The Medium is The Menu:

The Domestication of Mobile Technologies in the Home Kitchen

by

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To Erika, Maya, and Rowan—you are my inspiration, sustenance, and support.

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Abstract

The study looked at how people are using mobile communication devices in the domestic kitchen? How users have domesticated these devices? And in what ways have these devices been used to (re)skill users in the domestic kitchen?

We now live in a society where we do not have to know how to cook to live (our survival does not depend on our cooking abilities). However, there is a cost to our health and our quality of life as evidenced by the current obesity epidemic.

Grounded in phenomenology, the study used a convenience sample of seven participants in semi-structured interviews and domestic kitchen tours. Inspired by the work of Bakardjieva, the study relied on domestication theory to illuminate behaviour genres (or ways of doing) to help understand common user behaviours in the home meal planning process. This framework combined with research on deskilling helped illuminate the research questions about (re)skilling in the kitchen.

Five behaviour genres emerged from the participant interviews: finding, retrieval, skill development, sharing, and collecting—each with possible applications to help reskill consumers in meal preparation.

> We must more than ever see to our own fate, by deeply an even caringly looking after our own technologically textured world. (Ihde, 1993, p. 163)

Introduction

Has the presence of mobile communication devices in the practice of cooking changed the cultural syntax of our meals? Cooking is as universal to the human race as language, and it follows that recipes are the cultural syntax of food (Douglas, 1972; Lévi-Strauss, 1966/2008; Mead, 1943/2008). Mead (1943/1997) observed that the cooking practices of a society unconsciously communicate its structure and reveal its contradictions—a point echoed by Lévi-Strauss, (1966/2008). Visser (1986) suggests, "A meal is an artistic social construct" and further relates it to a play of the syntax and flow of language (p. 13). And Douglas (1972) suggests, "the taking of food as a social component, as well as a biological one" (p. 61).

This study looks at how mobile communication devices (smart phones, for example) have been appropriated and incorporated by their users and what influence these devices have had on the way they experience and approach meal preparation (planning, shopping, and cooking) in the home. The study took an exploratory ethnographic approach—gathering data through semi-structured interviews and guided tours of refrigerator, kitchen, and mobile device/applications in the contexts of planning, shopping and preparation of meals in the home. The study draws upon the theoretical perspective offered by *domestication theory*. Domestication theory, with its roots in phenomenology, offers an approach that looks at how technology is domesticated or tamed in the context of the home and everyday life. The theory is focused on the user and their integration of technology in their every day environment. It is also a theory that embraces the co-creation

and social shaping of technology—it eschews the deterministic view of technology and respects the role of the user.

The seed for this project was planted when I witnessed my friends using their mobile communication devices to augment their food shopping and cooking experiences. Many of these people had no culturally embedded or professional cooking skills. Indeed, some users were learning cooking skills on-the-fly by watching YouTube videos on their mobile devices (thus replacing the traditional role a relative—like a Grandmother, Baba, or Nona—perhaps filled in the past). It reminds us of the scene in the 1999 film *The Matrix* where, the character, Trinity has the skills to fly a helicopter instantaneously uploaded to her consciousness (as outlined in the following script from the film):

> Cell phone [conversation, Tank answers Trinity's call]:
>
> *Tank:* Operator.
>
> *Trinity:* Tank, I need a pilot program for a V-212 helicopter. Hurry. Let's go. ("The Matrix Transcript Part 9," n.d., para. 6)

This reflection on how we facilitate our personal skill development in a mobile and electronic information age lead me to ask the following questions:

1) How are people using mobile communication devices in the domestic kitchen?

2) How have these devices been domesticated by users?

3) In what ways have these devices been used to (re)skill users in the domestic kitchen?

To date, domestication studies (see Bakardjieva, 2005) have been confined to the use of desktop computers or televisions (see Silverstone, 1994) in the home, or, in the case of mobile communication devices, cultural appropriation in an economic context—not specifically mobile devices in the kitchen of the home (Hahn & Kibora, 2008). The mobility afforded by mobile

communication devices extends the concept of the "kitchen" to allow transitions between the contexts of planning, shopping, preparation and cooking, and presentation.

In her work as a domestication theorist, Bakardjieva used a framework of "little behaviour genres" or ways of doing to help us understand common user behaviours in the domestication of the home computer. This framework (combined with research on deskilling) helps illuminate my questions about (re)skilling in the kitchen.

Deskilling: The Atrophy of Cooking Skills

Deskilling is a concept that comes from Braverman (1974), which argues that the rise of scientific management gradually stripped skills from craftspersons. Instead of being able to build a carriage from scratch, for example, the craftsperson is replaced by the assembly line worker who specializes in making spokes for wheels. This worker does not possess the skills to make a whole carriage and is consequently at the mercy of the corporation who aggregates the workers into units who make each of the parts to make the whole carriage, yet none are able to assemble a whole carriage on their own. Control is lost to the organization.

In the context of the kitchen, Jaffe and Gertler (2006) remind us, "Food production processes are labour processes. One essential component of deskilling of labour is the division of tasks and the movement of many of the components of these processes out of the home and into the corporate workplace" (p. 147). Again, control is lost to the organization. Lyon, Colquhoun, and Alexander (2003) note, "It is a common experience of dietitians that many women in their 20s and 30s are unable to make the simplest dishes e.g. Shepherd's Pie" (p. 167).

It is important to consider in the case of cookery—is deskilling reversible? Kornelsen (2010) cautions us when discussing *deskilling* in the context of the domestic kitchen that culturally, many men were never skilled in matters of food "therefore terminology like

'reskilling' is highly gendered" (p. 40). She suggests the term "skilling oneself" would be more neutral. Perhaps *(re)skilling* would be a better way to view at the word *reskilling* as you see it throughout the rest of this paper. In fact (in a similar vein) Ihde (2010) points out that "Young ladies were often 'pre-skilled' for the two–handed writing style of the typewriter" (p. 133).

Kornelsen (2010), deftly synthesizing the work of Jaffe and Gertler (2006), categorizes six types of consumer deskilling. This categorization offers us a lens with which to view deskilling in the domestic kitchen:

Type of Consumer Deskilling	**Domestic Kitchen Example**
Professionalized	The consumer surrenders judgment to commercial experts, or subscribes to what Pollan (2008) calls "nutritionisim" following fad diets.
Emancipatory	The consumer is freed from the tyranny (and interaction) of performing the skill (women have been released from the kitchen thanks to the labour saving advances of convenience foods).
Palate	Perhaps the most covert form of deskilling. Consumer is subjected to simplified flavours and textures (dumbed down flavours). This is generally practiced by food manufacturers as a way to appeal to a broader audience.
Standardized/homogenized	Diverse cooking processes are flattened into purchasable products that transport easily and safely with longer shelf-life (engineered food).
Forced	Culturally imposed practices on fragile populations. For example, bottle feeding vs. breast feeding or restricting access to indigenous foods.
Generational	The eventual consequence of the aforementioned deskilling categories is a population that has fewer skills or related food culture to pass down to future generations. Household production is replaced by consumption and we fail to learn from our elders (lost knowledge transfer).

Figure 1: Types of Consumer Deskilling in the Domestic Kitchen. Adapted from "An Apple a Day: Exploring Food and Agricultural Knowledge Among Children in Southern Ontario," by S. Kornelsen, 2010, *Theses and Dissertations Wilfrid Laurier University (Comprehensive).* Paper 980.

We will return to this model in the discussion section of this paper as we look at possible behaviour genres that encourage reskilling.

Deskilling: The Cost to Our Health

We live in a society where we do not have to know how to cook to live (our survival does not depend on our cooking abilities). However, there is a cost to our health and our quality of life. “This process of outsourcing our food preparation to large corporations, which is what we've been doing the last 50 years, is a big part of our problem. We're seduced by convenience,” says Pollan (2009). The subsequent obesity pandemic means our children may be the first generation that will not outlive their parents (Cutler, Glaeser, & Shapiro, 2003; Pollan, 2009). Pollan (2009) asserts that deskilling in the domestic kitchen has its roots in technology:

> That decline has several causes: women working outside the home; food companies persuading Americans to let them do the cooking; and advances in technology that made it easier for them to do so. Cooking is no longer obligatory, and for many people, women especially, that has been a blessing. But perhaps a mixed blessing, to judge by the culture’s continuing, if not deepening, fascination with the subject. It has been easier for us to give up cooking than it has been to give up talking about it and watching it (para 33).

But something snuck up on us as we were enjoying our emancipation from the so-called tyranny of cooking—the unintended consequence of losing our kitchen skills. Cutler, Glaeser, and Shapiro (2003) offer a deeper insight into the effects of innovation on our time in the kitchen when they write:

> In the 1960s, the bulk of food preparation was done by families that cook their own food and ate at home. Since then, there’s been a revolution in the mass preparation of food that is roughly comparable to the mass production revolution in manufactured goods that happened a century ago. Technological innovations — including vacuum packing, improved preservatives, deep freezing, artificial flavours and microwaves — have

> enabled food manufacturers to cook food centrally and ship it to consumers for that consumption. In 1965, married woman who didn't work spent over two hours per day cooking and cleaning up for meals. In 1995, the same tasks take less than half the time. The switch from individual to mass preparation lowered the time price of food consumption and led to increased quantity and variety of foods consumed. (pp. 93-94)

They go on to suggest that obesity rates are inversely correlated with the amount of time spent on food preparation especially in regions with access to new food technologies and processed food that reduce the monetary and time costs of food and food preparation (p. 94). In fact, they note that the amount of time spent cooking predicts obesity rates more reliably than female participation in the labor force or income. Jaffe and Gertler (2006) assert, "When a skill is lost or displaced, it is often replaced by a machine." Is it possible the machine could revive that skill? Jaffe and Gertler (2006) provide some context as to why technology may hold some possible solutions to the reskilling question in the environment of meal preparation when they argue that without "deliberate steps to counter this process, consumers become progressively less 'skilled' in absolute and relative terms" (p. 143). The question is: As processed food has significantly replaced cooking from scratch, can we ever put the genie back in the bottle? (or at least transform that genie?). Interestingly, Jaffe and Gertler offer us a link to domestication theory when they write: "Technology, deskilling, and new food products co-evolve in a dialectical fashion" (p. 147).

