



Entrepreneurial inception: The role of imprinting in entrepreneurial action



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ABSTRACT

Recent research highlights that founders' early decisions and the environmental conditions at founding each imprint upon a new venture in ways that affect growth and survival. However, we know much less about how the entrepreneur is imprinted and how the outcome of this imprinting process influences the entrepreneur and the venture. Through semi-structured interviews and content analysis, our study examines entrepreneurs' formative experiences during sensitive periods of transition, which we refer to as *sources of imprint*. We illustrate how these sources of imprint impact entrepreneurial decision making and explain how they guide entrepreneurs' decisions as they progress through their entrepreneurial careers. In doing so, we improve our understanding of how entrepreneurs navigate the entrepreneurial process.

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1. Executive summary

The experiences and decisions through which an organization is created and the conditions under which it begins have non-trivial consequences for its later life (Boeker, 1988; Kimberly, 1979; Stinchcombe, 1965). A burgeoning body of research has explored this important phenomenon by espousing imprinting theory, which highlights the enduring impact of prior history on individual and organizational outcomes. However, the central focus within both the organizational and entrepreneurship literatures concerning imprinting has largely been on the organization. In other words, scholars have concentrated on how organizations are imprinted and what this means for the course of the organization.

In contrast, we focus on the imprinting process for individuals—namely, entrepreneurs. Although some organizational research has focused on the implications imprinting has for individuals and their careers (Higgins, 2005; McEvily et al., 2012), we demonstrate the broader implications of imprinting. Specifically, we explore how the imprinting process influences entrepreneurs' decision making and their selection of current and potentially future opportunities.

Through semi-structured interviews and content analysis techniques, we shed light on entrepreneurs' decision making and their ventures' development trajectories. By doing so, our theoretical contributions are threefold. First, we explore the role of imprinting in entrepreneurial action. We explain how imprinting may be a key mechanism to understand how certain formative experiences, which we refer to as *sources of imprint*, have a lasting effect on entrepreneurial decision making. Second, we build upon prior research to illustrate how different sources of imprint significantly influence which opportunities entrepreneurs select and, more broadly, the way they navigate the entrepreneurial process differently as a result of different sources of imprint. Finally, we consider the importance of educators in promoting entrepreneurial experiences that may guide the development of individuals' paths toward entrepreneurship

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as well as the different educational needs of entrepreneurs with different sources of imprint. Together, our study reveals the importance of imprinting by examining how sources of imprint have a persistent impact on entrepreneurs and their respective ventures.

2. Introduction

A long history of research in entrepreneurship has demonstrated that prior experiences play a critical role in the entrepreneurial process (e.g., Shane, 2000; Westhead et al., 2005). In part, experiences are important because they impact not only what opportunities individuals identify but also how they evaluate, select, and ultimately act upon them (Busenitz and Lau, 1996). Some experiences impart a passing influence on entrepreneurs, while other experiences stick with them, altering the way in which they see and think about the world (Politis, 2005).

Imprinting theory explains how individuals and organizations develop characteristics from experiences during a sensitive period and persistently reflect them despite time passing and the environment changing (Marquis and Tilcsik, 2013). To date, scholars have shown that imprinting is critical to organizations, including impacting outcomes like venture growth potential (Bamford et al., 2000) and turnover rates (Burton and Beckman, 2007). Scholars have also emphasized the importance of imprinting to individuals, such as by illustrating how early career mentors and peers influence subsequent work choices (Azoulay et al., 2011) or how initial network ties confer persistent advantages to young lawyers (McEvily et al., 2012). Within entrepreneurship, imprinting research has revealed how founding decisions—the choices made at the onset of the firm (DeTienne, 2010)—and founding conditions—the environmental conditions at the firm inception (Boeker, 1989)—impact the firm throughout its life. Together, these efforts demonstrate that what happens during venture founding (or the start of a career) has a persistent impact on the course of that organization (or individual).

Although these efforts have notably contributed to imprinting and entrepreneurship theory, extant research fails to explain how salient experiences and environmental elements (what we refer to as *sources of imprint*) imprint entrepreneurs and how these sources of imprint impact the way entrepreneurs manage their venture(s). Entrepreneurship research has shown that entrepreneurs bring in a set of givens (i.e., knowledge, skills, and abilities) that are then imprinted on a venture (e.g., Bamford et al., 2000; Boeker, 1988; Johnson, 2007), but it remains silent on how these givens impact entrepreneurs' decision making and the course of their ventures. Largely, research in both the organizational and entrepreneurship literatures has focused on organizations as recipients of the imprinting process and has primarily assumed that imprinting begins at venture inception (see Marquis and Tilcsik, 2013). However, it is likely that entrepreneurs are also recipients of as well as contributors to the imprinting process. As such, certain sources of imprint might influence entrepreneurs before they launch their first venture and may persist throughout their entrepreneurial careers, likely impacting their decision making and the trajectory of their ventures.

To address these limitations, we draw from the rich literature on entrepreneurial action and integrate it with imprinting theory from psychology. In so doing, we shift the focus from how the organization is imprinted to a largely understudied element of the entrepreneurial process: how the entrepreneur is imprinted. Specifically, we reveal how certain experiences and elements of the environment (i.e., sources of imprint) impart a lasting and persistent *stamp* on entrepreneurs that is carried with them as they make decisions for their ventures. Thus, we address the following research question: *How do sources of imprint have a lasting impact on entrepreneurs' decision making and their ventures' development trajectories?*

Given the relative paucity of research explaining how sources of imprint influence entrepreneurs and their ventures and our goal of developing new theoretical insights in this area, we selected a qualitative approach to study how sources of imprint impact entrepreneurial action. Specifically, we conducted semi-structured interviews with entrepreneurs and content analyzed their verbalized responses. Additionally, we followed up with each of our entrepreneurs a year after the original interviews to see how their future actions unfolded.

With this approach, our study contributes to the literature in three ways. First, we demonstrate that imprinting may be a key mechanism to understand how specific sources of imprint have a lasting influence on entrepreneurs. In line with calls for additional research to uncover the origins of how entrepreneurs think about opportunities (Grégoire et al., 2011), we adopt the relatively underutilized lens of imprinting to show that sources of imprint affect entrepreneurs' current and future decision-making processes as well as their opportunity selection. Second, we extend efforts emphasizing the importance of context and alignment in opportunity recognition (Grégoire et al., 2010) and evaluation (Haynie et al., 2009; Williams and Grégoire, forthcoming) by showing that the sources of prior knowledge (including when and under what conditions the knowledge was obtained), in addition to the knowledge itself, have an enduring impact on entrepreneurial action. Finally, we contribute to research in entrepreneurial education by exploring how prior experiences guide entrepreneurs' perceptions of who they are and what actions are most critical to their definition of success. Specifically, we illustrate the importance of entrepreneurial educators by showing that the sources of entrepreneurial learning can significantly impact how entrepreneurs make decisions and their priority of motives. Overall, we contribute to entrepreneurial decision making and opportunity selection by exploring how sources of imprint have a lasting impact on entrepreneurs and their ventures.

3. Imprinting

Building on the work of Stinchcombe (1965), organizational research on imprinting has highlighted the enduring impact of prior history on organizational outcomes by demonstrating how organizations (or individuals) assume elements of their environment that persist well beyond the founding phase (Milanov and Fernhaber, 2009). In their examination of imprinting, most scholars have considered three elements of imprinting: sensitive periods, stamps, and persistence (see Marquis and Tilcsik, 2013). Therefore, in line with prior work, we define imprinting as a time-sensitive (i.e., occurs at sensitive stages of life) learning process (i.e., a stamping process whereby the focal entity reflects elements of its environment) that initiates a development trajectory (i.e., produces persistent outcomes).

Certainly, related literatures have highlighted the importance of learning, socialization, and prior experience in entrepreneurial decision making and opportunity selection (Cope, 2005; Shepherd et al., 2003). For example, Shane (2000) shows that entrepreneurs discover opportunities related to the information they already possess; Choi and Shepherd (2004) suggest that an entrepreneur exploits an opportunity when he or she perceives greater knowledge of that opportunity; Ozgen and Baron (2007) show that three social sources of opportunity-related information—mentors, informal industry networks, and forums—assist entrepreneurs in identifying opportunities; and Haynie et al. (2009) posit that individuals do not simply search for the “best opportunities” but the best opportunities “for them” (p. 357)—that is, opportunities that are complementary to their existing knowledge base. Together, these studies suggest that knowledge obtained through socialization and prior experience is critical to the process of evaluating and selecting opportunities.

However, with its three distinct pillars, imprinting provides knowledge through a unique form of social learning. Namely, it suggests that when learning occurs is important (during time-sensitive periods), how long learning occurs is important (a stamping process), and for how long learned behaviors persist is important (for years despite environmental changes). In other words, imprinting offers a different perspective from extant research concerning prior knowledge and socialization by suggesting that the process through which knowledge is obtained (beyond just the knowledge itself) is critical to decision making and opportunity selection.

