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New Venture Teamwork and Uncertainty:

Implications of Interacting in the Unknown

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Abstract

Entrepreneurship research has historically taken the perspective of the individual entrepreneur. This trend is slowly changing as mounting evidence shows that many new ventures are started by teams, and teamwork has important implications for new venture creation. Scholars working to establish this new team-based branch of entrepreneurship have initially borrowed perspectives from upper echelons (top management team) and more recently organizational team literature. However, a fundamental aspect of entrepreneurship differentiates new venture teamwork from teamwork in the aforementioned bodies of knowledge, and has yet to be thoroughly considered: uncertainty.

The purpose of this thesis is to explore how new venture teamwork is influenced by uncertainty. To do so, uncertainty in the context of new venture teamwork is conceptualized using the 'entrepreneurial problem space' developed by Sarasvathy (2001, 2008) consisting of three types of uncertainty: Knightian (1921), goal ambiguity and isotropy. Using a mixed methods approach, new venture teams in a Swedish incubator and accelerator program are studied to investigate the influence of these three types of uncertainty on two broad categories of teamwork: team structure and team member interaction.

Findings indicate that overall, new venture teamwork is a different beast. Facing multidimensional uncertainties makes new venture teams much more dynamic and interactive than what is currently captured in upper echelons or organizational team literature. In terms of structure, uncertainty leads to fluidity in team boundaries, membership, and roles as team members continually interact with each other and the environment. Configuration is thus flexible, and trusting as opposed to controlling norms are preferred. In terms of team member interactions, uncertainty intensifies relational demands on team members and triggers a heightened need for trust and open communication. In this space team member interaction takes on transformational as opposed to transactive qualities and calls for a behavioral approach that is linked to altruism. The thesis concludes by suggesting five emerging elements of team-working under uncertainty, and argues that uncertainty should be a central part of any theory of new venture teamwork as scholars continue to develop this branch of entrepreneurship research.

Keywords: new venture team, teamwork, uncertainty, interaction, trust, structure

List of appended papers

Paper 1: Nowell, P. and Timmermans, B. (2016). Finding the Team: Roles, behavior, and relations in team-based entrepreneurship, under review as forthcoming book chapter in the Palgrave Handbook of Multidisciplinary Perspectives on Entrepreneurship, scheduled for publication in 2018.

Paper 2: Karlsson, T. and Nowell, P. (2016). Best team for two tasks? The divergent effect of group value consensus on performance, accepted for presentation at BCERC: Babson College Entrepreneurship Research Conference, June 2017, Oklahoma City, USA

An earlier version of this paper was presented at 3E: European Entrepreneurship Education conference, April 2015, Luneberg, Germany

Paper 3: Nowell, P. and Williams-Middleton, K. (2017). Trust and control in new venture emergence, under revise and re-submit with the International Journal of Entrepreneurial Behavior & Research

An earlier version of this paper was presented at FINT: First International Network on Trust, November 2016, Dublin, Ireland.

Paper 4: Nowell, P. and Brattström, A. (2016). Emergence of trust within new venture teams: a multilevel process model, presented at FINT – First International Network on Trust, November 2016, Dublin, Ireland.

Acknowledgments

One of my favorite quotes is from Wallace Stegner's 1967 book 'All the Little Live Things': *there is a sense in which we are all each other's consequences*. For me, this line captures our interdependence and the way in which we shape one another for better or for worse. While doing a PhD is very much an individual endeavor, it is also the product of the support, feedback, and energy of many other people. This part of the licentiate thesis was my favorite to write because I got to celebrate the people that I believe have shaped me and my work for the better.

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1. Introduction

Ilan Zechory and Tom Lehman are in couples' therapy. The pair, not actually a couple in any sense of the word, are co-founders of Genius.com a Brooklyn-based start-up that allows users to annotate song lyrics as well as any other text available on the internet. Founded in 2009, Genius has received over 55 million USD in venture capital financing and has an estimated worth of over 400 million USD[1]. Tom and Ilan met in 2002 while studying at Yale and have since become good friends who work together, do yoga together and occasionally even vacation together[2]. The challenge to their partnership is that as co-founders of a multi-million dollar start-up, if their relationship fails the company could also fail. In 2015 The New York Times reported on the co-founders' 'complicated' relationship and the increasing trend among young technology entrepreneurs to use couples therapy as an outlet for their personal and professional grievances[3]. In the article Ilan reflected, *"When you have no boundaries and you are totally enmeshed and it gets bad, it can be devastating (…) so the therapist is trying to work with us on that and figure out what types of boundaries are healthy"*. While the pair's relationship could be taken as an idiosyncratic tale of two eccentric founders, Peter Pearson, a psychologist and founder of the Couples Institute in Menlo Park, California states that *"except for the sex, founders have the same interdependency as married couples"* and that counselling has become a way for young technology entrepreneurs to work out their differences and keep their teams and companies healthy and intact. So what is it about the context of new venture creation that could drive team members into couples' therapy?

Interest in the 'team' as an object of study in entrepreneurship research is growing. As early as 1975 management scholars began to note the importance of the team in entrepreneurship (Timmons 1975), however it was in the late 80's and early 90's that scholars such as Kamm et al. (1990) and Gartner et al. (1994) first documented the prevalence of teams within entrepreneurship and called for a research program that would describe team characteristics and determine their impact on new venture performance (Ruef 2010). Since, scholars have shown that the vast majority of ventures are in fact led by teams (Lechler 2001, Beckman 2006), teams have important implications for new venture performance (Carland and Carland 2012), and on average have better chances of making it through nascency (Ruef, Aldrich, and Carter 2003) and securing venture financing (Alsos, Isaksen, and Ljunggren 2006). While in recent years entrepreneurship scholars have begun investigating team phenomena work on the topic is fragmented (Klotz

[1] http://fortune.com/2014/07/11/rap-genius-name-funding-embeddable/
[2] https://www.nytimes.com/2015/04/19/fashion/anger-management-why-the-genius-founders-turned-to-couples-therapy.html?_r=0
[3] https://www.nytimes.com/2015/04/19/fashion/anger-management-why-the-genius-founders-turned-to-couples-therapy.html?_r=0

et al. 2014). Evidenced by the arrival of influential publications such as the Klotz et al. (2014) review of the New Venture Teams literature and the initiation of large-scale new venture team research programs, it is clear that entrepreneurship scholars are taking the 'team' seriously, and pouring considerable resources into the study of this phenomena. This licentiate thesis is related to one such research program; the New Venture Teams project led by Frédéric Delmar in Lund, Sweden[4].

To date new venture teams (NVT) research has largely taken an upper echelons (UE) perspective (see Hambrick and Mason 1984, Finkelstein and Hambrick 1990), opting to draw on top management team (TMT) literature while remaining largely disconnected from the larger body of teams research in organizational behavior (OB). This disconnect is compelling considering OB's extensive body of knowledge and decades of research into work teams. Klotz et al. (2014) aim to bridge this gap by outlining what we know about NVTs through the lens of a model borrowed from OB team research; the Input-Mediator/Moderator-Output (IMO) framework. This important step acts not only as a bridge to OB but as a push to include dynamic process thinking in a field that has largely relied on the static input-output perspective common in most TMT research. However, as NVT scholars work to bridge these two perspectives a fundamental characteristic of entrepreneurship remains to be fully acknowledged; *new venture teamwork is teamwork under uncertainty.* Neither TMT nor traditional work teams literature captures the unpredictability, goal ambiguity and interactive, changing environment that NVTs face on a daily basis; a context which makes entrepreneurship, and thus new venture teamwork, 'extreme' in nature (Baron 2008, Cardon et al. 2012, Schindehutte, Morris, and Allen 2006, McMullen and Shepherd 2006, Ucbasaran et al. 2013). This connection to uncertainty raises a set of theoretically interesting and practically relevant questions that are addressed in this thesis and set the stage for the purpose going forward: to explore how new venture teamwork is influenced by uncertainty. In doing so this thesis complements and extends current models of new venture teamwork and develops theoretical foundation for future work.

1.1 Outline of the thesis

This thesis is organized as follows. Chapter 2 provides conceptual clarity regarding definitions and lays groundwork for the theoretical perspective of uncertainty taken throughout the thesis. Chapter 3 outlines methodological considerations, and Chapter 4 provides a summary of the appended papers. Chapter 5 discusses the findings and contributions and analyzes them in relation to the established theoretical lens of uncertainty. Finally, Chapter 6 discusses avenues for future research and possible ways forward.

[4] http://www.entrepreneur.lu.se/en/research/new_venture_teams_in_an_entrepreneurship_process

2. Literature Review

2.1 Delimiting New Venture Teams

A first step towards delimiting the NVT is establishing the perspective of entrepreneurship that is adopted in this thesis as well as the definitions of new venture, new venture team, and teamwork. First, entrepreneurship here is understood as the creation of new, for-profit companies (Davidsson 2005) and is conceptualized as an emergent, dynamic process that unfolds over time as a new venture grows and develops (Davidsson 2005, McMullen and Dimov 2013, Moroz and Hindle 2012). Accordingly, a new venture is defined as *"a firm that is in its early stages of development and growth"* (Klotz et al 2014, 227). These companies tend to be establishing organizational processes and procedures, developing and bringing their first products to market, and forming a customer base (Klotz et al. 2014). This definition is purposely broad and does not define new ventures based on age or size as such conditions tend to vary with industry and other contextual factors. Thus, ventures may not yet be formally incorporated; a strength of this thesis as much less is known about the very earliest stages of new venture teamwork (Klotz et al. 2014), a time that has been shown to have a large impact on the development of a new venture (Boecker 1989, Beckman and Burton 2008).

Second, teams within the field of entrepreneurship have been referred to various ways in literature, e.g. entrepreneurial teams, start-up teams, new venture teams, and founding teams. These terms are often used interchangeably and as previously mentioned have largely been conceptually aligned with TMTs in the UE literature. This thesis adopts the terminology and definition in Klotz et al (2014, 227) of a new venture team as *"the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture".* The term NVT is used over terms such as entrepreneurial team or founding team as it a) is thought to be more inclusive than the term founding team (new employees may be as much team members as founders) and b) captures a link to technology and innovation that the term entrepreneurial team may not. While entrepreneurial team is an umbrella for many kinds of groups attempting to start a firm including mom and pop type businesses, this thesis deals specifically with ventures that possess a component of technological innovation and are targeting high growth. High growth ventures create jobs, stimulate the economy, and have a higher impact on society (Delmar et al 2003; Davidsson 2006; Delmar 2006). Technological innovation (Schumpeter 1934) also adds another dimension of uncertainty to an already uncertain endeavor. Considering the rate of invention, diffusion, and utilization of new technology today, teams aiming for this kind of growth and innovation are worth studying.

Finally, teamwork, and not just teams, is the focus of this thesis. Here teamwork *"describes the interactions among team members"* (Mathieu et al. 2008, 420) and is *"the process by which members of the team*

combine their knowledge, skills, abilities, and other resources, through a coordinated series of actions to produce an outcome" (Forsyth 2009, 418).

As previously mentioned, NVTs are most often aligned with TMTs and more recently organizational teams. However, the following section illustrates that NVTs are in fact distinct from other types of teams due to the uncertain nature of entrepreneurship.