Theoretical Approach

William James argued that, the truth of a statement lies in its practical consequences (as cited in Cathcart & Klein, 2006, p. 73). Cathcart and Klein go on to explain:

> We choose our truth by what difference it will make in practice. We say Newton's law of gravity is true, not because it corresponds to the way things "really are," but because it has proven useful in predicting the behavior of two objects relative to each other under many different sorts of circumstances. The day a theory stops being useful is the day we will replace it with another one. (p. 73)

The question worth answering when choosing a theory through which to view the world is: "Does the theory model the real world in a useful way, and does it help us understand what we see?" The study draws upon the theoretical perspective offered by *domestication theory*.

Meta Theory: Social Constructionist Worldview

Epistemologically, this research project rests on a social constructionist foundation, with the understanding that this foundation affords more room for reality and what Ariely (2009) refers to as the predictably irrational behaviour of people.

Social constructionism has its roots in phenomenology. Creswell (2009) supports this observation when he comments on the significance of Berger and Luckman's (1967) "The Social Construction of Reality." Interestingly, Luckman and Berger were students of Alfred Schutz (Psathas, 2004, p. 24)—who studied Husserl intensely. Following this thread, Schutz and Luckmann (1973) go on to connect pragmatism with phenomenology when they comment that we act within and upon the every-day life-world noting that our daily life is "pervasively determined by a pragmatic motive" (p. 6). This suggests a paradoxical conundrum between the objective and the subjective. The author is comfortable holding two opposing ideas in his head at

the same time and considers this opposable nature to provide a richer context in research. Craig and Muller (2007) insist that phenomenology "rejects any absolute distinction between objectivity and subjectivity" as all experience involves both (p. 217). Thankfully, both perspectives eschew hard determinism. That said, one cannot ignore the influence of technology in a deterministically flavoured way. The balance between this tension will be unpacked in the theoretical section of this paper.

The core idea of constructionism is that "some social agent produces or controls some object" ("Naturalistic Approaches to Social Construction," 2008, para. 20). In other words, reality is constructed through social action (and actors). Crotty (2009) states: "Qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally" (as cited in Cresswell, p. 8). This empathetic approach reflects the phenomenological roots of constructionism.

Phenomenological Lens

Phenomenological methodology requires information about the experience in the person's own words. This is what Husserl called "lived experience" (Jasper, 1994). Or as Jasper (1994) writes: "The true meaning of phenomena can only be explored through the experience of them as described by the individual" (p. 310).

According to "Phenomenology" (2008), awareness-of-experience is a defining trait of conscious experience, which gives experience at first-person/lived character—this allows a first-person perspective on the experience. This perspective is what embodies the methodology of phenomenology. In fact, the mission of phenomenology is to identify the *essence* of an experience, understanding that there is no objective realty that can be studied in isolation from the experience of it (Jasper, 1994, p. 313).

The following perspectives from Oiler (as cited in Jasper, 1994) are helpful in understanding phenomenology:

> *Phenomena*: Objects and events as they appear assuming that there is a world, and that it is social in nature.
>
> *Reality*: This is assumed to be subjective and perspectival, reality is a matter of appearances.
>
> *Subjectivity:* Being in the world, the world becomes real through contact with it, knowing shapes experience.
>
> *Truth*: A composite of realities, access to realities is a matter of locating and using forms of expression, these give us a subject's reality. (p. 310)

Phenomenology is not without its challenges. Husserl (as cited in Craig, 2007, p. 224) points out that a person's sphere of knowledge does not reach beyond their sphere of experience. In other words, we are not fully aware of all things. The phenomenological method will always run the risk of data collection and interpretation being coloured by the researcher's preconceptions. This acknowledgement of subjectivity is part of the phenomenological methodology. Researchers need to find ways to collect experience descriptions while preserving the spontaneity of the subject's lived experience (Jasper, 1994, p. 310).

Phenomenology is, as Husserl stated, robust. This also means the tradition is open to change and refinement. Heidegger (as cited in "Phenomenology," 2008) expresses that we interpret our activities and the meaning of things by looking into our contextual relations to things in the world, thus phenomenology revolves around a fundamental ontology—we must distinguish beings from their being.

Importantly, Crotty (1998) reminds us that phenomenology is not purely subjective (pp. 82–83). Rather, it also looks at the objects of experience in addition to the experiencing subject. He also insists that phenomenology is "an exercise in *critique*. It calls into question what we take for granted" (p. 83). Indeed, an appropriate model for the study of the quotidian.

Literature Review

Looking back to Jaffe and Gertler's (2006) comment that "Technology, deskilling, and new food products co-evolve in a dialectical fashion" (p. 147) is a useful starting point in the review of the literature as it links domestication theory to deskilling (at least conversationally). Especially as we begin to look at how mobile communication devices have been domesticated by their users. And, more specifically, in exploring models with which to examine if and how mobile communication devices are socially constructed by users in meal preparation.

Deskilling and Cookbooks

Our working lives have changed, school curricula have changed, and we seem to have less time "for cooking and the transmission of skills to children" (Lyon, Colquhoun, & Alexander, 2003, p. 173). Knowing how to prepare meals and master basic cooking methods were "requirements of everyday life in the recent past." (Lyon, et al., 2003, p. 168). Lyon et al. also note that equipment innovations to make cooking easier have only resulted in a "partial reskilling" (p. 171). Indeed, McDonagh and Prothero (2005) question if the cookbook is dead as a "cultural artifact" (p. 2). De Certeau (1998/2008) writes of reconstructing a "silent legend" through cookery (p. 69). Could applications designed for mobile devices like the iPhone (EPI from *Bon Appétit* magazine, for example) be appropriated as a method of reskilling cookery? "Measuring Cup" (2012) suggests that mobile communication devices and search engines are a now a "main ingredient" in meal preparation skills and practice with 43% of respondents selecting search engines over cookbooks (which rang in at 19%) as a preferred resource (p. 1).

Domestication Theory: Everyday Life and the Household

To start understanding the integration of mobile devices into the context of everyday life—specifically in the home, Silverstone and Hirsch's (1992) domestication theory provides a

framework to critique everyday life. The theory helps us understand "how apparently uniform technological devices are pressed into specific cultural service" (Silverstone & Hirsch, 1992, p. vii) In other words, the social shaping of technology at the consumer level.

Reflecting the tension between pragmatism and determinism noted earlier in this paper, Silverstone and Hirsch (1992) observe, "We are, indeed, great consumers of technology. At the same time we are often quite anxious about technologies' capacity to consume us. There is a delicate line to be drawn between voluntarism and determinism" (p. 2).

Domestication theory looks at the relationships between technology, consumption, and the domestic sphere. Silverstone and Hirsch (1992) conceptualize the model of the household as a "moral economy" or "a social, cultural and economic unit actively engaged in the consumption of objects and meanings" (p. 5).

Domestication theory suggests a continuum that the user follows through the domestication of technology: First, *appropriation*, which "reveals itself in possession and ownership" (Silverstone & Hirsch, 1992, p. 22). Next comes *objectification*, which "reveals itself in display" (p. 22). Then comes *incorporation*, which is expressed in the use of the technology (p. 24). And finally, comes *conversion*, which (like appropriation) "defines the relationship between the household and the outside world" and provides conversation and meaning (p. 25).

How the technology is domesticated (especially at the appropriation stage) requires observation to more deeply understand and gain the phenomenological perspective that Appadurai (1986) advocates, through his comment that, "from a theoretical point of view, human acts encode things with significance, from a methodological point of view it is *things-in-motion* that illuminate their human and social context" (Appadurai, p. 5). Things-in-motion can be

thought of as *things-in-context*, thus the importance of interviewing participants in their home kitchens.

Silverstone and Hirsch (1992) argue that the authenticity of artifacts as culture comes not from how they were made, but from their "active participation in a process of social self-creation in which they are directly constitutive of our understanding of ourselves and others" (p. 21).

Domestication is not about consumption per se—it is about everyday life from the user's point of view (Bakardjieva, 2005, p. 70). In fact, Bakardjieva worked hard to distance her work from the purely economic interpretation of consumption. Cultural capital and how our objects classify our identity illustrate "the extent to which social distinction depends on *how* one interacts with the object" (Marshall, 2005, p. 75). Chaney (2002) insists, "Technologies do not by themselves determine how they are to be used in different social settings. Rather, it has been accepted that the meaning of the technology is shaped by the context of competing expectations, interests and powers." (pp. 12–13). Bakardjieva (2005) suggests that that a key to of domestication theory is recognizing the agency of the user. This aligns with Postman (1993) when he suggests that it is a mistake to think a technology carries only a "one-sided effect" (p. 4). He further advoctaes that "Tools are not integrated into the culture, they attack the culture. They bid to *become* the culture" (p. 28). He further insists that tradition will have to fight for its life. Where will this battle take place?

