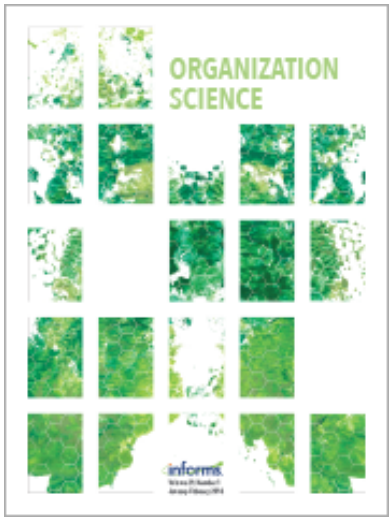

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The Evaluation of Founder Failure and Success by Hiring Firms: A Field Experiment

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Abstract. Organizations tout the importance of innovation and entrepreneurship. Yet, when hiring it remains unclear how they evaluate entrepreneurial human capital—namely, job candidates with founder experience. How hiring firms evaluate this experience—and especially how this evaluation varies by entrepreneurial success and failure—reveals insights into the structures and processes within organizations. Organizations research points to two perspectives related to the evaluation of founder experience: Former founders may be advantaged, due to founder experience signaling high-quality capabilities and human capital, or disadvantaged, due to concerns related to fit and commitment. To identify the dominant class of mechanisms driving the evaluation of founder experience, it is important to consider how these evaluations differ, depending on whether the founder's venture failed or succeeded. To isolate demand-side mechanisms and hold supply-side factors constant, we conducted a field experiment. We sent applications varying the candidate's founder experience to 2,400 software engineering positions in the United States at random. We find that former founders received 43% fewer callbacks than nonfounders and that this difference is driven by older hiring firms. Further, this founder penalty is greatest for former successful founders, who received 33% fewer callbacks than former failed founders. Our results highlight that mechanisms related to concerns about fit and commitment, rather than information asymmetry about quality, are most influential when hiring firms evaluate former founders in our context.

Supplemental Material: The online appendix is available at https://doi.org/10.1287/orsc.2022.1592.

Keywords: careers • entrepreneurship • evaluations • failure • field experiment • founders • hiring • labor markets

Introduction

The mobility of individuals across organizations provides insights into the structures and processes within these organizations. Research on the organizational spawning of entrepreneurs, or the *outflow* of employees from established firms to entrepreneurial ventures, has helped demonstrate that some firms are better than others at incubating future innovation-driven ventures (e.g., high-tech and science, technology, engineering, and mathematics (STEM) ventures) (Phillips 2002, Sørensen 2007, Chatterji 2009, Elfenbein et al. 2010, Sørensen and Fassiotto 2011, Feldman et al. 2019). For example, former employees from smaller and younger firms, which are arguably richer in entrepreneurial resources, are better positioned to launch successful ventures (Sørensen and Stuart 2000, Xu and Ruef 2004, Gompers et al. 2005, Sørensen 2007). Examining the reverse process, or the *inflow* of former entrepreneurs (or founders) into established firms, has received considerably less attention, yet offers a similar opportunity to understand other organizational processes, such as how firms evaluate entrepreneurial human capital. This view provides insight into a firm's human capital strategy, which reflects its resources, practices, and structures (Baron 2004, Chadwick and Dabu 2009, Bidwell 2011, Molloy and Barney 2015).

Research on the wage implications of entrepreneurship, as well as organizational research on hiring more generally, lead to unclear expectations. Former founders can be argued to be advantaged in the labor market because their entrepreneurial experience sends a strong, positive quality signal, such as possessing greater capabilities and human capital (Agarwal et al. 2004, Gompers et al. 2005, Burton and Beckman 2007,

Campbell 2013). Conversely, some scholars argue that entrepreneurial experience conveys an ambiguous quality signal, making it challenging for hiring firms to assess the quality of former founders relative to potential employees without entrepreneurial experience (Anton and Yao 1995, Hegde and Tumlinson 2021, Mahieu et al. 2021, Sorenson et al. 2021). Organizational scholars have shown that a priority for hiring firms is a job candidate's ability to fit into and remain committed to their firm (Chatman 1991, O'Reilly et al. 1991, Rivera 2012, Leung 2014, Goldberg et al. 2016, Galperin et al. 2020), which may also disadvantage former founders relative to wage employees. Further, the mechanisms driving an evaluation outcome in a multistage evaluation process may depend on which stage is considered (e.g., interview request vs. wage offered) (see Botelho 2017, Botelho and Abraham 2017, Botelho and Gertsberg 2022 for a discussion).

To better understand how founder experience is evaluated in the labor market, it is necessary to disentangle these two organizational perspectives: (i) mechanisms related to information asymmetry about quality (capabilities and human capital) and (ii) mechanisms related to concerns about fit and commitment.

We consider how the evaluations of prior founders vary based on their venture's outcome: success versus failure. Successful founders would arguably send a stronger signal of their quality than would failed founders because entrepreneurial success is rare and may require exceptional capabilities. Thus, if information asymmetry about quality is the driving mechanism in the evaluation of former founders, we would expect hiring firms to favor successful founders over failed founders. According to research on entrepreneurship and information asymmetry, employees leave their firms when they possess superior capabilities, which they cannot signal to wage employers, resulting in them leaving to launch their own ventures (Anton and Yao 1995, Hegde and Tumlinson 2021). Under conditions of complete information, hiring firms would seek to capture former founders, and, in particular, successful founders, who are more likely to have superior capability and entrepreneurial human capital (Lazear 2005, Campbell 2013, Luzzi and Sasson 2016). This pattern would indicate that organizations primarily view entrepreneurial human capital as a value-enhancing form of mobility.

Alternatively, a preference for failed founders over successful founders provides support for mechanisms related to fit and commitment (Åstebro et al. 2014, Leung 2014, Galperin et al. 2020, Mahieu et al. 2021), rather than those related to quality. This second perspective suggests that employees depart their firms when they have extraordinary expectations and preferences that are often not aligned with or cannot be realized within their existing organizations (e.g., autonomy, flexibility, and innovation). Thus, hiring firms would perceive successful founders as less likely to fit into bureaucratic structures and the culture at established firms. Also, successful founders would be seen as a greater flight risk, or more prone to leave for another venture relative to failed founders (Ucbasaran et al. 2013, Manso 2016). By simultaneously examining the evaluation of successful and failed founders, this study allows for a more complete understanding of the mechanisms driving outcomes for former entrepreneurs in the labor market.

Empirically, it is challenging to estimate the demand-side evaluation of founder experience and isolate the mechanisms driving this evaluation using observational data. Outcomes may be driven by at least three different types of theoretical mechanisms (Sørensen and Sharkey 2014)—labor demand-side mechanisms (e.g., evaluation by hiring firms), supply-side mechanisms (e.g., selection by job candidates), and opportunity structures at preceding organizations (e.g., advancement opportunities at established firms or growth opportunities at entrepreneurial firms). To address these empirical challenges, we conducted a field experiment. Specifically, we used an audit study design, which allows us to focus on the demand-side evaluation of former successful and failed founders by hiring firms, while holding constant the factors related to choices and opportunities of an individual (Rivera 2012, Kang et al. 2016, Weisshaar 2018). For example, a contemporariness study has employed this approach to examine how employers evaluate founder experience of nontechnical positions, regardless of venture outcomes, and find that men are penalized for having founder experience (Kacperczyk and Younkin 2021). We created three identical job-applicant profiles, varying only their postundergraduate-degree work experience: wage employee at a firm, founder of a venture that signals failure, and founder of a venture that signals success. We randomly assigned one of the three profiles to 2,400 full-time entry-level software engineering positions across six metropolitan areas in the United States.

We find that hiring firms are, on average, 43% less likely to call back candidates who start their career as a founder, relative to nonfounders (13.6% versus 24.0%). But the observed founder penalty alone does not explain whether it stems from uncertainty related to human capital and quality or from concerns related to fit and commitment. Comparing successful and failed founders, we find that founders of a successful venture are further disadvantaged compared with founders of a failed venture (10.9% versus 16.2%), which suggests that concerns about fit and commitment are stronger drivers of our observed founder disadvantage. To contextualize our findings, we also conducted interviews with 20 technical recruiting

professionals, who were unaware of our research question, experiment, and findings. The findings from our study contribute to research on entrepreneurship, evaluations, human capital, and organizations. Primarily, we develop theory related to the evaluation of entrepreneurial failure and success by bridging research on the organizational spawning of entrepreneurs, wage implications of founder experience, and the demand-side evaluation of job applicants. Our theoretical and empirical approach also answers a call from researchers to incorporate the role of entrepreneurship into organizations research by considering it an element of an individual's broader career path (Burton et al. 2016).

The Evaluation of Founder Experience by Hiring Firms

Studying how organizations evaluate and manage entrepreneurial human capital brings important insights to our understanding of the structures and processes of organizations (Phillips 2002, Sørensen 2007, Chatterji 2009, Elfenbein et al. 2010, Sørensen and Fassiotto 2011, Feldman et al. 2019). Yet, theoretical mechanisms that drive the evaluation of former founders remain unclear. It has been well documented that the hiring process is rife with uncertainty (Leung 2014, Rider and Negro 2015, Campbell et al. 2017). Evaluators often rely on signals that may convey information about job candidates to resolve this uncertainty (Spence 1973, Podolny 2005). In particular, a job candidate's prior work experience and career patterns serve as a proxy to assess that candidate's quality—namely, their capability and human capital—as well as their ability to fit into and remain committed to a hiring firm (Rivera 2012, Bidwell et al. 2014, Leung 2014, Galperin et al. 2020).

Research on hiring, entrepreneurship, and the organizational spawning of entrepreneurs offers important theoretical building blocks for understanding the demand-side evaluation of founder experience. The column headers of the matrix in Figure 1 provides a summary of these mechanisms from prior work, which we will discuss below, and how they should affect the demand-side evaluation of former founders by either increasing (left column) or decreasing (right column) the likelihood of former founders receiving a positive evaluation by hiring firms. These mechanisms can be interpreted as providing support for founder experience as an advantage (left column) as well as a disadvantage (right column) in the hiring process. As such, a focus on founder experience by itself cannot disentangle which of the two organizational perspectives—(i) mechanisms related to information asymmetry about quality or (ii) mechanisms related to concerns about fit and commitment—is driving how organizations evaluate entrepreneurial human capital.

Positive evaluations of entrepreneurial experience by hiring firms suggest that the primary function of this signal relates to quality, such that hiring firms perceive former founders to be higher quality and relatedly more entrepreneurial and innovative than nonfounders. Research on the outflow of entrepreneurs from established firms has shown that employees leave their firms when they possess superior capabilities that they cannot signal to their employers and will thus be undervalued if they stay (Anton and Yao 1995, Hegde and Tumlinson 2021). Therefore, if a hiring firm can accurately assess the superior quality of former founders who apply to their firm, we would expect better outcomes for former founders relative to nonfounders in the labor market (i.e., an increase in the likelihood of a positive evaluation). In contrast, employees may leave their firms to become entrepreneurs when they have strong expectations and preferences that do not align with or cannot be realized within their existing organizations, such as autonomy, flexibility, and innovation. Hiring firms may consider these characteristics as "red flags" and worry that former founders would not be able to fit into and stay committed to their firms and wage employment more generally (cf. Chatman 1991, O'Reilly et al. 1991, Rivera 2012, Leung 2014, Goldberg et al. 2016, and Galperin et al. 2020). Thus, if founder experience serves less as a signal of superior quality and more as a signal of poor fit and commitment, we would expect worse outcomes for former founders relative to nonfounders in the labor market (i.e., a decrease in the likelihood of a positive evaluation).