2.1.1 Differentiating NVTs from TMTs

TMT literature takes the stance that organizations are a reflection of their top managers, and that top executives play a pivotal role in shaping organizations. Scholars that adopt UE theory tend to argue that this group of senior executives is relevant because they are likely to possess power and their choices and actions impact the organization since they act as an interface between the organization and environment (Carpenter, Geletkanycz, and Sanders 2004). UE theory's central catalyst was the work of Hamrick and Mason (1984) which went on to influence the work of Boeker (1989) and Beckman and Burton (2008) who showed that imprinting, i.e. the early decisions and actions of founders, can have lasting effects on organizational processes, structures and outcomes long after the founders have left the organization. As NVTs are the 'top' managers of their ventures and have discretion and power it's easy to see the parallels to TMTs and why entrepreneurship scholars would initially draw on UE theory. However, there are a few key issues that make this problematic.

The TMT construct and team membership are most often identified by senior hierarchical level, as indicated by title or position within the company as these individuals are expected to have greater sway over strategic decisions (Carpenter, Geletkanycz, and Sanders 2004). However, in many early stage NVTs members do not yet have stable official titles or roles, nor may they warrant the 'senior' status of a top level position as they may lack experience and/or qualifications. The exclusivity of holding a senior title can also ignore important team members whose commitment to the venture and team are not captured by this requirement e.g. early employees. What's more, TMT senior executives are most often hired into a position in a company with established norms, routines and structures whereas new ventures lack these established structures, allowing the team to create its norms and shape the culture of its organization from the very beginning (Klotz et al. 2014). New venture team members also face a more 'extreme' context than TMTs, characterized by extreme uncertainty and potential personal risk (Baron 2008) and powerful emotional experiences (Cardon et al. 2012). Lastly, skepticism has also arisen as to whether TMTs actually operate as 'real' teams,

encouraging some scholars to call TMTs a 'myth': simply labeling a leadership group a team does not make it one (Katzenbach 1996).

This skepticism highlights the difference in how TMTs vs. work teams in organizations are delimited. For example, leading OB researchers Kozlowski and Bell (2013, 5) focus on behaviors rather than roles or titles when defining work groups and teams as "*collectives who exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity"* (p. 5). This focus on behaviors, as opposed to titles, is a fundamentally different way to conceptualize and delimit a team. While entrepreneurship's alignment with TMTs has come into question (Cooney 2005, Schjoedt et al. 2013, Klotz et al. 2014) the majority of empirical studies on team-based entrepreneurship tend follow TMT logic and identify team members by examining roles/titles; selecting those individuals that are listed (or regarded) as founders, owners and/or top management team members. However, some scholars have started to put more emphasis on behavioral factors specific to the NVT context in their criteria for team membership (e.g. Cooney 2005, Klotz et al. 2014, Ucbasaran et al. 2003), a move in line with Gartner et al. (1994) who argued that entrepreneurs should not necessarily be identified based on their position as an owner, founder, or investor alone, but also on the grounds of behavior (i.e. acquiring resources, setting up business operations and developing the venture's concept). The reason this discussion is so important is that entrepreneurship scholars need to ensure there is conceptual clarity regarding the object of study, in this case the NVT. It is important to consider what makes a team and what makes a team member in this context in order to ensure that scholars are getting at the people who a) make a difference in a venture b) make a difference within the dynamics of the team and c) work interdependently in a way that would actually grant them classification as a team.

The emerging bridge to OB and the importation of the IMO framework is a step in the right direction for NVT scholars. However, care should be taken when aligning NVTs with organizational teams and when importing theories and frameworks into entrepreneurship that are based on these teams.

2.1.2 Differentiating NVTs from organizational teams

As opposed to organizational teams found in OB literature (work, project, virtual teams etc.) NVTs have greater discretion in their managerial choices, fewer substitutes or blockers of leadership, and a wider latitude of action (Klotz et al. 2014). NVTs establish norms, process and procedures, often through trial and error, and hence are tasked more with creating and growing an organization as opposed to operating within

one. Accordingly, NVTs also face a more 'extreme' context than organizational teams (Cardon et al. 2012) and rather than being *embedded* in an organization, they *are* the organization. Thus, *neither TMT nor OB perspectives adequately capture the NVT context.*

The main underlying factor driving these differences between NVTs and other types of teams is a defining aspect of new venture creation (Knight 1921, McMullen and Shepherd 2006, Alvarez and Barney 2007, Sarasvathy 2001, 2008) and *"a conceptual cornerstone for most theories of the entrepreneur"* (McMullen and Shepherd 2006, 133): uncertainty.

2.2 The Uncertainty of New Venture Teamwork

While the 'unknowability' of the future makes all action to some degree uncertain (Mises 1949), uncertainty is compounded in the NVT context by novelty, a characteristic of entrepreneurial processes that manifests in the creation of new technologies, products, services, organizations, and even markets (Gartner 1990, Schumpeter 1934). While TMTs and OB work teams face some measure of uncertainty related to for example their strategies, products, technologies, or markets (Song and Montoya-Weiss 2001), NVTs are dealing with uncertainties that come along with *new* customers, *new* markets, *new* products, *new* technologies, *new* employees, *new* organizational structures and norms, and *new* relationships with highly interdependent team members. While other teams face uncertainties within the context of an organization, NVTs operate under the uncertainty of how, and whether an organization *can* in fact be built to develop, produce, and sell a good or service profitably (Cable and Shane 1997). NVTs thus face a resource uncertainty that teams in established organizations are less likely to experience or be affected by, and novice NVTs face the additional uncertainty of lacking knowledge and experience not compensated for by established organizational hierarchies, networks and practices available to new and/or inexperienced teams in established organizations. These uncertainties intermingle to form a context of unpredictability, goal and preference ambiguity, and an interactive environment that changes with every action (Engel, Kaandorp, and Elfring 2017).

Organization and entrepreneurship scholars have conceptualized uncertainty in multiple, often competing ways. For example (Milliken 1987) reviewed the organizational literature on uncertainty and proposed three distinct types of uncertainty: state, effect, and response. McKelvie, Haynie, and Gustavsson (2011) brought this framework into entrepreneurship and demonstrated that state uncertainty occurs when entrepreneurs perceive the business environment to be unpredictable, effect uncertainty when they have limited ability to predict how future environmental changes will impact the new venture, and response uncertainty when they are unsure how to respond to change, what their response options are, or what consequences will result from their responses. In contrast, McMullen and Shepherd (2006) depart from Milliken's framework and suggest

that importance lies not in which type of uncertainty is experienced but whether uncertainty has any impact on action, either through the amount of uncertainty perceived or the willingness to bear uncertainty. Thus, if uncertainty impacts action, it is worthy of consideration. This thesis relies on Milliken's general understanding of uncertainty as the *"perceived inability to predict something accurately"* (Milliken 1987, 136) and is present *"if, at the time a decision is being made, decision makers cannot collect the information needed to anticipate either the possible outcomes associated with a decision nor the probability of those outcomes"* (Alvarez and Barney 2007, 14). This thesis also subscribes to the view that uncertainty is subjective in nature and individuals may perceive and experience uncertainty differently (McMullen and Shepherd, 2006). In addition, uncertainty perceptions vary with both person and situation factors and can be affected by for example entrepreneurial experience (e.g. Baron and Henry 2010, McKelvie, Haynie, and Gustavsson 2011, Ucbasaran et al. 2010, Krueger 2007), psychological attributes (e.g. Frese and Gielnik 2014), fluid emotional states (e.g. Baron 2008, Cardon et al. 2012, Foo 2011, Podoynitsyna, Van der Bij, and Song 2012), situational factors such as the venture's life-cycle phase (e.g. Hite and Hesterly 2001) or environmental dynamism (e.g. Hmieleski, Carr, and Baron 2015).

One of the most paradigm shifting theoretical developments to come along within entrepreneurship research in recent years that has uncertainty at its core is effectuation (Sarasvathy 2001, 2008). Effectuation is a cognitive theory regarding how individual expert entrepreneurs make decisions under uncertainty. While recent criticism has questioned the development of effectuation research as well as its status as a theory (e.g. Arend, Sarooghi, and Burkemper 2015, Arend, Sarooghi, and Burkemper 2016, Garud and Gehman 2016, Gupta, Chiles, and McMullen 2016, Read et al. 2016, Reuber, Fischer, and Coviello 2016) the growing body of literature addressing effectuation and employing it to understand how uncertainty may influence entrepreneurial behaviors and outcomes is a testament to its merit (e.g. Chandler et al. 2011, Dew 2009, Engel et al. 2014, Perry, Chandler, and Markova 2012, Wiltbank et al. 2006, Engel et al. 2017, Engel, Kaandorp, and Elfring 2017). Effectuation as a theory is not used in this thesis per se, however Sarasvathy's portrayal of an 'entrepreneurial problem space' characterized by three types of uncertainty is employed in order to conceptualize uncertainty and describe the boundary conditions within which NVTs teamwork.

2.2.1 Uncertainty and the entrepreneurial problem space

Sarasvathy's entrepreneurial problem space is characterized by three types of uncertainty: Knightian uncertainty, goal and preference ambiguity, and isotropy. Knight (1921) made a conceptual distinction between risk and uncertainty that is most commonly illustrated using the statistical metaphor of the urn containing different colored balls. Say the urn is filled with green and pink balls and the game is to predict

the color of ball that will be pulled from the urn, risk is a scenario with a known distribution of balls but an unknown draw, i.e. there are 4 green balls and 4 pink balls, but it isn't known which one will be drawn. This type of unknown calls for analytical methods of the classical sort (Sarasvathy 2008). Uncertainty on the other hand is characterized by both an unknown distribution and an unknown draw. In order to deal with this kind of uncertainty one can employ techniques such as Bayesian estimation of probabilities. A third type of uncertainty however is when the distribution and draw are not only unknown, but they are unknowable in principle. In this case classical analytical tools and estimation are not helpful. Sarasvathy argues that the entrepreneurial problem space is characterized by this third type of uncertainty, Knightian uncertainty, and that entrepreneurs, and therefore NVTs by extension cannot calculate probabilities for future consequences.

The second type of uncertainty that characterizes the entrepreneurial problem space is goal ambiguity where preferences are neither known nor well ordered. NVTs may have some kind of overarching goal regarding starting a business of some kind, but it is difficult to set very specific, long-term fixed goals as there are too many unknowns. Goals and preferences thus continually evolve and are the product of action and interaction with the environment. The third type of uncertainty is isotropic, and refers to the fact that it is not always clear which pieces of information from the environment to pay attention to and which to ignore. For example, which aspects of feedback from potential customers, investors, suppliers and others should entrepreneurs heed, and which should they overlook? Isotropy can thus come across as 'mixed signals' and morph into problems of goal setting, as what the team 'should' do is unclear. These three characteristics of the entrepreneurial problem space create a very interactive environment that changes with every action (Weick 1979, Engel, Kaandorp, and Elfring 2017) and a context where prediction is impossible and goals are generated by action as opposed to preceding it. While Sarasvathy shows that these characteristics impact how individual entrepreneurs interact and make decisions, it is likely that these boundary conditions also have important implications for teams working in this context.