Home and Everyday Life

Bakardjieva and Smith (2001) put forward that, "The home is one of the central sites of everyday life," and look at users of technology from the perspective of "the actualities of their everyday lives" (p. 69). Silverstone and Hirsch (1992) argue, "The domestic is variously approximated to the household, to the family and to the private" (p. 5). It is culturally

constructed. Putnam (1990) argues, "An understanding of home becomes a means for organising the world and orienting our passage through it" (p. 7). Finally, Chaney (2002) suggests the household is a "stage for the moral order of everyday life" (Chaney, p. 74). Indeed, Bakardjieva (2005), introduces *home* "as a phenomenological experience" and the "container of interpersonal relationships" (p. 68). Bakardjieva expands on the significance of the relationship between technology and home:

> With respect to communication technology, then, home is interesting in that it allows for varied perspectives on the meaning and practical usefulness of a device, and its pertaining content and functionality, to be discovered and enacted. It is the point where the powers of technologies meet with the meaningful activities and self-affirming projects of ordinary users. (p. 69)

Home is "a place of resistance, a crucible of 'alternative reality,' which generated and enacted value systems and projects different from those organizing the public world" (Bakardjieva, 2005, p. 64). Home is intimate. The household is simultaneously aesthetic and functional, a bricolage of layers (de Certeau, 1984; Lévi-Strauss, 1966/2008), and a form of figure and ground (de Certeau, 1984, p. 35). De Certeau, Giard, and Mayol (1998) comment that home is "a protected space at one's disposal where the pressure of the social body on the individual doesn't prevail, [and] where the plurality of the stimuli is filtered" (p. 146). This further stresses the importance of the thing-in-context as it relates to the quality of the interviews gathered from participants in the study—the user-in-context with the thing-in-context.

Technology Artifacts in Daily Life

Bakardjieva (2003) advises that realizing how a new technology could "fit appropriately into the typical situations constituting the everyday life of diverse groups of people is the main

achievement of users" (p. 71). Certainly, the blending of technical artifacts into domestic values, space and time, is definitive to how these artifacts "would be perceived and employed in daily practice" (Bakardjieva, 2005, p. 65).

Sarker and Wells (2003) note that users also learn "to improvise in order to bypass the current limitations of mobile technology" (p. 39). In a similar comment, Bakardjeiva (2003) uncovers the generative aspect of domestication when she remarks on the "possibilities for the mediums' progressive development discovered by users" (p. 75).

Silverstone and Hirsch (1998) elaborate on the research significance of and impetus for domestication theory:

> The study of media audiences, in turn, had foundered precisely at the point at which it was to be confronted in its social and cultural complexity, i.e. within the household, among family members. Studies of technology had opened the question of its status as culture, but had not yet approached, other than in broad terms in contemporary society, the issue of its construction in consumption. (p. 211)

This reinforces Bakardjieva's (2005) conclusion that, "Domestication, thus produces an additional set of parameters that literally blends with the technical device and determines its nature, purpose and functionality" (p. 65). With this in mind, users are certainly actors in the technological world.

Little Behaviour Genres

Bakardjieva and Smith's (2001) research uncovered "little behaviour genres" invented by participants to link them back to their social-biographical situations to try to explain how the technology has empowered ordinary people to "transcend" certain limitations of their situations (p. 80). Or what Lefebvre (as cited in Bakardjieva & Smith, 2001) called the "critique of the real

by the possible" (p. 81). This nicely reflects Cresswell's (2009) comment that "Individuals develop subjective meanings of their experiences—meanings directed towards certain objects or things" (p. 8). The little behaviour genre concept has its roots in the study of linguistics, looking for common patterns in language. Bakardjieva applied it to common behaviour patterns (meaningful activities) among participants which can not be separated from the setting. The little behaviour genres model is a helpful tool to illuminate domestication theory and provide meaningful context especially in the incorporation stage of domestication.

Domestication theory brings a social constructionist perspective to the study of media within the household. It provides a model with which to examine how mobile communication devices are possibly constructed by users in meal preparation—particularly at the incorporation stage of domestication.

Gaps in The Literature

A few clear omissions in the literature became evident and provided a backdrop for the exploration of the study, findings and discussion:

1. Deskilling studies look at explicit vs. tacit knowledge—not text vs. video.

2. They use a practice-theoretical approach, which underestimates the creative complexities of cooking.

3. They take a deterministic view of technology.

4. Domestication studies have (so far) only looked at home computers and televisions or, in the case of mobile communication devices, cultural appropriation in an economic context—not specifically mobile devices in the kitchen of the home.

Methodology

Respecting that domestication theory has its roots in phenomenology, the objectives of this research project are to get deep insights into the commonplace of the everyday and understand how the actor (participant) incorporates their use of mobile devices in the domestic kitchen in their daily lives.

Research Questions

By observing lived experience and everyday life as technology tamed, the following questions are explored:

1) How are people using mobile communication devices in the domestic kitchen?

2) How have these devices been domesticated by users?

3) In what ways have these devices been used to (re)skill users in the domestic kitchen?

Ultimately, the project will be successful if it finds evidence of mobile communication technologies supporting reskilling through the influence they have in meal preparation. This in the context or what Gubrium and Holstein (1997) describe as a: “meaningful reality in the immediate settings of people’s daily affairs” (p. 7). At the same time it must respect the stories told by the participants, and as Nunkoosing (2005) implores, “give full expression to the emotional lives that these [participant] stories recreate” (p. 705).

Field Observation and Interviews

The home is, as Bakardjieva and Smith (2001) note, “one of the central sites of everyday life” (p. 69). This study is centered on the actor in the context of everyday life, as with domestication theory, it follows that the home is be the ground for the research.

Participants

The project looked at seven participants in urban centers in Alberta (See Appendix A: Requirements of Volunteer Subjects). Subjects were selected from a small pool of volunteers who are friends of friends of the author. As a back-up source of volunteer subjects, the author also used his network of food bloggers as recruitment resources. This non-probability sample is referred to as a "convenience sample" (Singleton & Straits, 2010, p. 173). It is useful for this study where the objective is to become more informed (but not statistically generalizable). This afforded a minor degree of separation from the author, which offers the benefits of observing and interviewing "strangers." Practically speaking, it also improved the chances of gaining access to the domestic kitchen site. This relative anonymity afforded candor in the responses of the participants—similar to the effect of a bartender or airplane flight where people tend to open up and share their life stories (McCracken, 1988, p. 27). This candor improves the quality of the data collected.

Participants in this study are not a generalizable sample and as McCracken (1988) suggests, they are not governed by sampling rules (p. 37)—they generalize to the theory, not to the population. However, they should still be relative strangers to the investigator and few in number—McCracken recommends no more than eight, which (with seven participants) this study respects. Also, the respondents should not have special knowledge of the topic (being in the food publishing business for example) (See Appendix A: Requirements of Volunteer Subjects). McCracken strikes an important point when he writes: "The selection of respondents is an opportunity to manufacture distance [figure and ground relationship]. This is done by deliberately creating contrast [age, gender, status, education, etc.] in the respondent pool" (p. 37). Appreciating this point (and the home kitchen context), I was sure to select participants from

diverse cultural, educational, and occupational backgrounds in addition to diverse meal preparation skill levels.

It is important to consider the investigator respondent relationship (McCracken, 1988, p. 25). Who does the respondent think the interviewer is? Who does the interviewer think the respondent is? Nunkoosing (2005) reminds us "power is always present in the transactions of the interview, as it is in all human interactions" (p. 699). We also have a responsibility as researchers to remember that the respondent is not just a passive provider of information (Nunkoosing, p. 701). McCracken (1988) suggests we strike a balance between formality and informality in speech, dress, and demeanor (p. 26). He also advises that we show professional, not personal curiosity. Importantly, he also asks us to be mindful of the time, privacy, and how intellectually and emotionally draining being a subject can be, suggesting that we must take precautions that the interviewee is not "victimized" (p. 27). Understanding this, I was careful to keep the interviews relaxed and comfortable, while respectfully reassuring the confidentiality of the participants.

Participant Observation

Participation, as Singleton and Straits (2010) note, "is a matter of degree" (p. 367). I was a participant to a lesser degree than an observer, taking a peripheral membership role in the observation of the subject in their home (Singleton & Straits, p. 380).

The setting for this part of the research is in the participant's home. Like Bakardjieva and Smith (2001), this study looked at "both sides of the screen" (p. 69). I asked participants to take me on an audio/video-recorded tour of the kitchen, pantry, and grocery store. This was followed (sometimes concurrently) by a tour of the screen of the participant's mobile device.

Semi-structured Interview

Singleton and Straits (2010) comment that, "Field interviews are a natural extension of participant observation" (p. 367). The interviews were conducted in the participant's homes and followed a general interview guide as suggested by Singleton and Straits and use nondirective questions as outlined by Lindlof and Taylor (2002) (p. 195) (see Appendix B: Interview Guide). The interview guide served as my launch pad for more probing questions, while providing contextual framework that was useful for my later analysis and comparison (McCracken, 1988; Patton, 1990).

An approach of listening and determining the next question based on the response of the informant was used. There was pressure on me that the opportunity to capture the information would not come again (see, McCracken, 1988, p. 38). That said, it is important to give the subject ample space to talk. McCracken (1988) reminds us that subjects must be "allowed to 'go' wherever they wish" and that "it is impossible to tell, in advance of careful analysis, whether (and how) what they are saying bears on the topic" (p. 40). The goal is to gather enough content for later analysis. McCracken advises, "It is frequently only this subsequent period of reflection [analysis] that will enable the investigator to see the connection and find the match" (p. 40). He also suggests that we must take full advantage of the contingency of the interview and "pursue any opportunity that may present itself" (p. 25). I let the participant's stories flow into the interview guide. Most of my research questions were answered this way. However, if questions were missed in the stories the participants shared, I returned to the interview guide for direction.