With regard to organizational research, imprinting has attracted interest from a broad range of areas, including network analysis (McEvily et al., 2012), top management teams (Beckman and Burton, 2008), career research (Azoulay et al., 2011; Higgins, 2005), institutional theory (Johnson, 2007), organizational turnover (Burton and Beckman, 2007), and organizational ecology (Carroll and Hannan, 1989). It has also garnered attention across multiple levels of analysis, including industry- (Stinchcombe, 1965), organizational- (Marquis and Huang, 2010), and individual-level studies (Kacperczyk, 2009). Perhaps not surprisingly, most of the organizational imprinting literature revolves around just that, the organization. For example, the sensitive stages are often characterized by the time of organizational founding (Carroll and Hannan, 1989; Johnson, 2007), and the stamping process reflects how elements of the environment are mapped onto the organization (Carroll and Hannan, 2004).

With respect to the entrepreneurship literature, most imprinting research has taken one of two similar approaches. The first approach is condition focused. This approach posits that new ventures' early conditions have a lasting impact on future outcomes (Boeker, 1989; Eisenhardt and Schoonhoven, 1990; Milanov and Fernhaber, 2009). From this perspective, the founding conditions—the environment, partnerships, competition, resource endowments, and other internal and external factors—influence a new venture, which in turn imprint throughout the venture's lifecycle (Hannan, 1998; Sapienza et al., 2006). For example, Milanov and Fernhaber (2009) suggest that initial alliance partners may serve as an important predictor of a new venture's network trajectory, and Boeker (1989) posits that founding conditions play an important role in either limiting or encouraging strategic change. Put simply, this stream of research finds that founding conditions impact the venture's life.

The second approach is decision focused. This approach suggests that entrepreneurs' initial decisions have a lasting impact on future outcomes (Bird, 1992; Cooper et al., 1994; DeTienne, 2010). From this perspective, entrepreneurs imprint their ventures by making important decisions early on in their venture's development. For example, DeTienne (2010) shows that entrepreneurs who develop an exit strategy early in the life of the firm imprint their firms so that they are more likely to achieve their exit goals. Similarly, Burton and Beckman (2007) suggest that position incumbents leave legacies that constrain subsequent position holders and influence successors' turnover rates, and Bamford et al. (2000) demonstrate that initial founding decisions significantly relate to new ventures' growth potential. Overall, this stream of research finds that founding decisions impact the venture's life.

Extant research has also demonstrated that individuals can be imprinted through a variety of sources, such as through economic conditions (Malmendier and Nagel, 2011), institutional conditions (Dokko et al., 2009; Higgins, 2005), equity partners (Breugst et al., 2015-in this issue), family members (Jaskiewicz et al., 2015-in this issue), or other individuals (Azoulay et al., 2011; Kacperczyk, 2009; McEvily et al., 2012). In many ways, individual- and organizational-level imprinting share many characteristics: they both concern time-sensitive learning processes that initiate development trajectories and persist despite environmental changes. However, in many ways, they likely differ.

For example, whereas an organization's sensitive period is often classified as the founding period (e.g., Milanov and Fernhaber, 2009), individuals can exhibit several sensitive periods, such as during their formative years, early career, or periods of significant economic change (Marquis and Tilcsik, 2013). Additionally, imprinting effects for an organization are not necessarily fixed, but they are thought to be difficult to change, whereas individuals' learning processes are often fluid and dynamic. Thus, for an imprint to persist among individuals, that imprint must be relatively strong (Marquis, 2003; Vergne and Durand, 2010).

From organizational and career development research, we know that individuals can be imprinted through career experiences; thus, imprinting can be an individual-level phenomenon (Azoulay et al., 2011; Kacperczyk, 2009; McEvily et al., 2012). From the entrepreneurship literature, we know that entrepreneurs can imprint their ventures through the relationships and decisions they make (Boeker, 1988; Breugst et al., 2015-in this issue; Milanov and Shepherd, 2008). However, our understanding of entrepreneurs as recipients of the imprinting process remains limited. Additionally, although prior research has shown that individuals (e.g., through founder decisions) can imprint the organization, research has not yet fully addressed how the imprinting process impacts entrepreneurs' decision making with respect to their current venture and possible future ventures. Given that entrepreneurs can undergo an imprinting process and that they can be highly influential in shaping their firms (Boeker, 1989; DeTienne, 2010), discovering how the entrepreneur is imprinted and how that imprinting process impacts the trajectory of the entrepreneur and his or her venture remains an important question with limited answers.

Recent research highlights what little is known regarding how the imprinting process impacts entrepreneurs' decision making and venture trajectories. For example, as Marquis and Tilcsik (2013) suggest in their review of the imprinting literature, “clearly, individual-level imprints may have significant consequences well beyond shaping individual cognition and behavior” (p. 219),

however such research has yet to receive “serious empirical attention” (p. 223). In part, these limitations arise from two significant empirical challenges. The first is that in order to understand the process of imprinting, one must garner an in-depth look into individuals and their lives. To accomplish this, many traditional methods (e.g., survey, secondary data) are ill equipped. The second challenge is that in order to understand the effects of imprinting, one must observe these individuals over time. Accordingly, as we explain in the next section, we adopt a qualitative perspective that allows us an in-depth look at entrepreneurs’ decision making and also enables us to look at potential sources of imprint and their persistence over time.

4. Methods

When selecting a method, we considered our research question (how potential sources of imprint matter to entrepreneurs’ key decisions over time), extant work (i.e., an area of imprinting for which prior research is incomplete and inadequate), and the intended theoretical contributions (i.e., theory development rather than theory testing). In doing so, we determined that an inductive qualitative research approach exhibited good methodological fit with the current state of the literature (Edmondson and McManus, 2007; Eisenhardt, 1989).

To answer our research question, we needed a methodological approach that allowed us to identify specific sources of imprint, namely emotionally-significant experiences during sensitive transition periods that continue to exert influence on entrepreneurs’ thinking. Further, we needed to be able to identify how such sources of imprint impact entrepreneurs’ current and future decisions. Thus, we developed a two-part research design. First, we conducted semi-structured interviews with entrepreneurs concerning their past, present, and future. These interviews were content analyzed through an inductive process of dictionary building in order to identify which sources of imprint had a lasting influence over time. Because some questions in the interviews involved experiences that happened in the past, we triangulated those interviews with additional sources of information. Second, we conducted a follow-up survey one year after our interviews in order to (1) validate that the answers to interview questions matched decisions they actually made in the intervening year, (2) further elucidate the entrepreneurs’ priority of goals for their venture, and (3) observe how their future actions unfolded.

In sum, our research design first centered on those salient experiences that led individuals to pursue entrepreneurship (i.e., launch their first venture). By doing so, we hoped to better understand the development of the cognitive and emotional factors that play a role in entrepreneurial action (Grégoire et al., 2011). Then, we examined how these experiences (potential sources of imprint) influence current and future decision making. This process helped us recreate a timeline of how entrepreneurs viewed the past and how specific sources of imprint affect how they think about entrepreneurial action in the present and their envisioned futures.

4.1. Sample

Two of the authors conducted semi-structured interviews and a follow-up survey with 25 entrepreneurs. The sampling strategy was purposive and theory driven (Miles and Huberman, 1994). As imprinting theory suggests that differences in salient experiences (i.e., potential sources of imprint) lead to different outcomes (Boeker, 1989; Burton and Beckman, 2007), we sought entrepreneurs from a variety of industries and backgrounds in order to be exposed to potential differences in salient prior experiences. We defined entrepreneurs as those who have founded and currently own a venture as well as a substantive voice in current venture decisions. We accessed most of the entrepreneurs through an entrepreneurial organization in the southeastern United States. The remainder (less than 15%) of our entrepreneurs were identified through the first author’s network in a different geographical region—the midwestern United States. Table 1 provides additional descriptive information on the participating entrepreneurs.

4.2. Research design

In order to create a timeline of what sources of imprint are salient to entrepreneurs over time, we first asked participating entrepreneurs to tell us about themselves, their current business(es), and what led them to pursue entrepreneurship in general. This series of questions exposed us to individuals’ life histories and, more importantly, the people, events, and activities that led the entrepreneurs to identify and pursue new venture opportunities. Given that we wanted to understand how salient experiences (i.e., sources of imprint) influence how entrepreneurs think about opportunities today and for the future, we selected an approach that captured their current entrepreneurial mindset as well as their envisioned futures.

Following the interviews, which ranged from 30 min to 2 h, the lead author transcribed the audio-recorded interviews, resulting in more than 200 pages of single-spaced text. To confirm the themes that emerged from the interview and ensure that an accurate depiction of the participant’s imperative experiences were captured, the lead author sent a condensed (≈ 2 pages) version of the interview to the entrepreneur, who responded with notes and comments.

Although we acknowledge that entrepreneurs’ perceptions of the past may be imperfect, we sought to understand, as a starting point, which experiences entrepreneurs recall as being particularly salient. As launching one’s first business likely has significant emotional value, it is also likely that entrepreneurs have an enhanced memory of them (Dolan, 2002). Further, as imprinting, by definition, reflects those experiences that have a persistent influence, entrepreneurs should have a higher recall of those experiences (Marquis and Tilcsik, 2013).