While much has been written about the link between entrepreneurs/entrepreneurship and uncertainty, little has been extrapolated to the NVT. This is perhaps not surprising since entrepreneurship research has historically focused on the individual entrepreneur as opposed to the team. There is general acknowledgement that *"the new venture context presents a unique and meaningful setting in which to study teams"* (Klotz et al. 2014, 228) however this context is described less in terms of uncertainty and more in terms of the power and managerial discretion NVTs have to shape and define their organizations. While Sarasvathy's theory of effectuation regards the individual entrepreneur, there is nothing about the entrepreneurial problem space *per se* that is specific to individuals. Therefore, this thesis extends this

conceptualization of uncertainty to represent the conditions under which NVTs work. In order to do so however, a few characteristics and assumptions of team research should first be outlined.

The multi-level nature of most team studies means that individual constructs often aggregate to form team level constructs (Klein and Kozlowski 2000, Kozlowski and Klein 2000, Fulmer and Gelfand 2012). Thus, if individual team members perceive and are influenced by uncertainty, the team is considered to perceive and be influenced by uncertainty. This aggregation is not always straightforward, i.e. the sum can be greater or lesser than its parts, however the team construct is nevertheless thought to be a reflection of its individual members. Therefore NVT members may not perceive uncertainty in the same way, at the same time, to the same degree, or have the same willingness to bear uncertainty. However the key assumption is not that uncertainty is perceived in the *same way* by team members, but rather that NVTs work under high uncertainty and this renders goals, or what the NVT 'should' do, ambiguous at best (Alvarez and Barney 2007, Alvarez, Barney, and Anderson 2013, McMullen and Shepherd 2006, Sarasvathy 2001). Sarasvathy (2008) acknowledges that in all likelihood entrepreneurs do not always face extreme uncertainty, and therefore alternate between causal and effectual logics. *Therefore, the assumption is that most of the time, in particular in the earliest stages of new venture creation, NVTs operate under uncertainty, and this uncertainty is characteristic of an entrepreneurial problem space.* Over time, as long as there is uncertainty about what to do next, the findings hold. However, as uncertainty recedes and organizational structures become more established and goals more focused, teams are thought to leave the entrepreneurial problem space and existing models of teamwork regain their viability. The way in which this has been operationalized in data collection is further explained in the methods chapter of this thesis.

To explore how new venture teamwork is influenced by uncertainty in the entrepreneurial problem space, this thesis considers two areas of teamwork: *team structure* and *team member interaction*, as illustrated in figure 1 below.

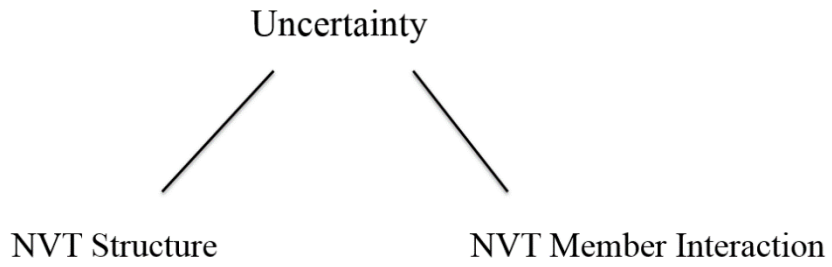

Figure 1. Theoretical framework for the thesis

Team structure is predominantly addressed in papers 1 and 2 while team member interaction is largely addressed in papers 3 and 4.

2.3 Research Questions

2.3.1 Team structure in an entrepreneurial problem space

Team structure is a broad term in team literature referring to the *"persistent and interrelated features of a group, such as roles and norms that influence the functioning of the group as a whole and create regularities in the interactions of its members"* (Forsyth 2009). It is also *"those features of the task, group, and organization that can be directly manipulated by managers to create the conditions for effective performance"* (Cohen and Bailey 1997, 243). Team structure thus relates to design issues of who is in the team (composition) and how teamwork is arranged (configuration), and is contingent on the context within which teams operate (Kozlowski and Bell 2013, Cohen and Bailey 1997, Mathieu et al. 2008).

The 'extreme' context of new venture teamwork; i.e. the entrepreneurial problem space characterized by uncertainty, is likely to influence team structure for several reasons. First, as mentioned above, team researchers acknowledge that team structure is contingent on context. Therefore context informs composition, configuration, and other design concerns. Second, Sarasvathy (2008, 2001), Engel et al. (2017) and others theorize that the types of uncertainty in the entrepreneurial problem space create a particularly interactive context for entrepreneurs. Since entrepreneurs don't know what is 'right' and can't predict what will happen or what they 'should' do, their only option is to continually interact with others and together carve out and clarify a problem and develop a solution, all in concert with environmental changes and feedback.

Team-working within these conditions would mean that team members need to constantly interact with their environment and each other to coordinate information and actions, revisit goals and assumptions, and remain open to new ideas and potential stakeholders (e.g. possible new team members) who could contribute resources and join in shaping the venture. These factors likely have structural implications for team configuration and composition as team member interaction would likely be more frequent, information channels would likely need to be more open, roles would likely be more fluid, and team boundaries may be more open and flexible. Scholars have begun to classify team members based on when and why they join or associate with an NVT (e.g. founders, joiners, helpers etc.) (Roach and Sauermann 2015), which circles back to the earlier discussion of what an NVT is, where its boundaries are and how it differs from other types of teams. The ongoing, unresolved debate as to whether heterogeneous or homogeneous NVTs

perform better (Klotz et al. 2014) may be a testament to the dynamic, changing nature of new venture teamwork.

This need to remain open, agile, and in constant interaction with one another and the environment leads to the first research question of the thesis:

RQ1: How is NVT structure influenced by uncertainty in the entrepreneurial problem space?

Team configuration and composition are the two main aspects of team structure that are considered in this thesis, which lead to two sub- research questions.

Within the entrepreneurial problem space:

a. Who is a part of the team and how is the team configured?
b. Under what circumstances does team composition help or hinder new venture performance?

These research questions are addressed by papers 1 and 2 respectively

2.3.2 Team member interaction in an entrepreneurial problem space

As theory around team member interaction in an entrepreneurial space has yet to be developed, this thesis draws on insights from theorizing on how individual entrepreneurs network and interact in this space. This is done with the intention of taking these insights and considering how they may change or evolve within the boundary of a team.

Insights from networking under uncertainty

Theorizing in this vein suggests that the boundary condition of uncertainty may call for a different approach to interpersonal interaction than other, less uncertain contexts (e.g. Sarasvathy and Dew 2008, Engel, Kaandorp, and Elfring 2017). Here, a basic paradox of human behavior is highlighted; the simultaneous pursuit of self and collective interests. Scholars argue that the condition of uncertainty encourages interaction that is pro-social, collective and altruistic in nature in addition to or in place of interaction that is motivated by pure self- interest (Van de Ven, Sapienza, and Villanueva 2007). In fact, increasing literature shows that under conditions of uncertainty individuals may be hardwired to behave altruistically (Engel, Kaandorp, and Elfring 2017, Simon 1993, Delton et al. 2011). Building on Sarasvathy (2001), Dew (2009) and others who have looked at networking from the perspective of effectuation theory, Engel, Kaandorp,

and Elfring (2017, 37) argue that "*the extent to which entrepreneurs are indeed calculative and instrumental networkers is limited by the ubiquity of uncertainty as a critical boundary condition"*. The authors go on to outline four main elements of networking under uncertainty in an entrepreneurial problem space: pre-commitment, intelligent altruism, generating contingency, and harvesting serendipity.

Pre-commitments are understood as self-imposed, non-negotiable constraints on future choices and are seen to bridge the gap between opportunism and trust in entrepreneurial networking (Sarasvathy and Dew 2003). Under uncertainty, openness to pre-commitments is a way for entrepreneurs to attract self-selected stakeholders by allowing them initial access to join in and shape the venture while both parties risk only what they can afford to lose. These pre-commitments are along the lines of iteration; testing and trying out new partnerships and ideas in the face of uncertainty. As goals are ambiguous and the future unpredictable, entrepreneurs cannot predict who they should partner with, what ideas are 'good' or will work, or how co-creation will unfold. Thus, in contrast to predictive approaches in which the future gain of each exchange is calculated and weighed in advance, pre-commitment is seen as a more flexible way for actors to try out a collaboration while controlling for their losses. This however does not mean that every potential tie is granted access to the venture. Rather, entrepreneurs open the door to possibility and allow others to offer up their commitments. Stakeholders that pass the commitment 'test' are given a voice in the re-design of the innovation, while those that do not commit, or whose commitments are not suitable or attractive enough, are not (Dew and Sarasvathy 2007).

Intelligent altruism is a concept originally developed by Simon (1993) and is an approach to interaction that is thought to enable entrepreneurs to attract pre-commitments and form early partnerships. While altruism is selfless behavior that "*reduces the actor's fitness while enhancing the fitness of others*" (Simon 1993, 156), intelligent altruism is generally understood as *"behavior that is neither extremely selfless nor completely opportunistic"* (Engel, Kaandorp, and Elfring 2017, 44, Simon 1993). Over time, it is thought that individuals have evolved to recognize when circumstances call for more altruistic or opportunistic behavior however, under uncertainty opportunism and altruism are often intertwined. Thus, under uncertainty, individuals may help themselves by helping others (Simon 1993).

Intelligent altruism echoes the concept of 'pay-it-forward', a popular layman's term that has emerged in relation to the behavioral culture of entrepreneurial hotspots such as Silicon Valley[56]. In both intelligent altruism and pay-if-forward, entrepreneurs manage uncertainty through interaction and helping others; by simply starting to interact, they help one another and in the process hope for the same behavior in return.

[5] https://www.forbes.com/sites/kevinready/2012/08/23/paying-it-forward-silicon-valleys-open-secret-to-success/#41d970582ec3
[6] https://steveblank.com/2011/09/15/the-pay-it-forward-culture/

This behavior connects to the reciprocity discussed in social exchange theory (Blau 1964) however it is not instrumental or calculative; the expectation is not 'I do this and you do something in return', but rather 'I do this and hopefully somewhere down the line someone will do something similar for me' (Engel, Kaandorp, and Elfring 2017, Adler and Kwon 2002).

Generating contingency and *harvesting serendipity* are the last elements of networking described by Engel, Kaandorp, and Elfring (2017). Serendipity here refers to *"search leading to unintended consequences"* (Dew 2009, 735). While uncertainty itself generates contingency by making goals ambiguous and outcomes unpredictable, entrepreneurs can generate and leverage even more surprise and create unexpected outcomes by exposing themselves to a range of diverse people and ideas and practicing intelligent altruism to attract pre-commitments. Thus, uncertainty itself, intelligent altruism and pre-commitments act as 'engines' of contingency and serendipity.