We start by further discussing the mechanisms driving an increase or a decrease in the likelihood that a hiring firm positively evaluates founder experience. However, the presence of these competing explanations makes it difficult to disentangle the dominant mechanism affecting the relationship between founder experience and wage employment. Specifically, if we find evidence of a negative evaluation of founder experience, it remains unclear whether it is because this experience provides a weak signal of quality or if it signals poor fit and lower commitment. Therefore, to isolate the mechanisms driving observed effects of founder experience on subsequent labor market outcomes, we move beyond considering founder experience in the abstract and examine how the effect varies by venture's outcome—namely, venture success versus venture failure.

We specifically focus on early-career founders of innovation-driven (or high-tech) ventures, who typically have a STEM background. This definition of entrepreneurship aligns with our goal to better understand how firms evaluate entrepreneurial and innovative human capital. Scholars examining the organizational spawning process have similarly focused on innovation-

Figure 1. Theoretical Mechanisms for the Likelihood of Former Founders Receiving a Positive Evaluation from Hiring Firms by Venture Outcome

VENTURE OUTCOME	EFFECT OF FOUNDER EXPERIENCE: INCREASE IN LIKELIHOOD	EFFECT OF FOUNDER EXPERIENCE: DECREASE IN LIKELIHOOD
	• Capabilities, human capital, and entrepreneurial traits • Alignment with firm focus on innovation and entrepreneurial culture	• Information asymmetry about quality (i.e., capabilities, human capital) • Concerns about fit and commitment
SUCCESS	**Q1. Venture Success Attenuates Concerns About Quality** • Successful former founders are more likely to be perceived as having higher quality (i.e., capabilities and human capital) • Successful former founders are more likely to be perceived as possessing more entrepreneurial and innovative skill sets • Successful former founders earn a premium in subsequent wage employment	**Q2. Venture Success Magnifies Concerns About Fit and Commitment** • Successful former founders are more likely to be perceived as having a lower fit with and commitment to hiring firms • Successful former founders are more likely to found another venture • Successful former founders are more likely to entice other employees to join them in entrepreneurship
FAILURE	**Q3. Venture Failure Attenuates Concerns About Fit and Commitment** • Failed former founders are more likely to be perceived as having a higher fit with and remain committed to hiring firms • Failed former founders are more likely to abandon entrepreneurship and find a better fit with wage employment • Failed former founders are less likely to poach other employees	**Q4. Venture Failure Magnifies Concerns About Quality** • Failed former founders are more likely to be perceived as having lower quality (i.e., capabilities and human capital) • Failed former founders are more likely to be perceived as coming from the lower tail of the quality distribution (or pushed into entrepreneurship) • Failed former founders may suffer status loss and lose bargaining power in the labor market

Notes. The column header of the matrix lists the mechanisms driving an increase (left column) and decrease (right column) in the likelihood former founders receiving a positive evaluation by hiring firms. Each quadrant in the matrix (Q1 to Q4) disentangles how these mechanisms would be strengthened or weakened based on a hiring firm's knowledge of the venture's outcome: success (top row) and failure (bottom row). For example, Q2 (top right) in the matrix discusses the mechanisms that would lead to a decrease in the likelihood that former successful founders receive a positive evaluation by hiring firms.

driven firms to understand the factors that predict not only the entry into entrepreneurship, but also the success of these spawned ventures (Agarwal et al. 2004, Gompers et al. 2005, Klepper and Sleeper 2005, Kacperczyk and Marx 2016). Furthermore, the significant failure rate associated with innovation-driven entrepreneurship results in a high transition rate to wage employment.[1] Given our nascent understanding of the demand-side evaluation of former founders of innovation-driven ventures, our focus on early-career entrepreneurs helps provide a theoretical baseline. This focus also removes potentially confounding signals that have been shown to affect the hiring process more generally, such as employer status and social capital (Fernandez et al. 2000, Phillips 2001, Graffin et al. 2008, Bidwell et al. 2014, Rider and Tan 2015).

Mechanisms for Hiring Advantage of Founders: Capabilities and Human Capital

Research on the demand-side evaluation of former founders has focused on the wage effects of hired individuals with general "entrepreneurial experience"—namely, those who have worked for a startup or are founders—relative to those without this experience. Researchers have highlighted superior capabilities and desirable human capital developed from entrepreneurial experience (Campbell 2013, Luzzi and Sasson 2016, Levine and Rubinstein 2017, Kim 2018). For instance, in a study of the California semiconductor industry, employees from startups, relative to those from established firms, earned higher wages in their subsequent careers (Campbell 2013). One of the posited mechanisms for this wage premium is that entrepreneurial experience serves as a signal for valuable capabilities and human capital that are otherwise difficult to observe, such as balanced skills, the ability to leverage capabilities and resources, and the ability to recognize entrepreneurial and innovative opportunities (Campbell 2013, Luzzi and Sasson 2016). This is also consistent with broader research on the organizational design of new ventures (Stinchcombe 1965, Aldrich and Ruef 2006). New ventures are resource-constrained, which forces founders and their employees to not only master their core competency, but also take on a wider scope of tasks (Lazear 2005). For example, a technical cofounder will have to be a proficient developer, as well as be able to effectively communicate the venture's technology and competitive strengths to internal (e.g., sales) and external (e.g., clients) stakeholders. In contrast, an employee with a similar developer role at a more established firm may possess the same technical aptitude, but is unlikely to have developed these other skills.

Studies on the organizational spawning of entrepreneurs also provide evidence that smaller and younger firms enable their employees to accumulate broader human capital than older and more established firms (Sørensen 2007). Startup-like firms are more likely to "breed" entrepreneurs and successful ventures, compared with more mature and likely bureaucratic firms, due to reduced role differentiation and specialization (Sørensen 2007, Elfenbein et al. 2010, Sørensen and Phillips 2011). Additionally, most former founders

have experience working in close-knit teams and, thus, can effectively manage similar relationships at established firms (Hannan et al. 1996). Therefore, hiring firms may value former founders if they perceive that this experience yields broader human capital most commonly accumulated through founder experience (Lazear 2004, Luzzi and Sasson 2016).

In addition, entrepreneurs from innovation-driven ventures are associated with desirable characteristics, which may lead hiring firms to prefer former founders. Founders are thought to be "cut from a different cloth" and to possess unique positive traits (for a review, see Åstebro et al. 2014 and Kerr et al. 2018). These studies suggest that founders of innovation-driven ventures are more likely to take on new challenges, successfully execute their visions, and present creative solutions, despite being in a volatile or uncertain setting. The positive traits that strongly predict entry into, and persistence in, entrepreneurship can also be useful and valued by established firms—for instance, identifying worthwhile innovations in a new or rapidly changing market (Singh and Agrawal 2011).

Hiring former founders would also align with the increasingly popular firm-wide focus on an innovative and entrepreneurial culture. Former founders of innovation-driven ventures may motivate other employees to become more innovative by exposing them to new ideas and practices. Innovative products and technologies are often developed and commercialized by entrepreneurial ventures (Schumpeter 1951, Tushman and Anderson 1986), and this realization has led many firms to discuss their commitment to fostering an entrepreneurial and innovative environment (Lo et al. 2020). Research on innovation and mobility provides evidence supporting this anticipated spillover effect. Specifically, researchers discuss that a way to improve innovative capacity within the firm is to hire external individuals who can source new ideas and routines from different firms (Song et al. 2003, Beckman and Burton 2008, Dokko et al. 2009, Palomeras and Melero 2010). Firms, especially when they perform well, often fall into competency traps and face challenges in seeking new ideas and opportunities (Stuart and Podolny 1996, Sørensen and Stuart 2000). Therefore, hiring entrepreneurial individuals can allow firms to access new ideas, adopt innovative practices, and reduce local search.

As summarized in the left column header of the matrix in Figure 1, hiring firms may value former founders to the extent that they perceive these candidates to possess superior capabilities and desirable human capital. Thus, during the hiring process, job candidates with founder experience may be evaluated more positively relative to similar job candidates without founder experience.

Mechanisms for Hiring Disadvantage of Founders: Information Asymmetry About Quality and Concerns About Fit and Commitment

Despite the positive attributions about entrepreneurs, founders come from both tails of the quality distribution (Evans and Leighton 1989, Åstebro et al. 2011, Levine and Rubinstein 2017). In contrast to the romanticized view of new ventures emerging from entrepreneurial aspirations or innovative ideas, this empirical evidence suggests that many ventures are instead formed out of necessity—for economic need or difficulty in finding a job. Although necessity entrepreneurship seems more likely for general self-employment than for innovation-driven entrepreneurship, any founder experience may be initially met with skepticism. For example, it is more difficult for hiring firms to validate skills and experiences claimed by former founders relative to wage employees for whom firms can more easily conduct a reference check (Lazear 1981, Mahieu et al. 2021). Furthermore, although founders of innovation-driven ventures may possess broader human capital than nonfounders, much of this could be seen as specific to their venture and idiosyncratic (Burton and Beckman 2007, Sorenson et al. 2021).

This uncertainty about the quality—namely, capabilities and human capital—of former founders is also related to broader organizational theory and research on evaluations in hiring. When faced with information asymmetry regarding a candidate's quality (Anton and Yao 1995, Hegde and Tumlinson 2021, Mahieu et al. 2021), evaluators often rely on various signals, such as education (e.g., Rivera 2011), race (e.g., Bertrand and Mullainathan 2004), gender (e.g., Correll et al. 2007 and Rivera and Tilcsik 2016), and community involvement (e.g., Kang et al. 2016). For individuals with wage-employment experience, affiliations with current or previous employers serve as an informative quality signal (e.g., Phillips 2001, Graffin et al. 2008, Bidwell et al. 2014, and Rider and Tan 2015). They signal, at a minimum, that these employers were willing to hire and pay the candidate. A lack of such affiliation may thus decrease the likelihood that founders, especially those early in their career, receive a positive evaluation from hiring firms.

Broader research on hiring and evaluation highlights additional disadvantages that former founders may face: uncertainty about their ability to fit into and remain committed to the hiring firm. For instance, examining the hiring of nontechnical positions (i.e., marketing or human resource professionals), scholars have found that employers penalize male job candidates with founder experience due to these concerns, but not former female founders (Kacperczyk and Younkin 2021). Entrepreneurial traits such as independence (Hamilton 2000, Åstebro et al. 2014, Mahieu et al. 2021) and having a desire for nonpecuniary

rewards (e.g., "being your own boss") (Hamilton 2000, Thébaud 2015) may not be considered desirable by hiring firms. These fit concerns are likely to be magnified in larger and more mature firms, as these types of firms tend to be more bureaucratic and rigid (Sørensen and Stuart 2000, Sørensen 2007, Sørensen and Fassiotto 2011, Sørensen and Phillips 2011, Kacperczyk and Marx 2016). In fact, these types of firms are less likely to spawn entrepreneurs, because they socialize their employees into "timid and conforming workers" (Sørensen 2007, p. 390) that are unlikely to challenge the status quo and take risks.

In addition, former founders may be considered less committed to wage employment and therefore a "flight risk" (Hyytinen and Ilmakunnas 2007). This flight risk is salient to hiring firms, given the high costs associated with employee turnover (e.g., searching for, recruiting, and training new employees) and retention efforts (e.g., working conditions, flexible working hours, and vacation policies) (Glebbeek and Bax 2004, Shaw et al. 2005). Furthermore, employers may fear that employees who leave the firm to start their own venture can act as "ringleaders," targeting other colleagues to join them (Shah et al. 2019).

Recruiters, who are gatekeepers at the start of the hiring process, are frequently incentivized to find candidates that will be considered a good match and remain at the firm (Fernandez et al. 2000, Rivera 2012, Leung 2014, Goldberg et al. 2016, Galperin et al. 2020). Therefore, the criteria affecting their evaluation of job candidates may differ from the criteria of those evaluating job candidates in a subsequent hiring stage (Botelho 2017, Botelho & Abraham 2017, Botelho and Gertsberg 2022). In fact, a recent survey has provided evidence that recruiters perceive former male founders as less likely to fit and to stay committed at established firms and that women are not subject to a founder penalty because of reduced negative stereotypes about fit and commitment (Kacperczyk and Younkin 2021).