However, we took steps to identify and minimize retrospective bias by triangulating our interviews with archival and third-party data. Specifically, we found information related to the entrepreneurs and their respective venture(s) that we could compare to their interview responses, such as newspaper and magazine articles, LinkedIn reviews from previous employers or customers,

Table 1
Description of sample.

Firm	Source of imprint	Year founded	% owner	Yrs of management experience ^a	Yrs of entrepreneurial experience	# of ventures founded
Fitness center	Work Exp./KSA	2009	50%	0	8	4
Auto parts manufacturer	Family/friends	1988	100%	0	24	4
Document management solutions	Work Exp./KSA	2000	50%	4	14	3
Web design	Mixed	2010	100%	0	1	1
Architectural	Work Exp./KSA	2010	100%	9	1	1
Entrepreneurial consulting	Mixed	2008	5%	5	25	7
Frozen yogurt restaurant	Family/friends	2010	100%	0	4	2
Illustrations	Tech./environ.	1989	100%	0	22	1
Golf swing aid	Tech./environ.	2009	100%	0	2	1
Management consulting	Work Exp./KSA	1997	100%	16	14	1
Speech consulting	Work Exp./KSA	2010	100%	32	10	2
Accounting	Family/friends	2007	100%	14	20	5
Referrals	Tech./environ.	2000	100%	0	30+	2
IT/AV home installation	Work Exp./KSA	2010	85%	1	1	2
Catering/graphics design	Tech./environ.	2011	51%	1	2	2
Social networking website	Tech./environ.	2010	50%	10	4	2
Medical care	Work Exp./KSA	2009	100%	21	2	1
Health care non-profit	Work Exp./KSA	1996	100%	2	10	4
Architectural	Work Exp./KSA	2007	99%	2	11	2
Construction/real estate	Family/friends	1990	11%	0	20	3
Golf products	Family/friends	2009	50%	0	30	5
Trucking/farm chemical sales	Family/friends	1989	50%	0	30+	2
Marketing coach	Work Exp./KSA	2008	100%	10	1	6
Environmental data management	Tech./environ.	2006	100%	9	5	1
Video production/book publishing	Tech./environ.	2005	64%	0	14	4

^a Years of management experience prior to launching current business.

organizational websites, third-party interviews, and business journals, and then matched the entrepreneurs' interview responses with these independent information sources. This triangulation showed that the past experiences entrepreneurs verbalized in the interviews occurred in the manner described.

After establishing a thorough account of the past experiences the entrepreneurs felt were most salient to their initial entrepreneurial pursuits, we asked participants various questions concerning how they make decisions in their current venture(s) and the biggest challenges they currently face. We concluded with a discussion about their future plans for their business(es), including where they saw themselves and their venture(s) in the next few years and what, if any, future projects/ventures they were considering. The goal of these questions was to derive what, if any, influence those early experiences had on current decision making and the entrepreneurs' envisioned futures for themselves and their ventures.

Additionally, a year after we conducted the interviews, we followed up with each of our participants to see if and how their future actions unfolded. Specifically, we sent respondents a survey and asked them to describe how satisfied they were with different aspects of their business (e.g., cash flow¹), on what aspects of the business they were most focused, any major decisions they had made in the past year, and important actions they had recently taken. In summary, our research design centered on revealing how past experiences influence how entrepreneurs make decisions with regard to present and future opportunities.

4.3. Data analysis

Characteristic of qualitative research (Eisenhardt, 1989; Miles and Huberman, 1994), we went back and forth between the data and the emerging theoretical framework through a highly iterative process. As Fig. 1 summarizes, this process encompassed two primary phases: (1) discovery and narrowing and (2) enriching and validating (Pratt and Rosa, 2003).

We first read through and analyzed the transcripts of the participants' interview responses, looking for commonalities and differences across respondents. In examining the text at a high-level, we began seeing certain themes emerging from the data, specifically as they related to potential sources of imprint. We assigned working names and definitions to these categories, and we began to apply first-order codes to certain pieces of text. For example, we came across interview quotes like, "It all started with my parents. My dad is an entrepreneur, and my mom has always been really supportive." We noted that this statement highlights the concept of 'family support' in entrepreneurship.

After identifying numerous categories, we began coding phrases, sentences, or paragraphs with these emergent themes and comparing how these themes related to one another and extant theory. Through a highly iterative process, we narrowed the entrepreneurs' discussion of the past, present, and future into a limited number of general themes, which we refer to as sources of imprint: family; partners; education; work experience; work-related knowledge, skills, abilities (KSAs); technology; and the environment.

¹ The aspects we asked about included cash flow, personal enjoyment, sales growth, net profits, reducing debt, innovativeness, improving society, achieving something, gaining recognition, customer satisfaction, and launching another project/venture. All 25 entrepreneurs completed the follow-up survey.

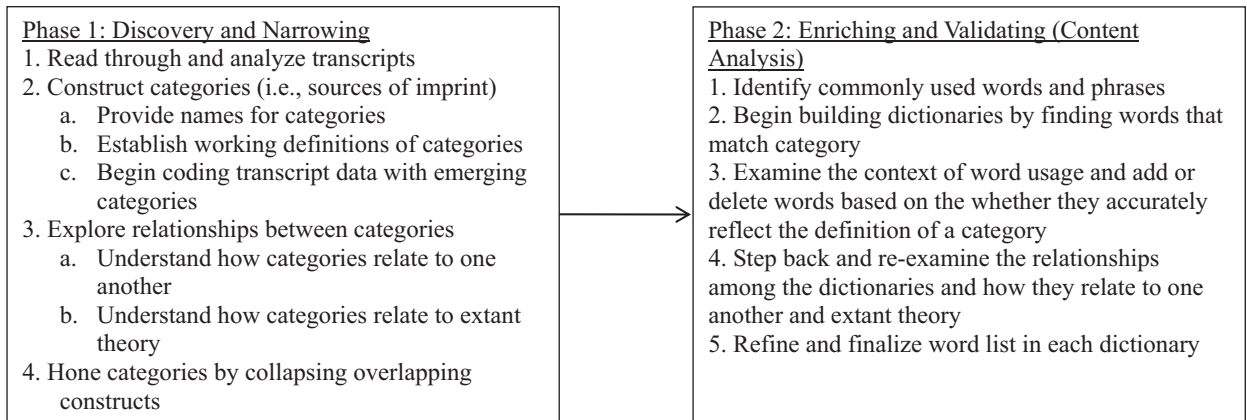


Fig. 1. Data analysis process*. *Adapted from Fig. 1 in Pratt and Rosa (2003: 397).

Next, in order to further enrich, validate, and develop theoretical insights from these emergent themes, we employed content analysis of the entrepreneurs' responses. We followed the general framework for enhancing construct validity when using content analysis advocated by Short et al. (2010). The qualitative software program, QDA, aided in this process by identifying frequently used words or phrases and comparing total word count across responses. We began building dictionaries for each of the categories by finding words that matched with each construct. For example, our quote above included several words that we incorporated into our dictionary for 'family,' such as *parents*, *dad*, and *mom*. We honed our dictionaries by examining the context in which each of the words in our working dictionaries were used; this allowed us to determine when and if words should be added or deleted and thus enhanced the reliability of our findings (Short et al., 2010). We went back and forth between our working dictionaries and our transcript data to refine our dictionary word lists. Table 2 lists the words in each of our final dictionaries for the constructs (sources of imprint).

4.4. Sources of imprint and entrepreneurial action

Next, since we were interested in understanding not only the salient sources of imprint but also how those imprints affect entrepreneurial action, we created a dictionary titled 'opportunity' following the same procedures described above. With this dictionary, we intended to capture vital entrepreneurial views and behaviors related to opportunity identification, evaluation, and exploitation by including words such as *launch*, *create*, and *develop*. Rather than capturing a specific opportunity, we sought to measure opportunity more broadly by building a dictionary that incorporated entrepreneurs' general thinking about opportunities.

On the aggregate, this approach produced somewhat ambiguous results, but as we delved further into the transcripts, we recognized certain patterns emerging. We realized that our data were highly congruent with specific sources of imprint. Therefore, we grouped our entrepreneurs according to which source(s) of imprint were most salient to them. This process resulted in three

Table 2

Word lists for content analysis.