The role of trust

Some scholars have argued that this approach to interaction leads entrepreneurs to over-trust, i.e. trusting others more than the situation warrants (e.g. see the debate between Goel and Karri 2006, Sarasvathy and Dew 2008, Karri and Goel 2008). However, Sarasvathy and Dew (2008) argue that trust is not a central issue in networking in an entrepreneurial problem space. Their logic can be understood by considering a common definition of trust in the organizational literature: *"a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviors of another"* (Rousseau et al. 1998, 395). While networking, entrepreneurs are not placing bets or acting out of positive expectations of specific others. Rather, they are constantly interacting, remaining open to surprises and new potential partners, all while risking only what they can afford to lose. Thus, as they are not placing bets or losing more than they've deemed affordable, there isn't the sense of expectation and vulnerability that comes along with trust. Likewise, Sarasvathy and Dew (2003) position pre-commitments as a bridge between opportunism and trust, arguing that these trial commitments can be made without necessarily taking into consideration assumptions about an other's opportunism or trustworthiness. However, the journey of trust's relevance begins when stakeholders pass the pre-commitment 'test' (Dew and Sarasvathy 2007) and real commitments are made. It is at this point that the boundary of the team becomes interesting to talk about; commitments have been made, interactions are repeated, richer, and more frequent than one-off or even regular networking, and individuals begin investing perhaps more than they can afford to lose: time, resources, emotions, opportunity costs, etc. Thus, in this uncertain context trust becomes a *very* relevant concept to study within the boundary of the team.

Trust in teams

Team literature considers trust to be an emergent state. Emergent states are *"constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context"* (Marks, Mathieu, and Zaccaro 2001, 357). Emergent states such as trust are thus contingent on the context of the team, and arise from a team's interactive processes, which are *"interactions such as communication and conflict that occur among group members and external others"* (Cohen and Bailey 1997, 244). Trust has been described as directly linked to achieving a sense of ontological security; the 'protective cocoon' which stands guard over the self in its dealings with everyday people and reality (Giddens 1991, Dibben 2000). Some scholars have even gone so far as to say that there is "*no single variable which so thoroughly influences interpersonal and group behavior as does trust"* (Golembiewski and McConkie 1975, 31). More recently, trust within teams has been shown to have an overall positive impact on team performance, particularly in highly interdependent team contexts (De Jong, Dirks, and Gillespie 2016).

Entrepreneurship scholars have taken a general (Welter and Smallbone 2006) and critical (Welter 2012) look at the role of trust in entrepreneurial activity. While some research has been done examining trust within the context of entrepreneurial teams (e.g. Zolin, Kuckertz, and Kautonen 2011) this research usually treats trust as a mediating/moderating variable and not the main focus of the study, a trend largely mirrored in general team studies (De Jong, Dirks, and Gillespie 2016). To the best of this author's knowledge, trust within NVTs remains largely unexamined, and studying trust in relation to how team member interaction is influenced by uncertainty is novel.

Trust is particularly relevant and interesting in new venture teamwork for several reasons. First, trust, uncertainty, and interpersonal relationships go hand-in-hand; when uncertainty is high, the need for trust is high and when uncertainty is low the need for trust is low (Möllering 2006). Second, the often impending sense of crisis that can accompany new venture creation makes trust a relevant concept for NVTs as crisis is readily acknowledged as a trust intensifier (Mishra 1996, Dibben 2000). Third, new ventures are devoid of the bureaucratic structures that enable team members in larger organizations to *"intentionally or unintentionally surround themselves in the cloak of institutionalism*" (Dibben 2000, 4). Thus, lines of communication and decision-making are shorter, task delineation is less formalized and interactions are not obscured or regulated by formal structures, roles, authority, and patterns of behavior. Therefore, in NVTs trust may be more prescient as an interactional lubricant and substitute for formal structure.

While Sarasvathy and Dew (2008) may argue that trust does not play a central role in networking under uncertainty, for the many reasons discussed above it becomes a relevant construct to study when considering team-working and team member interaction under uncertainty. This leads to the second research question of the thesis:

RQ2. How is NVT member interaction influenced by uncertainty in the entrepreneurial problem space?

The main aspect of interaction within the team that is considered in this thesis is trust. This leads to two sub-research questions:

Within the entrepreneurial problem space:

a. How do NVTs initiate trust and control in the early stages of their teamwork?
b. How does intra-team trust emerge over time in new venture teamwork?

These research questions are largely addressed by papers 3 and 4.

Given the elements of entrepreneurial networking under uncertainty outlined by Engel, Kaandorp, and Elfring (2017), questions arise as to whether the same can be done for new venture teamwork or 'team-working' under uncertainty. This query is illustrated in figure 2 and leads to the third sub-research question:

c. Given insights from networking under uncertainty, can any 'elements' of team-working be distilled?

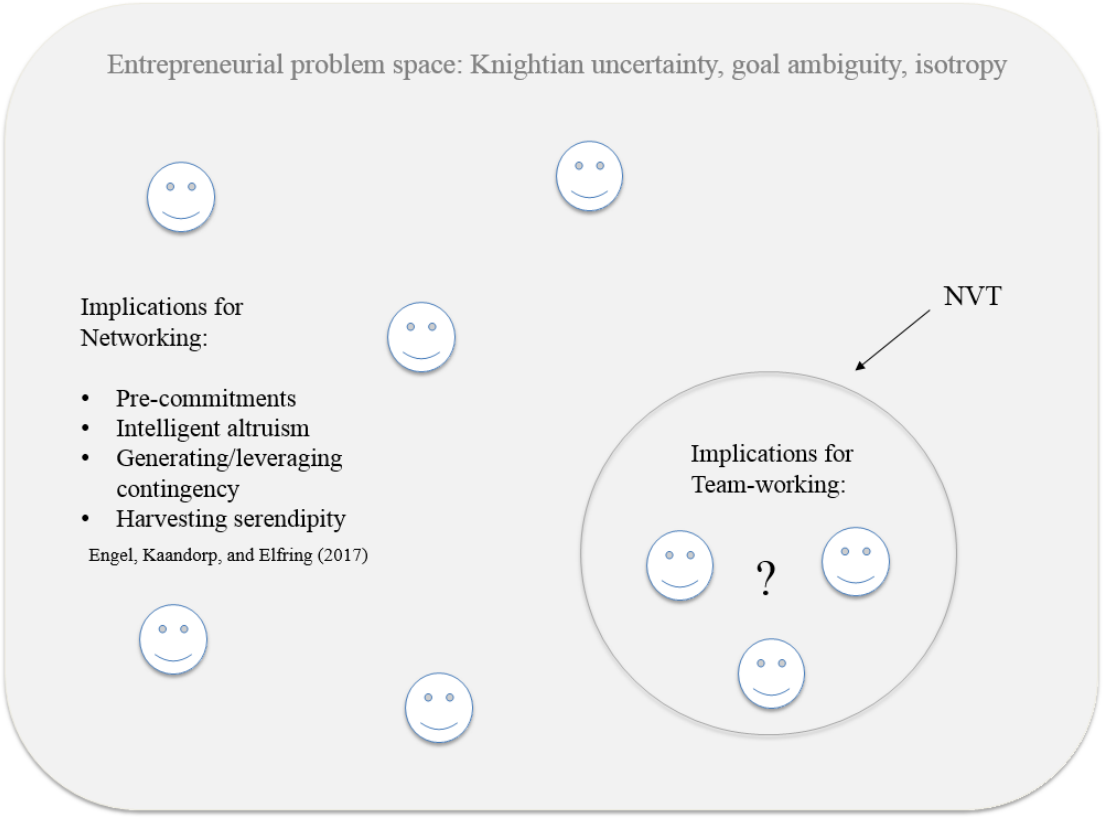

Figure 2. Understanding interaction under uncertainty within the boundary of the NVT: theorizing around elements of team-working in an entrepreneurial problem space

3. Research Methods

The purpose of this section is to provide an overview of the overall research design used to answer the research questions including the rational for the selected research setting. A more detailed description of the methodologies is available in each of the appended papers.

3.1 Research design

The type of research design selected depends on the overall purpose of the research as well as the questions being asked. This thesis aims to answer the two aforementioned research questions and sub-questions with the overall purpose of exploring how new venture teamwork is influenced by uncertainty. The research strategy was thus explorative and a number of different empirical analyses were carried out. The papers differ, but complement one another and work to answer the overall research questions.

An explorative strategy was selected for two main reasons. First, the field of NVT research is relatively nascent. While research on teams has been established in upper echelons (TMT) and organizational fields, the characteristics of uncertainty in entrepreneurship makes NVTs a separate, yet related concept. In addition, work that has been done on NVTs does not thoroughly consider and conceptualize uncertainty and its implications for new venture teamwork. This novelty motivates an explorative approach aimed at theory development. Explorative approaches can be both quantitative and qualitative in nature; however survey data generally has the reputation of being used to test rather than develop theory. This perception however often fails to capture the degree to which survey studies can be explorative and findings can result in theoretical contributions and departures from existing assumptions (Bryman and Bell 2015). Nevertheless there is general agreement within management and entrepreneurship research that nascent theory development calls for open-ended questions examined through qualitative data. This approach is intended to generate meaning through interpretation and connect to existing theory and is suitable when little is known about a phenomenon, or when existing theory does not adequately capture or explain phenomena (Bryman and Bell 2015, Eisenhardt and Graebner 2007, Edmondson and McManus 2007). Accordingly, all papers in this thesis take an explorative approach with papers 1, 3 and 4 adopting qualitative case study methodology and paper 2 adopting a quantitative survey methodology.

Second, as this thesis is part of a larger research project studying new venture team processes, part of the methodological idea was to get out in the field and ‘get dirty’; to learn about and characterize new venture teamwork and provide deeper understanding of the object of study in order to set the stage for future work.

This larger project[7] takes a mixed method approach and studies 120 teams in incubators across Sweden, Norway, Denmark, Russia and Jordan. The empirical setting for this thesis is one of the incubators selected for this larger project and is located at Chalmers University of Technology in Gothenburg, Sweden. The author is involved in ongoing qualitative and quantitative data collection at this site.

3.2 Empirical setting

As this thesis aims to study how NVT structure and team member interaction are influenced by uncertainty in an entrepreneurial problem space, it was necessary to find an empirical environment that a) provided the opportunity to study NVTs, b) possessed the characteristics of an entrepreneurial problem space i.e. Knightian uncertainty, goal ambiguity, and isotropy, and c) would grant the researcher the access needed to investigate both team structure and team member interaction. The incubator and accelerator programs at Chalmers University of Technology in Gothenburg, Sweden were deemed to fit the above criteria and thus selected as the setting for this research.