I gave careful attention to read verbal and nonverbal cues, while remembering to not seem too excited, but still interested (Singleton & Straits, 2010, p. 369). I also used what McCracken (1998) calls "planned and floating prompts" (p. 35). For example, a researcher might

use a raised eyebrow to indicate, “go on,” or repeat key words back to the respondent. This gives respondents something to “push off against” and recall a story or incident where the research topic was implicated (McCracken, p. 36). McCracken (1998) expands at length on the critical importance of manufacturing distance in the interview process:

> While investigators are free to experiment variously with their expectations, and see whether they can pry back their sense of familiarity and peer at the world behind, respondents are, understandably, somewhat less enthusiastic about this practice and quite slow to volunteer it on their own. For this group to stand back from categories and assumptions, gentle intervention is required. As we shall see below, one of the ways of creating distance is to establish certain prompting procedures that invite the respondent to articulate what he or she otherwise takes for granted. They can be well-designed questions. They can also be a series of stimuli (such as photographs) in which the respondent is asked to point out and account for similarities and differences among the stimuli. Good research helps respondents report their experience by manufacturing the distance they need to do so. (p. 24)

The tours of the pantry, fridge, kitchen, and devices helped to operationalize this advice and manufacture the distance necessary to keep the interview flowing and focused on the participant. Lindlof and Taylor (2002) also highlight the usefulness of combining participant observation and interviews: “Interviews can achieve efficiency in data collection. This is particularly true when an interview is compared with participant observation. … Interviews and field notes can complement each other very usefully, but only rarely can one substitute one for the other.” (p. 175)

Analysis

Gubrium and Holstein (1997) advocate that constructivist approaches "look at and listen to, the social activities through which everyday actors produce the recognizable features of those social worlds" (p. 7).

After the interviews, recordings were transcribed manually using a laptop and a foot pedal for audio controls. Patton (1990) reminds us that, "description must be carefully separated from interpretation" (p. 375). Description comes first. McCracken (1988) writes, "The objective of first-stage analysis is to see whether one can treat the utterance as an entryway" (p. 44). This starts with a "mannered reading of the transcript" putting off meaning construction for now. McCracken suggests taking metaphors literally at this stage. Using the "self as an instrument" supplying carefully monitored assumptions formed from the literature review, which triggers recognition, could follow this stage. Then, observations were related back to the transcripts. It is here I asked: "Were there inconsistencies revealed by body language or other behaviours?" and "Are there any relationships or similarities that reveal themselves?" (McCracken, 1988, p. 45). This should be followed by an examination of the observations found in the initial analysis (the transcript is of lesser importance here, as the emergent relational observations and the "text from which they sprang" are now the focus of analysis) (McCracken, 1988, p. 45). Here, decisions will have to be made about what are the general themes of the analytical findings? What are the residual themes? These themes echo Bakardjieva and Smith's (2001) "little behaviour genres." Observations now became findings.

As for technical process, McCracken (1988) suggests a simple word-processing technique—which worked just as well in 2012 as it did in 1988. McCracken advises the use of Microsoft Word to add observations in the form of comments directly following the utterance

that triggers the observation. He also suggests creating a new file, which includes only the observations and the utterances that triggered them in the later stages of analysis. This makes it easier to make observations on the observations (p. 47). These observations were compiled into tables categorized by theme as they emerged into a collection of related behaviours, similar to the “little behaviour genres” noted by Bakardjieva (See, Appendix D: Interview Coding).

Discussion

Symons (2000) comments that "routine can be presented as drab, but it is raw culture, the real thing, subtly changing, engaged and vibrant, its very mundanity draws us on. Its reiteration gives us momentum" (p. 32). That "reiteration" of the routine coupled with the fascination and sense of wonder of the *everyday* that is so important in phenomenologicaly flavoured studies like this one is what gives our exploration momentum. It is what encouraged the participants to share their everyday cooking stories with me.

In the domestic kitchen context, users have indeed *appropriated* their devices in terms of possession and ownership (Silverstone & Hirsch, 1992). However, as outlined earlier in the study, domestication becomes most visible through *incorporation*, which is expressed in the use of the technology and the behaviour genres detected.

Bakardjieva and Smith's (2001) research uncovered "little behaviour genres" invented by participants to link them back to their social-biographical situations to try to explain how the technology has empowered ordinary people to "transcend" certain limitations of their situations (p. 80). That transcendence illuminated through the little behaviour genres is the link to reskilling in this study. The little behaviour genres can be thought of as patterns of usage behaviour, which emerge as common behavioural themes among the study's participants. Bakardjieva (2005) notes that these genres are not random, but are afforded by the design—but not necessarily intended by the designer (suggesting domestication by the user). The important point to understand about behaviour genres is that they help us get beyond the obsession with how users tame technology and get us closer to articulating the meaningful insights behind the behaviour. This is what Bakardjieva (2005) referred to as "'because' motives" that make the technology "useful and significant to users" p. 118). For example, one of the little behaviour genres that Bakardjieva

found in her study of the Internet in the home was: "*Sense of belonging* to a dispersed community of interest, quite often— a community of suffering (such as rare diseases and adverse circumstances)" (p. 118). Bakardjieva illustrates this particular genre for us when she describes one of her participant's stories of how "online relationships and the self-understanding she acquired through them gave her the strength to start working on the reconstruction of her local friendships. Now she could reach out to people and tell them that despite the illness, 'I am the same friend you once had'" (p. 133).

With the little behaviour genres, it is important to understand that Bakardjieva is encouraging us to think about technology as being comparable to language. Bell (2007), suggests that we can look at the little behaviour genres in a similar fashion to language—as "a system with normative rules and codes," but also with "the openness to change, to new ways of talking, slang and wordplay" or "the different ways people talk in different situations, which we all carry around as a repertoire. How to speak your mother, or your friends, or shop assistant, or dog—each type of situation has it's own genre, and as we move to different social situations, so new ways of talking emerge" (p. 42). When we look at the use genres in the context of technology, we see some behaviour genres "stabilize" and become adopted "such as 'text speak' on SMS systems—whereas others fade to be replaced by new genres" (Bell, 2007, p. 42). And, as Bakadijva (2005) tells us, little behaviour genres can be used as a tool to "articulate technological change and social practice" (p. 31).

Keeping the search for this "articulation" of technological change and social practice in mind, the following five little behaviour genres emerged in my study:

- *finding* recipes and ingredients for meal planning purposes;
- *retrieval* of previously found and enjoyed recipes;

- *skill development* through the discovery and sharing of tips and tricks;
- *sharing* recipes with peers;
- *collecting* meal preparation and eating experiences (often photographically).

It is helpful at this point to reflect on *Figure 1: Types of Consumer Deskilling in the Domestic Kitchen* as we look at the participant interviews and how the mobile communication technologies appear in the incorporation stage of domestication theory—which is conveyed in the use of the technology and the behaviour genres expressed. It is also helpful to consider how the behaviour genres link to the question of deskilling (see, *Figure 2: The Road to Reskilling*) and how they might point to solutions for reskilling consumers—which helps to illustrate how the little behaviour genres help users discover the road to their reskilling (thus uncovering the "So What?" or "Because" mentioned earlier in this section).

Deskilled	**Reskilling Potential**	**Domestication Behaviour Genre Expressed**
Professionalized	De-professionalized /Peer-to-Peer	Sharing
Emancipatory	Tinkering/Tips	Retrieval, Skill Development
Palate	Discovery	Finding, Collecting, Skill Development
Standardized/Homogenized	Discovery	Finding, Collecting, Skill Development
Forced	-	-
Generational	Intergenerational Sharing	Sharing

Figure 2: The Road to Reskilling

Trust: The Dominant Emergent Theme

Interviewee's consistently spoke of what I call *recipe betrayal*. Poorly tested recipes that have a negative influence on the person doing the cooking. Embarrassment, waste and a feeling of not having the skills necessary to be a good cook were common sentiments. Comments like, "I get really mad if the recipe doesn't work. So I have tried and true cookbooks that never let me down." (1.131) or:

> I look online. They are hit and miss. They are not a reliable source. If you can't find a recipe in a source that you trust, go to the Internet. But then you are putting you life in someone else's hands. We've had some truly terrible things from online, even when we like try to sort of proactively modify something because we can tell there is a problem has often worked out against us. (4.106)

To manage that trust, attention was given to the reviews and comments offered on many websites:

> And there was one—it was fantastic—it amalgamated [she says while making stirring motions with her hand and forearm] all those comments and said here is what everyone kind of said and made the recipe based on those comments, this is what I changed." So I did that and then the cookies were good. (6.197)

This vetting takes more time, but the effort extracting the helpful social capital found in the comments appears to be worth it:

> I read a lot of the comments, because a lot of the times you'll find you actually need to add "this" and "this" and you are like oh, okay. You keep that in the back of your mind as you're doing it because then it helps...check the dough...and it's like "if it's a little too sticky"...that lady had said she "added a little bit of extra flour," so you know what, then I will add the extra flour. But I don't go off the bat trusting them, because then a couple of other people say, "It worked out perfect" and you're like "okay, well maybe it is going to be okay with the regular recipe." But for the most part, a lot of the comments, if it's a good recipe you won't even find people will alternate the recipe. It's pretty bang on and you are like "ok." And that's what I usually like to look for. Has a good rating and it's gotten really positive comments and not a lot of changes. Because I find when you start

> seeing like a million changes, you're thinking okay, something's just not right with the recipe. It sounded good for the one person that it worked for...but the other 50 it didn't work out. (5.224)

It is interesting how a recipe with many comments needs alteration and is treated with caution, and a recipe with few comments it's "pretty bang on" as noted above.

Recipe betrayal is not the only time trust is an issue. The impermanent nature of the Internet link to the recipe also came up as something that can erode trust in a recipe source:

> Um it depends what the source is. If it's a credible chef's web page, then I'm not that concerned. I have only recently got into a situation with blogs that I have realized the blogs have not continued forever. They disappeared. So sometimes I save them on my desktop. (3.331)

Reskilling and domestication begin with trust.

