Chapter 12. Transitioning Towards Sustainable Food and Farming: Interactions Between Learning and Practice in Community Spaces

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Introduction

Food is increasingly becoming a powerful arena in the struggle for a more ecologically and socially just society. There is growing recognition that the choices people make around food have significant environmental and social impacts, both on their communities and around the globe. To shift from unsustainable practices, scholars argue that profound personal and social changes are required, and transformative learning theory is useful for understanding some of these processes (e.g. Kerton and Sinclair 2010; Lankester 2013; Tarnoczi 2011).

To better understand the iterative relationship between learning and practice in community spaces, we draw upon both transformative learning theory and social practice theory to analyze the complex learning processes, contexts, and motivations that influence behavioural change in agri-food systems. By bringing these two theories into conversation we challenge the notion that transformative learning is individualistic by revealing the influence of friends, family, and peers as Communities of Practice (CoP) (Wenger 1998, 2000), which are integral for the successful and continuous commitment to more sustainable agri-food practices.

In this chapter, we apply a comparative qualitative case study method to examine the relationship between learning and practice in two different contexts: producers' stewardship practices in the Alberta Environmental Farm Plan (EFP) program and women's food practices in a rural Alberta community. These two case studies are examples of how food systems are an essential link between ecosystems and human populations. Agriculture and food consumption are two of the most important drivers of environmental pressures, especially habitat change, climate change, water use, and toxic emissions (United Nations Environment Programme 2010). Practices reproduced in any society, including those in food production and consumption, are outcomes of complex processes over which no single actor has control (Shove et al. 2012). As such, approaches which target individual attitudes, behaviours, and choices to create change neglect the extent to which state and other actors influence everyday life both currently and historically, through the shaping of options, design of technology and infrastructure, and promotion of institutions which maintain the status quo (Shove 2010). A sustainable agri-food system— a cornerstone to environmental sustainability— requires uptake and circulation of environmentally friendly practices in community spaces.

We begin with a brief review of literature on transformative learning and social practice theory, followed by methods and a description of the cases. Next, we present evidence from each of the two case studies that relates to our emergent three-part analysis: transformative learning and change as either incremental or rapid in response to crisis; the importance and influence of CoPs; and the residual and ripple effects of learning and practices. We conclude with a discussion on transformative processes for transitioning towards sustainable agri-food systems.

Theoretical Framework

Transformative learning

Cultural canon, socioeconomic structures, ideologies and beliefs, and the practices they support often foster conformity and impede socially and environmentally responsible

action. Transformative learning theory examines how adults learn to negotiate and act on their own purposes, values, feelings, and meanings rather than those they have uncritically assimilated from others, to gain greater control over their lives as socially responsible decision-makers (Mezirow 1997). Transformative learning demands that people become aware of how they come to knowledge and of the values that lead them to their perspectives (Mezirow 1997; Taylor and Cranton 2012).

Transformative learning occurs when an individual's frame of reference, or the structures of assumptions, shifts to one that is "more inclusive, differentiating, permeable (open to other viewpoints), critically reflective of assumptions, emotionally capable of change, and integrative of experience" (Mezirow 2000, 19), leading an individual towards "an informed and reflective decision to act" (Mezirow 1996, 163-164). Once set, adults tend to think and act without questioning and to reject ideas that do not fit into their frame of reference or the way they interpret their surroundings or experiences. A shift in frame of reference can occur through critical reflection on the assumptions upon which habits of mind or points of view are based (see Figure 1 in Tarnoczi 2011). Habits of mind are durable, "broad, abstract, orienting, habitual ways of thinking, feeling, and acting influenced by assumptions" (Mezirow 1997, 5-6), which structure the way we interpret our experiences, for example anthropocentrism. Habits of mind become articulated in a specific point of view that is changeable and is composed of specific attitudes, beliefs, feelings, and value judgements that filter interpretation (Mezirow 1997), for example regarding wetland protection.