Construct	Content analysis words
Opportunity	Acted, came up with, concept, creat*, decid*, decision*, develop*, discover*, do it better, idea*, chance, identif*, looking, notice*, open*, opportunity, launch*, recogniz*, saw a need, saw this need, search*, start*, realiz*, venture*
Sources of imprint	
Family	Baby, born, boyfriend, brother*, child*, dad, family, father, friend*, girlfriend, grandma, grandpa, relationship*, relative*, sister*, spouse, son
Education	Academ*, bachelor*, class*, colleg*, degree*, educat*, graduat*, instruct*, major*, MBA, professor*, program*, school*, semester*, student*, teach*, theories, theory, universit*
Work experience	Bosses, career, corporat*, internship, job, manager*, my boss, my supervisor, over me, position*, previous firm, prior firm, profession, worked for
Knowledge/skills	Begin*, build*, capital, design*, develop*, enter, entrepreneur*, entry, establish*, financ*, find*, found*, go, idea*, imagin*, initiate, innovat*, inspir*, invent*, launch*, love, make, new business, passion*, profit*, set-up, start, venture, work
Partners	Advisor*, alliance*, coach*, joint, board*, partner*, team*, network*
Technology	Automate, blog*, computer, digital, electronic, engineering, Facebook, Google, innovat*, internet, laptop, online, paperless, social media, software, systems, tech*, tweet, Twitter, web, website*, wireless
Environment	Auster*, boom or bust, city, community, cutback*, economy, environment*, feast or famine, federal, government, industry, layoff*, markets, policy, policies, politic*, recession, regulation*, state, town, competit*

* indicates wildcard (e.g., creat* would include words such as create, creates, creating, creativeness, etc.)

categorizations of entrepreneurs: those imprinted by (1) family and friends (2) technology and the environment, or (3) work experience and work-related KSAs. Based on word frequency, we conducted a factor analysis. In all but 2 of the 25 cases, each entrepreneur loaded onto a single source of imprint category (i.e., factor loading $> .5$ without cross-loadings). While we acknowledge that not all entrepreneurs fall neatly into one grouping and that these groupings are not exhaustive, this distinction allows for a better understanding of how different sources of imprint influence how the entrepreneurial decision-making process unfolds over time and how the sources of imprint impact opportunity-related actions.²

We visually mapped the opportunity dictionary with our sources of imprint dictionaries (e.g., family) to show how different sources of imprint relate to how entrepreneurs think about opportunity. Fig. 2 shows the results of this visual mapping. The size of the sphere represents how often (measured via word count) entrepreneurs used words in a respective dictionary. For example, Fig. 2 demonstrates that the 'family' sphere (the circle that looks like an eye) is particularly large (i.e., important) for the past and present for the first group of entrepreneurs (see Row 1 labeled 'Family & Friends'). The distance between spheres is determined by Jaccard's coefficient—a test to measure similarity between sets of data. In our case, the data are words. For example, Fig. 2 shows that work-related KSAs were often discussed in conjunction with opportunity-related language for some entrepreneurs because these spheres are closer in proximity to the opportunity sphere (see Row 3 labeled 'Work Experience & KSA').

As Fig. 2 shows, we found that for certain individuals, some sources of imprint waxed or waned in importance over time. For example, for entrepreneurs imprinted by family and friends (see Row 1), work-related KSAs grew in importance from the past to the present and then lessened in importance from the present to the future. However, for these same entrepreneurs, family, friends, and partners had a significant influence, specifically on their past and current (present) decision making (see Row 1). In contrast to individuals imprinted by close relations, the technology and environment around their passions led some individuals, albeit indirectly, to entrepreneurial action (see Row 2). Still, for others, 'becoming an entrepreneur' often occurred as individuals realized that an opportunity existed and their unique expertise would allow them to pursue that opportunity. For these individuals, the most salient and enduring source of imprint was their prior work experience and the knowledge and skills developed therein (see Row 3).

In sum, we identified three broad sources of imprint influencing entrepreneurs' thinking. While some sources waxed and waned, others had an important influence over time. Although the sources of imprint themselves are not new to the entrepreneurship literature, the ways in which they influence how entrepreneurs think about opportunities, how they make decisions, and how they prime venture priorities represent particularly interesting outcomes of the imprinting process. We delve into these findings below.

5. Findings

The visual mapping exercise provides preliminary evidence of how important certain sources of imprint are to how entrepreneurs think about opportunity. The spheres that are larger and closer to the 'opportunity' dictionary are likely more important to entrepreneurial decision making. This does not imply that entrepreneurs merely absorb stimuli without agency; certainly, entrepreneurs have discretion over what influences their thought processes. Rather, we suggest that certain sources of imprint are more salient to some than others and that these salient imprints have an indelible impact on how entrepreneurs evaluate and act upon opportunities. In the following sections, we discuss our findings regarding sources of imprint and entrepreneurs.

5.1. Source of imprint: family and friends

We found that family, friends, and partners maintain a significant influence on some entrepreneurs and influence their past and current decision making. For these individuals, imprinting often occurs early in life; thus, becoming an entrepreneur occurs intentionally, and being an entrepreneur is a critical part of who they are. These entrepreneurs seek out ways to become entrepreneurs and are passionate about the challenges of pursuing new venture opportunities even at the expense of growing their existing business(es).

I know the first time I thought about a business was when I was 10 years of age, sitting on my father's garage, and I looked at the neighbor across the road ... and they seemed more affluent [than my own family], and they had a business. And I worked that out at an early age that if you really want to be successful in life, you really have to have a business.

[Auto Parts Manufacturer, Owner]

I have always had businesses, even when I was a little kid. Right off the bat, I knew that [starting businesses] was something I liked.

[Golf Products, Owner]

I got into farming with my dad back when I was smaller because that is all we had to do was work. I always enjoyed that.

[Trucking/Farm Chemicals, Owner]

² Interestingly, although our sample includes entrepreneurs with differences in age, years of entrepreneurial or management experience, and/or ownership percentage, our qualitative review of the transcripts as well as our statistical comparisons of the dictionaries show no significant differences between entrepreneurs varying on these demographics. Instead, the source of imprint represents the driving influence in our findings.

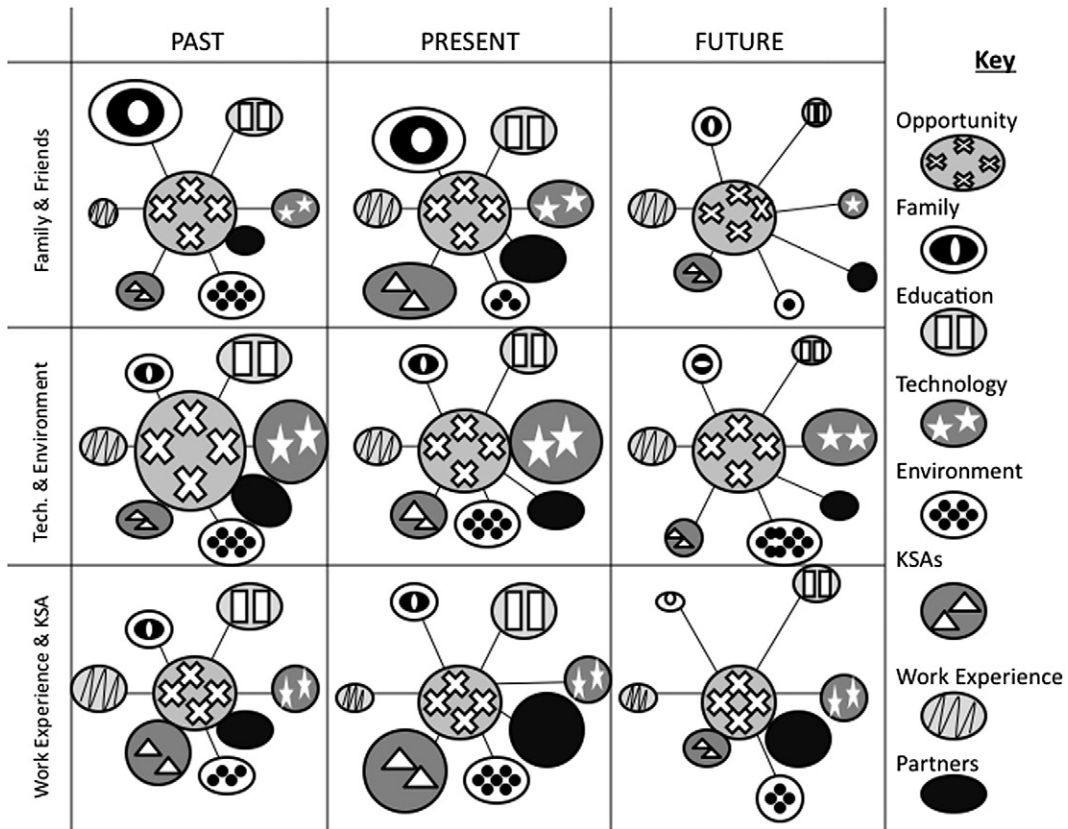


Fig. 2. The entrepreneurial nexus—with opportunity in center.

Like the individuals above who expressed an interest in entrepreneurship at an early age, many individuals are drawn to entrepreneurship years before they ever launch their first business. Without question, interests and aspirations can change between the age of 10 and the time one pursues a profession, yet even before the age of 10, the development of the way individuals think about the world has already begun (Kolb, 1984). Extensive research has shown that in the early stages of socialization, such as childhood and adolescence, individuals' cognitions are especially susceptible to the influence of others (Bandura, 1986; Ibarra, 1999). As such, prominent role models and mentors, such as parents, play an important role in guiding individuals' development and career selection (Keller and Whiston, 2008; Ozgen and Baron, 2007). Being raised in a family of entrepreneurs does not ensure one will pursue a career in entrepreneurship, but research has shown that individuals who grow up in an entrepreneurial family or are at least exposed to entrepreneurship early in life are far more likely to pursue entrepreneurial endeavors than those who are not (Crant, 1996; Scott and Twomey, 1988).

