Chapter 10
Cognitive Maps in Entrepreneurship: Understanding Contexts

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10.1 Introduction

In the original chapter we showed that cognitive maps were a viable tool for examining the cognitive structures of entrepreneurs and how we could reveal the differences in these structures between entrepreneurs and managers. Since then we have seen a growing interest toward entrepreneurial cognition (Mitchell et al. 2014), where it has become highly obvious that understanding cognitive differences is central for understanding what, how, why, and when entrepreneurs *do*. Or how do entrepreneurs think, before they do, and how does that thought impact their doing? In fact, we somewhat provocatively pointed out that managers, and especially CEOs have been portrayed as those that cognize, that is, those who decide and think (and implying that entrepreneurs were not). Yet research into entrepreneurial cognition—which is still rather recent—have argued that entrepreneurs do think differently and structure their realities differently (Busenitz and Barney 1997; Mitchell et al. 2002, 2007; Carsrud et al. 2009; Brännback and Carsrud 2009) In this chapter, we presented cognitive maps as an efficient tool and method for analyzing the differences. Cognitive maps were presented as a method that originated from work by Kelly in 1955 (Kelly 1955) and that it had successfully been applied in, for example, political sciences (Axelrod 1976), but frequently in strategic management (Eden 1988; Huff 1990; Brännback and Malaska 1995; Brännback 1996; Hodgkinson 1997).

While cognitive *maps* as an explicit research method have still to make its ways into entrepreneurship, we have during the past decade seen the diffusion of the

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cognitive maps discussion into entrepreneurship in different ways, where researchers address the same or similar issues through other conceptualizations and different theoretical inroads that essentially are addressed with cognitive maps. Therefore, this reflection will focus on these discussions. In our minds, this will show the theoretical and empirical richness found in the area of entrepreneurial cognition. This is most visible in the growing awareness and discussions of the importance of understanding the role of context in entrepreneurship research as well as practice (Welter 2011; Lippmann and Aldrich 2015, 2016; Gartner and Weleter 2016; Brännback and Carsrud 2016). It is a broad discussion also including topics such as language (Clarke and Cornelissen 2014; Brännback et al. 2014), culture (Aldrich and Yang 2012; Brännback et al. 2014), and history (Whadwani 2016).

But, what are cognitive maps? In a broad sense, they can be described as sense-making tools. Tools that can help us navigate *cognitively*. That is, when we do not understand, they are instrumental for us *to understand*. They are representations of territory and place, i.e., *spatial*. However, the spatial representation is also dependent on time, i.e., maps change over time—take the map of Europe before the fall of the Berlin wall and the map a few years after. Countries just vanished and others were re-created. Maps are *temporal*. But, maps are also *social*, e.g., family trees are representations of family networks over sometimes centuries, and maps are *institutional* in representations of economic or political systems. Think about how we like to describe the world as seven world economies—where some like to add an eight; the State of California and Silicon Valley, in particular.

That is, maps are representations of *contexts* (Welter 2011). Silicon Valley is indeed an economic context—a huge incubator—with relevance to technology entrepreneurship, where one region after another or country after another have tried to replicate the environment elsewhere, with little success of being equally successful.

10.2 Contexts as Maps in Entrepreneurship Research

In the field of strategy the role of context is not new. In fact a firms strategy is often said to be context specific and the fact that it is context specific is also the source of a firms competitive advantage on the served market (context). To us, context is highly important in entrepreneurship research. It would be naïve to assume that context does *not* matter in entrepreneurship since the entrepreneur creates a venture in a country, region, city (three contexts) to serve one or multiple markets (contexts) during a specific time period (context) under certain economic and political realities (contexts), etc. Yet, entrepreneurship scholars have to our minds not done a very good job in providing contextual descriptions.