Shifts in assumptions can occur from involvement in communicative learning or instrumental problem solving (Mezirow 1997). Communicative learning involves two or more people attempting to understand the meaning of what is being communicated in their discourse, by assessing the interpretations or justifications that stem from underlying assumptions (Mezirow 1997). Communicative learning occurs when the following change: 1) insight into one's own interests; 2) insights into the interests and experiences of others; 3) communication strategies and methods through sharing knowledge; and, 4) social mobilization (Diduck and Mitchel 2003; Kerton and Sinclair 2010; Lankester 2013).

Instrumental learning involves learning how to manipulate or control people or the environment to enhance performance through: 1) scientific and technical knowledge; 2) legal, administrative and political procedures; 3) social and economic knowledge; and, 4) evaluation of potential risks and impacts (ibid.). While communicative and instrumental learning are pathways for transformative learning, these types of learning may not be to the degree of change that qualifies as transformative.

Learning can occur through several processes: alteration or expansion of an existing point of view, establishment of a new point of view, and lastly, transforming habit of mind by becoming aware and critical of one's assumptions and beliefs (Mezirow 1997). Transformative learning can occur at a slow and incremental pace but can also be triggered by an externally imposed "disorienting dilemma" (Mezirow 1990, 13) such as a sudden or dramatic event. Personal transformations can cause changes that lead a person to have a different impact on his or her environment, translating individual transformative learning into broader social change. Furthermore, becoming critically reflective of the assumptions

of oneself and others' is fundamental for effective collaborative problem posing, redefining and solving, as well as adapting to change (Mezirow 1990).

One major critique of Mezirow's theory is that it has been too driven by rationality, with not enough attention to the way that individuals come to know and learn such as through emotions or embodied forms of knowing (Taylor 2001). Other critiques include excessive focus on the individual and not attending enough to social transformation, relationships, or context (Merriam et al. 2007; Taylor 2007). These learning scholars have argued for a stronger focus on the importance of body, emotion, and relationships.

Thus, we consider how bodies and relationships come together as CoP in specific social contexts and tactile spaces. Tactile spaces stimulate the senses (e.g. touch, taste, smell) and incubate lived experiences of the social and natural worlds and create opportunities for instrumental, communicative, and transformative learning to occur through the exchange of different forms of knowledge (Carolan 2007). We found that community, collective action, and relationships, while sometimes challenging and messy, were critical for transforming knowledge and practices in the food system.

Social practice theory

Social practice theory departs from analyses that tend to over-emphasize either structure or agency as the source of the problem and/or solution, and instead describes the world as constructed and ordered by social practices (Warde 2005). The principal implication of a theory of practice is that the sources of changed behaviour lie in the development and enactment of practices themselves. Thus, behaviour is not determined by individual agency nor by societal structures alone, but rather everyday practices like shopping, cooking, or eating. As Giddens observed: "The basic domain of study of the social sciences...is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time" (1984, 2). In this view, sustainable patterns of food consumption, for example, are not understood as the result of individuals' attitudes, values, and beliefs constrained by various contextual barriers, but rather as embedded within and occurring as part of larger social practices (Warde 2005).

In turn, the performance of numerous social practices is seen as part of "the routine accomplishment of what we identify as 'normal' ways of life" (Shove 2004, 117). Practices are "the source and carrier of meaning, language and normativity" (Schatzki 2001, 12) and are "centrally organized around shared practical understanding" (Schatzki 2001, 2). In this view, attention is diverted from individual decision-making toward the "doing" of different social practices (Hargreaves 2011). Importantly, practice theory emphasizes that it is through these engagements with practices that individuals come to understand the world around them and to develop a more or less coherent sense of self (Warde 2005). It should be noted that this theory does not mean individuals are passive victims of the dictates of practice, but instead conceives of them as skilled agents who actively negotiate and perform a wide range of practices in the course of everyday life (Hargreaves 2011). Bringing about more sustainable patterns of production or consumption, therefore, does not depend solely on a top-down, undemocratic process of persuading individuals to make different, or "better" decisions, but instead on understanding the social practices that constitute everyday life, and the ways in which they can be reworked or transformed to

acknowledge the social, economic, and environmental concerns, contexts, and constraints in people's lives.