3.2.1 Qualifying Chalmers as a setting in which to study NVTs

Chalmers has a strong reputation as one of Sweden's premiere entrepreneurial hubs[8] and recently bolstered this reputation by committing 33M USD to investments in early stage new ventures over the course of the next ten years[9]. Two organizations at Chalmers work together to drive these initiatives; Chalmers Ventures AB[10] and Chalmers School of Entrepreneurship[11]. Together these organizations offer incubation and accelerator programs aimed at educating and nurturing entrepreneurs while fostering the development of high tech, high growth ventures. While Chalmers Ventures has various Start-up Camp and Hackathon activities, this thesis concerns the Encubation and Accelerator programs where entrepreneurs are admitted through a two-year Masters program and spend the entire second year of their Masters education developing real-life ventures. Throughout this year, dubbed 'Encubation', entrepreneurs form NVTs and work full-time on their high tech ventures in the supportive milieu of an incubator. Teams receive coaching, legal and accountancy advice, office space, and eligibility for up to 40K USD in pre-seed funding. Upon graduation from the Masters program, ventures may apply to the accelerator program. In this program ventures work from their own office space but continue to receive coaching and support from Chalmers Ventures for

[7] https://www.entrepreneur.lu.se/en/research/new_venture_teams_in_an_entrepreneurship_process
[8] http://www.expressen.se/gt/chalmers-bast-pa-entreprenorskap/
[9] http://digital.di.se/artikel/investerar-300-mkr-i-startups-at-chalmers-ventures
[10] http://chalmersventures.com/
[11] http://www.entrepreneur.chalmers.se/

roughly 2-3 years and are eligible to receive up to 500K USD in further seed investments. Companies who achieve good value growth, a verified business model, and demonstrate the potential to scale are eligible for additional growth investments. The maximum investment for any one company is 1.7M USD and criteria for investment is a clear connection to Gothenburg and innovative technology within the sectors such as ICT, new materials, environmental engineering, medical technology or biotechnology[12]. Chalmers Ventures is a for-profit organization and thus takes a percent ownership in return for investments. Companies developed through the Encubation and Accelerator programs are thus considered Chalmers Ventures portfolio companies.

Chalmers is a relevant setting to study NVTs as high tech start-ups play an important role in the present economy (Liu et al. 2010, Agarwal, Audretsch, and Sarkar 2007) and are likely to be team-based and multi-disciplinary due to the complexity of activities (Wright and Vanaelst 2009, Beckman and Burton 2008, Gartner 1985). Incubators are increasingly important in nurturing high tech ventures (Siegel, Wright, and Lockett 2007) and are a relevant context within which to study new venture teams as they offer many advantages. First, incubators allow researchers to select cases with favorable antecedents (Amezcua et al. 2013) as they often employ screening processes where individuals, teams, and ideas are evaluated prior to admission. Therefore, teams are presumed to have characteristics associated with high performance (e.g. a decent business idea, entrepreneurial motivation and skill, a minimum level of education and experience etc.) and are able to access a minimum level of resources through the incubator. Studying teams in incubators also grants the researcher a level of access that may be otherwise difficult to obtain. These factors constrain extraneous heterogeneity and minimize variation in a way that allows the researcher to focus on team processes and compare across cases; introducing elements of control that are desirable in both case-study (Eisenhardt 1989) and survey research (Bryman and Bell 2015). What's more, management (Langley et al. 2013), team (Mathieu et al. 2008) and entrepreneurship (Aldrich 1999, Van de Ven and Engleman 2004) scholars alike have called for a move from static to more processual forms of research in order to understand the mechanisms and processes that underlie team dynamics. However, collecting longitudinal data on teams is complex and time consuming (Arrow et al. 2004). Incubator environments provide a cost effective way to sample teams (Ebbers 2014) and address challenges of identification and access to emerging ventures (Wright and Vanaelst 2009), providing opportunities to follow teams longitudinally while tapping into multiple sources of data.

[12] http://chalmersventures.com/money

3.2.2 Chalmers as an entrepreneurial problem space

Since uncertainty is a central part of this thesis, it is essential to ensure that the empirical environment can be considered an 'entrepreneurial problem space', and that the NVTs in question are facing the three qualifying types of uncertainty: Knightian, goal ambiguity, and isotropy.

As many of the NVTs in this study are, or at one time were students, questions could arise as to whether they are 'real' NVTs developing 'real' ventures facing 'real' uncertainties. While student samples are often used in disciplines such psychology and organizational studies, entrepreneurship has generally shied away from using student samples as contextual factors are thought to stray too far from the real-life uncertain and ambiguous nature of venture creation. However, the NVTs in this study are considered *real NVTs* facing *real uncertainties* in an entrepreneurial problem space for several reasons. First, incubation is an increasingly common way to start a venture (Siegel, Wright, and Lockett 2007) and programs like Chalmers that combine incubation and education are increasing in numbers across the globe (Ollila and Williams-Middleton 2011, Lackéus and Williams Middleton 2015). Second, the programs at Chalmers are prestigious and competitive, and applicants go through a rigorous application process in order to gain admission. Once admitted, the opportunity to participate comes with real expectations, real money, and real high tech ideas or 'babies' that originate with either the entrepreneurs themselves or through idea partners and inventors. In other words, there is real skin in the game. Third, NVTs work on their ventures full time for the entire second year of the Masters program, participating in formal lectures on Tuesdays only. Even then, lectures most often address some aspect of venture creation and are therefore directly related. Fourth, for those ventures that survive the first year, positions in the accelerator program are not a given and NVTs need to compete to secure a place, thus upping the ante even more. Finally, while some of the teams in this study were student NVTs at the time of data collection, other NVTs had already left the incubator and were out developing their ventures in their own office space collecting salaries, hiring employees, negotiating deals with customers, suppliers, investors, etc. Therefore, any argument that these are not 'real' ventures is misguided and does not match the realities these NVTs face.

Incubator programs no doubt provide added support and a safety net for ventures in order to help them make it through nascency; this is in fact their very mandate. Thus, experienced coaches may provide occasional guidance on how to build the business, what to do next, how/where to get financial support, and who/how to hire. The incubator itself may provide direct support in the form of office space, legal advice, and a network of other entrepreneurs among other things. However, while one could argue that these support mechanisms work to reduce uncertainty, the fact remains that these NVTs are partaking in a process of entrepreneurship, the act of new venture creation, which places them within an entrepreneurial problem

space. Sarasvathy's theory of effectuation (Sarasvathy 2001, 2008) is a theory of expertise, i.e. how expert entrepreneurs make decisions under uncertainty. Thus, even *expert entrepreneurs*, with all their experience, resources, and networks face the uncertainties of an entrepreneurial problem space. Thus, incubators can provide support and coaches can give advice based on their knowledge and experience, but uncertainty remains as there is no 'right' answer. Thus, within an incubator, goals are still ambiguous, the future is still unpredictable, and information is still isotropic, it may all just seem a little less intimidating and manageable for NVTs than if they were to go it alone.

3.2.3 Studying team structure and team member interactions at Chalmers

Chalmers is a fantastic place to study both team structure and team member interaction for several reasons. The incubator and educational program keep documentation on admissions, team formation, team norms, idea selection and development, business plans, learning journals, and venture financial information among other things. NVTs are required to submit progress reports and pitch their ventures at intervals, as well as meet with coaches and program personnel for updates and development talks. As a Chalmers researcher, the author has access to all of this documentation, and can use it to, for example, compare the kinds of norms teams are developing, see how they have selected and prioritized their team members, or how roles are developing over time. In addition to this documentation, the author can meet with program personnel such as coaches, lecturers as well as incubator and school managers to get an external perspective on the team. In terms of team member interaction, the author sits on the same floor, down the hall, from the Chalmers incubator. Thus, at any time she can pop in and talk to teams; simply sit, observe and takes notes, or arrange to observe more formal meetings or conduct interviews. Thus, as a researcher studying NVTs, the Chalmers environment provides unparalleled access to investigate the structure and dynamics of an understudied and emerging phenomenon.

3.2.4 Multi-level nature of team studies

As previously mentioned, team studies are multi-level by nature and individual constructs are often aggregated to form team level constructs (Kozlowski and Bell 2013, Klein and Kozlowski 2000, Kozlowski and Klein 2000). Team studies that have the team as the main unit of analysis can therefore collect data at the individual level and aggregate this information to form a team perspective, or collect data directly at the team level. For example, interviews can be done with individual members, and a picture of the team created from these individual perspectives, or conducted with the team as a whole. This thesis has the team as the main unit of analysis, and data was collected at both the individual and team levels in order to develop a more comprehensive understanding of the structure and dynamics of the team.

As the author is interested in interactions among team members including sensitive constructs such as trust, it was seen as appropriate to interview individual team members in order to get their perspectives and allow

them to reflect on how they interact with other individual team members. On the other hand, triangulating this kind of individual data with team level data such as team norms documents is useful in creating a more holistic perspective of the team. It also provides opportunities to theorize around mechanisms of how individual constructs aggregate to form team level constructs. Chalmers is a suitable empirical environment for multi-level studies because of the range of both individual and team level data available to the author, e.g. individual interviews, observing team level meetings, access to both team and individual level documentation, etc. This is considered a real strength of this research as it gives a more in-depth, comprehensive picture of the emergent, understudied phenomenon of new venture teamwork.

3.3 Case study and survey research

This thesis takes an explorative approach aimed at theory development. This section briefly describes the rationale behind the specific methodologies taken in the thesis, however a more detailed description can be found in each of the appended papers.

3.3.1 Case studies

Case studies are *"rich, empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources"* (Eisenhardt and Graebner 2007, 25). Case studies are particularly suited for studying dynamic phenomena and collecting multi-level data about how processes unfold and interact over time (Eisenhardt and Graebner 2007, Langley et al. 2013). Case studies provide an opportunity to build theory through the creation of new concepts and propositions (Eisenhardt 1989) and are particularly suitable for studying under- or unexplored phenomena, such as new venture teamwork. NVTs within incubators are particularly suited to case study research as they are easily identified as cases embedded in a larger institutional environment, a factor that as previously described helps to control for heterogeneity between cases. Case study methodology was used in papers 1, 3 and 4.

3.3.2 Sampling cases

In case study research cases are sampled based on the expectation that they will provide new insights about a phenomenon, or because the researcher has good access (Eisenhardt and Graebner 2007, Yin 1994). Thus, sampling is not random and theory building is done by comparing cases to each other, or by comparing cases to existing theory (Yin 1994, Eisenhardt 1989, Eisenhardt and Graebner 2007). The main criteria for sampling cases in this thesis were that teams had at least two members (Kozlowski and Bell 2013), originated from the Chalmers Ventures incubator, and that the NVTs would grant significant access. As the nature of inquiry could be perceived as a sensitive subject, e.g. trust between team members, it was important

that the researcher found cases that were willing to discuss these kinds of matters and be willing to provide multiple sources of data. In order to secure these cases, preliminary semi-structured interviews were conducted with 7 NVTs, 3 of which were willing to participate in the study and were deemed willing and capable of providing the kind of necessary data. The three selected cases were between 1-3 years old at the time the study commenced. All NVTs originated from the incubator at Chalmers, however only one, the youngest, was currently in the incubator at the beginning of the study. These NVTs are the cases studied in papers 1 and 4. Paper 3 on the other hand sampled all cases for the period 2011 – 2015 that participated in the incubator program, a total of 56 NVTs.

3.3.3 Survey data

Survey data was used in paper 2 in order to examine the circumstances under which composition helps or hinders new venture performance in an entrepreneurial problem space. For this study 118 students in the first year of the Masters program participated in two week-long tasks in teams of 4-7. This study was conducted to see how established team theory behaved in an entrepreneurial setting and looked at the relationship between team composition in the form of Group Value Consensus (Jehn 1994, O'Reilly, Chatman, and Caldwell 1991) and performance. While these teams were not yet NVTs *per se* as they were students in the first year of the program, they did participate in tasks that are similar to those performed by NVTs. Further details of the survey sample along with the procedures for collecting and analyzing the data can be found in paper 2.