As summarized in the right column header of the matrix in Figure 1, hiring firms may question a founder's quality given their lack of affiliation with an established employer and perceive former founders as low in fit with and commitment to both their firm and wage employment. Thus, during the hiring process, job candidates with founder experience may be evaluated less positively relative to similar job candidates without founder experience.

Distinguishing Venture Success and Failure to Triangulate on Mechanisms

Thus far, we have discussed how founder experience conveys a complex signal related to quality as well as fit and commitment in ways that may yield positive or negative effects for former founders in the labor market. It is important to note that evidence suggesting positive (or negative) effects of founder experience makes it difficult to pinpoint specific drivers of these effects. Take, for example, evidence of a founder disadvantage, in the form of a wage discount suffered by former founders. It is challenging to discern whether this observed founder disadvantage stems from the organizational perspective related to information asymmetry about quality (capabilities and human capital) or the organizational perspective related to concerns about fit and commitment. To distinguish which class of mechanisms is driving observed effects of founder experience in the labor market, we posit that it is crucial to consider the outcome of a founder's venture—namely, whether their venture succeeded or failed. Although failure is the more common outcome (U.S. Bureau of Labor Statistics 2016, Startup Genome 2019), it is important to consider the two outcomes together as it helps us further adjudicate between potential mechanisms.

As summarized in the matrix in Figure 1, we theorize about how mechanisms that would lead to an increase (left column) or a decrease (right column) in the likelihood of a positive evaluation of former founders by hiring firms vary based on whether a former founder signals a successful (top row) versus failed (bottom row) venture. Quadrants in the matrix ("Q1" to "Q4") describe why a preference for former successful founders provides support for mechanisms related to *information asymmetry about quality* (as summarized in Q1 and Q4 in the upper left and lower right), whereas a preference for former failed founders provides support for mechanisms related to concerns about *fit and commitment* (as summarized in Q2 and Q3 in the upper right and lower left) as the dominant organizational perspective related to how firms evaluate former founders.

As summarized in Q1 in Figure 1, entrepreneurial success may signal high quality—namely, superior capabilities and entrepreneurial human capital—to hiring firms. This would increase the likelihood that a hiring firm evaluates founder experience positively due to quality concerns. Venture performance is a strong predictor of an earnings premium in subsequent wage employment (Campbell et al. 2012, Luzzi and Sasson 2016). Given the high failure rates in entrepreneurship, especially innovation-driven ventures, such as in the semiconductor industry examined by Campbell (2013), having a successful outcome would alleviate uncertainty related to quality. Early-career entrepreneurs lack an affiliation with an established employer—and the associated quality signals—therefore, having a successful founder experience could validate a candidate's capabilities and human capital. Hiring firms may see these founders as possessing a desirable set of skills that enabled them to achieve this

success and, thus, expect them to be more likely to bring these skills and innovative ideas to the hiring firm. To the extent that the primary effect of founder experience in the labor market stems from signaling quality, we would expect former founders of successful ventures to be most preferred by hiring firms. Therefore, entrepreneurial success will increase the positive evaluation of former founders, as hiring firms are trying to capture this value through their human capital strategy.

Venture success may also magnify concerns related to whether former founders will stay committed to and fit into wage employment and the hiring firm (as summarized in Q2 in Figure 1). Former founders are more likely to start a subsequent new venture than those without founder experience (Hyytinen and Ilmakunnas 2007), and hiring firms may worry that the likelihood of departure will be greater for former successful founders, who have experienced success, than for former failed founders. Employees surrounded by former founders may be more likely to pursue entrepreneurship themselves (Gompers et al. 2005, Nanda and Sørensen 2010), and this likelihood may increase if these peer founders were successful. Further magnifying this fear, it should be easier for former successful founders to entice other employees to join them in entrepreneurship (cf. Shah et al. 2019). Relatedly, in terms of fit, hiring firms may evaluate founders of successful ventures—who were successful at being their own boss—as having lower person-organization fit with their firms. To the extent that the primary effect of founder experience in the labor market stems from signaling fit and commitment, we would expect former founders of successful ventures to be least preferred by hiring firms. Therefore, entrepreneurial success will decrease the positive evaluation of former founders, as hiring firms are placing more weight on fit and commitment in their human capital strategy.

Conversely, we would expect hiring firms to have fewer concerns regarding fit and commitment when evaluating a former founder of a failed venture (as summarized in Q3 in Figure 1). The individual could learn from this failure that they are not suited for entrepreneurship, and, thus, the likelihood of abandoning wage employment to try entrepreneurship again should be lower after failure than success (cf. Manso 2016). In addition, the aftermath of a venture failure is associated with psychological (e.g., remorse, guilt, or blame), social (e.g., breakdown of personal or professional relationships), and financial (e.g., bankruptcy) distress (Ucbasaran et al. 2013, Pollock et al. 2019). Understanding the general costs of failure, hiring firms are likely to worry less about the failed founders returning to entrepreneurial activities, relative to successful founders. To the extent that the primary effect of founder experience in the labor market stems from signaling fit and commitment, we would expect former founders of failed ventures to be most preferred by hiring firms, increasing the positive evaluation of former failed founders relative to former successful founders.

A failed venture, however, may heighten uncertainty around the founder's quality (capabilities and human capital), as noted in Q4 in Figure 1. Even if hiring firms understand that failure is the common outcome for innovation-driven ventures, this failure may confirm the assumption that some founders come from the lower tail of the quality distribution and are "pushed into" entrepreneurship (Åstebro et al. 2011, Sorenson et al. 2021). Furthermore, failed founders can suffer from a stigma associated with their failure, similar to how employees from failed firms experience status loss and lose bargaining power when they try to re-enter the labor market (Rider and Negro 2015). As such, the stigma from failure could lead hiring firms to distrust the founder's capability and human capital, assuming that the failure is attributable to the founder's lack of skills. To the extent that the primary effect of founder experience in the labor market stems from signaling quality, these magnified quality concerns related to venture failure would lower the likelihood of former failed founders receiving a positive evaluation by hiring firms relative to former successful founders.

In sum, without considering how the likelihood of former founders receiving a positive evaluation by a hiring firm varies by venture outcome, it is difficult to identify the most likely mechanisms driving the demand-side evaluation of former founders by hiring firms. Specifically, considering venture outcome helps adjudicate between (i) mechanisms related to information asymmetry about quality (capabilities and human capital) and (ii) mechanisms related to concerns about fit and commitment. Preference for successful founders over failed founders suggests that concerns related to quality (capabilities and human capital) outweigh concerns related to fit and commitment. Having a successful venture reduces information asymmetry about quality, although it magnifies concerns related to fit and commitment. Therefore, information about quality would serve as the dominant organizational perspective in evaluating founder experience (Q1 and Q4 in Figure 1). Preference for failed founders versus successful founders suggests that concerns related to fit and commitment outweigh concerns related to quality. Having a failed venture quells concerns related to a candidate's ability to fit into and remain committed to the hiring firm despite increased information asymmetry about their capabilities and human capital. Therefore, fit and commitment would serve as the dominant organizational perspective in evaluating founder experience (Q2 and Q3 in Figure 1). Finally, comparing hiring outcomes for the two founder types

with those of similar individuals without founder experience provides a sense of the strength of these mechanisms.

Empirical Strategy

To identify the mechanisms that help explain the evaluation of founder experience by hiring firms, it is critical to analyze how hiring firms evaluate candidates with and without founder experience, but who are otherwise identical. Prior studies examining the transition of former founders to wage employment at established firms have primarily used archival data, such as census or registry data (Campbell 2013, Luzzi and Sasson 2016, Manso 2016, Levine and Rubinstein 2017, Mahieu et al. 2021). This work has been informative, especially for understanding the net earnings effect of founder experience. It has been difficult, however, to distinguish demand- and supply-side mechanisms leading to these observed differences. Observational data only allow for the identification of realized hires and do not capture applicants who were not hired by or who did not apply to these firms. This selection on successful hires thus limits our ability to identify the extent to which demand-side evaluation processes drive differences between former founders and nonfounders. In addition, the definition of entrepreneurship in research is often varied, and it frequently mixes innovation-driven founders with founders of small businesses (e.g., self-employment). Founders and startup employees are also frequently mixed together, given the difficulty of distinguishing between these categories of individuals in most data sets.

We address these challenges by using a field experiment design. Specifically, we conducted an audit study, which involves sending fictitious—yet realistic—job applications to actual job openings. This methodology has been substantially used in economics, management, and sociology to capture the demand-side evaluation of job candidates (e.g., Bertrand and Mullainathan 2004, Pager et al. 2009, Kang et al. 2016, and Rivera and Tilcsik 2016). Although audit studies have been mostly used to investigate discriminatory behavior in hiring based on a candidate's ascriptive characteristics, such as gender and race, it has more recently been extended to examine demand-side effects related to candidate experiences, such as parental leave (Weisshaar 2018). Similar to these other audit studies, we operationalize the likelihood of receiving a positive evaluation by hiring firms as receiving an initial job interview (or callback).

Field Experiment: Audit Study

The three main conditions are: no founder experience (nonfounder), founder experience with a failed venture (founder failure), and founder experience with a successful venture (founder success). We also varied the applicant's gender to identify whether found patterns were stable for men and women.[2] Accordingly, our experiment involved sending job applications from one of the three main conditions at random to 2,400 job postings related to full-time, entry-level (requiring fewer than five years of work experience) software engineering positions in one of six different metropolitan areas in the United States.

In field experiments, there are various choices that researchers must make, including experimental design (between-subject versus within-subject), population of interest, and manipulations. These choices could limit the generalizability of findings. Prior to our study, we consulted with various expert informants to help us make choices that allowed us to simultaneously advance theory and retain external validity. This group consisted of four software engineers with two to four years of experience in software engineering (who share a similar background as our fictitious job candidates); four hiring managers or recruiters with five to 10 years of experience recruiting for technical positions; and two individuals experienced with preparing job candidates for the job market, one with no specific industry concentration and the other with entrepreneurship and software engineering experience.[3] We also discussed key design choices with various academic researchers studying entrepreneurship and labor markets and received feedback on application materials. In terms of experimental design, we used a between-subjects design due to both ethical and practical reasons (Lahey and Beasley 2018, Vuolo et al. 2018)—most importantly, to minimize the within-employer time burden and to avoid detection (Kang et al. 2016, Rivera and Tilcsik 2016, Weisshaar 2018). In discussing the application-review process with recruiter informants, it was clear that the likelihood that the same person would review applicants for the same, or a related, job was nontrivial, especially at small and medium-sized firms. The field experiment's general design and conditions were preregistered at the Open Science Framework (https://osf.io/kxj3f?view_only=d06eb25fc08540c990854035ed603023) and approved by an institutional review board before the job applications were sent.

An important design choice was our decision to focus on early-career entrepreneurs, especially given recent evidence that founding a new venture most commonly occurs in the later stage of one's career (Azoulay et al. 2020).[4] Apart from our earlier theoretical reasoning that this focus provides a clearer baseline, our focus on early-career founders was also driven by empirical and policy-related considerations. Empirically, our conversations with recruiter informants highlighted that the job search and hiring processes for an individual later in their career differs substantively from those earlier in their career. Mid- and

later-career job seekers primarily find employment opportunities through their social networks and search firms, whereas early-career individuals routinely apply online. Thus, an audit study design best approximates the job-search process for early-career individuals, whereas it represents an abnormal job-search strategy for mid- and late-career individuals. In terms of policy, there have been concentrated initiatives to promote and provide resources for early-career individuals to launch ventures. The fact that the number of states reporting K-12 standards for entrepreneurship education has more than doubled between 2009 and 2015 (Marich 2015) and one-third of U.S. incubators are housed on university campuses (Kauffman Foundation 2013) underscores this trend. Early-career setbacks also have a long-term and substantive impact on an individual's career (Oreopoulos et al. 2012, Altonji et al. 2016, Sorenson et al. 2021).