If people are "faithful carriers of practices" (Shove et al. 2012, 98), then how are practices reproduced? How do they become defective? According to Shove et al. (2012) practice consists of three basic elements: *materials* (objects, infrastructure, tools, and the body itself); *competencies* (skills, know-how, technique); and *meanings* (social and symbolic significance of participation). Practices exist, persist, or disappear when the links between these three elements are created, sustained, or broken by practitioners. *Competencies* and *meanings* can be significantly shaped by transformative learning and thus contribute to changed practice over time. There are two distinct aspects in the reproduction of circuits of practice (Reckwitz 2002): first, practice-as-entity (practice as a block or pattern created by the interdependencies between the three basic elements), which is then filled out and reproduced through the second aspect, practice-as-performance (practice as immediacy of doing; see Szanto et al. in this book for an exploration of food as performance).

Through routinized practices, individuals sustain a sense of ontological security (i.e. stable mental state), and reproduce their social life (Giddens 1984). When an event occurs that is not consistent with the meaning of one's life, ontological security is threatened. This is similar to Mezirow's "disorienting dilemma" triggered by an event that opens up a possibility for transformative learning. In this chapter, we examine such instances and the changes in individual's practices and subsequent collective practices. According to Giddens (1984), it is the reflexive monitoring of not just individual's but also others' activities as well as the contexts that is a continuing feature of everyday action. This is noteworthy since critical reflection is also important in Mezirow's transformative learning theory. Giddens and Mezirow agree: both call for a critical examining of actions. We therefore use criteria outlined for each theory to examine the magnitude of learning, whether it be transformative or less extensive in the case of instrumental and communicative learning.

A challenge with social practice theory is that it has undergone a number of waves of change, creating a diversity of approaches with varied and conflicting conceptions and research strategies. That said, all practice approaches are bounded by conceptualizing the field of practices as consisting of, or as a crucible wherein, phenomena occur, such as human activity, power, language, social institutions, knowledge, meaning, science, and historical transformation (Schatzki 2001). Social practice theory raises a series of radically different questions about how to create more sustainable patterns of consumption (Hargreaves 2011), and arguably production, including those related to food and agriculture. The focus no longer rests on individuals' attitudes, behaviours, and choices, but instead on how practices form, reproduce, or become defective among the carriers of practice, who form a CoP.

Communities of practice

CoPs are "groups of people informally bounded together by shared expertise and passion for a joint enterprise [who] share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems" (Wenger and Synder 2000, 139-40). Theories of CoP examine how people learn socially from their peers within communities

(Wenger 1998) and has provided a useful lens to view farmers and their practices (Oreszczyn et al. 2010) as well as community members engaging in cooking activities (Terrenghi, Hilliges and Butz 2007). Wenger (2000) argues that participating in CoPs is essential for learning because communities are the basic building blocks of a social learning[3] system. When CoPs do not form, knowledge and practices may be lost.

Within the CoP literature, an emphasis is often put on the social learning that occurs when people engage with one another, often from diverse perspectives and experiences to develop a common framework of understanding and basis for joint action (Schusler, Decker and Pfeffer 2003, 311). The development of a new, shared worldview, through social learning is an example of transformative learning (Cundill and Fabricius 2009). CoPs play a significant role in prompting individuals to critically reflect on their own and each other's assumptions of the world, which is an important part of learning that enhances sustainability (Lankester 2013). For Pahl-Wostl, Mostert and Tàbara (2008) social learning includes relationships between social agents and between social-ecological systems, emphasizing collaboration in moving towards sustainability.

The process of understanding perspectives or points of view other than one's own, or "decentration" (Mezirow 1981, 15) can result in shared subjectivity that transcends pursuit of individual drives (Hoverman et al. 2011). In turn, the experience of shared subjectivity lends itself to the development of empathy, responsibility, transparency, trust, and accountability and can alter relationships to people, animals, and land. Hoverman et al. found that "just as the process of knowledge formation is a social process, so too is creating or agreeing on a new understanding of the world that incorporates new perspectives into the accepted view of social truth" (2011, 29). If we trust a social network, we will likely believe the knowledge it produces thereby accepting its version of truth or reality (Carolan 2006b).

