Building uncertainty competence: applying the entrepreneurial method

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Abstract

This impact paper looks upon the global Covid19 crisis as an event that created massive worldwide uncertainty at an unprecedented speed. A world that was preoccupied with different versions of uncertainty, some of which related to globalization and digitization, is now unified in tackling pandemic uncertainty. The question is: what to do about it? While the field of entrepreneurship has a traditional focus on creating start-ups, the past 20 years have expanded our understanding of entrepreneurship to what we here offer to call uncertainty competence. Entrepreneurship as uncertainty competence describes the process of creating new value in the face of uncertainty. And we believe that this uncertainty competence should become a fundamental element of today's management education.

Keywords: Uncertainty, Entrepreneurship, Effectuation, Decision-making

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The Covid-19 crisis is characterized by a high level of uncertainty. At the beginning of the crisis uncertainty mainly stemmed from questions like "Will the virus spread from animals to humans?", "How easily can it spread between humans?", "What are the best ways to impede the spread?". Then uncertainty was around "Who is affected the most?", "What kind of medical equipment do we need (how fast and when)?". And now we are grappling with questions like "How can we end the confinement?", "What parts of our economy needs the most help and what form should that help take?" to name but a few. On a company level, questions might be around "What should we be worrying about the most?", "Will our business model still work?", "What can we do, now that our business model does not work?", "What new opportunities emerge from such a crisis?". All of these questions are characterized by a high level of uncertainty about what to do next. Not only are we unsure of which scenario will come to pass, we do not even know if we have considered all the options and potential outcomes.

The current Corona pandemic has brought a concept which is central to the entrepreneurship field to the fore: Dealing with and making decisions in the presence of uncertainty. A cornerstone of this theory is the work by economist Frank Knight from 1921, in which he made uncertainty the basis of his theory of entrepreneurial profits. Knight portrays entrepreneurship as a discovery process. Many new ventures will be launched, but only some will survive and prosper (Knight 1921).

Ever since then, entrepreneurship is viewed as a process that typically involves a high degree of uncertainty. The ability of entrepreneurs to interpret and respond to that uncertainty is what determines the degree of success or failure achieved by the venture. In fact, the notion that entrepreneurs take decisions and subsequently act in the face of inherently uncertain, even unknowable, futures is one of the most closely held assumptions in entrepreneurship (e.g., Knight, 1921; Eckhardt and Shane, 2003; Sarasvathy 2008).

In this paper we want to briefly discuss some of the key findings of entrepreneurial research and how they might help managers in developing uncertainty competence in their companies as they adapt to a world in the grips of Covid-19. We suggest that for uncertainty competence, managers need to first understand and assess uncertainty as opposed to risk. Second, they need to know how to approach different levels of uncertainty, and, third, we will discuss how executives can prepare their companies for uncertainty competence. With a lot of uncertainty around us, and potentially more to come, this seems a worthwhile investment.

Understanding and assessing uncertainty

Uncertainty implies the absence of certainty of the potential outcome of a specific decision or action in a particular situation. The Covid-19 crisis came out of the blue and took us by siege – it is described by Nassim Taleb as a black swan. Uncertainty at an unprecedented scale ensued. Politicians, epidemiologists, managers or others cannot agree upon the potential outcomes of their decisions. Therefore, it seems valuable to look into complementary processes beyond standard risk management in order to develop uncertainty competence.

Our starting point is discussing and coming to understand the true nature of uncertainty before we can think about ways of dealing with it. Almost 100 years ago, Frank Knight

detailed in his book, "Risk, uncertainty and profit", his conception that fundamentally only uncertainty can explain profits (and losses) and therefore entrepreneurial endeavours. He defined uncertainty as a situation in which there is no basis for classifying potential outcomes. To Knight, true uncertainty is substantially different from risks, as it is impossible to neither assign probabilities to future outcomes nor even know all possible future outcomes based on today's possible actions. While this may sound like an objective classification, organizational researchers later argued that uncertainty is perceptual and thus has to be assessed individually (e.g. Downey and Slocum 1975).