3.4 Limitations and special considerations

Each of the appended papers in this thesis contains a reflection of its specific limitations as well as possible directions for future research. The purpose of this section is therefore to outline some of the overarching limitations that pertain to the thesis as a whole, as well as emphasize that findings should be interpreted in light of these limitations.

3.4.1 Chalmers and the Swedish context

The cultural context for this research is Sweden, and while the program is international and NVTs are to some extent culturally diverse, Swedish values and cultural norms are inevitably prescient and contextually relevant. For example, Swedish inclination towards flat organizations means that NVTs often share leadership and single out a formal leader only for the purposes of registration as a company. Many of the NVTs who continue with their ventures post incubation, such as the ones studied in this thesis, consist of two of the original three or so team members. This dynamic means that a partnership develops, and members

often go on to develop leadership in their respective areas. NVTs in the research setting may also share leadership as it is simply the norm of the program at Chalmers, and may relate to the way the teams are formed; individual team members start on equal footing and join the venture at the same time, thus precluding the phenomenon of the 'lead entrepreneur'. Sweden is also considered to have high generalized trust, i.e. the extent to which one believes others in society can be trusted (Bjørnskov 2007). Rather than reflecting person factors or interpersonal trust per se, generalized trust largely reflects institutional trust, or trust in society's systems, norms, and structures to encourage trusting and trustworthy behavior. Thus, it is not that Swedes as individuals are necessarily more trusting or trustworthy than for example Ugandans, but Swedish society is constructed as such that Swedes can have confidence in their fellow citizens. These cultural characteristics of the research setting may be fundamentally different in other contexts and are worthy of taking into consideration when interpreting findings. As this author is part of a larger ongoing NVT project studying teams in incubators across Sweden, Norway, Russia, and Jordan, it could be useful in future research to take these cultural considerations into account.

Along a similar vein, the empirical setting for all of the research in this setting has been NVTs at, or originating from Chalmers University of Technology. The fact that this is a technical university, and still a relatively new type program (incubation/education) should be taken into consideration. As argued earlier, Chalmers is an excellent empirical environment in which to study NVTs, however the fact that the author is part of a larger research group, studying NVTs at other incubators within Sweden and abroad will only act to develop and enrich theorizing as findings can be compared and contrasted across locations. Lastly, it is worth noting that the majority of NVTs in the research setting are made up of young, novice entrepreneurs. While some team members may have experience starting and developing ventures, many are doing this for the first or second time, with some 'trying it out' to see if it is something for them. This factor may have implications for some of the findings in terms of for example how team members perceive and react to uncertainty. If they are new to entrepreneurship, and new to these types of uncertainty, they may react in different ways than more experienced NVTs. This matter is addressed further in the discussion section of Chapter 5 of this thesis.

4. Summary of appended papers

This section briefly summarizes the appended papers and outlines the author's contribution to each paper.

4.1 Paper 1: Finding the team: Roles, behavior and relations in team-based entrepreneurship

This explorative, multiple case study takes a bottom-up perspective and follows 3 new ventures from their formation to present day using case study methodology in order to ask *"who is a part of your team and why?"* This study tracks team member changes over time and finds that in addition to roles and behaviors, which are the focus of current team-based definitions conceived by researchers, relational elements such as rich and frequent interaction, interdependence, commitment and a shared social identity are important factors in determining team membership and configuration. This paper argues for a more inclusive and dynamic understanding of team as organizational members who are not necessarily part of the core may in some cases be classified as team members. In addition to entry and exit, team member mobility includes movement within the organization in terms of core, operational and supportive tiers. This paper contributes by showing that team structure, in the form of team boundaries, roles and membership is much more dynamic and interactive than currently captured in upper echelons, organizational or team-based entrepreneurship literatures. *Both authors of paper 1 contributed equally to the conceptualization and writing of the paper, with the thesis author taking sole responsibility for data collection and analysis.*

4.2 Paper 2: Best team for two tasks? The divergent effect of group value consensus on performance

This paper shows that the same team composition (in this case homogeneous values) can be beneficial to NVT performance in some tasks (internal/conceptual) and detrimental to NVT performance in other types of tasks (external/behavioral). As NVTs have to partake in both types of tasks, often in parallel, it is difficult for NVTs to establish an 'ideal' composition or configuration. Instead, teams need to be flexible, bringing in competence when it is needed, and/or shifting around members based on the tasks at hand and the composition available within the team. This paper contributes to the heterogeneous/homogeneous NVT composition debate by showing that there may be no best team composition for all tasks and that NVTs may benefit from being flexible in their composition and configuration. *The thesis author is the second author of this paper and contributed to the conceptualization of the paper, development of the data collection instrument, data collection and treatment, and paper writing.*

4.3 Paper 3: Trust and control in new venture team emergence

The purpose of this paper is to investigate the ways in which NVTs initiate trust and control in the early stages of venture emergence. This qualitative paper builds from existing literature of the dimensions of trust and control and applies these as an analytical framework to 56 NVT norms documents. This study finds that the use of trust or control in norms can influence entrepreneurial perseverance and that novice NVTs on the whole prioritized controlling as opposed to trusting norms. Teams that had highly trusting norms were shown to persevere much longer than teams with highly controlling norms. Implications are insights into how trust and control can be understood within a context of team dynamics during emergence as well as soft skills entrepreneurs can develop while working in their teams. This paper contributes by illustrating the ways in which trust and control influence team dynamics during venture emergence and shows that NVTs may prime their dynamics through the use of trust and/or control language in team norms. *The authors of this paper are equal authors, with the thesis author contributing to the conceptualization of the paper, development of the analytical framework, data collection and analysis, and paper writing.*

4.4 Paper 4: Emergence of trust in teams: a multilevel process model

This paper studies the emergence of intra-team trust based on an inductive, longitudinal case study of a three year old new venture team. To do so, the paper relies on i) interviews with team members at two different points in time; ii) a survey; iii) biweekly diaries from team members and iii) team members' written assessments of each other prior to team formation. This paper theorizes around two related processes of intra-team trust emergence: i) the emergence of trust in the team as a collective and ii) the emergence of interpersonal trust within the team. Analysis uncovers a complex and diverse pattern, where processes of high trust, low trust and distrust simultaneously emerge within the team. This paper contributes by theorizing around mechanisms of how individual level trust aggregates to team level trust in an NVT, and shows that core team members develop either categorical or complex perceptions of other team members' trustworthiness depending on which conceptual team tier they belong to. *The thesis author is the lead author of this paper. Both authors contributed to the conceptualization of the paper and development of the interview guide. Data collection and analysis was conducted by the thesis author, who also took a lead role in writing the paper.*

5. Discussion

The purpose of this section is to synthesize and build on the contributions of the appended papers in order to answer the research questions and theorize around how NVT structure and team member interaction are influenced by uncertainty. This is accomplished by analyzing the findings from the appended papers in relation to the conceptualization of uncertainty as described in chapter 2 (Sarasvathy 2001, 2008, Engel, Kaandorp, and Elfring 2017).

5.1 Team structure and uncertainty

The first set of research questions deals with the structure of an NVT. The overarching research question was: *how is team structure influenced by uncertainty in the entrepreneurial problem space?* The sub-research questions were: a) *who is part of the team and how is the team configured* and b) *under what circumstances does team composition help or hinder new venture performance?* These questions are largely answered by papers 1 and 2 in the thesis.

The main findings from papers 1 and 2 are that NVT structure is much more flexible, dynamic and interactive than what is currently captured by upper echelons (TMT), organizational team research, and team-based entrepreneurship literatures. Paper 1 illustrates the flexibility of NVT boundaries, membership and roles by showing that there are founders, new employees, helpers, consultants, bachelor and masters student workers, part-time team members, virtual team members, coaches, advisors, board members etc. that are all involved and contribute resources in the early stages of new venture development. These individuals all have an impact on the venture, but are not all considered team members. Why?

As outlined in chapter 2 of this thesis, an entrepreneurial problem space is characterized by an unknowable future, goal and preference ambiguity and an interactive environment that creates large amounts of conflicting feedback making entrepreneurs unsure about what to listen to and what to ignore. These factors create the need for flexibility and openness and for many different kinds of people and competences to be involved in the early stages of venture creation. In the beginning, the need, market, customer, offer, etc. i.e. in essence what the venture will become, are unknown or at the very least unclear and ill-formed. Thus, the competencies and the roles needed are also unknown and evolving. It is as entrepreneurs interact with their environment, testing and iterating, trying out people, partnerships, competencies and ideas that the venture takes shape and suitable roles and competencies are established. However, even once some initial structure takes form, the interactive, uncertain environment and evolving nature of the venture drive a continued need for openness and flexibility. Engel, Kaandorp, and Elfring (2017), Sarasvathy and Dew (2008) and Sarasvathy (2008) discuss this openness in terms of networking in an entrepreneurial problem space. The

authors argue that under uncertainty entrepreneurs should be very open and generate contingency by seeking out new interpersonal ties with others who are diverse in background and perspective. As the range and breadth of search activities are strongly associated with unexpected discovery (Granovetter 1973, Burt 2004, Kim and Aldrich 2005), interacting with dissimilar others increases opportunities to experience diverse points of view and in turn generates the unexpected and harvests serendipity. The authors argue that pre-commitments allow entrepreneurs to self-select into the process and help shape the venture, in turn risking only what they can afford to lose. While this theorizing is done from the perspective of an individual entrepreneur, paper 1 shows that NVTs as a unit also open their boundaries to a variety of individuals in order to remain open to ideas and competencies and test out collaborations for potential fits.

According to the NVTs interviewed in paper 1, within all of this interaction amongst various stakeholders, the team boundary is based on ongoing rich and very frequent interaction, a sense of responsibility and involvement in the ongoing strategic decision making and direction of the venture, a sense of identity as in, this is 'us' and we are in this 'together', and an underlying understanding of commitment. In the words of Pete, CEO and founder of Beta and one of the interviewees, in order to be part of the 'team' you need to:

"be part of the discussions, to be part of the 'we should do this or that', basically be part of the development of the company as a whole and not be as much yupp, that's great, I'll do that (…) we're so small at the moment, it's just that interaction, there needs to be a lot of interaction between the different members (…) at the moment because we're such a small team everything does get discussed more or less (…) I mean technically Christina (co-founder) and I own shares in the company but Eric (first hire) doesn't but I see him as much a part of the team as Christina or myself" (Pete, interview Jun 2016)

The people that met the above criteria in the three cases were founders and first employees. While the NVTs in the study acknowledged that there were many other people involved; some staying, some coming and going like part-time employees, masters and bachelor's thesis workers, board members etc., 'team members' were individuals *who take responsibility for the venture and face and work through uncertainty together on a day to day basis, and have faced and worked through uncertainty together in the past.* Thus, team membership is not just about ownership, or founding status, C-level titles, or power in decision making. It is about the group of people who have made, and continue to make, the commitment to tackle uncertainty together.