Methods

Since learning is always ''situated'' (Lave and Wenger 1991) and practices occur within a specific time and space (Shove, Pantzar, and Watson 2012), we apply a case study method approach that involves an empirical investigation of a phenomenon within its real-life context (Flyvbjerg 2001; Yin 2014). The case study method is ideal for examining a set of complex interactions, rather than relationships between variables, thereby enhancing our understanding of the richness and nuances of social life.

Every province in Canada and the Yukon Territory has an EFP Program (Agriculture and Agri-Food Canada 2009). In Alberta, over 12,000 producers have participated to date. Based on the principles of adult education, the EFP is a business and risk management tool that enables farmers to voluntarily perform a self-assessment of their farming operation to identify environmental risks relating to water, soil, air, and biodiversity (Alberta EFP [AEFP] 2012). Producers develop a Farm Plan to mitigate or eliminate risks based on suitable beneficial management practices (BMPs). We chose this case study because it provides an opportunity to examine the process of transitioning to sustainable farming practices. The case study draws on secondary data from EFP media

[3] Social learning is characterized by an iterative process, reflective practice, utilisation of diversity, shared understanding, and active experimentation (Rodela et al., 2012).

articles[4] (n=74) from 2006 to 2013, which are based on interviews with producers participating in the Alberta EFP Program.

The second case study examines the gardening, cooking, and canning practices of women in Stony Plain, a rural Albertan community. This case study highlights the women's learning around food and agriculture and provides insight into everyday household food procurement, preparation, and preservation practices. Data for this project was collected as part of research on traditional food practices of rural women in Alberta (Braun 2014). This research involved extensive participant observation and fifteen, in-depth, semi-structured qualitative interviews and a focus group conducted with the women and their (adult) children.

These two case studies provide opportunities to explore the interplay between transformative learning and social practices in growing and preparing food shaped by, and circulated among, community. They also differ in a number of ways. In the EFP study, participants are from a wide geographic range in Alberta and are mostly male, whereas the second study consisted of women from a small community. In addition, the EFP program has evolved as part of a formal government initiative, whereas the practices of the rural Albertan women are informal and "everyday". The EFP media articles highlight only success stories and the interviewees from Stony Plain self-selected to participate in the study. Although these case studies were methodologically distinct, a qualitative analysis approach allowed us to reconcile these differences. The emergent analysis drew strength from this diversity and constructed new insights by working across these two distinct studies and indeed, by looking at learning across spaces of production and consumption.

Transitions Towards Sustainable Food Practices and Farming

In this section, we explore how learning and practices interact to encourage a transition towards sustainable food practices and farming amongst our interviewees in community spaces. We also explore the role of CoPs in this process where friends, family, and peers served as carriers and conduits of practices.

Change: sudden or incremental

The experience of direct personal hardship as well as indirect learning from others who experience difficulties can create disorienting dilemmas and serve as opportunities for learning and motivation for changing practices (Lankester 2013; Mezirow 1990). In our case studies, the occurrence of environmental or health problems often had deep and profound impacts on individuals and entire families.

In agriculture, a producer's values, shared meanings and social norms, underlying beliefs and assumptions, and relationships shape his/her system of farming (Alberta Research Council 2006; Carolan 2005). A crisis, such as a drought, can trigger shifts in perceptions and practices, which farmers Glen and Kelly Hall faced in the 80's: "So for us, that whole big picture water system became very clear…a lot of what we've wrapped our heads around over the last three decades [since the drought] is that by looking after the land and the water and being good stewards, it then looks after you" (AEFP December 6, 2012, ¶17, 28). The couple made several changes in their farming practices: protecting

[4] The EFP media articles are available at albertaefp.com.

watersheds and leaving half the grass un-grazed, for which "people look at [them] funny" (ibid., ¶11) (*meaning*); conservation tilling to reduce erosion and conserve moisture; and planting shelterbelts (*materials*). The environmental crisis alerted these ranchers to the value of good water sources and consequently they sought ways of educating (*competences*) themselves through the EFP on how to manage those sources: "That EFP experience was a good reflection on our practices and it helped us to realize what we were doing right…Our focus really became water once we looked at that whole Farm Plan" (ibid., ¶23).