Finding: Palate Reeducation and Rejection of Standardization Through Discovery

Consider the following participant stories where the mobile communication device has contributed to the opening up of the users exploration of flavour and how it facilitates taste discoveries that reeducate the palate and also pushes back against standardization and homogenization of the foods we eat:

> Yes, absolutely. We've made things that I'd never thought that I would ever be making in my kitchen. I mean that is pretty cool. (2.306)

> I've made some amazing food and some really kind of exotic foods that I wouldn't have in a cookbook, because I have access to the phone, I guess it's kind of opened up the kinds of foods that I make...it just seems so casual. I can be in Superstore standing in the produce aisle flipping through [on mobile device] and making dinner for eight people

> later that day, which sounds kind of crazy because just a couple of years before, I would have put a lot of time into looking through my cookbooks. It's just made it casual but very very easy. It's funny, I was in the produce section and I saw this girl and she had her full heavy Jamie Oliver cookbook at the grocery store and I was looking and thinking, that's crazy that she is trying to do everything and balance her cookbook. Whereas I feel kind of it is a treat to walk around and have this [phone] and have access to that at your finger tips is I think a pretty remarkable thing. We've come a long way. (2.278)

In some ways, for this participant, the ingredient is the determining factor (perhaps nature herself is the deterministic one) as it often provides the trigger for the recipe search.

Participants mentioned that although they often thought of planning weekly menus, they failed to do so. Menu planning is replaced by a trusted retrieval system (often Google) and driven by what is fresh and available:

> The iPhone, I just find amazing that you can be at the grocery store and see one thing—maybe it's on sale—and plan your meal around that. That part to me is just the most convenient, and you know sometimes I get to the grocery store and just have no idea what I'm going to make and just ends up being kind of a progression after something I found on the phone. (2.159)

For others the mobile communication device provides access to foods that are hard to find or difficult to access. This used to mean finding a different recipe because of the added friction (effort) of tracking down exotic ingredients:

> I think it's really made things accessible. If I am looking for a particular ingredient and I'm not able to find it and I'm on the go, I can search it and I will know where to buy it.

> And I can complete all of the things that I need to buy for that dish. The shopping trips are decreased. (3.404)

In the 1990s I used to work for a cookbook store that had evolved in to a specialty food store because the cookbooks they sold needed special ingredients for the recipes (if the ingredients were too hard to find, customers would not buy the books out of frustration).

For some, the mobile communication device facilitates the building of their recipe capacity. This expanded capacity is key to pushing back against the standardization and homogenization of our taste:

> I think I would say yes, it has improved our repertoire. By adding new recipes in. For example, butter chicken; we would never have a butter chicken recipe if it weren't for the Internet. Not that we have found the perfect one yet, but... So definitely it has expanded our repertoire and definitely has been a good source of tips. (4.197)

This exploration to try new things and explore more complex flavors seems to be accelerated through the use of online video—noting the importance of *seeing* the *doing*:

> David and I both love ethnic foods and I don't know how to make them because I've never...I like to learn by trial and error and things like that, so. When you see somebody making it...you're like, "Oh, that's actually pretty simple, I think I could do that." (5.72)
>
> So we had fattoush at a friend's house. And then David was like I think we should try to make that. Ok, he's always inspiring me to make stuff. So we went out and bought all of the ingredients. But there all these little special spices that you don't know of that you need for fattoush. So I went on YouTube and ended up finding a lady who made the fattoush and she cut everything, like showed me exactly. And she was like "and then you need the sumac and the sumac you will get at any of your local Lebanese or whatever

> sores and I was like "oh okay" so finally went to go get that. And it tasted authentic. As if we had it at the party. It's nice you can pause it. Do your thing and go back to it again: "okay what was that that I needed?" Ok and you don't even need to write the recipe down. Cause they tell you what you need and you pretty much can remember as you go. (5.91)

This "as you go" method of retrieval requires the mobile communication device to be on/in hand in the kitchen—bringing us closer to instantly the downloaded skills in the scenario from the film *The Matrix* mentioned at the beginning of this paper.

Retrieval: Where Did I Put That Recipe?

Our relationships with the physical (paper) and the virtual are most expressed in this context of retrieval. Once a recipe is trusted, how does one repeat and perfect the process? What systems are trusted for retrieving the recipes of past meals? Searchability seems to be a key factor in building a trusted retrieval system, be it Gmail, a folder on the desktop, or a Google search:

> I don't spend time organizing stuff, which is why computers are so great for me because I don't organize my files on the computer, I know it's there and there is a little find button. And to me it's a waste of my time for me to put things in folders, because the computer can find it. Single bucket. The paper is a single bucket too. (1.190)

All of the participants mentioned their common starting place for search and retrieval was Google. Interestingly, there was little concern for losing a specific recipe as there is a trust that similar recipes will available upon a fresh Google search:

> For instance, if I Google something, I'll use it that one time and then I won't save it—even if I liked it—I won't save it and I won't remember where it is and if I think about it later on I'll just remember to Google it again, and I try to find it through the Google

> search. Sort of strange that way. I find that recipes are kind of not sticking with us as much. And I think also because there is so much available to us and so many recipes there, that I'm...there are very few recipes that I am worried about loosing. Which is kind of strange, but I'm also very confident that I'll be able to find a similar recipe the next time or and even better recipe. So I'm not necessarily saving all of them. (2.172)

Skill Development Through Tips and Tricks: Bite Sized Confidence Builders

The emancipatory deskilling outlined earlier seems to trigger a craving that progresses into a thirst for tips and tricks to improve one's skills. Crawford provokes us with the comment, "We are getting more stupid with every passing year—which is to say, the degradation of work is ultimately a cognitive matter, rooted in the separation of thinking from doing" (p. 38). To combat this, our search for tips and tricks may be a reflex reaction pushing back against how "the corporations 'cook' in the sense that they organize what is on our plate" (Symons, 2000, p. 37).

The mobile device—afforded through it's rich access to the Internet—is inclined to help, rather than force. But cooking is more than tools and tricks. Symons (2000) sagely reminds us that cooking is not just about tools—wisdom is also required. So, where does this wisdom come from? Indeed, cooking could be argued as a form of cultural communication in itself (as noted in the introduction of this study). Symons suggests it is a symbiotic relationship, as culture creates cooks and, "cooks maintain culture as much as it maintains them. In their everyday labour, cooks sustain not just physically, but also culturally" (p. 105). In fact, meal preparation processes culture as much as it does food. In this appropriation of culture, can we also see the appropriation of technology?

Perhaps the answer lies in the craft of cookery. Crawford (2009) suggests that the "tangible elements of craft were appealing as an antidote to vague feelings of unreality,

diminished autonomy, and a fragmented sense of self " (p. 28). I think this is where the do-it-yourselfer or tinkerer thrives—a desire triggered by the aforementioned fragmented sense of self:

> The whole tinkering thing with the recipe is not so much that I'm experimental, it's what's in the fridge. So one day, I only had… I cook based on what's available whether it's in my fridge or in the store because I'm not one of these people that will drive all over the city for an ingredient. I'll instantly substitute. (1.200)

Much of this lies in the dance between explicit and tacit knowledge (and where the classic cookbook and YouTube arm wrestle for our attention). Nonaka's (1994) postulation that "knowledge is created through a continuous dialogue between tacit and explicit knowledge" (p. 18) resonates through this discussion—reflecting Polanyi's (1966) statement: "We can know more than we can tell" (p. 4). Indeed the reflections by interviewees about the difficulty describing textures and "doneness" bring this conflict to life. This learning through doing is the essential lubricant that moves the user and the technology through the stages of domestication.

On the stream of video and tacit knowledge transfer, Marwick (2001) suggests the tools that are best at processing tacit knowledge are the ones that imitate face-to-face contact as closely as possible.

Sharing: De-Professionalizing Through Peers-to-Peer Sharing

Some sharing seems to be facilitated by the fact that much of the friction of the effort of hand writing a recipe is removed by the electronic device:

> Oh yes. I share them always sharing the link through email. I have a few apps on my phone, usually when we have dinner parties I'm making something from one of the apps and so I'll just share it with my friends. (2.124)

> I can't remember the last time I wrote out a recipe. Actually a couple of my neighbours are...we talk about food all the time, we exchange cookbooks. But I can't think of the last time I used a recipe card or wrote out a recipe. (2.126)

Not surprisingly, interviewees told me they consumed more recipes than they shared:

> I've written in my cookbooks. I often write in them changes that I would make. I guess I'm a little bit selfish that way. I often read comments online, but I don't necessarily contribute. (2.345)

From an intergenerational and intragenerational sharing perspective, it is worth noting is how blogging surfaced as a way of documenting the journey of acquiring cookery skills:

> Well I blog about them. Um and there's two reasons to blog: A) it helps me make a searchable accessible inventory of my own recipes, and b) I'm able to share it with other people and sometimes other people comment on it and tell me what they think about it. (3.234)

> My sister and I had a blog for a while where we would each post recipes that we liked and so then the other could try the recipes that the other had recommended. On Facebook, friends send me recipes all the time. Like I just tried this, you should totally try it yourself. (4.120)

The mobile communication device can also be a launch pad for the transfer of intergenerational meal preparation knowledge that can lead users toward reskilling:

> It's interesting, because Philip has started...when she [mother] visits he's kind of like an apprentice. In the past year he has started making recipes that I ate growing up and I don't know how to make, but he will call my Mom and clarify what she taught him. (2.117)

The ability to communicate visually through video (Skype or Facetime, for example) delivers more depth to the learning thanks to the extra bandwidth:

> Video helps communicate, I know sometimes even when Philip is talking to my Mom it's very difficult for her to explain to him consistency. “Is it the right consistency?” is very difficult to describe. (2.268)

To counter the blind trust consumers formerly placed in so called food and diet experts, participants looked at comments on recipes from their food preparation peers on sites like AllRecipes.com and Epicurious.com. Here, trust and the tinkering of online participants plays a major role in preventing so called “recipe betrayal” or failed recipes (which erode confidence in one’s meal preparation skills):

> Yes, I like AllRecipes.com just ‘cause it’s easy and people rate them. I think there was once, I made oatmeal chocolate chip cookies. Somebody at work made oatmeal chocolate chip cookies, I thought they were good, so I was like I’m gonna go online and uh…see this is what takes so long. Looking for the oatmeal chocolate chip cookie recipes and then I read like three pages of reviews and on Allrecipes, people start changing the recipes. They will say like only use maybe half a teaspoon of cornstarch and add this and this. And there was one—it was fantastic—it amalgamated [she says while making stirring motions with her hand and forearm] all those comments and said here is what everyone kind of said and made the recipe based on those comments, this is what I changed.” So I did that and then the cookies were good. But yeah it takes what two hours of searching an oatmeal chocolate chip recipe. (6.197)

This comment also connects to Jaffe and Gertler’s (2006) observation that standardization has taken it’s toll on cooking skills—the goal being “an entirely predictable

outcome as long as the consumer follows the directions on the package, which are precise in terms of timing, ingredients to added, and processes to be used in taking products from package to table." (p. 144). It is important to note that although it is now easier to access recipes today, recipes have not necessarily made meal preparation any easier.