It all started with my parents. My dad is an entrepreneur, and my mom has always been really supportive ... I was just brought up in that sense.

[Frozen Yogurt, Owner]

In a nutshell, I come from a family of business owners—parents, brothers, aunts, uncles, and highly creative people. I was never taught to be an employee ... I was always raised thinking like a business owner, and so I stink at being an employee—just not my thing.

[Accounting Firm, Owner]

My father was very much an entrepreneur and sort of instilled it in the family. I come from a family of seven, and each one of them has a business or businesses that they are involved with ... The spirit of entrepreneurship was infused in each of the kids.

[Construction/Real Estate, Owner]

For these entrepreneurs, family is clearly the most salient source of imprint underlying what led them to pursue entrepreneurship. However, for imprinting to occur, actions must follow from a set of learned behaviors. That is, what has happened in the past must be reflected in individuals' present and future actions. When asked about how they make decisions currently in their business and

specifically who or what they turn to in making those decisions, again these entrepreneurs often cited family members as instrumental in their decision-making process.

It really just depends on the situation, but there are a lot of times I turn to my parents. Like I said, my dad had been involved in real estate and dealing with all these businesses for his whole life. My mom is just a very personable person. Anytime I have the employee issues, I'll turn to my mom. She is much better at dealing with people than I am, dad the same.

[Frozen Yogurt, Owner]

I have a mom and dad who hit me with a two by four every so often [when I have bad business ideas]. My mom really keeps me on the line. Everyone needs a mom like mine.

[Accounting Firm, Owner]

For some entrepreneurs, they trade a family influence for that of close friends or partners in their decision-making processes. Research also demonstrates that these individuals can imprint other individuals. For example, through the notion of imprinted ties, McEvily et al. (2012) posit that mentors of early career lawyers impact the amount of knowledge young lawyers obtain and the subsequent growth of their respective firms. Studies also highlight the important imprinting effects early career mentors have among scientists in regard to patenting behavior (Azoulay et al., 2011) as well as the impact early career co-workers have on entrepreneurial decisions years later (Kacperczyk, 2009). In our study, a real estate owner referenced his personal “network of relationships” as important for guidance, and an auto parts owner made decisions by “empowering and consulting” his “close-knit office” to make decisions like “a team.”

I will look to my successes and failures and try to help my son with that [learning] and analogize that to other industries. What can we learn from them? My network of relationships. I will also call on this network for guidance as well.

[Construction/Real Estate, Owner]

I do things as a team. I always like getting other viewpoints and second opinions. 'Cause one good thing about being in this close-knit office—this is really the management team here. And they're always being consulted. Everything we do we do as a team ... Everyone is empowered with responsibilities, and everyone has a say with what goes on.

[Auto Parts Manufacturer, Owner]

Together, our interviews revealed family and close relationships imprint some entrepreneurs and guide their thought processes. As one respondent suggested, she had “grown up thinking like a business owner,” while another respondent claimed “entrepreneurship was infused [in him] as a kid.” As the primary source of imprint, family and close-friends become critical for entrepreneurs as they make decisions for their respective business(es), as illustrated in Fig. 2, Row 1. Whether it is actively seeking out advice from family or consulting with close friends, these entrepreneurs tend to make decisions collectively by soliciting advice from individuals they intimately know and trust.

By engaging family and friends in decision making, such as decisions within their existing ventures or decisions concerning selecting new opportunities, these entrepreneurs open up their list of alternatives and actively search for the best opportunities available to them. As the ideas generated in the decision-making process may (or may not) have originated from the entrepreneurs themselves, a selected opportunity may (or may not) be related to what the entrepreneur currently knows. Instead, the information might stimulate entrepreneurs to broaden their decision making and select opportunities from within the realm of possibilities rather than within the realm of what they intimately know. Thus, we put forth the following proposition:

Proposition 1. *Entrepreneurs imprinted by family and friends engage in participative decision making and thus pursue venture opportunities beyond their respective industry or field.*

Although growth is often a central goal for entrepreneurs (Stewart et al., 2003), growth is not necessarily the primary focus for entrepreneurs imprinted by family. Instead, pursuing new ideas, challenges, and opportunities may take precedence. Perhaps not surprisingly, many of our participants could be classified as serial entrepreneurs—on average, they had founded four ventures, and each had started at least two businesses.

Prior research shows that early exposure, such as exposure to internationalization, imprints organizations for adaptability to uncertain environments and internal receptivity for continual change (Sapienza et al., 2006). Our findings indicate that the same is true for entrepreneurs. Those individuals exposed to entrepreneurship at a young age, particularly through family, are repeatedly willing to take on new challenges by pursuing new businesses. For them, entrepreneurship is, to a large extent, about launching new ventures. With prior exposure to the entrepreneurial process, these individuals are more receptive to new and unexplored challenges, and as such, they are more likely to pursue new venture opportunities. When asked about their plans for the future, they claimed they were driven by “more challenges” and “new opportunities” rather than profits and growth:

That decision-making process is driven by the opportunities that present themselves, but also where we are financially ... It is driven by the pool of resources we have to deploy capital and then what are the business opportunities presenting themselves.

[Construction/Real Estate, Owner]

I don't really do things for the money. It's just a measurement of success. Last year, I was starting to get bored ... so we're in the process of negotiating in setting up a new European distribution base—really tackle Europe ... I need some more challenges, so I'm creating a lot of things to take it up to the next level.

[Auto Parts Manufacturer, Owner]

I would love, love, love to open a climbing gym ... It is something I would be passionate about. It would be one of the few things I would do even if the money wasn't behind it, like not a lot of profit.

[Frozen Yogurt, Owner]

I love the chaos of a start-up, so I would go out and look for start-ups or things to begin. I cannot stand it when things become routine.

[Accounting Firm, Owner]

Additionally, when asked in our follow-up survey what important actions they had taken over the past year, we found that these entrepreneurs continued to place significantly more importance on pursuing new ventures than other entrepreneurs with different sources of imprint. For example, the auto parts manufacturer referenced above claimed that he “had launched his European division,” while another entrepreneur claimed that he was “investing in three new business ventures and two non-profits.” Table 3 illustrates additional results of this survey, in which entrepreneurs described major investment decisions they had made in the subsequent year.

This leads us to propose the following:

Proposition 2. *Over time, entrepreneurs imprinted by family and friends focus on venture creation, rather than venture development, by pursuing new and oftentimes unrelated ventures.*

5.2. Source of imprint: technology and the environment associated with hobbies

Technology and the environment have a profound influence on some entrepreneurs. These individuals are ardent about inventing through meeting unmet needs, solving problems, or making existing products better, and entrepreneurship seems to just happen, often accidentally (Shah and Tripsas, 2007). Similar to Shah and Tripsas (2007) notion of user entrepreneurs and Fauchart and Gruber's (2011) communitarians, these entrepreneurs largely engage in activities they enjoy and about which they are passionate. Gradually, they recognize this passion as an opportunity and pursue it through a new venture.

The way I got into it [illustrating] was really even when I was a small kid, being the kid that could draw. I always thought it would be cool to make a living by drawing ... In the early 90s, I bought my first Mac and just dabbled a little. I took one class in Photoshop, but the rest was just trial and error.

[Illustrations, Owner]

I always really liked writing, so I always thought I'd have a career in writing. In my earlier years, I never really thought of myself as an entrepreneur. I kind of fell into it [entrepreneurship] by accident. I have always been a restless person. I had been kind of messing around with web development and web design [for technical writing and video production sales], but I had never started a business before.

[Video/Publishing, Owner]

I just like to cook. It is a hobby. It is easy to get into and fun to do.

[Catering/Graphics Design, Owner]

Table 3

Quotes concerning actual investment decisions (1 year after initial interview).

Proposition	Entrepreneur	Example of actual decisions—1 year later
Proposition 2. <i>Over time, entrepreneurs imprinted by family and friends focus on venture creation, rather than venture development, by pursuing new and oftentimes unrelated ventures.</i>	Real estate/construction owner	“Invested in an online retail firm, as well as spent innumerable hours on research for a CNG station and conversion firm.”
	Golf products owner	“We spent a bit on samples, travel, and generally pulling info together to see if we are ready to go [into a new venture].”
Proposition 4. <i>Over time, entrepreneurs imprinted by the technology and environment associated with their hobbies focus on ventures without regard for pecuniary motives.</i>	Illustrations owner	“I have invested my time and talents into my business. I have invested financially in my existing business in the form of self-promotional material and technology.”
	Referrals owner	“We've invested in new technology to help our clients.”
Proposition 6. <i>Over time, entrepreneurs imprinted by prior work experience and the KSAs derived from that experience focus on growing their ventures.</i>	Architectural firm owner	“I am continuing to invest in the business I started in 2010.”
	IT/AV home installation owner	“I have invested into new products for my existing business.”