This example illustrates instrumental learning, in which new practices were adopted in response to a disorienting dilemma, to enhance environmental performance through the application of scientific and technical knowledge and that had positive impacts on water, land, and neighbours' farming operations downstream. Learning became transformative as the couple moved away from mainstream grazing practices to more sustainable ones. Glen and Kelly examined their role as stewards of the land and critically reflected on farming practices. In addition, the couple continued "building on [their] initial success" (AEFP December 6, 2012, ¶25), indicating they were set on a pathway for further reflection on sustainability. Such changes in ways of thinking and acting have also been found in other agricultural research as evidence of transformative learning (Lankester 2013; Tarnoczi 2011).

Altered perceptions and beliefs can result in a change of practices, but the opposite can also occur: change in practices can result in shifts in perceptions and beliefs. As such, learning is an iterative process; learning leads to changed practices, which in turn, leads to new learning and new practices (Mezirow, 2000). Michel-Guillou and Moser (2006) found that when producers adopt new practices because of social influences, it "seems to trigger interest in the environment, particularly in terms of conceptualizing the environment and of assessing the farmers' own capacity for action" (227). This finding is unique in that it demonstrates how action and routinization can lead to reflection and changes in perceptions, but is consistent with social practice theory. In the context of EFP, this suggests that producers initially motivated by social or economic factors to implement stewardship practices may incrementally internalize sustainability-oriented attitudes, beliefs, feelings, and value judgements or point of view, and if repeated, ultimately transform their frame of reference.

Incremental learning was also a key finding in our other case study. Ang, a mother of three, went through a series of small shifts in points of view that resulted in a significant transformation in her food practices and beliefs about food over time. When she was pregnant with her first child, she moved out to rural Alberta to be closer to her in-laws. Ang did not grow up with any type of gardening or canning background, and was surprised when she discovered the copious amounts of fresh, healthy, and delicious food her mother-in-law could get from her home garden:

I couldn't get over the fact that when you plant one row of carrots, how many freaking carrots you got. I just had no concept of that until the first year I did the garden with my [mother in law]. There was that much food coming out of the garden! … And that's where I got into making my own baby food; I could use all the extras from the garden and make baby food all year long.

Ang ascribes her desire to have her own small garden at home, can all of her own baby food, bake her own bread, and cook from scratch, to the learning that occurred through interactions with her mother-in-law. Ang explained,

Gardening is important because it's [the produce] just fresher and we know where our food came from. And that's what I wanted to do when I found out we were having our son – I canned all my own baby food. I never ever bought one jar from the store because I knew it had acid and all those yucky things in it, so I just wanted my kids to eat fresh out of the garden…I think it's important to know where your food comes from and to know what you're eating and that it's not laced with chemicals.

Gaining knowledge (*competencies*) and evaluating potential risks of chemicals set the stage for further reflection on sustainability and gave Ang motivation to continue learning about the ingredients (and their side effects) in processed food, which lead to more insights into, and questioning of, mainstream food production practices.

Another interesting transformation that occurred in Ang's life is her active participation in the buying, and later selling of goods (*materials*) at the farmer's market. She began attending the farmer's market with her mother-in-law. She then started selling small amounts of homemade cupcakes on the weekends, and found that she loved the relationships (*meaning*) she was able to build with customers and fellow vendors. Further, the positive interactions and convivial environment of the farmers' market has kept Ang baking treats each week to sell, despite having three small children at home, and a husband who works full time. This example illustrates communicative learning with Ang's mother-in-law, then enhanced communicative *competence* at the farmers' market, as well as the inklings of social mobilization by recruiting other members of her family in gardening. Ang also demonstrates enhanced instrumental learning by replacing her habitual practices with new *competencies*: gardening, preparing food from scratch, and selling it. Eventually, the incremental changes lead to a transformation.

Furthermore, through all of these transformative learning experiences, Ang became a producer (gardening, canning much of her own produce, and selling at the farmers market) and consumer (of different kinds of products) as a result of her changing orientation towards food practices and beliefs about the food system. This was certainly not the case for all of the women interviewed, some gardened and canned out of necessity, others dabbled in either canning or gardening over the years, and a majority of them had not personally experienced any sort of disorienting dilemma about their food. The motivations were varied across the lives of the women, but the most significant changes occurred in the women who had undergone some critical transformative moments with their children or community, which is further elaborated on in the next section.