I appreciated the candor of the participants of the study. With a subject as intimate as food, one has to worry if participants will be honest in their responses to questions. At first I worried if they would tell me honestly about their meal preparation struggles and failures. With the promise of anonymity, thankfully they did not hold back. Food choices are so intimately connected to our identity, Indeed, Symons suggests that recipes are a "partial reflection of people's images of themselves" (p. 121). Recipes are social and embody a great deal of cultural information. Is searching for a recipe online a form of soul searching (or soul surfing)? Twidale, Nichols, and Paice (1997) suggest that "browsing" is more indicative of what people actually do as they search and the importance of the "social aspects of information seeking" (p. 762). Browsing affords serendipity and colleagues provide pointers for where to look. Interestingly, Twidale et al. comment, "Other people should be seen as an integral part of the whole browsing activity" (p. 762) and cite Zhao and Kantor's (1993), comment, "… very little attention has been paid to the human channel of information exchange in both research and practice of information retrieval" (p. 763). The self and the other may indeed be part of the answer in returning agency of our meal preparation skill from the corporation to the individual.

It is worth reflecting at this point on why we should care about meal preparation skills? Burke, (2002) revives our call to action:

> It is essential that children are taught relevant food skills if they are to have the choice of eating a healthy diet. This should be viewed as a life skill available to everyone. If the

> consumer has the ability to take control of their intakes of fat, sugar and salt, they will be able to meet healthy eating advice and improve their understanding of food ingredients. However, for those individuals who cannot cook and are more reliant on pre-prepared foods, their health will be largely dependent on the manufacturers. (p. 160)

This dependence on someone or something else is the reverse of the culinary tinkering spirit I witnessed. However, there is more to changing broad meal preparation practices than skills. In a recent article, Wente (2012) suggests an even deeper problem with far reaching health implications and cautions us that:

> The problem is that people *like* fast food. They like its salty, fatty taste, washed down by quarts of sugar. Fast food is engineered to be addictive. Nor is it true that healthy food is more expensive. You can walk into any grocery store and buy enough rice and beans and vegetables and meat to feed your family for a few bucks a week. The catch is that healthy food isn't fast. Generally you have to cook it, and people have forgotten how. It is not true that people don't have time to cook and shop. Most people have hours and hours of time to watch TV and surf the Internet. And that is what they'd rather do" (para 10).

Further research would do well to look at how mobile devices combined with our desire to collect experiences, tips and tricks around cooking could allow us to build culinary confidence in bite sized (manageable) chunks.

Collecting: The Emergence of Food Photo Snaps

It is hard to find a mobile phone without a camera in it. This is perhaps one of the most interesting aspects of the domestication of mobile devices. Incorporating the device as a capture and retrieval tool to help us plan, shop, and cook:

> Occasionally I'll photograph an ingredient that I think he may have a hard time finding. Or like one time he couldn't find cream of tarter. And so he photographed the list I had given him and he couldn't read it for one thing and he was like, “Are you sure what is this cream of tartar? I think you miss spelled this or something.” So he sent that photo to me and I was like, “No, that says cream of tartar. That’s what I want.” (4.23) Or the occasional photo of a product where I'm like, “Is it this one? Is this what you were hoping for?” (4.30)

For some the need to photograph is visceral (interesting considering the digestive nature of meals):

> I take photos of food actually all of the time. Whether they are meals that we have made or when we are at a restaurant. I actually regret when I don't take pictures (2.235)
>
> *Interviewer:* Have you ever taken a picture of a recipe for your cookbook to take with you to the store?
>
> No, but Philip has. He actually started doing that...we went to a friend’s… wasn’t that long ago and she showed us the recipe it was from a magazine and I was ready to copy it out and Philip took the photo, so he has it on his phone. (2.293)

Sometimes the photograph is a simple, yet effective, capture tool for a shopping list (again removing the friction of handwriting or even typing):

> I just tell my husband, "Open this page, this is the recipe, take a picture and send me a text." I am not kidding. I don't always have time to copy and paste. I have literally been sitting in front of the computer and taken a picture of the computer screen. To much work to print. (3.325)

Media ecologists would likely agree with Silverstone and Hirsch's assertion that "communication and information technologies are not just objects: they are media" and it is their status as media which distinguishes them from other domestic objects like "hair dryers or hammers" (p. 15). This is a relative (not an absolute) distinction, as one could also argue that a hammer is indeed a technology. That said, the functional significance of the photographic capabilities of our mobile devices can not be ignored. With growing bandwidth capabilities and more frictionless uploading and sharing of photographs in social media spaces, food, photography, and sharing will continue to grow together. But why capture food photos? The following suggests there may be a link to the creation of identity:

> I never thought that I'd get into food photography, but a lot of my questions and inquiries and suggestions come from this. They start from food photography because I'm trying to recreate something. (3.356)

I would suggest that "(re)creation" is deeply tied to our own identity creation and projection of our self.

Video: Tugging at The Virtual Apron Strings

According to "The Measuring Cup" (2012), 74% of home cooks watch how-to cooking videos online and 43% of home cooks "believe that in 15 years, more people will learn to cook from videos than from their parents" (p. 2). Compare with text, video is where the strongest knowledge transfer lies. The ability to rewind (without the judgment that comes from asking someone to repeat what they just said or did). The ability to see what each stage of the cooking process is supposed to look like (texture and consistency, for example). And the ability to retrieve and review as needed are the cornerstones of its skill building power. Ironically, it brings cookbooks to life as the following anecdotes illustrate:

> I was trying to do something in a Julia Child book and it...I think it was *brunoise*, a knife skill. The funny thing about her books, I don't know if we have lost that level of technique, or it's just something that at a completely different level. (2.249)
>
> It's funny how you can buy the ingredients and you get home and you think you're all set and then you read the techniques, and it's like I need to look that up. So I find if I'm using some book like that...actually, it's funny, the Julia Child recipe, I think I was trying to do bœuf bourguignon and there is actually… you can find cooking demos of people making her exact recipe on YouTube, and so I looked up the actual technique, but then I actually looked up her bœuf bourguignon and there is like a maybe a culinary school, but their making her exact recipe, which I thought was kind of interesting. Like some of her classic dishes they have people actually doing them on YouTube, which I don't know, I guess her cooking show obviously exists somewhere, but people often feel the need to share how to make them by way of YouTube. Video is a good way to learn that, A few of the recipes that I've actually seen on TV...I sometimes wonder if I could have made them as well as I did if I hadn't seen it in the first place. (2.253)

Similar to the tinkering behaviour, searching for tips and tricks videos is a common behaviour that links searching with skill building. Here a participant shares her experience about quickly learning how to properly dice an onion on YouTube:

> A lot of little tricks I would you know learn from them [YouTube videos] ... You know like smashing the garlic. Cutting and onion, you know making it diced [motions horizontal and vertical cuts with her hands]. Cutting it in little, you know, slices. (5.206)

And another participant articulates why showing how something is done versus telling is so critical in learning cooking skills:

> Oh yeah, definitely [I use video], because the thing is, especially North American cuisine. (And I call it North American cuisine because like roasting chicken and stuff I didn't)...I learnt it all by watching videos. Or by Jamie Oliver. Because his books are very clear on what to look for as an indication. Right. Um how to measure doneness, what to look out for, what to watch for. Those kind of things are very very important, I think. (3.369)
>
> I learned basic stuff that we don't cook at home, panna cotta, bread pudding, um how to pan fry chicken—that was my biggest challenge! You don't understand...pan frying chicken was my biggest challenge, I just could not figure out what the optimum temperature of the pan should be. And these guys they made it very clear, they said, "your pan needs to be smoking, you can see it" I'll show you a video, it's really well done. They said, "Drop a drop of water in the pan, and if the water splits, into smaller droplets of water, you know that is optimum. But if that drop of water circles around the pan really quickly, and it remains singe, that means it's too hot. It's so precise. (3.389)

It is interesting how much detail is in the above description, watching the video gave the participant the confidence to describe the concept as if they were teaching me the same concept. This suggests some larger reskilling potential. And some participants described much faster transfers of knowledge as one describes his experience learning how to deconstruct garlic: “I think I learned how to peel a bulb of garlic in ten seconds” (4.195).

The above stories illustrate some of the ways that people using information communication technologies in the domestic kitchen, how they are using mobile devices in the domestic kitchen and how these devices have been incorporated by users.

There's an App for That: Or is There?

My expectation as I started this project was that food related mobile applications (apps) would dominate the discussion and that I would find frequent mobile food app users and evangelists. I could not have been more wrong. App use was limited and most interviewees were disappointed with their food specific app user experience. In fact, most have moved back to a simple Google search as their preferred starting place:

> I don't use them because I just found Google to be so much faster. (5.204)
>
> The app that I actually use the most is the Food Network (The Canadian Food Network). The reason I like that is that I have found a couple of chefs that I just sort of trust more, so I can search by host. So I'll search by host and kind of get inspiration for particularly if I am making something for a dinner party—that's where I will kind of start. (2.192)

App use seems to start in a similar fashion to cookbooks that catch our attention in the bookstore and then languish on a shelf after a few uses. Perhaps they lack the vastness of Google?