For Covid-19, there is no solid prior experience, and hence many decision-makers in these times experience what Frances Milliken (1987) describes as state, effect and response uncertainty. State uncertainty captures the perceived uncertainty about how components of the environment like suppliers or competitors might be changing or reacting in the Covid-19 situation. Effect uncertainty captures a perceived inability to predict the impact of these changes and repercussions for the organization. Finally, response uncertainty is about the lack of knowledge of response options and the inability to predict the consequences of those response options.

Ultimately, the judgement of the degree of uncertainty of any given situation is subjective. Individual decision makers will have different experiences and potentially even different access to information and might therefore experience a given situation differently. Or as William Gibson put it: "The future is already here – it's just not evenly distributed". In today's connected and digitized world all necessary information for any given situation will most likely exist, but this information might nevertheless not be available for the individual decision maker. She might just not know where to find the information and on top of this, might experience uncertainty about whether to trust this information. In our Covid-19 situation, a lot of information is most likely available. But some of it is hard to find (scientific publications), and studies contradict each other, so it is hard to know what to trust.

We will argue below that the degree of uncertainty should influence the approach taken. This choice requires an assessment of the uncertainty involved in a decision. Therefore, it becomes important to not only consciously include such an assessment, but also create transparency about the perceived uncertainty within a team, business or even company by asking and discussing a number of questions. Questions for an uncertainty assessment can include:
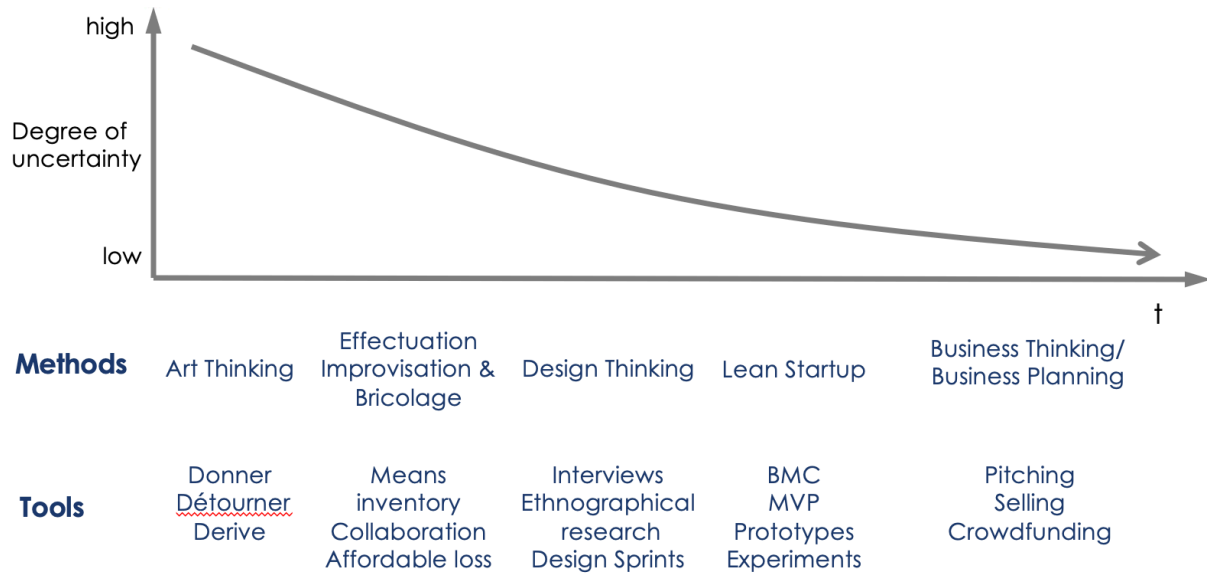
- Are the goals well-defined and specified?
- Is the information provided unambiguous?
- Can the future consequences of decisions taken now be estimated?
- Is the environment constant or are changes frequent?
- Is the decision-making situation straight-forward?