Communities of practice as carriers and conduits of practices

Family, friends, colleagues, and peers can constitute a CoP, and through mutual engagement, shared repertoire, and joint enterprise, these communities can become carriers of particular practices (Shove et al. 2012; Wenger 2000). Getting together allows for collaborative activities, but also sharing a lived experience, creating tactile spaces that "embed and embody individuals within the social and natural worlds; a move that, in turn, nurtures new intelligibilities and behaviours toward others and the environment" (Carolan

2007, 1265). Social networks and relationships in both case studies emerged as fundamental to processes of transformative learning. In this section, we explore multiple scales of social embeddedness, the importance of community, and the critical role of family in sharing knowledge and shaping sustainable agri-food practices.

Without the relationships and social networks formed in Stony Plain (the Stony Plain Women's Institute, the Multicultural Heritage Center, churches, other local charities, farmers' markets, and friendship circles) some of the women would not be as active in their gardening, cooking, and canning as they are today. Some of the older generation also volunteer with the Multicultural Heritage Center's children's programs, and teach grade four and five students how to use local crab apples to make jams and jellies. Throughout the course of our research, it became evident that food practices, learning, and community involvement were indeed iterative and mutually reinforcing. Another example is the involvement of several women volunteering to cook for the community soup kitchen. They became involved in this practice through their social networks at the Stony Plain Women's Institute. The learning and subsequent changes in practices were not always transformative according to Mezirow's criteria, but through community networks and the influence of peers, food practices were able to be shared for the greater nourishment of the Stony Plain community. Participation in the local farmers' market was a space that allowed Ang to embody her transformative learning experiences by producing, consuming, and selling locally-made, fresh, natural food products.

Relatedly, the articles on EFP indicate that producers are embedded in multiple levels of social influences such as: family and friends who may also be part of the farming operation; fellow farmers who may even be part of a producer value chain; commodity organizations such as Potato Growers of Alberta and Alberta Beef Producers; neighbours; consumers; institutions such as financial and real estate; municipal, provincial, and federal government programs; as well as environmental organizations. Producers expressed a sense of belonging to community through phrases such as "shared responsibility", "world working together", "coordinated responses", and "we're all in it together". This mirrors findings in the literature on the critical role of social factors affecting uptake and maintenance of stewardship practices (including Carolan 2005, 2006a, b; Oreszczyn et al. 2010). The EFP workshops provided opportunities for discussion and exchange between producers. Formal workshops and programs bringing producers together to learn and share their experiences are pivotal for changing agricultural practices (Lankester 2013). For example, a survey on environmental stewardship in Alberta found that BMP adoption was 23% higher on farms where someone had attended a farm conservation workshop or training program (Government of Alberta 2012).

The implementation of BMPs from Farm Plans may not have been solely a result of a transformative learning experience. Other factors may have been equally important, such as government-sponsored financial incentives that farmers receive for adopting more sustainable farming practices. However, we argue that financial incentives do not negate the subsequent and ongoing learning and changed perceptions that occurred for EFP participants, as evidenced by numerous personal stories in the media articles. In addition, finances are necessary for purchasing (farm) *materials* and possibly for obtaining *competencies* (for example, registering for a course or travelling to a farm demonstration). Workshops and programs draw from a diversity of people and can create a space for people

to safely explore and confront various viewpoints and interests through dialogue (communicative learning), form new social connections and develop new CoPs supportive of values that are environment-oriented (Hoverman et al. 2011; McLachlan and Yestrau 2009). Informal gatherings in local coffee shops and community restaurants also provided opportunities for knowledge exchange (ARC 2006; Lankester 2013).

Another overlapping theme across both case studies was the significant influence of family. Almost all of the producers interviewed in the AEFP media articles mentioned the significance of their spouse or families, and children were a key consideration when farmers reflected on their role as stewards of the land. The well-being of their children was a motivator even for producers who did not consider themselves environmentalists: "We borrow this world from our kids and they will borrow it from the next generation. I'm not a tree-hugger, but I believe we should all play our part so everyone has a chance to enjoy it" (AEFP May 15, 2009, ¶6).