Application Materials

Job applications in our study consisted of a resume and a cover letter. The application materials varied across conditions in the following two areas: (1) applicant contact information—first name, address, email, and phone number—and (2) applicant work experience—applicant company name, job title, and language used to signal venture outcome (failure versus success). Other information (e.g., work responsibilities, education, interests, and skills) remained identical across all conditions. Each of our fictitious applicants had worked for one firm and completed approximately three years of full-time work experience, with the same major day-to-day activities; listed the same skills and interests; and participated in the same extracurricular activities. This information was detailed in the applicant's resume and summarized in the accompanying cover letter. Table 1 provides a summary of the information used in each resume across conditions.

In terms of the applicant's contact information, for each applicant-city pair, we listed a local address[5] and a phone number (with an area code used in the metropolitan area) on the resume. We did this to remove potential geographical barriers to a job applicant receiving a callback. For example, an employer may be wary of a potential applicant moving across the country for a job and possibly asking to cover the costs of the interview and relocation, or the employer may need a new hire to start quickly. If similarly qualified applicants are local, a nonlocal applicant would have a lower chance of receiving a callback relative to a local candidate. A unique email address was used for each applicant-city pair to keep track of the resulting data. We consulted with our informants to ensure the external validity of our materials and conducted pretests to ensure that our manipulations accurately captured entrepreneurial success and failure. For pretests, participants reviewed application materials for one of the three founder conditions, and were then asked to identify whether the applicant is a founder and whether that founder's venture was successful versus failed. Overall, the combination of work-experience details in our resume and cover letter, which we will further describe below, served as salient manipulations of founder experience, with the majority of pretest participants being able to correctly identify the founder condition assigned to them.[6]

Table 1. Summary of Baseline Resume

Work experience
• 3 years of full-time work experience
• Lead developer of the application
Education
• B.S. in Computer Science; graduated in 2015
• Undergraduate Researcher in Computer Science
• Board Member, Entrepreneur and Venture Club
Skills and interests
• Python, Java, JavaScript, C/C++, AWS, Hadoop, SQL, Linux, JQuery
• Enjoy cooking, cycling, and traveling

Notes. On the actual resumes, each of these experiences and skills was described in detail with additional bullet points. The actual resumes were drafted in a typical resume format.

We chose first and last names that are not associated with low or high socioeconomic status (Gaddis 2017) to enhance generalizability and avoid confounding effects of socioeconomic status, which may correlate with the mechanisms we are testing. We pretested these names to intentionally choose the names that subjects classified as being White and middle-socioeconomic status. The same last name was used across all conditions.

In terms of applicant experience, the only differences across the job applications related to our experimental conditions. To create salient and reliable manipulations, we varied multiple elements related to the applicants' past employment experience on the application materials—company name, job title, the language used to signal venture outcome, and a description of the founder's salary (Rivera and Tilcsik 2016). Applicants in the two founder-experience conditions (failure and success) listed themselves as a Co-Founder and CTO (Chief Technology Officer) of their venture, and the job title "software development engineer" was used in the nonfounder condition.[7] For many startups, especially for innovation-driven ventures, a founder commonly holds the title of Chief Executive Officer (CEO) or CTO. We chose the CTO title because the CEO title has more ambiguity and variance in responsibilities and experiences; it is unclear what kind of job title would be most suitable as the counterfactual for the CEO title. However, "Co-Founder & CTO" as a job title for the treatment conditions has a clearer counterfactual case, as many technical founders primarily function as software engineers—this similarity in responsibilities was confirmed in our discussions with our informants. We

position our founder candidates as completing a software engineering role without mention of other nontechnical duties. In addition to the methodological benefits, using the two roles is most closely aligned with our motivation for this research. First, it aligns with our goal to focus on innovation-driven entrepreneurship. Theoretically, we can more closely contribute to organizational spawning research, which often concerns the spawning of innovation-driven ventures. Empirically, it is a core type of entrepreneurship considered by college-aged individuals. Second, software engineering is one of the most in-demand professional fields (Stansell 2019), which enabled us to find the necessary number of jobs to apply to in a timely fashion.

In the failure condition, venture failure was signaled on the resume by stating "failed to secure the necessary funding and are ceasing operations." Because we did not want recruiters at hiring firms to think that the failed founder was pushed into entrepreneurship (i.e., necessity entrepreneurship) (Åstebro et al. 2011, Levine and Rubinstein 2017) and instead be thought of as an individual who could have joined wage employment, we also added a bullet "able to pay myself a salary to cover necessary expenses." Conversely, in the success condition, venture success was signaled on the resume by stating "successfully sold the firm for $3 million." We also added a resume item, "able to pay myself a market competitive salary" as a balance to the salary information in the failure condition. In both cases, the former founder was transitioning from their venture and looking for employment.

Related to design choices, an alternative for the failure condition would have been not to admit the failure. However, the common wisdom is that former founders ought to discuss their venture failures in resumes and to describe it as a learning experience in interviews (e.g., Franco 2015). This language was also consistent with what we heard from our informants tasked with preparing job candidates for the job market. They indicated that they encourage former founders to be honest and believe that discussing failure openly is beneficial and that discussing one's failures is often a routine question in the interview process. We were also advised against blaming the failure on the founder or a team member and instead on a financing issue, a common reason for startup failure. For the success condition, the choice of $3 million[8] stems from our informants indicating that not listing an amount would be met with suspicion, whereas lower amounts brought their success into question, and higher amounts elicited questions about whether the person would need to work again. The nonfounder condition described the applicant as working for an actual firm involved in the same business as our fictitious startup and with the applicant having identical responsibilities as our founder conditions. Consistent with being a technical cofounder (and a software engineer, in our nonfounder condition), we listed only technical responsibilities, which were identical on all resumes.

A challenge to using an audit study design is the lack of a credible online profile and general presence (e.g., news articles) of the candidates. In our context, this also extends to a lack of online presence for the founder's firm. Although it is possible to create a basic web presence, it would be nearly impossible to make this presence credible, especially for the success condition. Recruiters may expect to find information about the venture online, with one informant telling us that although they do not always search for candidates online, the lack of online presence for their venture would lead them to believe the candidate's venture was a failure. This fact is in line with our failure condition; however, it imposed a challenge to our success condition. Therefore, for the success case, we put the fictitious venture name in quotations and stated in the cover letter and resume that the sale of the venture was almost complete, but until it was completed, the conditions of the sale did not allow our applicant to publicly announce the sale, and, instead, a pseudonym was being used. In addition to conducting pretests regarding our manipulation, we also asked online participants, as well as recruiter informants, whether using a pseudonym would appear as strange or suspicious. Both our pretests and prestudy interviews with recruiter informants dispelled these concerns.[9]

Each job application included a personalized cover letter, which included the position title and the name of the firm being applied to in the opening paragraph. Recruiter informants admitted to us that although they do not often review cover letters, if one was missing or lacked personalization, they would view this negatively, indicating a low level of interest. Therefore, we decided to include this level of personalization. This choice would not affect the internal validity of our findings because it would be constant across conditions; however, it strengthens the study's generalizability, as it is possible that the types of employers that would give a callback to an applicant without this personalization may be substantively different from those employers who would not. In the end, our goal was to mimic the typical job-application process for the focal positions in our study as closely as possible.

Participants: Recruiters at Hiring Firms

The participants in our study were recruiters[10] (e.g., human capital/resources representatives) who review job applications submitted for a given job opening and evaluate the applications to determine who should continue in the process and receive an interview.

Although this methodology involves a cost to the participants—namely, a loss of time—we took marked steps to ensure that these costs were minimal. Our recruiter informants revealed that a recruiter spends about five to 10 minutes on a candidate that receives an interview. For many positions, a substantial number of candidates are never reviewed, and only a very small percentage of candidates are chosen for an interview. Based on these estimates and assuming every application was reviewed to this full extent, it would take between 200 to 400 hours across the pool of recruiters in our study to review the 2,400 job applications we submitted for this field experiment. Using data from www.payscale.com, a midcareer recruiter (five to 10 years of experience) earns an average total compensation of $55,000.[11] Therefore, at the high end—assuming 10 minutes per each of the 2,400 candidates—the total cost imposed to complete this research was $10,600 (or $4.42 per firm).[12] We also responded to recruiters who indicated interest in our candidates in a timely fashion, as detailed below, to further minimize any additional time investment on the part of the firm. We strongly believe that the results of this research will offer benefits to individuals who need a better understanding of how founder experience may affect their career, organizations who want to better understand how human capital is evaluated, and policymakers who are interested in entrepreneurship programs.

Application Process

We applied to jobs over a consecutive 28-day period in the summer of 2018. All applications were completed by the authors to ensure consistency in the application process and timely completion. Applying to jobs over a long cycle introduces the possibility of noise stemming from labor-market fluctuations that could substantially affect the results. We sourced job openings posted on a major online job-search-engine platform.[13] We applied to the position following the application instructions for each job opening, simulating a realistic job applicant's strategy. A job entered our risk set if it met the following criteria: It was posted within the last 30 days, listed as entry-level, listed as full-time, and located within 25 miles of the metropolitan area of interest (Austin, TX; Boston, MA; Chicago, IL; Los Angeles, CA; New York, NY; and San Francisco, CA). Each job that fit these criteria was checked by both researchers to ensure that the employer was looking for applicants with a software engineering background. When multiple jobs at the same firm fit our criteria, we chose the most recently posted jobs and then chose at random if multiple jobs were still available. We then stratified the job openings in terms of the geographic location and employed block randomization to assign each job opening to each candidate. This block randomization ensured that we achieved balance across experimental conditions within each city block.[14] Table 2 shows the distribution of job applications submitted across the six metropolitan areas for each experimental condition.

Measures of Interest

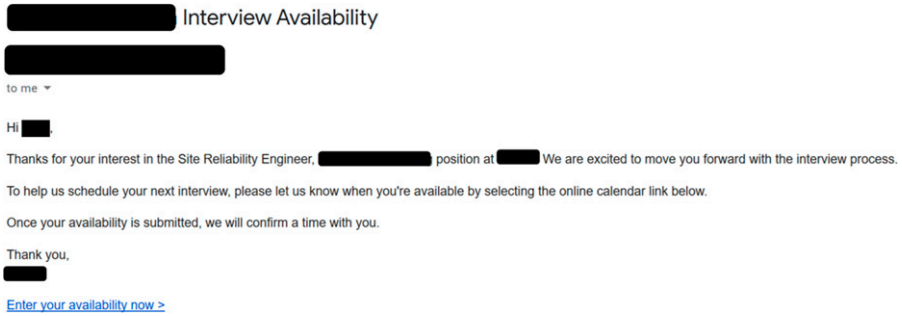
We checked the email and voicemail accounts for each applicant-city pair daily to make sure that data were being recorded consistently and to immediately respond to hiring firms that the applicant was no longer interested. A callback was considered if it occurred within 60 days from the focal job-application date. The unit of analysis is the job application, and the main outcome variable is *Callback*. This variable is an indicator variable that takes the value of one if the hiring firm contacts the job applicant for an interview, and zero otherwise. Contact by hiring firms was primarily through email, with only a handful occurring via phone call. These e-mails typically came from a recruiter at the firm and followed a similar pattern, stating their interest in the applicant and requesting to schedule a 30- to 60-minute phone interview (see Figure 2 for an example).