Dealing with uncertainty

As described, certainty, risk, and (true) uncertainty are not distinct and separated conditions but rather points on a continuum. So a situation is not *per se* uncertain or certain, but it can move from being highly (true) uncertain to lower levels of uncertainty to risk and potentially to certainty, depending on our actions (and here the importance is on the word action in contrast to analysis). In the start-up world we often hear the term "de-risking", but what it often actually means is "de-uncertaining". And as entrepreneurship research has focused so much on uncertainty as the fundamental driver of entrepreneurial action, it has also started to research what entrepreneurs actually do and how they take decisions to reduce uncertainty. Figure 1 shows an entrepreneurial venture over time as it moves from high levels

of uncertainty to lower levels of uncertainty and eventually to certainty (for sure after the fact). During this process, entrepreneurs might use a number of methods or tools which are appropriate to the different degrees of uncertainty.

Figure/Table 1: Entrepreneurship as uncertainty reduction

Degree of uncertainty (high → low) over time (t), shown as a decreasing curve.

Methods	Art Thinking	Effectuation Improvisation & Bricolage	Design Thinking	Lean Startup	Business Thinking/ Business Planning
Tools	Donner Détourner Derive	Means inventory Collaboration Affordable loss	Interviews Ethnographical research Design Sprints	BMC MVP Prototypes Experiments	Pitching Selling Crowdfunding

(Source: own visualization based on Grichnik et al. 2017)

The right-hand side of the figure (methods like the business plan or tools like pitching, crowdfunding and the like) is closest to standard management practice. It has dominated practice in entrepreneurship for decades. This is quite natural as the knowledge was taken from the field of business administration and management. It had simply been adapted to the realities of newly established and small companies. The knowledge helped start-ups to be more professional. However, it did not fully serve what is potentially the most distinctive characteristic of ventures: uncertainty. A business plan, for example, helps to define how different pieces of a business idea need to come together; what it does not do is help with more fundamental uncertainties which start-ups face in the early stages, and with which companies around the world, irrespective of their age and development stage, are now grappling.

Progressing leftwards in the figure moves us through many of the approaches that have been developed, adopted, or integrated by the discipline of entrepreneurship over the past 20 years. They take on higher levels of uncertainty and allow entrepreneurs to explore and cocreate possible futures. These methods include more widely spread approaches such as Design Thinking or Lean Start-up, but also approaches like effectuation, bricolage, improvisation, or art thinking – the further development of which is a key focus of ESCP's 'Jean-Baptiste Say Institute for Entrepreneurship'.

It is only over the last 10 years that we have seen a strong tendency of established companies to develop an interest in these methods and tools, not least because uncertainty has come to their attention more radically.

What do these methods and tools have in common:

-   Bias towards action (if you are unable to predict the future, only action will help you)

- Bias towards collaboration (as you do not control all means, only collaboration will help you)
- Bias towards today (as uncertainty is high, the speed to move forward matters)
- Bias towards small iterations (testing and experimenting are key)
- Bias towards keeping investments/losses low (starting with small bets and consequently increasing them over time as uncertainty decreases)
- Bias towards agility (radical readiness to react even to weak signals)
- Bias towards early customer interaction (ultimately, only the customers know)

The current curricula at business schools around the world are typically skewed towards teaching the methods and tools on the right side of the figure (how to write a business plan, entrepreneurial finance, strategy, market analysis, etc.). Entrepreneurs are seen as experts in dealing with uncertainty. They tend to use methods and tools that are further to the left side of the figure. Therefore, we believe that these methods and tools should be much more prevalent in business school curricula and in companies. In order for this to happen, it is not enough to merely know these methods and tools. Companies faced with high uncertainty have to enable their employees to better understand their individual decision-making process and to adapt it to the environment. Employees ought to be trained in the application of these different approaches and provided with the working environment and leadership skills required not only to act, but also to convince others to act with them. This is what we call building uncertainty competence.