Family was not only a source of motivation for transforming practices but also a medium for sharing knowledge: "[my wife] would learn something at a workshop, share that information with me, and then we would get the kids excited about making environmental improvements. There was education happening on multiple levels" (AEFP December 3, 2007, ¶2). EFP workshop facilitator, Dan Moe, noted that it was common to see several family members become involved in learning about and developing a plan for changing agricultural practices: "We've seen couples take on the process as a team, and we've even seen whole families getting involved" (AEF December 24, 2007, ¶11). Family, as demonstrated in this case study, is an important type of CoP for communicative learning, and for changing or preserving certain agricultural practices (see Oreszczyn et al. 2010).

Children were a key variable and influence for the women of Stony Plain when changing their procurement and preservation practices. Recall the changes that Ang made to her food preparation and consumption as a result of her children's health and well-being. In this case study, it was often the mothers who had a transformative experience that resulted in a changed practice, but it was often embedded within the family and sometimes larger social networks.

Further, the desire to garden, cook, and preserve was fostered, in part, by the presence of a strong and influential "food role model" in the family. The conditions needed to create, sustain, and extend not only the technical skills, but the appreciation and enduring desire for fresh, homemade, inexpensive, and unprocessed food were often created in the context of the home, together with a particular family member. For example, a mother and daughter baked traditional Austrian food together: "[it's] something that we do together and it's just a bonding thing, and you have some wine and you make some cookies: it's just a good social thing".

Our two case studies show that different layers of communities and social influences were essential to fostering and sustaining practices related to the production and consumption of food. It is difficult to identify any type of transformative experience and subsequent practice change as an exclusively individualistic and isolated endeavor. Changed perspectives, norms, and sustained commitment to more sustainable activities are intimately linked with larger communities. We argue that this is particularly true whenever food is present. Food is inherently social, not just when consumed, but also when produced.

Ripple effects: to community and beyond

Participatory experiences increase the sense of integration into the wider community and society, promoting an "'active public-spirited character" (Held 1987 in Hoverman et al. 2011, 31). Such "ripple or spillover effects" that extended beyond the immediate communities and spaces were repeatedly found in our case studies. The findings from the Stony Plain case study indicate that sustained participation in gardening, cooking, and canning practices, created larger ripple effects that reverberated into other areas of the participants' lives. Cooking good food at community soup kitchens, teaching children to use local food to make jam, selling high quality, preservative free products at the farmer's market, are just a few examples of the ways the women are contributing to a more healthy and sustainable food environment in their communities. Other ripple effects among the women included a strong conservation ethic and aversion to waste, increased participation in community food-related activities, and finally an acute awareness (among some participants) of local land issues and other problems with the conventional food system. Without an overtly political or critical agenda, and before it was trendy or ethical to do so, the women in Stony Plain were acting as thoughtful and committed food citizens, and continue to be in their own ways.

EFP media articles captured spillover effects where food, commodity, environment, producer, and consumer repeatedly blended together: "I don't think you can run a business without really knowing your environmental impact. We have to make sure, especially farmers, that we can keep producing food. That's the way we look at it - it's not just about making money, it's about feeding people" (AEFP January 11, 2013 ¶15). The EFP media articles capture the shift from recognizing food as not just a product of a competitive food industry but also a form of nourishment. Food was not mentioned in the first two years of the EFP media articles, except for one article in 2006. At the onset of the 2008-2009 food crisis, as the concept of a "sustainable diet" emerged (see Bomford and Brock in this collection), a keyword search revealed 43 of the 74 EFP articles mentioned food and of those, almost half (n=21) mentioned food in the context of consumers, sustainability, welfare, and safety. These results are reflective of recent emphasis for farmers and the food industry in general to adapt to societal demands not only to reduce environmental impacts but also related to animal welfare, safety, and quality issues (Alberta Farm Animal Care 2012; Domaneschi 2012).