> I do have a couple of apps that I might have paid for, like the Mario Batali and the Mark Bittmen one (I do like). The is another on Tyler Florence. I was really excited (and I have the Jamie Oliver) I was really excited to get all of those and I appreciate them and think that they are really well done, but for some reason they are not the ones that I go to very often. Like the Mario Batali app is beautiful, but I have never used it for a recipe. It's by region in Italy that he arranges it and I really like reading them and I always say I should make something, but I really haven't. I've used some of his cookbooks, but I haven't used his app. The Epicurious app—I really like I just think it's a really beautiful app and I love seeing the great photos of everything. (2.204)

> Epicurious. Epicurious is the only app that I have downloaded, I think for food. And it is also very hit and miss. And I find that lots of times you put something into it like if I typed in pesto, I wouldn't get any pesto recipes, I would get like variations, like sun-dried tomato pesto like no, I want actual pesto thanks. So then I have to go on the Internet or look in my cookbooks. (4.136)

Visual search—not unlike browsing a bookstore for cookbooks and meal inspiration is an emergent and growing trend. Sites like Facebook and Pinterest are built on sharing images that we quickly scan until one of them catches our attention:

> Similar to the Pinterest was how I found a food photograph picture that I really wanted to use as an inspiration I would save them on my desktop. Now I just put them on my board—I have a board for that. And you know people love it actually. Just yesterday I had 10 people follow that board just because you know I guess it just they also find a sense of inspiration, right. So that Pinterest is amazing for that. (3.262)

Have Mobile Communication Devices Reskilled Users In The Domestic Kitchen?

Referring to *Figure 3: Evidence of Reskilling in the Domestic Kitchen*, one can see that from a domestication point of view, the mobile communication devices have been incorporated into the meal preparation process through the behaviour genres of finding, retrieval and recall, building skills through tips, sharing and collecting. There was also evidence that mobile communication devices have the potential to move consumers toward reskilling through de-professionalization through peer-to-peer sharing, accessing ways to tinker with recipes and watching video cooking tips, through the discovery of lost flavours and culture, and through the facilitation of intergenerational social sharing.

Deskilled	Reskilling Potential	Domestication Behaviour Genre Expressed	Reskilling Evidence
Professionalized	De-professionalized/ Peer-to-Peer	Sharing	De-professionalization and confidence building through peer-to-peer sharing
Emancipatory	Tinkering/Tips	Retrieval, Skill Development	Accessing ways to tinker with recipes (recipe website comments, for example) and watching short video cooking tips on YouTube
Palate	Discovery	Finding, Collecting, Skill Development	Through the discovery of lost flavours and culinary culture
Standardized/Homogenized	Discovery	Finding, Collecting, Skill Development	Through the discovery of lost flavours and culinary culture
Forced	-	-	-
Generational	Intergenerational Sharing	Sharing	Through the facilitation of intergenerational social sharing of recipes and tips

Figure 3: Evidence of Reskilling in the Domestic Kitchen

Countering this argument, however, was the surprise finding outlined in the following participant's story about how the overly abundant access to recipes afforded by the Internet triggers anxiety and resistance to reskilling:

> No this is in my reading the recipe ten times before. So my husband will be like just do it like this. And I'm like "no it's not what it says" and so it think its made it a lot harder. It would have been easier if I just had cookbooks and I don't have a computer and just say, "this is the only chocolate chip oatmeal cookie recipe I have."
>
> *Interviewer:* So Google adds too many cooks to the kitchen?
>
> Yes, it does. I feel like I have to find the best one. Because I don't love cooking, I want to get the biggest bang for my one attempt at it. And if it doesn't work out, I don't tend to do it again. I don't try different recipes—I just don't make it again. I look for what people have said about what people have said in the comments.

Interviewer: So you are looking for the perfect answer?

Yes. It makes things too hard. I think it would help if I were a better cook. Then I could adapt things to taste. But I'm not. (6.229)

Is it possible that those with less cooking skills to begin with are negatively affected by too much choice? Or too many experts? Those with stronger cooking skills to begin with (or interest sparked by watching the FoodNetwork) seem to have a positive boost in skills afforded through their mobile devices:

The thing that I think has helped is that I'm not searching so long to find what I need. Whereas before I probably would have had to call somebody: "do you remember how to make that, what do you put in that, how do you do it?" Whereas now I just go on the Internet and find how to do it. And a lot of times that helps. Even temperature. So we were at my brother's the other night and he was making meatloaf and he was like, "do you think it's ready?" and I was I don't know. "How long as it been in there, what does the internal temperature have to be on meatloaf. And was like "I don't know" So I went onto my phone and typed "internal temperature of meatloaf" click. 170. Okay, so it has to be 170. So I got the thermometer and tested it was ready. To me, this thing [iPhone] is my lifeline. Anything you need to know is at your fingertips. You are in the middle of a recipe...and you are: "How are you supposed to do cardamom." That's another one. I had whole cardamom, and then I didn't know if I was supposed to smash it and cook it, or cook it and smash it to get the flavours to release. So I looked that up too. I remember that was another recipe. Another East Indian recipe that I had to do. So little things like that. They are just how'd you do that. It gives you independence and then you know for next time. You've learned through it as well. (5.281)

Here the device was a confidence builder. Perhaps the difference is that recipes have the potential for betrayal, but tips and tricks that build skills are easier to trust (and often delivered in video format). With this building of confidence users are more willing and able to go beyond the recipe—to tinker with it—and further grow their skills.

Have Mobile Communication Devices Influenced Healthier Eating?

I did not find many direct examples that conclusively linked mobile communication devices to healthier eating beyond the improvement of skills. However, the following comment sheds some light on how this question may be answered in the future as it illustrates the potential development of consumer self-awareness:

> Definitely. Um, you know technology has changed because now if while I'm eating if somebody makes a remark like, "This is good for you." I can check it right away. Right. You know, I've actually used my phone to keep a food journal. The only way (I've tried to keep food journals for years) because I have always wanted to become ridiculously skinny. The only way it was going to work was because of my iPhone. It's easy to record stuff. you can see the patters of what time of the day is when you are craving kicks in and what to avoid and maybe you are sitting in front of the TV or in the car and you've not had lunch and you've skipped lunch. All those things, so yeah, it really does change the way I eat now because A) I can check it right away and B) I can self-check. (3.458)

The less direct link to health in this case is through reskilling. As Cutler, Glaeser, and Shapiro (2003) and Jaffe and Gertler (2006) suggest, the capacity to cook from scratch is society's vehicle out of the obesity epidemic.

Phenomenology and the Devices

After discussion focused on the user and their mobile communication technologies, I would be remiss if I did not pause to reflect for a few moments on the thing itself—especially in light of how domestication theory runs counter to technological determinism.

An iPhone, for example, is a haptic device. That touchability embodies the mediation of the device with the user. Verbeek (2005) reminds us, "If products are to be designed to encourage human attachment, it is necessary to design them so that humans deal with the products themselves and not only with what they do or signify" (p. 232). The mediation forms the relationship we have with our devices “for this reason, the mediating roles of artifacts are not properties of the artifacts themselves, the rise in the relations which people have with artifacts.” (Verbeek, 2005, p. 217). Bijker (1995) calls it “interpretive flexibility” (p. 20). Idhe (2010) echoes this thinking, writing:

> Any technology in relation to human praxis, before it can become transparent and thus fully accommodating, must be “embodied” if it is to be “known” at all. In short something like presence–out–hand, although in phenomenologicaly different ways, lies at both beginnings and breakages. (p. 125)

This interpretation punches a hole in the suggested (and often negatively connoted) determinism our devices have over our behaviour and lives. Verbeek (2005) reminds us that context matters when he notes, “The supposed determinism of technology appears to be weaker than is presented in the classical picture; while technologies do indeed strongly shape the form and the context in which they function, this happens in a more differentiated and local manner than in the traditional view.” (p. 5) It appears that our devices are adding to our skills. Verbeek (2005), in his discussion on the work of Karl Jaspers notes of Jaspers:

> In his view, mass production curtails the attachment between humans and the world around them in two ways: human beings no longer have a hand in producing the artifacts themselves, and the artifacts they produce are standardized and merely functional (p. 23)

Yet our interviewees showed that they were indeed experimenting more as they move away from the homogenous and use exploratory behaviours learning tips and techniques that expand their cooking repertoire. The technology seems to afford the more authentic versus the alien—and Jaspers thought that technology alienated the authentic—much as Braverman believed that it would deskill us. Our smartphones are being used to shape our experience as a tools by the user, and not the other way around. If anything the fresh ingredient is determining the course of action with the tool merely facilitating the capture and retrieval of cultural knowledge and identity. Verbeek (2005) paraphrases Kierkegaard's assertion that, “Their [human beings] existence is not something simply given, but something that they have to shape themselves” (p. 31). In fact, this expression of our identity has afforded us with the space to be ourselves. Through domestication we have asserted our sovereignty over our technology.