Building uncertainty competence

Supporting multiple decision rationalities

A first step in developing uncertainty competence means that leaders, managers and employees need to have the knowledge (understanding of uncertainty) to assess the specific decision-making situation that they are in, determining its position on the uncertainty spectrum, and then deciding for the appropriate approach (dealing with uncertainty). While this sounds intuitive, in reality it can be complicated as it very often breaks with the traditional rationality approach. Here, it is generally assumed that more information and, potentially, computation (analysis of variance, regressions, Bayes's rule, etc.) always result in better decisions. But in the face of high uncertainty this might not be true and can actually be very costly and time-consuming (Gigerenzer 2008). To give an example: Writing a detailed business plan including modelling the diffusion of a new product with a newly developed technology for a new and never-before served customer segment can be as context-irrational as applying effectuation for introducing an incrementally new feature for a well-established product targeting a well-known target group.

What we propose is that companies develop and allow a wide range of decision logics with matching methods and tools (as outlined in Figure 1) and actively encourage employees to choose the appropriate one. This of course makes the life of everyone a little bit more complicated than having one defined and accepted decision logic for every situation, as for example in the case of one single stage gate process for innovation through which all innovations (incremental and radical) have to go through.

Developing method and mindset expertise

The second step of building uncertainty competence brings a choice of methods to a company. Those methods then have to be applied. And here the focus is on application, on action. It is one thing to analyse and learn about a new method, it is a very different thing to

actually apply it. Methods and tools which are more suited for highly uncertain situations have a bias towards action, collaboration, iteration and customer centricity. These methods therefore require a shift in mindset. This shift means that in order to successfully apply these methods and tools people have to shift from an optimization mindset to an exploration mindset. And this might prove difficult as through our education most of us are trained in the mindset of optimization, finding the best solution to a problem. On the left hand side of the spectrum, we need to become a lot more like artists, with a mindset that allows for the emergence of (not necessarily optimal) solutions. Training in design thinking or effectuation highly depends on a mindset that allows acting without knowing what the right direction is. Failing becomes part of the process. And failing your way to success is not a standard operating procedure in companies today. It needs training, in terms of both method and mindset.

Making "room" for creation: developing leadership and the work environment

Finally, uncertainty competence requires making room in companies that are designed for optimization. Leadership must come into play at this point. There certainly have always been people acting as entrepreneurs in established firms – we call them intrapreneurs. However, their task is not starting up a venture on a green field. They are acting in an institution with rules that are not necessarily conducive to creation and emergence. Leadership in an uncertainty competent company needs to be aware of that and to make room for it. This room comes through developing leadership skills in people who are supposed to do projects on the left side of the spectrum presented in Figure 1. They need to feel safe in following their procedures and take other people with them on their journey of exploration. At the same time, top management needs to be trained in delegating those projects, which requires rethinking of KPIs and reporting procedures, but also designing the communication between the established management practices and the exploratory projects. With uncertainty competence, leadership is installing a new operating system as opposed to replacing the existing one. Instead, both are supposed to run in parallel and create fruitful connections. Innovation management literature has been talking about developing 'ambidexterity' (two-handedness) of firms. Developing uncertainty competence is an important step in that direction.

Conclusion

Our research on decision making under uncertainty can help managers to not only rethink their approach to decision making but to actually build a much-needed uncertainty competence. We have outlined three critical steps in building this uncertainty competence: Supporting multiple decision logics, developing method and mindset expertise, and building organisational spaces to give this new approach a safe environment to apply the new competence.

The process of building uncertainty competence is in itself highly uncertain as it depends on previous knowledge, routines, structures and processes. It is therefore important to treat the project of building uncertainty competence as a decision under high uncertainty. This would mean that it is important to prioritize action over analysis, collaboration over competition, today over tomorrow, experimenting over executing, agility over efficiency and last but not least working early and closely with your customers, employees, leaders, and managers.

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