Not surprisingly, consumer support for farming was one of the most frequent topics in the EFP articles in the last two years. Agriculture is increasingly operating in the context of a tightening social license where the latitude that producers and agri-food industry are allowed to exploit resources for their private purposes is being qualified and enclosed (Martin and Williams 2011). The former Alberta EFP Program Coordinator, Perry Phillips explains how this can create opportunities for savvy farmers: "More and more the agricultural industry is realizing this is a partnership with the food industry in supplying consumer expectations" (AEFP October 7, 2011, ¶12). The Potato Growers of Alberta is one of EFP's greatest success stories to date and exemplifies the power of CoPs to create change. To fulfill shareholder requests, the Potato Growers of Alberta made EFP a standard for demonstrating environmental stewardship across the Prairie Provinces. As a result, they are able to sell through McCain Foods and are receiving top dividends by meeting consumer demand for potatoes grown using environmental responsible practices (AEFP

February 15, 2013). Such shifts in the agri-food system are opportunities for producers' and consumers' shared values on sustainability to meet in the marketplace (for more research on the role of marketplace, see Lowitt et al. in this collection).

Both of our case studies demonstrate how transformative learning contributed to sustainable food and farming practices that had ripple and spillover effects into other areas of the participants' lives and into the lives of others who are not necessarily part of the immediate CoP. While learning is situated, the impacts of learning can clearly spread into other spaces and manifest in (collective) social practice changes as well as products that support environmentally sustainable practices.

Conclusion

In this chapter we examined and compared two case studies by drawing upon transformative learning theory and social practice theory in our analysis of food systems change. These case studies provided an opportunity to explore some new and interesting theoretical conversations about transformative learning, social practices, and broader change for social and environmental sustainability.

Transformative learning theory is a useful tool in understanding the process of changed behaviour oriented towards more ethical and sustainable practices, but it is incomplete because it does not account for the already existing social practices ordered across time and space. Transformative learning does not occur in a vacuum, but occurs within communities who have certain norms, expectations, and meanings attached to their routine behaviours, like cooking from scratch, ensuring children are adequately and nutritiously fed, or conserving water for irrigation and habitat. Indeed, learning, shifting perceptions and changed behaviour, occur in an iterative process that is sometimes incremental and sometimes triggered, enhanced, or halted by a disruptive event or a disorienting dilemma as we saw from our case study examples. However, there is much more going on in these processes than simply a seamless transformative experience and it is important to consider these transformations as embedded within and shaped by larger social practices.

A social practice theoretical framework allows us to understand how the world is constructed and ordered. It is neither individual behaviour nor societal structures that exclusively affect behaviours, but everyday practices made up of materials, meanings, and competencies that hold them together. We looked at specific food and stewardship practices that served as sustainable exemplars, their evolution, the significant influences of transformative learning in that process, and how they are continually nested in, and influenced by larger CoPs.

By applying CoP theory, we argued that transformative learning in regards to food cannot be abstracted and isolated from its social context. Food in and of itself transgresses many boundaries: it is a biological necessity, cultural marker, and a social and political symbol for many of the problems we see within today's society. Food is an infinite source of pleasure and delight, but often that joy is entirely bound up with the communities with which that food is produced and shared. These findings are important because they speak to the necessity of a more holistic and socially focused approach to both social and environmental sustainability.

Current interventions seeking to "solve" our environmental and related social crises tend to be top-down, undemocratic, and individual-focused. Within the current neoliberal context, practices like paying for ecosystem services, "greenwashing" consumer products, and downloading responsibility onto individuals (precautionary consumption, feeding the "organic child") are perhaps missing the importance of the larger influence of social learning, CoPs, and personal relationships as sites of change. For example, simple strategies that seek to educate and inform the population about environmental degradation, while useful and necessary, are limited. These strategies do not take into account the context within which unsustainable practices are created and fostered, nor do they consider the complex relationships that can either foster or eliminate (un)sustainable practices. Also, they do not give space for community as sites of social learning, and as a critical factor in the uptake or disregard of more environmentally friendly practices. By examining practices of individuals and communities engaged in the pursuit of social and environmental sustainability, and the learning processes and transformations that have facilitated their transition, we hope to bring a new perspective to the discussion of how change is happening in the agri-food system.

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