Contexts are important not only for interpreting the research results but they often serve as *conduits* for identifying research questions setting off an entire study. Contexts will also serve to focus or frame our studies, i.e., what we include/exclude and why we include/exclude. Context will also sometimes determine how a study is

designed; why was a certain research method chosen over another (Carsrud et al. 2014). Context will impact how questions are asked or not asked. This is not only a linguistic issue but also a cultural issue. In certain cultures (contexts) one cannot ask certain questions from, for example, women. Or it is not legally allowed to create databases over individual data without permission from authorities (contexts).

As researchers we are all too familiar with those numerous occasions when a study—which the researcher finds important and interesting with respect to his or her contextual reality—is rendered *uninteresting* by reviewers that do not see the relevance or importance of a particular study because of not being familiar with the context. While the theoretical contribution may be lacking there may indeed be a highly relevant empirical contribution in such a study.

A thorough description of all these examples of contexts becomes, in a sense, cognitive maps for research, which allows others to replicate a study or conduct a different study, compare results and identify meaningful insights. In fact, in many studies contexts are reduced to being a list of *control variables* (Carsrud et al. 2014). However, such list can sometimes become very long or then far too short, reduced to two variables *sex* and *age*. From a methodological point of view contexts are indeed problematic, since they create a dilemma for the requirement of research results to be generalizable, since per definition contexts are specific to a particular and often limited—context!

This problem is all too present in research on culture. Cultural researchers distinguish between *etic* and *emic* culture studies. Etic studies have a reductionist view of culture and often use country as a proxy for culture. By doing so, it is also assumed that a country is a representation of a homogeneous culture, which is rarely the case. In emic studies the impact of culture is included as a contextual characteristic from the very outset (Schaffer and Riordan 2003; Luna and Peracchio 2005; Usunier 2011; Welch et al. 2011; Keysar et al. 2012; Brännback et al. 2014). Taken too its limit the requirement of generalizability in social sciences—the scientific disciplinary context of entrepreneurship—runs the real risk of reducing the relevant peculiarities of entrepreneurial (human) behavior out of the study thus rendering research results irrelevant. Another problem, which seems to be partially due to context, is the assumption of representativeness and that data is normally distributed. It is assumed that data aggregate around the mean, which is stable (Christopher et al. 2015). This is especially problematic in entrepreneurship research as many of highly successful and entrepreneurial companies appear to be outliers on many dimensions, e.g., there is an exceptional entrepreneur (Steve Jobs, Michael Dell, Jack Dorsey, Elon Musk) and the firms show exceptional growth rates. Not only are these companies special, but they also impact the contexts in which they operate, for other firms—for good and for bad. The research by Christopher et al. (2015) analyzed 49 variables among nascent and start-up firms, both input and outcome variables, and found that 48 were *power distributed*. Thus, assuming normal distribution is problematic to say the least, yet that is what most studies do. While the research results have implications for theory and practice, it also raises the question of the role of context with respect to research methods.

10.3 Organizational Forms as Maps in Entrepreneurship

One distinct feature of entrepreneurship is that we study organizations that are *in the making*. We study nascent entrepreneurs, those who are considering becoming entrepreneurs. Then we readily study how that actually happens—we study start-up firms; how a small firm without much of any structure other than a legal form and a budget (sometimes this is missing too) develops into a larger organization. We are very keen on studying the *growth* of such a firm. We then discuss growth rates and number of employees. But, we shun from considering organizational structures. In fact, many are those researchers who will say that entrepreneurship is so nice because you do not have to look at the structures—because there are not any. We do not have to worry about line organization or matrix organization or strategic business units. A small start-up is so nice because it sits so neatly in ones palm everything can be captured with almost a glance. Perhaps this is a problem; not only for researchers but also for practicing entrepreneurs.