In eight cases, firms reached out to request the completion of a technical challenge, such as writing code to solve a problem, before an initial interview. In these cases, we e-mailed back and asked the recruiter whether this request was being sent to all applicants or to shortlisted applicants as the next stage of the interview process. We coded *Callback* as one if the technical challenge was the next stage of the interview process and as a zero if it was sent to all applicants. After a callback was received and noted, we promptly e-mailed the firm representative back, stating that the

Table 2. Distribution of Submitted Applications by Experimental Conditions and Metropolitan Area

Metropolitan area	No founder experience	Founder failure	Founder success	City total	City's share
Austin, TX	80	80	80	**240**	**0.100**
Boston, MA	147	147	146	**440**	**0.183**
Chicago, IL	116	116	117	**349**	**0.145**
Los Angeles, CA	101	102	102	**305**	**0.127**
New York, NY	180	180	180	**540**	**0.225**
San Francisco, CA	176	175	175	**526**	**0.219**
Total	**800**	**800**	**800**	**2,400**	**1.000**

Figure 2. (Color online) Callback Example



Note. This is a random example of a request for interview (or callback) from a hiring firm.

applicant was no longer interested and wanted to withdraw from consideration for this job and any future jobs. The same message was used in all communications across all conditions. We also kept track of the dates for all communications, specifically, the days between the job application and a response (*Days to Callback*).

The main independent variables are indicator variables identifying the respective experimental condition. The indicator variable *Founder* takes the value of one if the applicant started their career as a founder (failure or success) and zero if the applicant was not a founder. Then, we created indicator variables to represent each of the conditions: *No Founder Experience* for applicants with no founder experience, *Founder Failure* for applicants with founder experience who failed, and *Founder Success* for applicants with founder experience who succeeded.

To account for any geographic variation in hiring practices that can influence hiring decisions of the applicants, we control for the location of the job using six indicator variables that take the value of one if the job posting was from the particular metropolitan area, and zero if otherwise: *AUS* for Austin (the reference category); *BOS* for Boston; *CHI* for Chicago; *LA* for Los Angeles; *NYC* for New York; and *SF* for San Francisco.

We also collected a set of variables on hiring-firm characteristics that could influence a recruiter's evaluation of founder experience. Founding dates for the firms in our sample were collected from various online resources (*Firm Age*). Founding year could not be determined for 31 firms. Additionally, we matched firms in our sample to its corresponding two-digit North American Industry Classification System (NAICS) code. Our sample consists of firms in 21 unique industries using this classification scheme. A separate industry code was used for firms that could not be clearly categorized according to this classification.

Table 3. Descriptive Statistics

Variable	*N*	Mean	SD	Min	Max
Callback	2,400	0.17	0.38	0.00	1.00
Days Since Job Posted	2,400	15.08	11.23	0.00	30.00
Firm Age[a]	2,369	26.92	36.95	1.00	389.00
Days to Callback[b]	411	8.99	10.67	0.00	59.00

[a]Founding year could not be found for 31 firms.
[b]Conditional on receiving a callback.

Summary Statistics

The summary statistics of key variables are shown in Table 3. In total, 411 of the 2,400 applications received a callback. The average age of the firms was 27 years (median of 15 years), and this variable is skewed to the right. Approximately 37% of firms were 10 years of age or younger. On average, callbacks were received nine days after the application was submitted. Although we do not know the gender composition of the recruiters at the firms, recruiters reaching out to candidates who received a callback were approximately even in terms of gender.

Table 4 provides a comparison of key variables across conditions to assess the integrity of our randomization. Pairwise *t*-tests of *Days Since Job Posted* and *Firm Age* demonstrate that there are no statistically significant differences across the founder conditions. Pairwise chi-squared tests of the industries of the firms applied to also do not differ significantly. Furthermore, Figure 3 plots the distribution of each of these variables, where a box plot is accompanied by the kernel density in the shared area. Together, these results give us confidence that our random assignment yielded a sample that is balanced on key observable characteristics across our conditions. We present the plots of all of our results below and provide the supporting tables in Online Appendix A. Given that our treatment is randomized and these characteristics are balanced across conditions (as shown in Figure 3), controls are not strictly necessary; however, we include regressions with controls because the inclusion of controls can improve point estimate precision.

Table 4. Randomization Integrity

	Nonfounder experience			Founder failure			Founder success		
Variable	*N*	Mean	SD	*N*	Mean	SD	*N*	Mean	SD
Days Since Job Posted	800	14.96	11.25	800	14.87	11.08	800	15.41	11.38
Firm Age[a]	792	25.61	35.06	785	28.24	38.08	792	26.91	37.65

Notes. *t*-tests of *Days Since Job Posted* and *Firm Age* across conditions show that there are no statistical differences between any pair of conditions. A chi-squared test confirmed that were no significant differences in the distribution of industry across conditions. These statistics do not include missing values.

[a]Founding year could not be found for 31 firms.

Results

Founder Experience and the Likelihood of Receiving a Callback

We first look at the evaluation of former founders by hiring firms evidenced by the callback rate for each founder condition. Here, we group founders regardless of their venture outcome using the binary variable *Founder*. Figure 4 compares callback rates for nonfounders versus founders. We find that having founder experience substantively lowers the number of callbacks received. The callback rate for nonfounders was 24.0%. It is important to note that this is a high callback rate. However, as one recruiter stated in their reply to our message rejecting their request for an interview, "it is a seller's market." This sentiment is also supported by available labor market statistics. For example, in 2015 (the year our applicant graduated from college), there were approximately 60,000 computer science graduates and approximately 527,000 related openings, a ratio unparalleled by other industries or specialties (Kessler 2017, Stansell 2019). Therefore, we should expect our baseline callback rate in this context to be much higher than in other contexts. Furthermore, what is important for our focal research question is how callback rates differ across conditions. We found that the callback rate for founders was 13.6%. Therefore, founder experience resulted in a callback rate that is approximately 43% (more than 10 percentage points) lower than not having founder experience, all else equal ($p < 0.001$). These results provide causal evidence that early-career founder experience is evaluated negatively by recruiters during the hiring process in our context.

Comparing the callback rates for founders and nonfounders thus suggests that former founders are evaluated less favorably by hiring firms, which generally indicates that this experience leads to uncertainty related to quality and/or concerns about fit and commitment, as we summarized in the right column header of Figure 1. Although we find evidence for an early-career founder disadvantage, it remains unclear whether the demand-side evaluation outcome is driven by an organizational perspective on quality (i.e., information asymmetry about the former founder's capabilities and human capital) or an organizational perspective on fit and commitment (i.e., concerns about the former founder's ability to fit into and stay committed to wage employment and the hiring firm).

To disentangle these mechanisms, we next examine the heterogeneous effects of founder experience as a function of venture success versus failure. Figure 5 shows the average callback rate across our three main conditions: no founder experience, founder failure, and founder success. The result for the nonfounder condition is the same as seen in Figure 4, with a callback rate of 24.0%. We find that former founders whose venture failed have a higher callback rate than founders whose venture succeeded. Specifically, the callback rate for the founder failure condition was 16.2%, whereas the callback rate for the founder success condition was 10.9%. Therefore, these results show that while all founders are disadvantaged in the initial evaluation stage of the hiring process relative to nonfounders, founders of failed ventures fare significantly better than founders of successful ventures, resulting in a callback rate that is approximately 48% (or more than five percentage points) higher ($p < 0.01$).

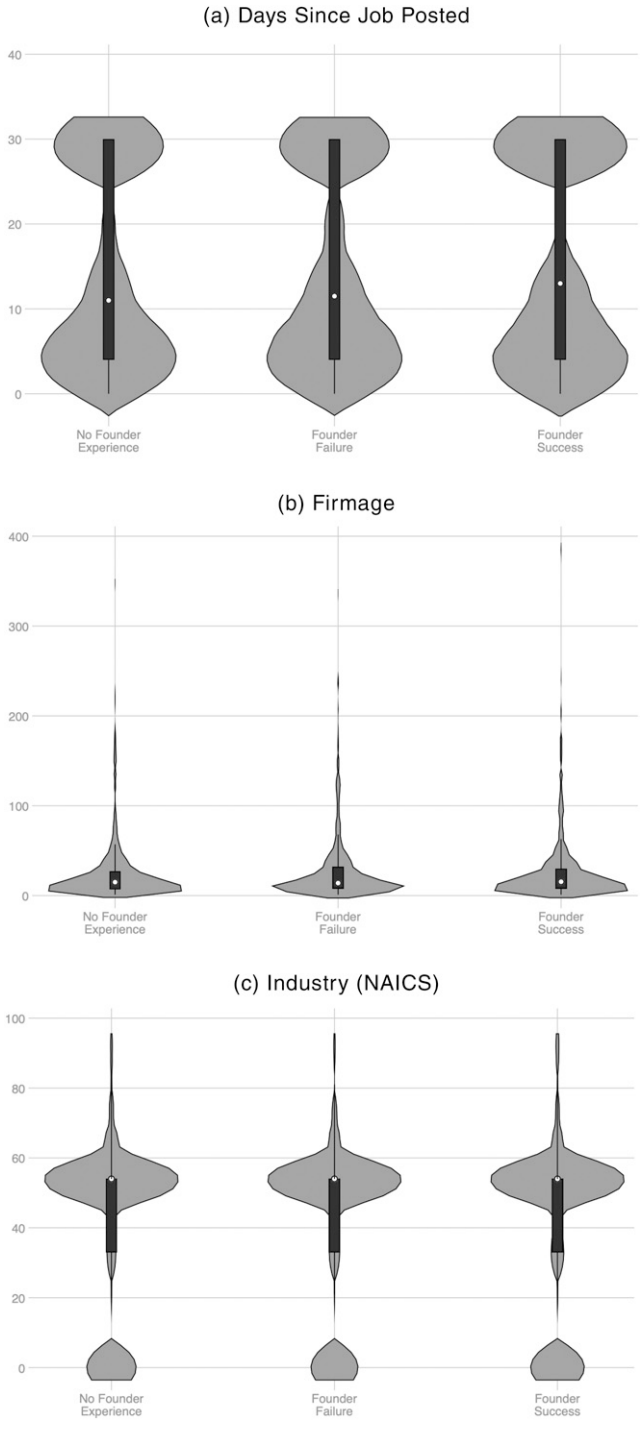
Overall, comparing the likelihood of receiving a positive evaluation by hiring firms across the three founder-experience conditions, considering venture outcome, enables us to disentangle the relative strength of mechanisms related to founder advantages and disadvantages. Specifically, these results suggests that employers are more concerned about fit and commitment than about quality when assessing former founders. This is consistent with our theorized explanations summarized in Q2 and Q3 in Figure 1. Preference for founders of failed ventures relative to successful ventures provides evidence that the concerns related to fit and commitment outweigh the advantages related to quality (capabilities and human capital). In short, managing the inflow of entrepreneurial human capital, which is reflective of structures and processes within firms, is most strongly driven by concerns about fit and commitment rather than information about the quality of former founders at this stage of the evaluation process.

Post Hoc Analyses

Are Successful Founders Seen as Overqualified?