The X-teams framework of Ancona, Bresman, and Kaeufer (2002) consisting of core, operational and supportive tiers helped to further differentiate between layers in the NVT. The individuals who were initially identified as 'team members' in the cases were categorized as part of the 'core' team when entrepreneurs were presented with the X-teams framework. Some individuals, such as Jon a part-time software developer

and Drew a board member, were considered a part of the 'larger team' as operational and supportive members respectively, however not a part of the 'core' team. Thus, the core team consisted of founders and first employees. However, within this core, the tiered team framework helped to highlight differences between these team members. In two of the cases the founders had hired a first employee who worked with the venture as a technical developer. Using the X-teams framework, these individuals were initially placed by all team members (including themselves) near the boundary between operational and core, while the founders were placed directly in the core. Reasons for this distinction centered on identity and commitment/responsibility:

"Me and Christina are more Beta than Eric (first employee) is" (Pete, interview Nov 2015).

"In some way we want to make Chris (first employee) a stakeholder, if not a shareholder at least some sort of, to have some stake in it to get the motivation, to become, to come into a new company and not be an employee but rather take this responsibility" (John, interview Dec 2015)

Founders pointed to the first employees' limited time with the venture, and worked towards incorporating first employees into the core over time. However, the topic of commitment came up repeatedly in the interview waves, with founders wondering if new employees could, or ever should be quite as 'core' as themselves. These questions arose not because of personal characteristics of first employees, but because the founders had seen the venture, and each other, through its most uncertain, vulnerable times, the earliest stages, the point of going from nothing to something. This raises an interesting insight about the concept of imprinting; not only can founders imprint on a venture and have lasting effects (Boeker 1989, Beckman and Burton 2008) *but early experiences and the accompanying uncertainty may imprint on founders, creating hypothetical dividing lines with between founders and early employees in NVTs.* It is quite possible that these 'faultlines' (Lau and Murnighan 1998) could have implications for team dynamics and team growth going forward, depending on how they are managed. This issue of commitment links to the discussion in Engel, Kaandorp, and Elfring (2017), Sarasvathy and Dew (2008) and Sarasvathy (2008) of the role of *pre-commitments* in networking in an entrepreneurial problem space. It seems that within the boundary of an NVT, team-working in an entrepreneurial problem space is more concerned with *post-commitments;* what happens post-commitment, or how pre-commitment evolves and develops into real commitment.

While these dynamics are evolving within the boundary of an NVT in an entrepreneurial problem space, this boundary needs to be flexible and open as the NVT as a collective still needs to continually expose itself to a diverse array of people and competencies by bringing in self-selected stakeholders such as design students, part-time workers, board members and others as seen in the cases in paper 1. Through this exposure NVTs can create opportunities for serendipitous encounters with possible new team members and partners

while bringing in new resources and competencies to the venture. As the venture evolves it may become evident that team members, or potential team members, are not actually suitable for particular roles, skill sets may become less relevant, or new skill sets may be required. Individuals may also simply turn out to be incompatible or relationships may suffer under the strain of uncertainty and constant change. Depending on how affordable losses actually are, and how firm commitments have been made (e.g. shareholders agreements, employment agreements, intellectual property etc.) team members may move within core, operational and supportive tiers or in and out of the team. This is evidenced in paper 4 in the Alpha case (also a case in paper 1) when Mike, a founder and part-time CTO, is relegated from the core to a more supportive tier in a 'free-roamer' role because:

"He wants to realize his ideas, it's more like a playground, he wants to build things and test them, and we want him to build the things that the customers are paying us for and nothing else and it's a problem" (John, interview Dec 2015)

Paper 2 also speaks to the need for NVTs to be flexible in their configurations. This paper shows that the same team composition (in this case homogeneous values) can be beneficial to NVT performance in some tasks (internal/conceptual) and detrimental to NVT performance in other types of tasks (external/behavioral). In entrepreneurship literature these tasks are often conceptualized as gestation activities (Carter, Gartner, and Reynolds 1996, Reynolds and Miller 1992), and NVTs have to partake in both types of tasks, often in parallel. This, combined with the fact that there is uncertainty around what composition will be desirable in the future, make it difficult for NVTs to establish an 'ideal' composition or configuration. Instead, teams need to be flexible, bringing in competence when it is needed, and/or shifting around members based on the tasks at hand and the composition available within the team. At some point NVTs may leave the entrepreneurial problem space and evolve into some kind of organizational team or TMT as the venture establishes itself as a legitimate, stable business. In this process uncertainty recedes, goals and preferences become clearer and organizational structures are established. At this point, existing models of the team become viable again. However, until this occurs uncertainty requires teams to have a flexible, open, fluid structure.

5.2 Team member interaction and uncertainty

The second set of research questions deals more specifically with team member interactions within an NVT. The overarching research question was: *how is team member interaction influenced by uncertainty in the entrepreneurial problem space?* The sub-research questions were a) *how do new venture teams initiate trust and control in the early stages of their teamwork,* b) *How does intra-team trust emerge over time in new*

venture teamwork, and c) *given insights from networking under uncertainty, can any 'elements' of team-working be distilled?* These questions are largely answered by papers 3 and 4 in the thesis.

As the thesis has thus far demonstrated, uncertainty influences NVTs to adopt an open, flexible, interactive, and tiered structure that allows team members to move within the team and take on different roles, responsibilities and configurations as the venture develops over time. Uncertainty also encourages NVTs to open up their boundaries to diverse others in order to generate contingencies, try out potential collaborations, and bring new ideas and resources to the venture. Papers 3 and 4 in the thesis show that these fluid structural aspects of the team under uncertainty are facilitated by a) trusting as opposed to controlling team norms and b) a strong and grounded 'core' of (in these cases) founding team members.

5.2.1 Trusting over controlling norms in the face of uncertainty

Paper 3 analyzed the norms documents of 56 NVTs and found that teams with more trusting as opposed to controlling norms tended to persevere longer in their venture creation efforts. Norms considered to be trusting in this study were those such as *"have common sense"* which gave team members leeway and showed confidence in one another's integrity (a sense of shared, acceptable principles). More controlling norms on the other hand were those that focused on specific behaviours, such as requiring team members to work certain hours, always be at the office, attend all meetings, share all information, etc. Trusting norms tended to work from a set of shared or agreed upon values and principles as opposed to behavioral or goal oriented rules. Considering the characteristics of an entrepreneurial problem space and the ensuing requirements for a more flexible and open structure, trusting norms make sense as team members need latitude to both move around within the team, but also interact with potential stakeholders outside of the team to attract pre-commitments and leverage opportunities and contingencies along the way.

Considering the established theorizing around interaction under uncertainty presented in chapter 2, with the dichotomy of altruism-opportunism and the related concepts of intelligent altruism and pay-it-forward, trusting norms would be more along the lines of altruism and intelligent altruism/pay-it-forward while controlling norms would be more along the lines of calculation and controlling for opportunism. While trusting or "intelligently altruistic" norms facilitate flexibility, they also foster trust-building within the team because actions are reciprocated willingly and not by the force of contracts, rules or formal obligations. Thus trust emerges in the team through creating norms that allow team members the opportunity to show their trustworthiness and reciprocity over time. The boundary condition of uncertainty thus means that *governance of NVTs should focus on trusting over controlling norms in order to cultivate team agility, maintain openness to unexpected contingencies, and foster the emergence of trust within the team.* While

intelligent altruism may be a gateway to trust, it isn't yet clear just how these two concepts are related. This provides an interesting avenue for future research.

An important aspect of this study is that the NVTs were largely *novices*, i.e. team members had relatively little experience with new venture creation. Interestingly, most of the teams favored controlling over trusting norms, which may indicate that when new to an entrepreneurial problem space, and faced with Knightian uncertainty, goal ambiguity and isotropy for the first time, the initial reaction may be to try to control the environment and one another, thus novices may 'under-trust' as opposed to the suggestion in Goel and Karri (2006) that entrepreneurs 'over-trust'. One possible explanation is that novices may be more familiar with managing risk through the calculation of probabilities as opposed to operating under high uncertainty. Therefore, this kind of pay-it-forward or trust-based interaction is not necessarily something that comes naturally, but must be learnt over time.

5.2.2 The importance of a grounded 'core'

In the two cases with a new employee (Alpha and Beta) both the founders and new employees of both companies emphasized that founders were the core of the NVT and the foundation of the company. As the NVT's core, founding team members are crucial as they *"are often present at the start of the team (…) carry the team's history and identity (…) make key decisions (…) and understand why early decisions were made"* (Ancona, Bresman, and Kaeufer 2002, 32). However, the core is not necessarily a management level; core members may frequently work beside other team members of equal or higher rank. Core members are however crucial to a team, and if they leave, teams usually take a long time to get back on track (Ancona, Bresman, and Kaeufer 2002, 32). All team members in these two cases asserted that the relationship between founders was essential to the health of the larger NVT and venture:

"We (Sam and John) are the corner pillars of the company and if we are not balanced the company will not be balanced" (Sam, interview Mar 2016)

This importance of a strong foundational core from which to grow harks back to chapter 1 of this thesis when Ilan and Tom, the co-founders of Genius.com were introduced. These founders were in couples' therapy as they recognized that *"if something goes wrong with their relationship, something could go wrong with their company"*[13]. Thus, the relational dynamic between founders does not seem to be your typical work-team or colleague dynamic. Interestingly, this dynamic did not naturally or immediately extend to first employees in the cases, even though they came in at a very early stage, contributed important resources and

[13] https://www.nytimes.com/2015/04/19/fashion/anger-management-why-the-genius-founders-turned-to-couples-therapy.html?_r=0

had a big hand in shaping the venture. This could be because *the founder dynamic is forged under the most uncertainty* and *first employees, despite being part of the NVT, do not bear or commit to take responsibility under uncertainty to the same extent or in the same way as founders.* Even if employees come in at a very early phase, there are likely more knowns and more structure by the time they arrive. Since founders and new employees (joiners) have different motivations for engaging in new venture creation (Roach and Sauermann 2015) they may also have different exposure to, or willingness to bear uncertainty in the venture, thus influencing their interactions and the nature of the relationships they develop within the team.

In order to face the multidimensional uncertainties and ongoing change within an entrepreneurial problem space interaction within the team, in particular between founders, or core team members, is very rich and very frequent. For example, Sam reflected that:

"If you would have an app I could gather all the texts, emails, phone calls we send to each other, that would be crazy" (Sam, interview July 2016).

On account of this richness and frequency, ceremony is often abandoned and walls come down. As a result team members need to be open and accepting of conflict and disclosure. This approach to interaction requires, but also creates openness and trust if teams can manage to work through it. Thus, the extent to which NVT members can be calculative and instrumental in their interactions is limited by the ubiquity of uncertainty in the entrepreneurial problem space. However, as interaction is concentrated within the boundary of a team the 'someone' who shall reciprocate altruistic behaviors 'at some point down the road' is narrowed down significantly. The entrepreneurial problem space thus fosters 'extreme' kinds of relationships. In the cases in this thesis, these were deep, complex, trust filled relationships:

"I spend a lot more time with him than with any of my close friends so I know a lot about him. We have been in this together and we have created this together. I like him a lot and I really enjoy working with him. I know what he can do. He's fantastic, but you spend so much time with each other (…) the relation is very tested." (John, interview July 2016)

However these relationships could have just as easily been explosive ones; Sam and John, and Pete and Christina have stayed together and built a solid foundation, but many don't. Thus, uncertainty intensifies team member interactions resulting in heightened relational demands through openness, disclosure, and trust. This is particularly the case for founding team members, or team members who are present at the most uncertain times in the venture and experience the most uncertainty together.