For individuals like these, their passions for specific activities (or products) often lead them, albeit indirectly, to entrepreneurial action. Prior knowledge is integral to the pursuit of opportunities, but how those opportunities emerge is also critical. Through deep and active engagement in interests and hobbies, individuals can build up a stock of knowledge and discover and create new products and services (Zahra et al., 2006). For example, the golf swing aid owner referenced below spent more than an hour discussing how he spent two years of his life developing a new product: a golf swing training aid.

I like to play golf. The problem I was having was that my golf shots were never consistent, and I knew there were several people having the same problem of shifting their weight wrong. That is when I had this idea for a sensor under my left foot. That is what started it [the business].

[Golf Swing Aid, Owner]

In many ways, this individual was an inventor, yet he moved beyond tinkering by acting upon an opportunity and launching a new venture. It was evident he was passionate about building this product and seeing its development through to fruition. As the product-development process progressed, he began recognizing the possibilities (i.e., commercial opportunities) for what he had created, but he lacked the prior knowledge for how to exploit that opportunity.

Again, this is just serendipity the way that this worked ... I got an idea and a working prototype. Where do you go with it? The average guy doesn't know where to go. I didn't know where to go.

[Golf Swing Aid, Owner]

For entrepreneurs imprinted by the environment and technology, the entrepreneurial process is not centered on creating and launching businesses. Rather, these individuals focus on creating and developing products and services about which they are passionate. Ventures are just the vehicles through which they can exercise these passions. Entrenched in the development of their products and services, these entrepreneurs are particularly attentive to the environmental and technological disruptions occurring in their respective area.

If you'd asked me 10 years prior, "Would you be running your own company?" I was personally more of a—I like the security of working for someone. I guess it took the changes in the world and the opening of the eyes.

[Environmental Data Management, Owner]

Together, our interviews indicated that for some entrepreneurs, technology and the environment related to inventing new products or services, represents a particularly salient source of imprint. These individuals heavily emphasize the products or services they invent/create which are grounded in their interests and hobbies as well as reflect environmental changes and technological advances. These passions develop through strong emotional engagement over time. For example, the golf swing aid owner had "loved to golf [his] entire life." He described his swing aid in great detail and directed the lead author toward some YouTube videos demonstrating his product. The illustrations owner "enjoyed drawing, even as a small kid." He discussed the evolution (moving from hand drawing into the digital age) of the illustrations industry at great length and how his business fills unmet needs in the marketplace. Demonstrating his passion, he brought some of his work to the interview, including a poster and a book, and he presented them to us as gifts. The social networking owner enthusiastically discussed his website, carefully described how it solves an important problem, and explained how his partner and product developer initially responded to his idea.

Like user entrepreneurs (Shah and Tripsas, 2007; von Hippel, 1994, 2009), these entrepreneurs focus on an idea, an innovation, or a solution that they personally enact. Although they might initially lack the diverse entrepreneurial network typical of those imprinted by friends and family, interestingly, they enjoy working independently or in a small community of individuals with like-minded interests (i.e., user communities) to develop their innovations. For example, when they discussed how they make decisions in their business(es), our participants focused on themselves and/or groups of individuals with similar interests.

A lot of decisions are just made by myself.

[Catering/Graphics Design, Owner]

I do ask for help, but I make most decisions myself.

[Video/Publishing, Owner]

I have about 75 blogs that I look at on a weekly basis. I'm constantly discussing with other people in social media things that are up and coming and going on and what we think are going away.

[Web Design, Owner]

When individuals are embedded in a user community, the development and commercialization of their product can be highly influenced by the individuals in that community or the potential adopters of the product they have developed (Autio et al., 2013; Shah and Tripsas, 2007). In other words, these individuals take the support, advice, and feedback they receive from community members and potential product users and leverage that information to improve their product. By relying on themselves and others with highly similar interests, these entrepreneurs' behaviors can be self-reinforcing, leading to greater levels of identification over time (Dutton

et al., 1994) and an increased likelihood of taking entrepreneurial action (Autio et al., 2013). Thus, in making decisions and pursuing opportunities, these individuals often focus on the creation (and improvement) of a product that can be commercialized rather than the creation of a business that offers products. As such, we suggest the following:

Proposition 3. *Entrepreneurs imprinted by the technology and environment associated with their hobbies rely on themselves or user community members when making decisions and thus orient toward ventures within their technology or hobby domain.*

Context is highly significant to the imprinting process (Johnson, 2007), and extensive research has shown the imprinting effect of initial resources on the early growth path of new ventures (Hannan et al., 1996). However, when looking toward the future, few entrepreneurs imprinted by technology or the environment focus on growth or the pursuit of new ventures. Instead, their 'development trajectory' leads them to continue to pursue their passion for their hobbies and interests, as reflected in their venture's products or services, such as improving products and designs or satisfying customers.

We're not trying to be on any kind of exponential growth curve and grow to a \$600 million company. That's not our goal. Our primary goal is taking care of our customers and taking care of our employees, and I don't really have any interest in growing.

[Environmental Data Management, Owner]

I would like to start a design consortium in the area. It's an idea I've been toying with—a place for all walks to come together and share their stories and network and help each other out. My idea is kind of along the same lines of a non-profit, of bringing together the surrounding area's web designers and web developers to not only give each other a sounding board for ideas and things like that but to help each other out.

[Web Design, Owner]

While exposure to entrepreneurship at a young age leaves imprints on some entrepreneurs that guide them toward pursuing many ventures, the imprints of technology and the environment lead entrepreneurs down a different path. These imprints do not necessarily pertain to business or entrepreneurship but to the products or services associated with the entrepreneur's interests. As such, these entrepreneurs' focus tends to be on *what* they invent that their venture produces.

Research has indicated that some individuals may be so passionate about their inventor role that they may never actually take their products to the market or found the venture to exploit the opportunity (Cardon et al., 2009: 517). Thus, it is perhaps not surprising that our findings suggest that once our participants eventually decided to pursue an opportunity, their passions were transferred to their new venture. In their new ventures, they were fully involved in decision-making processes and highly vested in the success of the company, where success is as much about intrinsic rewards (i.e., creating a product/service they are proud of and improving upon it) as it is about extrinsic rewards.

When asked in our follow-up survey, entrepreneurs imprinted by technology and the environment valued personal enjoyment more highly than other entrepreneurs, ranking personal enjoyment higher (2.8 out of 11) than those imprinted by work experience/KSAs (4.0 out of 11) or family, friends, and partners (5.3 out of 11). Additionally, when asked about their investments and experiences over the past year (see also Table 3), one entrepreneur imprinted by technology and the environment claimed her new venture had been "very rewarding, both personally and financially," while another claimed he was "focused on his existing business, and developing new prototypes." Together, these entrepreneurs—similar to user entrepreneurs (Shah and Tripsas, 2007; von Hippel, 1986)—continued to put their passion and enjoyment first by remaining focused on product and service development. As such, we propose the following:

Proposition 4. *Over time, entrepreneurs imprinted by the technology and environment associated with their hobbies focus on ventures without regard for pecuniary motives.*

5.3. Source of imprint: prior work experience

Still for others, prior work experience and the KSAs derived from that experience are a highly salient source of imprint. For these individuals, 'becoming an entrepreneur' often occurs as individuals realize that an opportunity exists, and their unique expertise and skills in the field allow them to pursue and develop that opportunity. Not surprisingly, these entrepreneurs want to nurture a singular emergent opportunity rather than create multiple new ventures or continually solve new problems. As such, going forward, these entrepreneurs remain most focused on a single business, with the goal of growing and building that business.

I was working in an environment with a lot of other people as a vice president for sales, and I realized that there was no one out there consulting in the area of self-management. And I said, "maybe this is an issue" because I realized that [sales management] was a weak link in a lot of companies. So I recognized this business opportunity first.

[Management Consulting, Owner]

I got started, I worked for [redacted] company for about four years ... And then, they were making changes to their direct sales and going more toward channel sales. And when I saw that happening, I saw this opportunity to pursue in terms of document-management solutions.

[Document Management Solutions, Owner]

Many individuals possess years of professional experience before they take entrepreneurial action. Prior information, such as that developed through work experience, is highly influential in an entrepreneur's ability to comprehend, synthesize, and apply new information; those who lack such prior information will likely be at a disadvantage in discovering or creating entrepreneurial opportunities (Roberts, 1991). Further, Shane (2000) highlights three critical dimensions for entrepreneurial discovery: prior knowledge of markets, prior knowledge of ways to serve markets, and prior knowledge of customer problems. Both the management consulting owner and the document management solutions owner cited above described how their experiences as employees triggered their recognition of an opportunity. Through their industry-specific experiences, these individuals accumulated a wealth of prior knowledge—knowledge of the industry, markets, customers, and gaps in current product/service offerings—that allowed them to recognize opportunities others had not.

Prior knowledge is critical to an entrepreneur's cognitive mindset (Westhead et al., 2005). For entrepreneurs imprinted by work experience, the way in which they evaluate and select opportunities is largely based on prior knowledge and skills mainly derived through professional work experience; other sources of imprint were less central.

I'm an architect and have been practicing for 15 years now, working for various-sized firms. Last year, I don't know if I was insane or overly optimistic, but I decided to go out on my own and make a go of it.