An important alternative explanation to our findings is that our founder success condition is discounted

Figure 3. Randomization Integrity



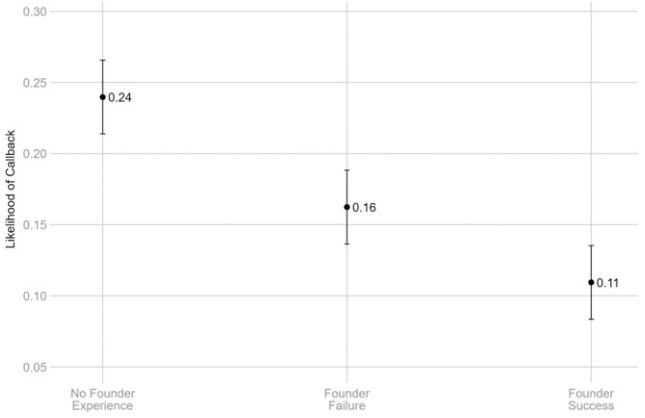
Notes. Each marker indicates the statistic's median, each box indicates the interquartile range, and spikes extend to the upper- and lower-adjacent values, as in a standard box plot. Overlaid with the box plot is the estimated kernel density, allowing us to better understand the distribution in each variable across the conditions.

relative to our other conditions because former successful founders are seen as overqualified or less likely to accept early-career jobs (cf. Galperin et al. 2020). As summarized in Q1 in Figure 1, prior entrepreneurial success may increase the likelihood of former founders receiving a positive evaluation from hiring firms because it signals superior capability and entrepreneurial human capital to hiring firms (Campbell 2013, Luzzi and Sasson 2016). Also, although unlikely, using the CTO title may lead recruiters to believe that former successful founders should be placed in a role with more leadership responsibilities. In short, even though the jobs we applied to are in line

Figure 4. Founder Experience and Receiving a Callback: Nonfounders vs. Founders

Notes. The figure shows the margin plot from regressing the likelihood of a callback on the job applicant's founder experience, grouping failed and successful entrepreneurs as one condition (Table A1, model 1B in the online appendix). The model includes controls for gender of the applicant, the number of days since the job was posted, the age of the firm being applied to, the posted city of the job opening, and the industry of the hiring firm. Bars represent 95% confidence intervals.

Figure 5. Founder Experience and Receiving a Callback: Failed vs. Successful Founders



Notes. The figure shows the margin plot from regressing the likelihood of a callback on the job applicant's founder experience (Table A2, model 2B in the online appendix). The model includes controls for gender of the applicant, the number of days since the job was posted, the age of the firm being applied to, the posted city of the job opening, and the industry of the hiring firm. Bars represent 95% confidence intervals.

with the candidate's experiences, having been successful founders may lead recruiters to believe their capabilities and human capital are too high for these positions.

To unpack this alternative, we used our empirical design to apply to 400 additional jobs. The key difference in this application process relative to that of our main results is that we only applied to midlevel jobs (typically requiring at least five years of experience and many describing a leadership role), whereas we only applied to entry-level jobs (requiring fewer than five years of experience) in our main study. The callback rate for former successful founders to midlevel jobs was 6.3%, which is approximately 40% (or four percentage points) lower than the callback rate for these same applicants to entry-level jobs, 10.9% ($p = 0.023$). This substantively lower callback rate does not support the argument that recruiters found the successful founders as overqualified.[15]

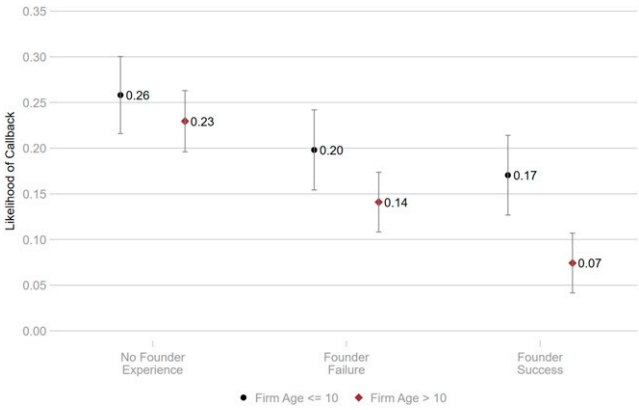
Do Founders Receive Callbacks for More Desirable Jobs?

To provide further insight into our main results, we analyzed whether the job desirability differed across conditions. We had three software engineers, who closely matched the profile of our fictitious job applicant, independently rate each job that one of our applicants received a callback from. Jobs were rated on a 1 to 5 scale with 1 indicating that they had no interest at all and a 5 indicating that they were extremely interested. These engineers were unaware of which jobs corresponded to which condition. Across the three engineers and across each job type, the average rating was 2.9. The average rating for the nonfounder condition was substantively the highest, at 3.0. The average rating for the founder failure condition was 2.8, and the average rating for the founder success condition was 2.9. Although the nonfounder condition received the highest average score, we do not see these differences as substantively meaningful. Statistically, using a pairwise comparison, the only difference of note is between the nonfounder condition and the failure condition ($p = 0.069$). These results confirm that there is little difference in job desirability across the conditions and that it is not the case that former founders, especially former successful founders, are receiving interviews for the most desirable jobs.

Firm Age and the Demand-Side Evaluation of Founder Experience

Researchers studying the organizational spawning of entrepreneurs have consistently found that a firm's age is strongly correlated with entrepreneurial entry and performance, with employees from more established firms being less likely to become founders and experience entrepreneurial success compared with employees from younger firms (Sørensen and Stuart 2000, Sørensen 2007, Sørensen and Fassiotto 2011, Sørensen and Phillips 2011, Kacperczyk and Marx 2016).[16] The demonstrated relationship between firm age and the organizational spawning outcomes informs that a firm's processes and structures are strongly tied with its employees' transition to—and success with—entrepreneurship. Specifically, a firm's age is argued to affect different skills, knowledge, and cultural norms and values employees can attain at their organizations (Sørensen and Fassiotto 2011). For example, older firms—characterized with rigid job specializations, hierarchical structure, and emphasis on rules and routines—are more likely to exploit existing competencies and engage less in exploring new ideas and practices than younger firms, which tend to have a more positive attitude toward risks and attaining challenging goals (Sørensen and Stuart 2000, Xu and Ruef 2004, Gompers et al. 2005, Sørensen 2007). With respect to our research question, recruiters working at younger firms may be more inclined to see founder experience as fitting in with the culture of their firm and to value this experience, relative to recruiters at older firms. They are also more accustomed to high turnover rates and, thus, may have fewer concerns related to commitment. Therefore, given that fit and commitment were the dominant mechanisms driving our main results of a founder disadvantage, we should expect more similar callback rates for candidates with and without founder experience when applying to positions at younger firms. To test this, we used the natural variation in firm age

Figure 6. Founder Experience and Receiving a Callback: Young vs. Older Firms



Notes. The figure shows the margin plot from regressing the likelihood of a callback on the job applicant's founder experience interacted with firm age (Table A3, model 3B in the online appendix). In this regression firm age is a dichotomous variable indicating whether the firm was founded 10 or less years ago (as of the summer of 2018). The model includes controls for gender of the applicant, the number of days since the job was posted, the posted city of the job opening, and the industry of the hiring firm. Bars represent 95% confidence intervals.

within our study to determine whether callback rates for candidates with founder experience varied as a function of firm age.

Figure 6 presents the likelihood of receiving a callback for each of the three main founder conditions, separately for older firms—with firm age greater than 10—and younger firms—with firm age less than or equal to 10. For older firms, the evaluation pattern remains similar to the main results presented. Nonfounders were the most likely to receive a callback (22.9%), followed by failed founders (14.1%), followed by successful founders (7.4%), with these differences remaining statistically significant ($p < 0.001$). For younger firms, the most preferred applicant is also the nonfounder (25.8%). However, the pattern for founders is a bit different when we consider recruiters from these younger firms: Callback rates for both failed and successful founders are higher and statistically equivalent, 19.8% and 17.0% respectively ($p = 0.382$). Relative to the nonfounder condition at younger firms, there is an overlap in the confidence intervals between the callback rate for nonfounders and failed founders ($p = 0.095$). Comparing across younger and older firms within conditions, there is only a statistically significant difference in the successful founder condition. Younger firms are much more likely than older firms to call back a former successful founder ($p < 0.001$). These results demonstrate that much of the founder discount is driven by recruiters at older firms, who show a strong evaluative preference for nonfounders, as well as an evaluative preference for failed founders over successful founders. Younger firms, which share more similar values and practices with entrepreneurial ventures, are likely to have fewer concerns related to fit and commitment of former founders.

These results on firm age contribute to the debate in the organizational spawning literature regarding the presence and role of bureaucracy. Established research consistently suggests that bureaucratic firms are less likely to spawn entrepreneurs. However, it remains unclear whether the spawning is driven by the treatment effect (e.g., bureaucratic organizations do not offer resources and practices for entrepreneurship) or selection effect (e.g., less entrepreneurial individuals choose to enter bureaucratic firms). Our study provides evidence for selection as a driver of our observed results. Older—and likely more bureaucratic—firms evaluate former founders less favorably. Therefore, firm age is linked to not only the spawning of entrepreneurial ventures, but also to the hiring of former entrepreneurs. As in the organizational spawning literature, understanding the boundary between entrepreneurship and wage employment—in our case, the reverse process (or the inflow of human capital)—offers insight into organizational processes and structures related to entrepreneurial human capital.

Interviews with Recruiters: Face Validity for Main Results

We interviewed 20 technical recruiters to further explore whether anecdotal evidence from these interviews is consistent with the theoretical mechanisms

Table 5. Interviewee Information

	Recruiter			Firm		
Recruiter	Years of experience	Gender	Location	Industry	Age	Type
1	5–10	Male	NYC	Healthcare tech	5–-10	Private
2	5–10	Female	NYC/SF	Technology/media	10–15/30–50	Private/public
3	10–15	Male	NYC	Technology	20–25	Public
4	3–5	Male	SF	Technology	10–15	Public
5	5–10	Male	NYC	Finance	15–20	Private
6	5–10	Male	NYC	Finance	15–20	Private
7	3–5	Female	CHI/AUS/LA	Finance/technology	20–30/20–30	Private/public
8	15–20	Female	BOS	Healthcare tech	50–75	Public
9	15–20	Female	BOS	Technology	50–75	Public
10	20–25	Female	AUS	Technology	5–10	Private (VC)
11	1–3	Male	LA/SF	Tech recruiting	10–15	Private
12	1–3	Female	LA	Tech recruiting/technology	3–5/3–5	Private/public
13	20–25	Female	LA	Technology	10–15	Private (VC)
14	3–5	Male	LA	Tech recruiting	3–5	Private
15	3–5	Male	LA	Tech recruiting	10–15	Private
16	10–15	Male	AUS	Technology	15–20	Private (VC)
17	5–10	Female	AUS/LA	Technology	5–10	Private (VC)
18	5–10	Female	SF/LA	Technology	15–20	Private (VC)
19	3–5	Male	CHI	Technology/marketing	25–30	Private (VC)
20	3–5	Male	CHI/BOS	Technology/platform	5–10	Private (VC)

Notes. Interviewee 2, 7, and 12 have recently worked at two different firms and spoke on their experiences at both places. For firm types, "VC" indicates whether a private firm has ever received venture capital funding.

put forth to explain our results (Rivera 2012). These recruiters were not aware of our research question, experimental design, or findings. These individuals are tasked with identifying and screening job candidates for technical positions (e.g., software engineering) on a daily basis and spoke about their experience with recruiting entry-level hires. We recruited participants through an online professional networking platform. We employed theoretical sampling (Small 2009) to select recruiters with varying backgrounds (e.g., level of experience, industry, firm type, and gender) to best represent the recruiters from our field experiment. Although most recruiters screen applications for their firms, four of the recruiters worked at technical-focused search firms. Interviews with search firm recruiters offer a more general view of industry recruiting trends that may not be salient during interviews with recruiters at a specific firm. Information about the interviewed recruiters and their firms is summarized in Table 5.