The lack of some kind of structure implies the lack of a map even at a perceptual level. As pointed out by Aldrich and Yang (2012) start-up organizations have yet to acquire the blueprints needed for building an organization. The lack of such blueprints or organizational templates—routines (maps), habits (maps), and heuristics (maps)—impacts performance. This is also referred to as the liability of newness (Stinchcombe 1965). These blueprints become maps used by entrepreneurs to build the venture. While some researchers have called organizational forms *cultural codes* Aldrich and Yang (2012) argue that blueprints and cultural codes are different. They refer to work by Hsu and Hannan (2005) who have argued that cultural codes are those held by audiences, i.e., perceptions of an organization that outsiders have of such an organization. In a start-up setting such perceptions (maps) are likely to be highly different from those (maps) by the founders. These culture codes are referred to as *common knowledge* (maps) by outsiders. Blueprints are *internal* maps over how a firm functions, how input becomes output that are specified a priori the business is up and running. "If, however, they cannot locate such blueprints they face the task of developing the required instructions on their own" (Aldrich and Yang 2012, p. 5). We like to define business plans as blueprints and in case the business plan contains false assumptions the entrepreneur having to construct these *ex post*, is essentially creating a venture by effectuation. The development of culture codes and blueprints are ways of creating organizational identities, which again can be seen as cognitive maps of organizational forms (Hsu and Hannan 2005). Interestingly, there is a fairly large stream of research into entrepreneurial identities, but not much on organizational identities in entrepreneurship. How do organizational identities emerge in entrepreneurship? How do such identities impact performance?

The importance of understanding venture creation in larger contexts, how multiple contexts interact and implicitly this cognitive dialog between maps, is captured by Gross (2009: 359) as: "ways of doing and thinking that are tacit, acquire meaning from

widely shared presuppositions and underlying codes, and are tied to particular locations in the social structure and the collective history of groups." It is the process of how entrepreneurs interpret opportunities and from this then create their ventures. Aldrich and Yang (2012) argue that cultural codes (maps held by outsiders) are incomplete guides to entrepreneurs for the purpose of creating ventures and ensure effective performance, but likewise the blueprints are also incomplete—if not altogether missing.

10.4 Past and Present as Maps

The temporal nature of context is clear. Things take place at a certain time. Yet, we could do a much better job in dealing with time. The past is not something, which occupies the minds of dedicated historians. There is some relevance and merit to *the past informs the present and the present illuminates the past*. We know all too well that most entrepreneurs are constantly dealing with lack of time, or not being fast enough. But, we can also learn from past behavior. With respect to cognitive maps we call for a better understanding of how shared experience shapes entrepreneurial action and thus affects outcomes over time. This is the same issue Lippmann and Aldrich (2015) address in a recent article on generational units and collective memory in the context of entrepreneurship. Once again this is a different way of tackling the fluid nature of cognitive maps and the necessity for doing this. Lippmann and Aldrich make the case of utilizing generational units and collective memory for understanding the emergence of entrepreneurially oriented groups within regions. They do this by analyzing Silicon Valley. While they do not explicitly refer to cognitive maps this is again a vivid example of how sense making is constantly present in entrepreneurial (human) behavior.

Time and history help us cognitively to make sense of events. By explicating when something has taken place we are usually far better off in understanding and to help others understand those things that are unfamiliar which we encounter. We are able to draw cognitive parallels to something familiar that has occurred or we find reasons to why something took place. The question philosophers often like to discuss is whether it is correct to draw conclusions of a past event, based on our present understanding of the same thing. For example, we are frequently upset by discriminations of people based on gender or race that occurred in the past, because it is not considered correct by the present cognitive map (or cultural code)—yet there are places in the world and cultures where there is no conflicting map with this—even today!

The issue here is that we have to sensitize ourselves to an ongoing dialog between the past and the present to enable us to better deal with the future. Thus, contexts help us make sense of, and understand who becomes (and does not become) an entrepreneur and when, why, how, and what then happens. Contexts become cognitive maps for studying entrepreneurship in action.

While cognitive maps have not explicitly become a useful tool for researching entrepreneurship as was envisioned in the original chapter, cognition and the importance of dealing with cognition when studying entrepreneurs has indeed been amplified. It is interesting to discover the multiplicity of research inroads this is taking, and obviously there are endless options of future research issues.

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