Papers 1 and 4 show that these kind of strong foundational partnerships within the core can provide an anchoring or stabilizing mechanism that balances and enables all of the movement, openness and flexibility

that uncertainty demands of NVT structure, in particular regarding movement in, out and within outer tiers as potential stakeholders come and go. This strong, stable core may also, to relate to the parenthood metaphor (Cardon et al. 2005), act to absorb the lion's share of uncertainty, lessening the impact for the rest of the family.

5.2.3 Elements of new venture 'team-working' under uncertainty

As previously mentioned, Engel, Kaandorp, and Elfring (2017) identify four basic elements of networking under uncertainty: pre-commitment, intelligent altruism, generating contingency and harvesting serendipity. The purpose of this section is to create a similar, initial framework for team-working under uncertainty by considering these established networking elements as well as the insights that have been presented thus far.

Before the possible elements of team-working under uncertainty are discussed, it is helpful to briefly consider the work of Davidson (2001) on the philosophy of knowledge and the intersubjective.

The intersubjective

Davidson argues that knowledge is an irreducible tripod of the objective, subjective, and the *intersubjective*, and that the mind (i.e. the subjective) is largely a myth because it is constructed through lived experience and interaction with others. While the term *interpersonal* assumes two or more people exchanging independent 'subjective' viewpoints through interpersonal interaction, the *intersubjective* refers to the vast areas of coherence that so-called subjective viewpoints already possess as individuals share in and experience the same objective reality (Venkataraman et al. 2012). Therefore, the intersubjective refers to the taken-for-granted shared core between people interacting as opposed to the differences they overcome through negotiation, transaction or exchange (Venkataraman et al. 2012). Thus, the intersubjective does not equal the interpersonal.

While all knowledge is inextricably intertwined in terms of the subjective, objective and intersubjective, some contexts and activities may emphasize one over the other. For example, Venkataraman et al. (2012, 26) highlight the intersubjective within the context of entrepreneurship and argue that action and interaction in entrepreneurship lead to *transformation* as opposed to *exchange*, and thus through action and interaction entrepreneurs are *"transforming the extant world into new possibilities"*. Uncertainty and the ensuing interactive nature of the entrepreneurial problem space do make the intersubjective a relevant concept to consider. First, the kind of uncertainty in this space means there are no 'right' or objectively best answers, or at least entrepreneurs are unaware of them. Second, the interactive context makes it more difficult for individuals to establish their subjective viewpoints as more and more interactions and experiences take place and are shared. Thus, rather than interpersonally interacting and exchanging or transacting upon view-

points, entrepreneurs are intersubjectively interacting, wrestling uncertainty and creating shared understanding.

The intersubjective may be even more interesting from the perspective of an NVT as team member interactions are even more rich and frequent and founders in particular *need* to develop a shared understanding in order to make decisions and move forward. The boundary condition of uncertainty thus leads NVT member interaction to be transformational in addition to or perhaps even in place of interaction that is transaction or exchange based. It may in fact be the need for this shared understanding that creates such high relational demands on team members. If team members can develop a shared understanding they move forward and create strong bonds, if not, it creates big difficulties.

Outlining some possible elements of new venture team-working under uncertainty

This thesis has thus far worked to provide insight into how new venture team structure and team member interaction are influenced by uncertainty in an entrepreneurial problem space. This next section acts to both wrap up and enrich these insights while packaging them in a way that can direct the author's future work. This is accomplished by suggesting some possible elements of new venture team-working that are inspired by the four basic elements of networking under uncertainty proposed by Engel, Kaandorp, and Elfring (2017): pre-commitment, intelligent altruism, generating contingency and harvesting serendipity. It is important to note that the framework put forth in this section is rudimentary and in no way exhaustive or exclusive. Rather, it is meant to ignite discussion and open up for further development down the road.

Element 1: Post-commitment/real commitment

From the perspective of networking, interaction in an entrepreneurial problems space calls for pre-commitments, where entrepreneurs try out potential collaborations and risk only what they can afford to lose. However, new venture teamwork is more concerned with post-commitment or real commitment; i.e. how pre-commitments turn into real commitments and what happens after commitments have been made. As team members pass the 'commitment test' and real commitments are made, trust starts to emerge. However, team members need to continue to honor commitments for trust to be built over time.

Element 2: Trusting norms

While networking under uncertainty calls for intelligent altruism, team-working under uncertainty calls for trusting norms. The relationship between trust and intelligent altruism is still unclear, however trust based norms may take the place or complement this approach to interaction within the boundary of a team. Trusting norms may be primarily based on values or principles, however this is still unclear as most of what is known about team norms is developed in less uncertain contexts.

Element 3: Generating and leveraging shared understanding

Communication and openness are key in developing shared understanding. NVTs should thus benefit from generating and leveraging opportunities for rich and frequent interaction, conflict, and disclosure, thus enabling transformational interaction.

Element 4: Harvesting relational depth

While networking under uncertainty values surprises, team-working under uncertainty, at least relationally, values stability. The stability and predictability of strong relationships can counter the unpredictability and uncertainty of the environment and task at hand. Thus, while networking under uncertainty calls for *relational breadth*, exposing oneself to a variety of diverse others, team-working under uncertainty calls for *relational depth* and highlights trust, shared understanding, and transformation.

Element 5: Networking elements

Lastly, NVTs still need to remain open and flexible in order to attract potential stakeholders and future team members. Thus, team-working under uncertainty incorporates the elements of networking under uncertainty at the team's peripheral boundary.

These 5 elements of team-working under uncertainty are illustrated in figure 3.

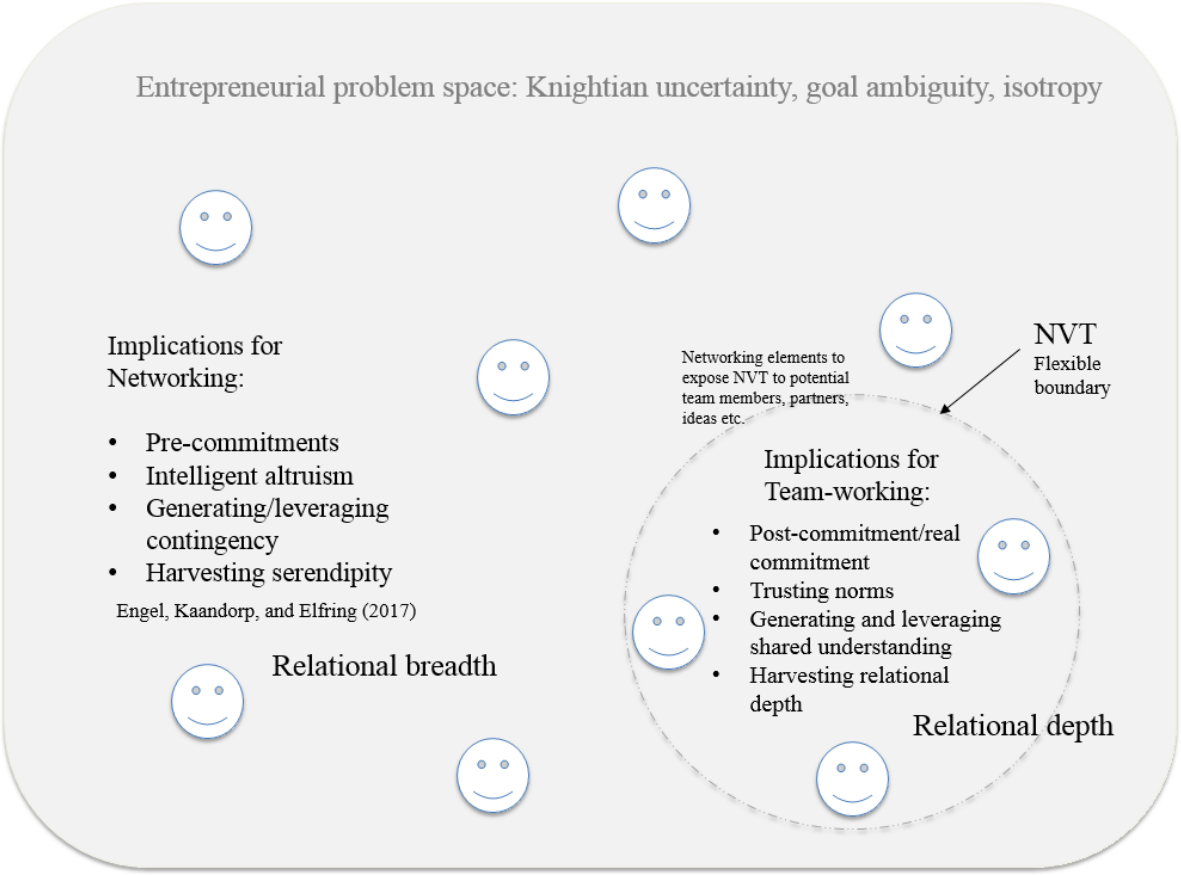

Figure 3. Understanding interaction under uncertainty within the boundary of the NVT: theorizing around elements of team-working in an entrepreneurial problem space

6. Conclusions and Future Research

The purpose of this licentiate thesis was to explore how new venture teamwork is influenced by uncertainty. As interest in the team as a unit of analysis grows within entrepreneurship research, it is important to consider how defining aspects of new venture creation, such as uncertainty, may impact a team's structure and functioning as the large majority of what scholars know about teams has been developed in less uncertain contexts. By conceptualizing uncertainty using the 'entrepreneurial problem space' developed by Sarasvathy (2001, 2008), this thesis shows that uncertainty sets new venture teams apart, and makes these teams much more dynamic and interactive than what is currently captured in upper echelons or organizational team literature. In terms of structure, uncertainty leads to fluidity in team boundaries, membership, and roles as team members continually interact with each other and the environment. Team configuration is thus flexible, and trusting as opposed to controlling norms are preferred. In terms of implications for team member interaction, uncertainty intensifies relational demands on team members and triggers a heightened need for trust, openness to conflict, and communication. In this space team member interaction takes on transformational as opposed to transactive qualities and calls for a behavioral approach that is linked to altruism. In addition, five emergent 'elements' of new venture teamwork under uncertainty were suggested in relation to the established theorizing around entrepreneurial networking under uncertainty: post-commitment/real commitment, trusting norms, generating and leveraging shared understanding, harvesting relational depth, and networking to meet potential team members. Considering these findings, this thesis argues that uncertainty should be a central part of any theory of the NVT or new venture teamwork, and scholars should continue to explore how uncertainty impacts teamwork in this setting.

Future research for the author will build on this licentiate thesis and continue to investigate uncertainty and how it impacts new venture teamwork. One possible avenue is to more closely consider how the three types of uncertainty in the entrepreneurial problem space individually interact with different aspects of teamwork. Another interesting direction would be to look closer into the relationship between intelligent altruism and trust, and the co-evolution of trust and uncertainty over time as NVTs develop their ventures. The author would also like to dig more into uncertainty itself and the various ways entrepreneurship scholars have discussed this concept. Lastly, it could be fruitful to continue the philosophical line of inquiry about the role of the intersubjective, and how interaction and trust may differ in the interpersonal/transactive vs. the intersubjective/transformational.

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