural value in the sense that they keep teams accountable. Metrics driven processes are how accelerators currently address that need and keep teams focused. Balanced with elements of design thinking, they could create a structure for more innovative product development—by understanding the context better, evaluating multiple design alternatives, and garnering a deeper understanding of the user.

Combining elements of Lean and design thinking is not just a suggestion for accelerators; others have noted the potential synergies of these approaches (Müller and Thoring 2012). This is something for us to continue to explore as a community. Lean provides clearer business value while design thinking provides more product value. Together, they could be very useful in terms of thinking about how to provide value for both stakeholders and users at the same time. This also presents an opportunity for us to engage with the startup community and simultaneously learn from them.

Product Challenges and Opportunities: Revolutionary or Evolutionary Innovation

Accelerators also play a direct role in creating value for the product itself. Through the economic capital they provide, they take many financial concerns out of the equation for the initial product development. Teams can therefore afford to create a product that is free or freemium-oriented or is not immediately sustainable. This allows room for experimentation, for the idea to evolve and further solidify over the course of the accelerator program. Through the social networks they provide, accelerators also impact a products' early distribution. Through mentors' extended networks, teams can gain access to otherwise hard-to-reach decision makers and build a relationship. Some of these relationships are lifelines to the products as the teams try to convince themselves and investors of the potential use case of the product. And they also create value in terms of product direction through embedded practices, such as pitching. One of the key structures that the accelerators provide is the pitching framework they teach the teams. While pitching is widely seen as a communication tool to garner interest from investors, pitching also emerges as a tool enabling collaboration within the cohort and amongst the accelerators' network through feedback and iteration. And this ultimately impacts the way teams make strategic decisions about the product.

The main challenge for accelerators and organizations in the innovation business is that have a tendency to focus on innovation that provides revolutionary impact to the market—the sort of "disruptive innovation" discussed by Christensen et al. (2006). At the same time, accelerators emphasize the use of Lean processes, which focus on iterative, small feedback loops to refine ideas and their products, and learn from early adopters. This creates a sort of dichotomy of focus on revolution and evolution from the outset.

We can also think about this dichotomy in terms of Norman and Verganti's (2012) discussion of radical versus incremental innovation. By their definition, radical innovation is "a change of frame ('doing what we did not do before')," while incremental innovation is "improvements within a given frame of solutions ('doing better what we already do')." In practice, though, accelerators face the challenge of juggling both radical technology and practicality of the application of the technology. Teams that are in today's accelerators are often at either end of the revolutionary-evolutionary spectrum. In other words, they have difficulty striking a balance between having a strong, novel technology and an understanding of how it can be used; or, having a strong understanding of a market or specific problem, and being able to develop a strong, novel technology to address it.

Norman and Verganti argue that "radical innovation is surprisingly rare" and requires agents of "meaning or technology change." In their point of view, most innovation is incremental. As the discussion of Lean metrics illustrates, accelerators focus on iterative decision-making process that fosters incremental innovation. Lean advocates believe that Customer Development and Agile form a continuous, non-stop process. This raises an eye-brow for many entrepreneurs. When is enough Lean? There is no definitive answer; analysis paralysis is a term that is often invoked. This is where the challenge of "local maximum" arises. It seems that, rather than striving for disruptive innovation, startups –and anyone working in product development– should focus on where value can be added, which is much more in line with an evolutionary process. Accelerators as socio-technical systems cannot escape an incremental innovation approach; however an opportunity for a larger focus on and deeper role for user research also presents itself.

An Opportunity for User Research – Two teams in the JFDI program exhibited a revolutionary and an evolutionary approach to innovation. Scrollback developed a browser-based Javascript chat tool to replace Internet Relay Chat. Scrollback is back-ward compatible with the open protocol (IRC) of the past 20 years, which has not seen any major technology innovation through that period. The Scrollback team started with the technology and initially tried to bring on customers from universities, admission offices, online forums, other communities that presently used IRC. On the opposite end of the spectrum, Vault Dragon created operational procedures to bring urban storage to customers; the team started with a focus on the existing market for which they wanted to develop a technology. Both approached the problem at hand with experiments and metrics, modeling and replicating existing behaviors, and failed to understand their potential users this way. Both teams of young, technology savvy entrepreneurs lacked the tools and experience in conducting user research. The teams ultimately sought out the guidance they needed, then went out and did much more detailed research- enabling them continue moving forward with their innovations.