Each interviewee was read a verbal consent prompt that stated our interest was learning more about the "recruiting process for technical positions, such as software engineers." Interviews, conducted via phone calls, were semistructured and lasted approximately 20–30 minutes. We asked them questions regarding their recruitment process of technical positions and then their experience with and evaluation of former founders during the recruitment process. Recruiters reported very similar recruitment practices, which involved directly sourcing potential applicants for openings, analyzing referrals, and reviewing unsolicited applications (i.e., applications via the firm's website or human capital management platform). Recruiters reported that, on average, unsolicited applications were about 40% of the total applications received for an opening. The remaining applications were either sourced by the recruiter (34%) or employee referrals (26%). Each recruiter reported experience evaluating former founders for these positions. One interviewee highlighted that they are seeing more early-career applicants with founder experience (recruiter 11) and another that former founders are more prevalent for technical roles relative to nontechnical roles (recruiter 9). This information is in line with our earlier discussion with informants that unsolicited applications are the most singularly common mode for applying to entry-level roles and that recruiters for entry-level technical positions are familiar with evaluating former founders.

Discussions Related to Fit and Commitment

Recruiters were concerned about whether former founders could fit into their firm and wage employment more generally. Recruiters noted that assessing a candidate's fit is a crucial part of their evaluation and that values and attitudes of founders would be different from those of wage employees. Recruiter 7 stated that she assesses founders against her "culture flag." Recruiter 3 stated that founders rarely passed his screening due to concerns about fitting into wage employment: "Founders look like aliens to people." Recruiter 8 described her impression of a former founder as a misfit for her firm: "[Former founders] are afraid of politics, hate the documentations they need to go through, and don't seem to understand why there is a structure here. They are from a chaotic environment and may expect peaceful working conditions here. But that's not always the case."

Other recruiters shared these concerns about fit and believed that former founders would not become a "good corporate citizen" (recruiter 3). Many also worried about former founders not being able to cope well with upper-level managers at a more bureaucratic workplace. Recruiter 5 said former founders "may not be able to receive training from more senior developers [and] may not know about best practices of working professionally." Similarly, recruiters 7 and 16 both indicated that former founders would not be able to work around the "red tape" present in wage employment.

Concern regarding fit seemed stronger for former founders of successful ventures. Recruiter 19 worried that former successful founders would feel uneasy taking directions and being part of a team. "Entrepreneurship is a mentality. We worry that the success cases will feel confined or get bored," said recruiter 7. Recruiter 13 said she screens out job applicants with successful ventures entirely, but evaluates failed founders more positively: "Successful founders are cocky. You can't undo success .... This makes it hard for successful founders to land on a job. We are scared they won't settle into their role. Few [founders] even get an interview but the ones that have are failures."

Commitment concerns were also commonly discussed by recruiters. Our sample of recruiters discussed former founders, especially the successful ones, as flight risks and, thus, less committed to the firm. Many recruiters described these candidates as "jumpy" (recruiter 4). They assess whether job candidates are the ones "who can have longevity in roles" (recruiter 12), given that "it is expensive to hire technical talent" (recruiter 15). Recruiter 2 stated that former successful founders would have a greater flight risk: "I understand that they apply for stability but worry they may suddenly leave. They may go all in for new ideas and opportunities." Recruiters also expressed concern about founders poaching other employees (Shah et al. 2019). Recruiter 7 discussed a recent example where a former successful founder who was hired left quickly to found another startup, taking with them a long-time employee from the firm.

Discussions Related to Capability and Human Capital

Although failed founders elicited more concern regarding quality—in particular, capability and human capital—many recruiters stated that this could be figured out in subsequent stages of the hiring process. These recruiters mentioned that founder experience, in general, engendered uncertainty regarding the founder's quality. Yet, this only occurred when discussing former failed founders, with no recruiter expressing quality concerns for former successful founders. Recruiters 11 and 14—both from technology search firms for younger client firms—indicated a preference for successful founders because of their quality signal. Consistent with human capital research and the popular depiction of founders, several recruiters acknowledged a penchant for innovation and entrepreneurial attributes of all founders. "[Former founders] are more adventurous, creative, driven," said recruiter 10. Recruiters did not specifically penalize founders whose venture failed, as they discussed that most startups fail and that many factors affect the survival of a venture. Recruiter 15 noted that there are positive aspects of venture failure and success: "A failed founder can tell you what they learned whereas a successful founder can tell you why they're great." Other recruiters echoed this common trope that founders can learn a lot from failure, as recruiter 12 described: "In fact, during the screening interviews, I always ask: 'tell me a story about your failure. How did you approach your situation and how did you react to that?' Failure demonstrates learning experience, resilience."

Overall, these semistructured interviews lend face validity to our main findings from the field experiment by providing illustrative and real-world examples. From these interviews, recruiters did not emphasize quality concerns related to founder experience, but, rather, fit and commitment concerns. Kacperczyk and Younkin (2021) use a survey experiment to show that employers associate male-led entrepreneurship with a lack of fit and commitment to wage work. Our interviews broadly confirm these findings, but suggest that the extent of these concerns vary by venture outcomes and are not necessarily gender-specific.

Discussion

Examining how founder experience is evaluated by hiring firms deepens our understanding of organizations' human capital strategy and individual career trajectories. We focus on the demand-side evaluation of entrepreneurial success and failure—namely, how hiring firms evaluate former successful and failed founders as job candidates. In doing so, we bring together research on careers, evaluations, entrepreneurship, and organizational spawning to theorize about the most likely mechanisms driving how organizations evaluate founder experience at the initial stage of hiring. Causal identification of whether the demand-side mechanism relates to an increase or decrease in the likelihood of successful and failed former founders receiving a positive evaluation by hiring firms necessitates that supply-side mechanisms remain constant. We achieve this by using a field experiment design and find causal evidence that early-career former founders are disadvantaged in the initial stage of the hiring process, consistent with the results from a contemporaneous audit study (Kacperczyk and Younkin 2021). To test whether the mechanisms affecting this evaluation are uncertainty related to quality—in particular, capabilities and human capital—or concerns related to fit and commitment, we compare former founders who discuss their experience as a failure versus a success. The observed preference for failed founders over successful founders points to how concerns related to fit and commitment are the dominant organizational perspective regarding the evaluation of founder experience in the hiring process. Furthermore, we find evidence that this founder disadvantage is more pronounced among older hiring firms than younger firms, offering further insights into organizational structures and processes.

The organizational spawning literature has focused on the *outflow* of employees from established firms to founders of new ventures (Agarwal et al. 2004, Gompers et al. 2005, Klepper and Sleeper 2005, Franco and Filson 2006, Sørensen 2007, Sørensen and Fassiotto 2011, Kacperczyk and Marx 2016). We contribute to this research by providing a theoretical framework for the reverse process—namely, the *inflow* of former founders to established firms as wage employees. In particular, we provide theoretical insights regarding how hiring firms evaluate founder experience during the initial stage of the hiring process and how the evaluation varies by the venture's outcome—namely, venture failure versus success. Developing strong human capital through recruiting new hires is central to organizational performance (Baron 2004, Beckman and Burton 2008, Chadwick and Dabu 2009, Bidwell 2011, Bidwell and Keller 2014, Molloy and Barney 2015), and our study helps us understand how entrepreneurial human capital—which is important in promoting innovation and entrepreneurial culture in organizations—is evaluated by hiring firms.

Most importantly, our study builds on the organizational spawning literature by focusing on the evaluation of entrepreneurial success and failure. Although recent studies have started to investigate how firms manage the *inflow* of entrepreneurial human capital, there has been mixed empirical evidence and competing explanations, making it difficult to understand how hiring firms assess former founders. Specifically, these inconsistent findings have blurred our understanding of whether organizational hiring strategies

tend to prioritize signals of quality or of fit and commitment stemming from founder experience, as summarized in the column headers of the matrix in Figure 1. Recently, researchers have shown that former founders receive fewer callbacks for midlevel jobs in the marketing and human resources fields and that this difference is present for men, but not women (Kacperczyk and Younkin 2021). In a follow-up survey, this difference is attributed to expectations about fit and commitment that vary by candidate gender. Here, female founders are the preferred candidate type, as they do not exhibit the same entrepreneurial traits as male founders.

Our research extends this line of inquiry in a few key ways. Founder experience conveys a complex signal related to quality, as well as fit and commitment. We use information about a venture's success to better isolate mechanisms related to capability from mechanisms related to fit and commitment. Our findings that venture success, which conveys positive signals related to superior capability and human capital (versus venture failure), magnifies this founder disadvantage challenge the notion that signals related to quality are the driving force in the initial hiring evaluation in our context. As such, considering venture outcomes is important to understand alternative theoretical perspectives on the transition from entrepreneurship to wage employment. Moreover, we find that all founders—male and female candidates—are similarly penalized. This highlights that the evaluation of founder experience is also dependent on career stage and industry. Moreover, the magnitude of this penalty is venture-outcome-specific. Future research can further unpack these differences based on the framing of founder experience and the founder's career stage.

Insights from this study also contribute to two previously disparate streams of research related to organizational perspectives on entrepreneurial human capital. First, our study has implications for research on entrepreneurship and information asymmetry (Anton and Yao 1995, Hegde and Tumlinson 2021, Mahieu et al. 2021). Based on the existing literature, we may expect successful founders to be preferred over failed founders, as venture success serves as a signal for superior capabilities and human capital as compared with venture failure and, thus, reduces uncertainty about candidate quality. Yet, our study demonstrates that information about capabilities alone does not fully explain the initial hiring evaluation. For instance, Mahieu et al. (2021) attribute the wage discount suffered by Belgian former entrepreneurs to high uncertainty related to a former founder's capability or expected productivity. In fact, we find evidence that employers do not prefer former founders who experienced success and who may bring extraordinary capabilities into their firms, indicating that mechanisms related to quality are not the key mechanisms driving evaluations of former founders in the initial stage of hiring in our context. However, the mechanisms responsible for observed evaluations may differ, depending on evaluation stage (Botelho and Abraham 2017, Botelho 2017, Botelho and Gertsberg 2022). Thus, it is critical empirically and theoretically to understand how mechanisms are dependent on the evaluation stage under consideration. For example, recruiters may have a different set of preferences relative to managers.

Further, we contribute to research that examines the importance of fit and commitment in organizations. We theorized that founder experience conveys a complex signal, not only related to a job candidate's quality, but also related to a job candidate's fit and commitment, which organizational scholars have established are important hiring considerations (Rivera 2012, Leung 2014, Goldberg et al. 2016, Galperin et al. 2020). Organizational concerns related to fit and commitment loom larger than perceptions related to quality, especially when firms evaluate founders of successful ventures. Although the quality signal from entrepreneurial success may be beneficial, in our context, it did not outweigh the negative signals related to fit and commitment of successful entrepreneurship.

Our results on the moderating effect of hiring-firm age also engage with the debate in organizations research regarding the relationship between bureaucracy and entrepreneurial human capital (Sørensen and Stuart 2000, Sørensen 2007, Sørensen and Fassiotto 2011, Sørensen and Phillips 2011, Kacperczyk and Marx 2016). Evidence from our study—that founder disadvantage is less pronounced among younger hiring firms—offers evidence that less bureaucratic firms are less likely to penalize former founders. The significant difference in the evaluation of successful former founders between younger and older firms further validates that our proposed fit and commitment mechanism is most pronounced for older, and thus likely more bureaucratic, organizations. This finding highlights the significant role of bureaucracy not only in the outflow of human capital to entrepreneurial ventures but also in the inflow of former founders to established firms.