[Architectural Firm, Owner]

I have over 20 years of corporate marketing and project management experience. After my fifth layoff in 10 years, I started to think well maybe I should start out on my own.

[Marketing Coach, Owner]

I was teaching an undergraduate course in professional communications for two years full time. Finally, I decided I don't want to do this anymore, so I came up with this idea that seemed like a pretty obvious need: working with professional corporations in training and development.

[Speech Consulting, Owner]

Through this wealth of experience, entrepreneurs like these realize a weak link, see the opportunity, and fill a need. These entrepreneurs leverage their deep expertise in a field to realize an opportunity, a source of imprint that also affects how they think about current and future growth opportunities and how they make decisions.

While prior work experience can represent a valuable resource, it can also lead to highly industry- or firm-specific cognition (Benner and Tripsas, 2012). Put differently, the thought processes through which individuals evaluate and select opportunities can be deeply rooted in prior employment experiences. Sources of imprint, particularly those gained in a job or career, can push entrepreneurs into different patterns of personal choice (i.e., development trajectories) (Minniti and Bygrave, 2001). In talking with participants with work experience imprints, we found many had a deep-seated knowledge of their area of expertise. However, similar to those imprinted by technology and the environment, these entrepreneurs often lacked or were uninterested in the business-side requirements of running an enterprise:

I'd say the paperwork side of it [is the most challenging part of being an entrepreneur]. I'd like to just do what I love to do, and that's train people—be a strength and conditioning coach. And the paperwork, the taxes, everything that has to be taken care of, I find that to be probably the biggest hurdle just because I don't have a background in any of that stuff.

[Fitness Center, Owner]

I have made some mistakes in the past on delegating the wrong thing and trying to be the accountant. I am an architect. I need to be an architect and delegate the accounting.

[Architectural Firm, Owner #2]

The most challenging part of being an entrepreneur is finding out what paperwork you need to actually fill out ... Architects, most of them, have large egos and think they can do everything. So they will do their own logos, graphics, and website design. Again, I have a different approach. I realize there are people that are better at that part than I am.

[Architectural Firm (different than architectural firm above), Owner #1]

Many of these entrepreneurs are overwhelmed with and sometimes ill-prepared for the 'paperwork' associated with managing a new venture. In other words, entrepreneurs imprinted by work experience often have little affinity for starting a business; they prefer to work *in* their business, not *on* their business. To fill these knowledge and interest gaps, these individuals rely heavily on business coaches, boards of advisors, or partners with business backgrounds in running their business and making decisions. Therefore, entrepreneurs with work experience imprints tend to concentrate in a specific area without branching out into new, unrelated areas. This leads us to propose the following:

Proposition 5. *Entrepreneurs imprinted by prior work experience and KSAs derived from that experience delegate decisions and thus focus on venture opportunities in known knowledge fields.*

When asked about their plans for the future, many entrepreneurs in our study claimed they were driven by organic growth and franchising opportunities:

At some point, with our business model, we're going to reach max capacity of members, and so there's a ceiling there for profits. And eventually opening a second location somewhere else I think is the route we'd like to go.
[Fitness Center, Owner]

Finding new clients and letting them know I'm here would let me grow my firm.
[Architectural Firm, Owner #1]

I would probably expand to greater locations or something like that or consider franchising the business out.
[IT/AV Home Installation, Owner]

I would actually consider creating a franchise.
[Speech Consulting, Owner]

Given that (1) prior knowledge and industry-specific work experience are particularly salient to these entrepreneurs and the opportunity they elect to exploit and (2) they lack business-specific knowledge and interests, we conclude that they will be unlikely to pursue new, widely varying ventures. Rather, guided by their past professional experiences, these individuals will follow a development trajectory that allows them to further capitalize on their existing skill set, such as expanding their current venture.

The follow-up survey indicated that these entrepreneurs did indeed put greater emphasis on profitably expanding their current businesses than other entrepreneurs, who focused on new businesses and personal enjoyment. On average, entrepreneurs with work experience imprints ranked cash flow a 2.9 (out of 11), compared to 4.4 for the other entrepreneurs. Additionally, in the open-ended responses about investments over the past year (see Table 3), one entrepreneur mentioned that he had invested in a “new website, new books, new videos, and new association memberships” in order to “get his name out there.” Similarly, another mentioned “business marketing investments, such as networking and associations” to “let the public know I am here.” To position them for growth, these entrepreneurs joined associations, networked, and developed promotional materials to improve their brand awareness and extend their reach into new markets, all while maintaining a focus on cash flow and profits. Stated formally, we propose that:

Proposition 6. *Over time, entrepreneurs imprinted by prior work experience and the KSAs derived from that experience focus on growing their ventures.*

6. Discussion

Prior research demonstrates that founding conditions and founder decisions each imprint upon ventures and thus influence each venture's future path (DeTienne, 2010; Milanov and Fernhaber, 2009). Building on this important research, we show that different sources of imprint alter how entrepreneurs navigate the entrepreneurial process and how they take entrepreneurial action. In doing so, we elucidate that specific sources of imprint have unique effects on entrepreneurs' decision making and priorities related to their ventures.

6.1. Implications for imprinting and development trajectories

A major contribution of our study is the integration of imprinting theory at the individual level with research in entrepreneurship on entrepreneurial decision making and action. To date, research has shown that the founding conditions and the founder decisions at the onset of a venture have a significant impact on the venture's development trajectory (DeTienne, 2010; Milanov and Fernhaber, 2009; Stinchcombe, 1965). We extend this line of thought by illustrating how certain sources of imprint have an enduring effect on how entrepreneurs think about themselves, their opportunities, and their ventures. We highlight what sources of imprint affect how entrepreneurs identify and develop their initial new venture opportunity and which sources of imprint provide a lasting effect on how entrepreneurs think about opportunities. Therefore, we provide a more nuanced view of the factors that play a role in entrepreneurial decision making.

Specifically, our results indicate that when the intent to become an entrepreneur is imprinted on individuals early in life through friends and family, individuals are more likely to be intrigued by the entrepreneurial pursuit and will thus be more likely to take entrepreneurial action as well as pursue more new venture opportunities. Thus, these individuals are not just more likely to become entrepreneurs but are more likely to continue to behave entrepreneurially by founding multiple, potentially unrelated ventures across different product or service areas. When the source of imprint stems from a particular hobby or activity, they focus less on new ventures, growth, or profits. Instead, they make decisions in a self-reliant manner and take pleasure in developing products and services related to these activities. Finally, when a career in a given profession (e.g., architecture) is the most salient source of imprint, individuals will delegate decision making and select opportunities to start and grow their business in their field rather than search for new and unrelated opportunities.

Our examination of entrepreneurs' past, present, and future actions demonstrates not just *that* history matters but *how* history matters. The past is important not only for the identification and selection of an opportunity to start a first venture but also to the progression of that opportunity and potentially others. Interestingly, each source of imprint provides insight into the antecedents of entrepreneurs' passions and motivations for pursuing (or not pursuing) opportunities. For example, different sets of passions emerged during sensitive stages in each entrepreneur's life. Whether it was the entrepreneur who discussed "seeing his wealthy neighbor at the age of 10 and realizing [he] wanted to be an entrepreneur" or one who "always loved to play golf and invented a swing aid to improve [his] game," the development of specific passions has an important impact on entrepreneurs and their decisions. This parallels recent work in entrepreneurship on passion and identity (Cardon et al., 2009; Fauchart and Gruber, 2011) and suggests an important area for future research at the intersection of imprinting and identity theory. The imprinting process and corresponding sources of imprint guide entrepreneurs' perceptions of who they are with respect to others (social identity) and what roles are salient (role identity).

By utilizing imprinting theory, we do not imply that entrepreneurs are merely sponges imprinted by everything that happens in life. Rather, entrepreneurs exert critical-thinking skills and make determinations for how they perceive (or do not perceive) opportunities. Without question, not everything that happens in life equally affects how entrepreneurs think about opportunities. Although our investigation shows that what happens during sensitive stages of life—when imprinting begins—considerably matters to the future growth and development of entrepreneurial ventures, the process of learning can also be reflexive in nature (Archer, 2003; Mutch, 2007). In other words, it is not that entrepreneurs are imprinted and that knowledge is 'stuck' with the entrepreneur, but that entrepreneurs are greatly influenced by those complex, and often recursive, combinations of events, people, activities, and experiences that occur throughout life. This notion of reflexivity might explain why certain sources of imprint wax or wane in importance over time, and we encourage future research to explore this further.

6.2. Imprinting and entrepreneurial decision making

Although we focus our theoretical efforts on imprinting theory, our study fundamentally involves entrepreneurial decision making: which opportunities entrepreneurs decide to pursue, how entrepreneurs go about making important decisions, and what decisions entrepreneurs make regarding priorities for the future of their ventures. We show that different sources of imprint result in different decisions and different decision-making processes. Thus, sources of imprint represent an important antecedent to and generally understudied aspect of entrepreneurship.