User research seems to be the missing element that can bridge the gap for teams whose starting point is a piece of technology or a market. While all startups come into an accelerator with at minimum a strong product idea, most have done little, if any, research into the context of the potential user. And in the accelerator, they do not do much of this either. Research is, rather, focused on validating the idea with early adopters, developing an MVP, and testing it, not learning about user needs. "Social proof" –what other people think is correct– is a major goal, rather than really understanding the user.

This is an issue rooted in the larger, Lean structure as well as the networks of accelerators. There is a lack of focus in Lean methods on doing any sort of in depth user research. Those elements are often boiled down to understanding whether and how early adopters use a product and are often conducted through tools such as crazyegg.com, analytics Heat Maps, and A/B testing tools, like optimizely.com and unbounce.com which is indicative of a sort of deskilling of labor in UX not unlike what Lombardi (2009) describes in relation to ethnographic work in the private sector. These are often supplemented by some interviews with actual users (early adopters) or cold calling potential would-be users. Doing and interpreting research with users is something generally left out of the teaching or guidance of accelerators. The networks of mentors accelerators curate typically come from business-oriented or technology-oriented backgrounds, not the realms of design, UX, or any sort of research, for that matter. There is a great opportunity in rallying efforts to improve the focus on user research in accelerators—and in the larger startup community in general. By becoming involved in our own local startup ecosystems, we can help teach and spread the skills we have as a community of researchers, creating value, but also learning from them as well.

Impact Challenges and Opportunities: Global Reach versus Local Value

Finally, accelerators create a great deal of value for the larger ecosystems in which they are embedded. The economic impact on the ecosystem can be seen in the venture capital cycle, where investors have pressure to deploy and can rely on a steady and predictable

number of companies in the pipeline. Socially, they bring the ecosystem together in a more solidified way by combing and connecting different networks and providing activities and events through with both bridging (loose connections) and bonding (tight connections) capital are formed. At the larger level, this creates a shared experience and identity within the larger ecosystem and fosters a network of trust. And, ultimately, this creates a stronger cultural identity within the ecosystem, propagating norms, such as "paying it forward." This is a sort of Silicon Valley cultural notion that experienced entrepreneurs should give back to the ecosystem—and this is at the root of the social construct of accelerators.

The propagation of accelerators around the globe also creates some challenges as they move into various global contexts with minimal reflection on how they should adapt. The concept of an accelerator, its canonical literature, and adoption of Lean methods and principles are all products of Silicon Valley. The terminologies and cultural views of this origin are imbued into the structures, practices, and approaches of accelerators, and this includes adoption of the venture capitalist business model and its underlying goals and objectives. While the accelerator provides value to the innovation teams by injecting economic capital, the accelerator also relies on (and expects) a return of capital via future liquidity event, commonly known as an "exit." This enables the accelerator to fund its future operations. An accelerator is a "hit" business; it makes many "small bets" with the goal of having at least one team among many become successful.

Therefore, by design, the goal of the accelerator operators is to foster an environment that produces large capital gains within a short time-frame. In practice, this translates into a culture within accelerators that promotes creation of globally-focused, scalable, and profitable businesses. Underlying this are some implicit assumptions: a) the maturity of local venture funding ecosystem is lacking; b) the cultural norms of conducting business in a local context are similar to Silicon Valley; and c) value created via global impact is more valuable than local impact. And this is fundamentally at odds with where the greatest potential impact for accelerators lies: the decentralization of technology production. Rather than functioning as worldwide scouts for the next big global, scalable technology product or pathways through which to take an existing technology to meet new markets, accelerators could have a much larger impact in creating value for different user groups— smaller, marginalized, or otherwise neglected groups. And it can do that by leveraging what it already has: teams with local knowledge from all over the globe.