That said, it is also easy to agree with “Technologies coshape the human world and thus also human relations with technology itself. Human beings are not sovereign with respect to technology but are rather, inextricably interwoven with it.” (Verbeek, 2005, p. 44)

The point of the above is that they do not determine, rather they promote a way of doing. Verbeek defince a device as an “entity that makes available a commodity on the basis of machinery that remains concealed as much as possible” (p. 177). “When technologies mediate the intentional relation between human beings and the world, this always means from a phenomenological perspective that they co-determine how subjectivity and objectivity are constructed” (Verbeek, 2005, p. 116). Ihde (1993) refers to technology in humans as being"

active relational pairs" (p. 34). They are what they are only in their use. Multi-stability. Technology is different interpretations under different contexts or identities. You can see this relation in experience. The tool is the means versus the object of the experience. For example, the fridge is in the background–unless stops. Things are not neutral in that they mediate our relationship with the world. Kornelson (2010) advises that self-identity and place identity are woven through webs of consumption "and food hat came from 'Mom's kitchen' began to come from 'nowhere'" (p.13). I would argue that our mobile devices have a natural inclination to bring back that self-identity and place-identity as we reconnect with food by appropriating our devices as tools to do so. The fact that mobile device are in the hand is worth reflecting on—especially in the context of the creation of self-identity. Place identity becomes entwined in acoustic space, not "noplace" as Kornelson notes, but "all places." The foods and cultural expertise to create than are fully accessible (take the earlier fattoush story as an example). Self-identity is bricolaged in those layers of culture and tastes that we may not have grown up with.

Context Matters

The essence of technology must be thought of as a verb "it is not what technology is, but how it is present" (Verbeek, 2005, p. 57). Idhe (1990) offers that, "There is no-thing-in-itself. There are only things in contexts, and contexts are multiple" (p. 69). Technologies provide a framework for action as they tend to "incline toward some possibilities" based on what is it what they enhances or makes more difficult (Ihde, p. 142). Mobile devices are arguably multi-stable, that is they exist in different contexts of use. Or what Ihde (2010) describes as: "… Structured ambiguities that allow what first appears as a "same" technology to be differently situated and have different trajectories" (p. 126).

Constraints and Limitations

This study did not set out to see who was in control, the purpose was to seek how we are using technology—or how we and technology nudge each other to grow (Kelly, 2010). Ihde (1993) reminds us "we cannot 'control' it [technology]–since the question is wrongly framed–there are directions that can be taken in crucial interstices that can do some significant nudging" (p. 163).

As outlined in the methodology section, participants in this study are not a generalizable sample, but do give insight into the larger theoretical perspectives of domestication theory and deskilling as they relate to the research questions in the context of the domestic kitchen.

Also of note is the fact that of the six types of consumer deskilling in meal preparation (see Figure 1) the "forced" category was not within the scope of the study.

Future Research

I tend to agree with Bakardjieva's (2005) notion that domestication research should be "for users" (p. 77). Following that thinking, reskilling the user in the domestic kitchen is linked to interest in cooking, and, as Lyon, Colquhoun, and Alexander (2003) suggest, that the loss of interest would be a tragic blow to reskilling consumer meal preparation skills. Further research *for the user*, would do well to look at how mobile devices combined with our desire to collect experiences, tips and tricks around cooking could allow us to build culinary confidence (and interest) in bite sized, or manageable chunks of learning and how that skill development affects our health.

Research expanding on Jaffe and Gertler's (2006) suggestion that eating is a political act, which requires the development of a deeper literacy about food would be useful in the context of domestication theory, specifically how mobile devices might be incorporated to assist in the

development of the aforementioned food literacy development. There may also be a link to Media Ecology in this line of research from a media self-defense angle (perhaps using Edgar Allan Poe's "Maelstrom" as a metaphor for exploring the possible resulting benefit of media/food self-defense).

Perhaps looking at game theory and cooking skills would also offer some useful insights into how to encourage more play and experimentation in the domestic kitchen in creative ways to build confidence and bring healthier meals to the table.

Conclusion

As technologies change, Ihde (2003) insists that our philosophies of technologies must also change. Our ability to see and to interpret also changes. For example, sunflowers follow the sun, but until the advent of stop motion photography we were generally not away of the phenomenon. Poignantly, Ihde sums up the one "solid" thing I take away from this research: "Humans and technologies are, I argue, interrelational and mutually co-constructive" (p. 135). It's not so much a deterministic vs. neutrality argument, it's not that simple. But what does this mean in the context of domestication theory in home meal preparation, reskilling and the research questions asked?

1) How are people using mobile communication devices in the domestic kitchen?

2) How have these devices been domesticated by users?

3) In what ways have these devices been used to (re)skill users in the domestic kitchen?

Thanks to Bakardjieva's (2005) confirmation that domestication research provides insights into the nature of the social world in which domestic practices are embedded and to which they give substance, we illuminated the incorporation stage of domestication theory though the discover of little behaviour genres or themes. Five behaviour genres emerged from the coding of the participant interviews: finding, retrieval, skill development, sharing, and collecting—each with possible applications to help reskill consumers in meal preparation.

Finding through search engines (like Google), recipe sites (like AllRecipes, Epicurious and Pinterest) encouraged an exploration and discovery of new recipes and flavours that help to reeducate the palate and help users move beyond the convenient confines of standardized and homogenized processed food products.

Retrieval served to reinforce newly developed skills by affording the confidence that a recipe (or similar variation) could easily be retrieved at a future date to recreate the successfully prepared meal again. Trust played a key role in selecting resources and preventing "recipe betrayal."

Skill development was apparently strongest in the confidence building aspects found in the tips and tricks department (versus learning to cook from scratch). Quickly accessing the needed knowledge to chiffonade some basil, chop and onion, peel garlic, or understand the clues a drop of water holds in determining if a frying pan is at the right temperature to correctly sauté a piece of chicken. Video was particularly useful in quickly transmitting the required knowledge—is it more closely approximates tacit versus explicit knowledge transfer. This "as you go" method of retrieval requires the mobile communication device to be on/in hand in the kitchen—bringing us closer to instantly downloaded skills in the scenario from the film *The Matrix* mentioned at the beginning of this paper.

Sharing was facilitated by the speed afforded by the mobile communications devices to share recipes between peers. Video also played an important role here by adding more depth to the sharing. For example, visually verifying the correct texture of a dish with a knowledgeable relative through shared images in real time, or peer-to-peer sharing through the comments on recipe websites that modify existing recipes.

Collecting is related to sharing. Collecting includes photographing meals in restaurants as well as in the domestic kitchen. Some users post images of meals they proudly prepared before they go in the oven and after they come out of the oven on Facebook and Pinterest. Others collect their experiences visually to reflect and reminisce past meals. These photos are key to

triggering the inspiration to discover new flavours and experiences and are often the catalyst (or capacitor) for reskilling in the domestic kitchen.

Facilitating interest in cooking for one's self seems to be a possible viable solution to food related health issues (keeping in mind that with the small number of participants in this study it is not possible to apply this statement to the general population, nor were health issues within the scope of this research—my point is to reflect on the possibility). Reflecting on Jafee and Gertner's (2006) comment that, "Skilled consumers will be vital to the positive transformation of food systems" (p. 158), ultimately, the project was successful as it found evidence of mobile communication technologies supporting reskilling through the influence they have in meal preparation. This is particularly well illuminated in how the behaviour genres link to the reskilling outlined in Figure 3—especially in light of how the behaviours seem to collectively build confidence in the meal preparation skills of the mobile communication technology users through de-professionalization, peer-to-peer sharing, tinkering tips, and tricks, intergenerational sharing and ultimately: a craving for discovery.

It would be useful to do an expanded study of this nature with a larger sample across a broader geographical area to see if the behaviour genres are consistent over a broader population and if they are static or dynamic. Also, from a policy perspective, are there ways to encourage reskilling in the general population through the use of mobile communication devices with the goal of improved public health.

Reflecting on my experience preparing, collecting, and distilling the findings of this study, I am most struck by how prescient the comments of Douglas (1972), Lévi-Strauss (1966) and Mead (1943) are with regard to the deep and universal similarities between language and cooking. It is also interesting how this language/food connection is echoed in the linguistic roots

of Bakardjieva's "little behaviour genres" tool that helped me articulate the view of the user, technological change, and social practice. The study was a fascinating, lengthy, and sometimes difficult journey for me—and although it satiated my curiosity—I know I will soon be hungry for more discoveries in the everyday domestic spaces where humans and communication technologies interact.

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Appendix A: Requirements of Volunteer Subjects

1. Must own, use, and have and active service account for a smart phone (mobile device).
2. Use the devices in meal preparation (planning, shopping or cooking) at least three times per week.
3. Live in the greater Calgary or Edmonton regional districts (urban).
4. Must be over 18 years of age.

Appendix B: Interview Guide

The Medium is the Menu
Interview Guide

Date
Start time
End time
Location
Participant Name
Gender
Sex
Age
Marital status
Number of children living at home

	Research Questions	Interview Questions
	Physical kitchen tour	Can you take me on a tour of your refrigerator? What kinds of things do you enjoy cooking? What frustrates you about cooking? What convenience foods do you use? Can you take me on a tour of your kitchen? What is your favourite or most useful kitchen tool?
	General eating and cookery skills	Can you describe a recent family meal? When was it? Where was it? Who was there? What was the experience like? Why? Do you have any rituals around mealtimes? How would you rate your cooking skills compared to your friends and family? Describe some of your favourite family recipes? Who gave them to you? Where does your family shop for food? Do you share recipes? How? Do you share cooking experiences with friends? How?
RQ1	How are people using information and communication technologies in the domestic kitchen?	Do you us a computer to get ideas for meals or recipes? How? Have you used a laptop in the kitchen? How? How do you search and select recipes online? How do you use those recipe in your kitchen?
RQ2	How are people using mobile devices in the domestic kitchen?	How do you use your mobile device to plan meals? How do you use you mobile device to shop for food? In the store? Tell me about the last time you used your smart phone to help you make dinner? Where did it happen? What was the experience like for you? Why is that? (probe)
RQ3	How have these devices been appropriated by users?	Can you take me on a tour of a few of your food related applications on your smart phone? How does the experience make you feel?
RQ4	How have mobile devices contributed to reskilling domestic cookery?	Do you watch videos on your smart phone to learn new cooking techniques? Which sites or applications do you use? Describe how you learned something new about cooking on your smart phone.
RQ5	How has this use influenced healthier eating?	Has your smart phone changed the way you think about food? Has your smart phone changed the way you eat? Are your children interested in cooking?