Our study deviates from much of the current research on entrepreneurial decision making in that we center on how and why history matters for entrepreneurial decision making. In contrast to important research that centers on developing theory regarding entrepreneurs' espoused and/or de facto decision models (e.g., Choi and Shepherd, 2004), we show that sources of imprint initiate a pattern of influence that may begin significantly prior to the decisions an entrepreneur makes today. For example, prior research demonstrates that the extent to which a current opportunity is "related to the entrepreneur's existing knowledge, skills, and abilities" (Haynie et al., 2009: 349) directly influences the entrepreneurs' evaluation and selection of that opportunity and that prior knowledge moderates the effects of opportunity attributes on entrepreneurs' opportunity-related decision making (Wood and Williams, 2014).

We go beyond these findings to illustrate that how and where prior knowledge is gained not only influences entrepreneurs' decisions to start a venture but also their decision-making processes when running the venture. Specifically, we show that these sources of imprint are vital to which opportunities entrepreneurs identify and enact as well as the exploitation patterns of these opportunities, notably the future growth and trajectories of their ventures. We suggest that sources of imprint can provide more than just alignable knowledge critical to identifying, evaluating, and exploiting opportunities; they provide insight into the origins of such knowledge corridors (Venkataraman, 1997) and their persistent influence over time.

Sources of imprint offer increased clarity for context that supplements our understanding of prior knowledge and the decisions entrepreneurs make regarding opportunities. Although we inform how sources of imprint influence entrepreneurial decision making, our picture of this process is far from complete. The factors influencing how individuals think about opportunities are inherently complex, highlighting areas for future research. Building on the idea of sources of imprint as the origins of knowledge corridors, a potentially fruitful area of inquiry could be to integrate the strategic groups or clustering literature with research on prior knowledge. For example, Shane's (2000) seminal work examines how eight entrepreneurs pursued eight vastly different opportunities from one single innovation. Reversing this approach could offer useful insights for the study of entrepreneurship. Such an endeavor could explore how different career paths and cognitive schemas can lead to the same opportunity pursuit (i.e., equifinality).

Our efforts could also help further our understanding of entrepreneurial typologies, specifically as it relates to user entrepreneurship. In some instances, a user community might provide better information for decision making than friends or family members. For example, a community-based social structure, one in which ideas and information are voluntarily shared among users, could lead to greater success with opportunities that are centered on technologies and products and require significant human capital. However, a social network-based structure, one in which ideas and information are shared between close or familial ties, could lead to greater success with opportunities that are centered on relationships and require significant social capital. Additionally, our study demonstrates that sources of imprint represent a useful way to think about 'types' of entrepreneurs, explaining why different entrepreneurs may pursue similar opportunities quite differently. Ultimately, the strategies resulting from different sources of imprint may prove useful as a contingency leading to (or away from) equifinality in venture success among entrepreneurs pursuing similar opportunities.

6.3. Implications for entrepreneurs and education

Consider our study's two entrepreneurs who founded golf product companies. One played golf professionally and started multiple businesses at a relatively early age; the other played golf leisurely in retirement and launched a business after developing a new golfing product. Despite having seemingly similar sources of imprint as golfers who started their own businesses, this surface-level similarity does not tell the full story. One entrepreneur expressed a passionate interest in being an entrepreneur early in his career and discovered an entrepreneurial opportunity related to his knowledge base. The other invented a product to solve a problem, and the act of starting a venture reflected his need to take the invention to market. The two entrepreneurs make decisions very differently and foresee different paths for their own futures and their venture's futures, as the quotations below highlight:

I am never content where they [ventures] are. That can sometimes wear you out, but to me, that is what drives me. I definitely push things to fruition. So they [ventures] are either going to work, and we build them, or we don't think they are going to work, and we move on to new businesses.

[Golf Products, Owner]

I want to go back to play golf and the things I was doing before I had this idea. It is so ironic: I don't have time to play golf because I invented a golfing swing aid to help golfers. What is wrong with that picture?

[Golf Swing Aid, Owner]

The above differences in seemingly similar entrepreneurs imply an important aspect of prior experience, context, and how entrepreneurs are made (Hodgetts and Kuratko, 1995). Knowing that individuals have prior experience in golfing does not provide the complete picture. In addition to *what* knowledge entrepreneurs possess, an understanding of *where*, *when*, and *how* that experience occurs is also critical to predict entrepreneurs' future paths and decisions, and imprinting explains how this learning process unfolds. Our research thus highlights the importance of nurturing (e.g., mentors, work experience) in entrepreneurship. We show that role models and educational experiences can have an indelible effect on entrepreneurs' evaluation and selection of opportunities and their paths as entrepreneurs in general. As such, understanding how entrepreneurs are made is important.

Further, these important differences in sources of imprint suggest implications for entrepreneurial education and future research that take a more nuanced approach to examining such sources of imprint. For example, many schools worldwide are expanding their entrepreneurship curriculums; however, we know little about which educational experiences are most salient to entrepreneurs (Martin et al., 2013). Future research on the effects of different courses, cases, or competitions could not only shed light on imprinting and entrepreneurship theory but also improve the effectiveness of entrepreneurship programs. For example, future research could explore the extent to which entrepreneurs with different sources of imprint need different types of entrepreneurial education at different stages of their lives.

6.4. Limitations and future research

Our study's limitations provide avenues for future research. First, we asked entrepreneurs to recall what led them to pursue their first venture, and asking participants to recall past experiences may introduce retrospective bias. However, it was important for us to uncover which sources of imprint entrepreneurs felt impacted their past decisions so we could compare these to how the same entrepreneurs approached current and future decisions. Thus, we strove to identify emotionally and cognitively-salient influences that extend beyond the initial venture-creation decision. Further, we triangulated our interview responses with archival and third-party information sources. We also followed up with our entrepreneurs by sending a condensed interview report back to each participant highlighting the most important aspects of themselves and their business(es) and had them respond with comments concerning inaccuracies. However, we cannot fully explain the extent to which biases influenced respondents' recollection and perceptions of past events.

Second, we focus on the outcome of the imprinting process, not the learning process that takes place during imprinting. Future research examining the imprinting process in situ would reveal a great deal about how imprinting occurs and would minimize potential retrospective bias. Such research could examine individuals prior to becoming entrepreneurs, follow them as they progress through their career, and track what sources of imprint impact their entrepreneurial pursuits and at what points in time certain sources of imprint fade or grow in importance. Such research could also examine when—if at all—certain sources of imprint cease to continue influencing the entrepreneur's decision making and thus when the lasting effect ends.

Further, our sampling strategy introduced the potential for regional bias, survivorship bias, and endogeneity. Despite our efforts to limit such biases, each of these reflects potential limitations in the generalizability of our study. However, we note that our sampling strategy, although intended to be as representative as possible, was designed to provide variety in sources of imprint but not necessarily to create an exhaustive typology of sources of imprint. Instead, we sought to develop theory that would lend insight into how such sources of imprint influence how entrepreneurs think, make decisions, and operate their ventures today and in their envisioned futures. Thus, it is possible that other samples of entrepreneurs (e.g., those from different geographical or cultural regions, those not associated with an entrepreneurial organization, and/or those whose ventures have already failed) might identify other sources of imprint as particularly influential. We encourage future research that identifies additional sources of imprint, examines the effects of these differences, and includes samples that measure the success and failure of entrepreneurs from a variety of regions and backgrounds.

Our research also raises important questions about the order of causality of our constructs—namely, whether entrepreneurial decision-making processes (i.e., participative, self-reliant, delegative) are influenced by venture motivations (i.e., new ventures, non-pecuniary motives, growth) or whether venture motivations influence decision-making processes. For example, individuals who are interested in constantly launching new ventures may continually engage family and friends (i.e., participative decision making) because it is unlikely that they have in-depth knowledge of each opportunity they are interested in acting upon. Alternatively, through continuous engagement in participative decision making, these individuals might constantly be exposed to diverse viewpoints and a wide range of ideas, which in turn leads these entrepreneurs to often pursue new, and unrelated opportunities. We encourage future research to explore the causal connection between entrepreneurial decision making and venture motivations.

Future research could also examine the boundary conditions of our findings. For example, although we found that exposure to entrepreneurship through friends and family imprints entrepreneurs, we do not know whether this imprint is a result of only successful entrepreneurship. In other words, the successfulness (or unsuccessfulness) of family and friends in entrepreneurship may imprint individuals in distinct ways, with some imprints perhaps guiding entrepreneurs toward (or away from) pursuing new ventures.

7. Conclusion

Much research has focused on what leads individuals to become entrepreneurs and how some experiences lead some individuals to be more likely to become entrepreneurs. We extend this work by examining how different sources of imprint have a lasting influence not just on the initial venture founded by entrepreneurs but, more importantly, in the decisions entrepreneurs make about their ventures and their futures and the process by which they make such decisions. By illustrating the influence of different sources of imprint, we explain how they guide entrepreneurs' decisions as they progress through their entrepreneurial careers and elucidate the ways in which entrepreneurs navigate the entrepreneurial process differently. Thus, we demonstrate the potential for research at the crossroads of imprinting theory and entrepreneurial action and hope to encourage future research along these lines.

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