An Opportunity for Bottom-Up Focus in Emerging Ecosystems— One of the major potential benefits of the global expansion of accelerators is that they can enable entrepreneurs in different regions to address problems that are local, that no one else could or would, address. Many co-founders' ideas are drawn from their experiences or something in their personal lives. Thus, many have a great understanding the context or problem space, enabling local knowledge to play a role in innovation, which Seely-Brown and Duguid (2002) have argued for. But the rigid structure of the accelerators and their very top-down approach creates issues– and sometimes leads a group to drop out altogether, meaning these great locally-innovative ideas might not come to fruition. One Vietnamese group of co-founders, CloudJay, dropped out of the JFDI program halfway through because they felt uncomfortable doing many of the things required of them, like cold-calling potential

customers. Other groups, such as Molome, a startup from Thailand, struggled because they tried to take the advice of too many different mentors. Their sense of hierarchy and deference to mentors made them feel like they should embrace everyone's feedback, rather than determining which advice was best for them. This led them to focus on a global, scalable idea rather than the domain they were interested in.

Accelerators should consider ways in which their very Silicon-Valley oriented cultural values can be promoted in a way that creates shared standards, while still being sensitive to different backgrounds and values. Rather than focusing on ways for participants to assimilate, accelerators can be more reflective about what values and activities are important and focus more on iterating the model and building these into practice. This requires both global accelerators and their startups to be more explicit about beliefs that are often transparent. An open dialogue about assumptions and values should be at the front end of an accelerator program, to help encourage a more bottom-up, rather than top-down approach.

All parties should keep an open mind throughout and look for ways to adapt methods and practices. Silicon Valley can certainly learn from the way things are done elsewhere. The confluence of cultures participating in global accelerators provides a rich site, rife with opportunity to learn. Accelerators serve as a kind of liminal space, an idea rooted in anthropological inquiry. Much like the rites of passage to adulthood in different cultures, founders are being inducted into a culture and going through their own unique challenges. Learning from one another's challenges creates a sense of communitas and also helps in adapting. Taking the long view, should these founders become successful, they would become tomorrow's mentors to younger local entrepreneurs. Over time this creates a startup ecosystem with its own adapted culture, just as Silicon Valley's culture evolved over the years organically. As a community, we can aid in this by getting involved locally in startup ecosystems- teaching, mentoring, and encouraging the use of local knowledge in innovation.

CONCLUSION

While accelerators (and Lean) may optimize for value creation, they face many challenges in truly fostering innovation. There is great potential there. In relation to the changing structures of "innovation", John Seely Brown says: "Knowledge is fundamentally changing from being contained within a corporation to being contained within ecosystems of partners." (2012) And the ecosystems that accelerators help create- and the teams and products they foster- are part of those changing structures. Yet, within accelerators –and much of the startup world in general– metrics take priority over understanding the complexity and dynamics of the problem space and trying several design alternatives. Both revolutionary and evolutionary innovations struggle to find where or how they might fit. And valuation and other Silicon Valley structural influences limit the impact of local teams creating value for a local, rather than global, audience. Current structures, processes, and a metrics-driven focus may impede innovation, but there is great potential in iterating the model itself to be more innovative. Mixing elements of Lean with more front-end design thinking, creating better instruction for doing research and building a community of mentors

who can help with that, and focusing on adapting the model to better fit the context are all opportunities to innovate the model. And the EPIC community can play a role in that.

At the root of this seems to be a lack of knowledge and understanding of design, user research, and a rigid, top-down approach to development processes. Education is clearly an important first step. To help accelerators see the value of these insights, we should engage in professional development of accelerator personnel and managers in a hands-on way. The design and research community can do outreach with the startup community in a variety of ways. Mentorship and educational roles are a good first step in this. This would not only create value for them— it would also be valuable to us. There is a lot we can learn from the startup community in general and by getting involved in our local ecosystems in particular. Startup founders are modern-day bricoleurs who also have a lot of knowledge they've gained through their experiences. There is great opportunity for us to learn from each other.

Julia Katherine Haines is a PhD candidate in Informatics at the University of California, Irvine. She studies innovation practices, social creativity, and transnational work. Her current research focuses on accelerators and the decentralization and diffusion of tech startups globally. She has an MS in HCI and an MA in Social Sciences. hainesj@uci.edu

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