Our research also contributes to the growing body of work about entrepreneurship and labor markets (Campbell et al. 2012, Luzzi and Sasson 2016, Manso 2016, Levine and Rubinstein 2017, Mahieu et al. 2021, Sorenson et al. 2021). Although the findings from this prior research have been mixed, it has provided a key set of plausible mechanisms that may lead to a wage premium or discount for former founders, as well as former employees of startups. It is inherently difficult to control for supply-side mechanisms (e.g., selection by job candidates) and, thus, distinguish the mechanisms driving the demand-side evaluation (e.g., evaluation by hiring firms) with archival data of realized hires. By leveraging a field experiment design, we can hold

supply-side mechanisms constant and focus our theorizing on the demand-side mechanisms affecting the evaluation of candidates with founder experience. For example, Manso (2016) proposes a supply-side explanation "learning through experimentation" to support his finding from longitudinal data that entrepreneurs prone to failure limit their wage loss by selecting into wage employment. We shed light on the demand-side mechanism: that hiring firms evaluate venture failure as a positive signal for fit and commitment relative to venture success, but that all founder experience is evaluated more negatively than nonfounder experience. Moreover, Campbell (2013) and Luzzi and Sasson (2016) propose that mechanisms related to superior capability and human capital could lead to a wage premium for former founders. Our study contributes to this work by highlighting that mechanisms related to fit and commitment play a more significant role at the earlier stage of the hiring in our context; thus, it is critical to consider the stage of the evaluation process when discussing mechanisms (Botelho and Abraham 2017, Botelho 2017, Botelho and Gertsberg 2022). As we contribute to the existing literature by focusing on the demand-side mechanisms, future research can further clarify the mechanisms driving the supply-side factors. Similarly, future work can focus on how the mechanisms affecting demand-side evaluation may change in later stages of the hiring process.

Finally, a theme of organizational research on careers has been on the various factors that affect an individual's career progression both within (Baron and Bielby 1980, Barnett et al. 2000, Castilla 2008, Goldberg et al. 2016) and across firms (Sørensen 1977, Baron 1984, Cohen et al. 1998, Bidwell and Briscoe 2010, Bidwell and Mollick 2015, Rider and Negro 2015). The popularity of entrepreneurship as a career choice has resulted in the inclusion of entrepreneurship in this discussion, with an almost exclusive focus on the organizational spawning process. Our study begins to answer a call from researchers for a more comprehensive understanding of careers by considering entrepreneurship not as a final destination, but as a "step along a career trajectory" (Burton et al. 2016, p. 237). Specifically, we develop theory and provide evidence for the implications of transitioning from entrepreneurship into established organizations—specifically, how the transitions may vary by the success or failure of entrepreneurial ventures. This research also informs how founder experience signals distinctive qualities about the candidate to hiring firms. There is much room for future research to continue to broaden our understanding of how founder experience fits into an individual's broader career path, such as whether this allows for switching one's career focus or how other previous experiences and other signals interact with founder experience when trying to enter the traditional labor market.

Generalizability

An inherent limitation of field experiments relates to the generalizability of results beyond the context. Thus, it is important to discuss how the key design choices related to the experiment may affect the interpretation of our results.

It is plausible that our estimated effects vary across types of entrepreneurs in a few key ways. First, our focus on individuals with a technical background may understate the level of disadvantage faced by former founders with other backgrounds. For example, in our postexperiment interviews, each recruiter had familiarity with early-career former founders in the recruiting process. In settings where applicants with founder experience would be seen as highly atypical (e.g., non-innovation-related fields), former founders may receive a more negative evaluation. Specifically, a lack of familiarity with founder experience should magnify concerns related to fit and commitment.

Second, we focus on early-career founders. We have discussed why this is the appropriate sample for theoretical, empirical, and policy considerations. It is also important to address how this design choice affects the interpretation of our results. Focusing on early-career individuals may magnify the founder disadvantage, as they have shorter career histories and lack previous affiliations that can assuage the hiring firm's concerns. Later-career founders can more easily use their previous work experience to show their ability to fit into and remain committed to a hiring firm. Conversely, a transition to entrepreneurship later in one's career may send a more negative signal. It could be seen as a very purposeful career pivot and, thus, magnify concerns about fit and commitment.

Third, our application process took place online, which may also suggest a scope condition to our study. Although this is the most frequent mode of job searching among early-career individuals applying for technical roles, as described by our prestudy informants and consistent with our postexperiment interviewees, we cannot speak to the effect of referrals in the evaluation of former founders or alternative job-search strategies. It may be the case that a referral will mitigate these concerns by vouching for the candidate in question; however, it may also be plausible that gaining a referral will be challenging, as the referrer may hold similar concerns about how their referral will affect their own reputation at their firm (cf. Smith 2005).

Conclusions and Implications

Increasingly, firms have been claiming a desire for their employees to be more innovative and entrepreneurial (e.g., Ishak 2017, AT&T 2018, and Bendes 2018), with firms adopting executive positions to increase innovation and even creating innovation

hubs or centers. However, we find evidence that former founders have a substantively lower callback rate than nonfounders, especially from older firms. We believe that this inconsistency between the espoused ideals and the reality of demonstrated hiring decisions stems from distinct signals associated with founder experience to different members of hiring firms—namely, executives and recruiters. Claims about valuing entrepreneurial and innovative employees originate with organizational leaders and executives, but decisions on which applicants will be included for further consideration for a job are made by recruiters. Unlike executives, who are motivated to nurture entrepreneurial environments and are focused on long-term strategic initiatives, recruiters are motivated to evaluate candidates regarding their current quality, fit, and commitment. This is because these factors are related to worker retention, which is a key performance that metric recruiters are evaluated against (Fernandez and Sosa 2005, Leung 2014, Galperin et al. 2020). Therefore, recruiters may not be motivated to bring in an entrepreneur if it is at the expense of affecting their own performance outcomes. Our results suggest that firms would benefit from clarifying their human capital strategy to the gatekeepers enacting this strategy—recruiters—to better achieve the desired long-term human capital outcomes.

For policymakers, there is a significant focus on early-career entrepreneurship. Although the average entrepreneur may be more advanced in their career, recent policy demonstrates an effort to promote and provide resources for young entrepreneurs. In the United States, the number of university courses in entrepreneurship has grown 20 times from 250 in 1985 to more than 5,000 in 2008 (Kauffman Foundation 2013), and the number of states that have K-12 standards for entrepreneurship education has more than doubled from 19 in 2009 to 42 in 2015 (Marich 2015). Our research will help better inform well-rounded and transparent policy decisions in this area.

For current and aspiring entrepreneurs, our research provides insights into how to navigate the labor market after venture failure or success. For many individuals, entrepreneurship is not a destination point in their career, but a step along their career path. Although the lower callback rate for former founders may initially sound discouraging, we caution against an oversimplification in interpreting our results. It could be thought that entrepreneurship should be avoided by early-career individuals; however, we do not believe this to be the case. As mentioned above, firms have been increasingly looking for entrepreneurial and innovative talent, and the callback rate of 13.6% for former founders suggests that some hiring firms may value the human capital and entrepreneurial traits associated with founder experience. Instead, our findings highlight that founder experience carries a complex signal from the perspective of hiring firms—in particular, recruiters—and, thus, former founders must update their labor market strategy accordingly. For example, early-career former founders should consider ways to offset potential concerns about their fit and commitment. They should focus on ways to emphasize their ability to fit into and remain committed to the hiring firm and understand that certain firms, such as younger firms, should more highly value this experience.

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Endnotes

[1] Although high failure rates are associated with entrepreneurship in general (U.S. Bureau of Labor Statistics 2016), this rate is most significant for innovation-driven entrepreneurship, with some estimates surpassing 90% (Startup Genome 2019). Failed entrepreneurs are not alone in seeking wage employment, with evidence suggesting that founders with relative success also make this transition (Luzzi and Sasson 2016).

[2] A discussion of these results can be found in Online Appendix B.

[3] We had access to these informants through pre-existing connections and referrals. None of these individuals are one of our 20 informants for our postexperiment interviews.

[4] Other studies examining the relationship between age and entrepreneurship have offered an inconsistent depiction of the modal type. For example, Liang et al. (2018) document that a decrease in a country's median age increases new business, using a cross-country entrepreneurship data. Ng and Stuart (2016) find that the founding rate for high-potential startups peaks at the early 30s (at approximately eight years after college) and begins to fall off thereafter. Evans and Leighton (1989) find that the probability of entering self-employment is independent of age for men who are under 40.

[5] Addresses were chosen based on the median rental price for a one-bedroom apartment in the focal city. For each address, we used an apartment number that did not exist to help ensure that spam mail was not sent to a real address.

[6] Using Amazon's Mechanical Turk, we recruited 400 participants online. The vast majority of the participants (92%) were able to distinguish between founders and nonfounders, whereas 96% of those who were assigned to one of the two founder conditions were able to distinguish success and failure conditions.

[7] One may argue that the two roles are too distant and that CTO is a more managerial role, and, thus, a CTO may not be doing the programming. Yet, based on our prestudy interviews with software engineer informants and popular press discussing this issue, CTOs at a startup typically spend "all [their] time hacking [coding]" in the early days and "about 80% of [their] time hacking [coding]" when

they get a small team of up to six people (Startups 2015, Helmig 2017). Also, searching profiles of individuals with "Co-Founder & CTO" as the job title on an online career networking platform shows that the primary function and description of these individuals mirrored those of software engineers. These individuals share similar technical tasks and are likely to build up similar programming skills as software engineers at more established firms. Therefore, the tasks and skills of a CTO at new ventures more closely resemble those of software engineers at established firms, rather than those of a CTO at established firms.

[8] Having sold the startup for $3 million may be considered a substantive amount, but note that the candidate is a co-founder, and it is reasonable to conclude that the success cannot be solely attributed to the founder. Furthermore, after taxes and fees, this split amount is only a bit higher than the bonus and equity packages an engineer can accumulate at a leading technology firm over the same number of years.

[9] In the pretests with 400 participants, we asked whether the participants who received the success or failure condition find not disclosing the name of the company (success condition) or using a name that cannot be tracked (failure condition) suspicious. Approximately 80% of the participants responded that they did not find it suspicious or strange. Those assigned to a failure case reported that it is reasonable not being able to find a web presence of a company that had failed.

[10] For the remainder of the paper, we use "recruiters" to refer to the individuals who screen applicants in the initial stage of the hiring process. Depending on the firm, these individuals could go by various titles. Further, this individual could also be the hiring manager for the position though less likely as firms frequently have recruiters who assist in the early stages of the hiring process.

[11] https://www.payscale.com/research/US/Job=Recruiter/Salary.

[12] It could also be argued that there was a cost to those candidates that did not receive a callback due to our candidate being selected over another applicant. However, we were told that individuals who withdraw or do not respond after the initial interview request are most frequently replaced.

[13] A benefit of this sourcing strategy is that the jobs advertised include positions submitted by employers as well as other open positions aggregated from other career sites and recruiter listings. Thus, we are able to come up with a comprehensive list of employers and open positions. A key distinction is that for the latter set, applicants cannot apply through the job-search platform and, instead, need to apply through the employer's career portal or human capital management platform (e.g., Workday or Lever).

[14] After a job was assigned to an applicant profile, it could be skipped, with the two most common reasons being that the job posting was no longer available and that the job description available during the application process changed and no longer fit our criteria (e.g., it was listed in one of our six cities, but was actually for another city). When a job was skipped, that firm was re-entered into our risk set.

[15] We also conducted an ex post exploratory analysis near the end of the experiment period and applied to mid-level jobs with our nonfounder condition. To reduce the cost to employers for this supplementary analysis and ensure that the new applications were sent not too long after the main experiment, we limited it to 20% of the targeted sample, resulting in 80 jobs. The callback rate for the nonfounder condition was 13.8% for mid-level jobs, a rate that is approximately 2.2 times higher than that of the successful founder ($p = 0.020$). This provides further support that the results from our initial field experiment were not driven by recruiters believing that successful founders were overqualified for the positions.

[16] These studies have also examined firm size along with firm age and found consistent results due to their strong correlation between these measures (Sørensen 2007, Sørensen and Phillips 2011). Unlike these studies that use registry data or publicly accessible firm data, many of the hiring firms in our sample are private companies. Therefore, although firm age information is available via multiple sources, firm size information is not.

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