# Research Statement **D. Carrington Motley**

Carnegie Mellon University – Tepper School of Business

### Overview

My experiences working at three different VC-backed startups and two venture funds got me excited about entrepreneurship. After pursuing my PhD in Management Science and Engineering, I developed a passion for improving our understanding of entrepreneurship through the lens of strategy and organizational learning. My dissertation focuses on how entrepreneurs create successful new ventures, specifically investigating how founding conditions and learning experiences, both within and across different ventures, influence entrepreneurial performance. My work contributes to our understanding of how various forces at founding can shape the trajectory of new ventures and what conditions are most conducive for learning. I have sought to advance theory and resolve practical tensions connected to imprinting and learning from failure in the context of founding teams and their environments. Ultimately, I aim to improve our understanding of what enables entrepreneurs to leverage prior experience to manage the myriad of challenges involved in starting a new venture.

To develop this research, I use a variety of quantitative techniques to investigate data sets of startups. These data sets have been assembled from alumni surveys and industry partnerships with educators and investors, such as accelerators. Additionally, I have experience in conducting qualitative interviews to ensure that the experiences of actual entrepreneurs validate my results. To date, using these data sets and techniques, I have pursued my research agenda in two main streams: the lasting influence of founding conditions on venture performance and the (in)ability of entrepreneurs to leverage failure experience to improve venture performance.

#### **Dissertation Research**

My Job Market Paper, "Born Into Chaos: The Role of the Founding Environment and the Performance Impacts of Founding Team Composition," focuses on the long-term impact of founding environmental conditions and founding team composition on startup performance. While prior research demonstrates that several distinct founding forces influence new venture trajectories via imprinting, our understanding of how simultaneously occurring forces interact is lacking. Additionally, changes to a venture's environment over time affect founding imprints, yet research has yet to examine the performance implications of such environmental shifts empirically. To address these gaps, I analyze 1,060 entrepreneurial ventures from a comprehensive survey of university alumni. I find that founding environmental dynamism and founding team functional diversity are independently related to the improved long-term performance of entrepreneurial ventures. However, the interaction of a highly dynamic founding environment and a functionally diverse founding team has different relationships with performance depending upon the changes to a venture's subsequent market environment. In particular, for ventures whose environments have stabilized over time, I show that adding a functional role to the founding team of ventures formed in dynamic environments is associated with decreased performance.

These results support three main contributions. First, my theory and results suggest that founding environmental dynamism promotes the performance of new ventures as it limits the advantages of established ventures and enhances those entrepreneurial ventures. Additionally, while prior research highlights the complementary relationship between functional diversity and environmental dynamism, my results show that these benefits can be short-lived. Thus, I contribute by providing boundary conditions for the complementary relationship between functional diversity and environmental dynamism. Finally, I show that changes in environmental dynamism over time may lead formerly advantageous imprints to become detrimental. As such, I provide theory and evidence for the consequences of interacting imprinting forces and the damaging consequences of founding imprints that become misaligned with the environment.

In my second dissertation paper, I examine entrepreneurs' ability to learn from failure during the venture creation process. Recently, research has provided a clearer descriptive picture of the pivoting process from its antecedents to its consequences in recent years. In addition, pivoting scholars advanced prescriptive studies that illuminate how entrepreneurs should strategically manage the post-pivot environment. However, absent from this work are studies investigating how entrepreneurs should navigate the period immediately preceding the decision to pivot. One question emerging from this gap is when a founding team receives negative feedback from market actors about their business model, what aspects should be adjusted to improve the venture's performance? In answering this question, I analyze a unique longitudinal data set comprised of over 300 similarly oriented new ventures in the National Science Foundation (NSF)'s I-Corps program. My results show that the locus of the negative feedback, i.e., which aspects of the business model receive negative feedback, determines the venture's responsiveness to the negative feedback and the effectiveness of the venture's responses. Furthermore, for these new ventures, I argue and find that the core of the business model responds best to change.

Overall, I contribute to the pivoting literature by outlining what aspects of their business model entrepreneurs should change in response to early signs of failure. In doing so, I also contribute to research on organizational learning, which thus far has focused on the impact of failure magnitude, volume, and exposure, by highlighting the importance of an understudied dimension of failure, its locus.

The final paper of my dissertation centers on serial entrepreneurs. Again, using an alumni data set, this paper explores what enables serial entrepreneurs to improve the performance of subsequent ventures following a failed venture. Prior research on serial entrepreneurs highlights that entrepreneurs with failed startups in their history are less likely to found future successful ventures than their peers. However, entrepreneurs themselves and organizational learning research both tout the value of failure experience. I resolve the tension between these two sets of findings by establishing a series of boundary conditions within which experience with failed ventures can be an asset to entrepreneurs. In doing so, I aim to contribute to the literature on entrepreneurship by providing evidence that failure can be beneficial to entrepreneurs. Additionally, I contribute to the literature on organizational learning by delineating a series of conditions that enhance the ability of individuals to learn from idiosyncratic failures.

## **Research Pipeline and Future Goals**

Along the same line of my dissertation, I am interested in exploring how various learning experiences are connected to subsequent entrepreneurial performance in my future research. I have started building my research pipeline by constructing two of my own original datasets. First, I partnered with a highly regarded Stanford entrepreneurship class (its alumni have raised more than \$600M in VC funding over the past ten years) that implements the Lean Startup Method. I obtained communication data from startup teams over the first ten weeks of their ventures as they completed various steps in the venture creation process, including building prototypes, completing their first sales, and pitching investors. My initial plan is to use this communication data to investigate how the size and locus of failure experience relate to an entrepreneur's ability to learn from these experiences.¹ As part of this project, I have continued to develop my professional network, recruiting a PhD candidate from Carnegie Mellon University to collaborate with me on this project.

Second, beyond collecting Stanford course data, I have also been very committed to partnering with an actual company during my PhD. To that end, I am currently in the final stages of

<sup>&</sup>lt;sup>1</sup> By locus of failure experience, we mean who experienced the failure, the focal actor, or someone else from whom the focal actor could learn.

arranging a data transfer agreement with an accelerator from the Bay Area. The accelerator has agreed to provide access to a series of surveys administered throughout the accelerator to participating companies. Using the founders' responses to questions regarding their learning goals, most significant challenges, and actual achievements, along with performance data on their respective startups, I plan to analyze how learning objectives and setbacks affect startup performance.

## **Summary**

Overall, my research focuses on how entrepreneurs navigate the hurdles involved in founding new ventures and what they can do to create successful startups. Relying on the quantitative analysis of survey data and data gathered from industry partners, I aim to contribute to (1) our understanding of the effects of founding forces on long-term startup performance and (2) what enables serial entrepreneurs to leverage the previous experiences to improve subsequent performance.