Social Influence, Status, and Entrepreneurial Entry

Evidence from the Comic Book Industry

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Tag der mündlichen Prüfung: 21.06.2019

Abstract

Most studies of social structural effects in entrepreneurship have investigated how the structure of social networks affects entrepreneurial success. The effects of network structure on entrepreneurial entry, namely when an individual, either alone or with a team, brings a self-created offer to the market, are thus far under-investigated. Based on the previous, this thesis aims to advance our understanding of the effects of network structure on entrepreneurial entry by focusing on two research questions: (1) how does social proximity to other entrepreneurs affect entrepreneurial entry and (2) how does social status, the relative position in a social hierarchy, affect entrepreneurial entry?

Based on social influence theories and the theory of role models, we disentangle two alternative mechanisms of social influence on the transition to entrepreneurship: communication with other entrepreneurs to which an individual has a cohesive relationship, on the one hand, and comparison with equivalent entrepreneurs, on the other. Further, we review several of the social status mechanisms affecting choice outcomes and hypothesize that status can both deter and encourage individuals to pursue entrepreneurial entry depending on the relative strength of these mechanisms.

We test our hypotheses in the empirical context of the US comic book industry using event history analysis as the methodological framework. From a large-scale collector database, we construct a longitudinal data set of the career paths and professional networks of more than 11,000 comic book creators active in the industry between 1988 and 2014.

The results of the discrete-time event history regressions support the theory of communication and comparison with other entrepreneurs being two different but positively interacting mechanisms of social influence on entrepreneurial entry. We further find that status based on the bestowal of a prestigious industry award encourages a transition to entrepreneurship, whereas social status based on occupying a central position in the professional network deters entrepreneurial entry.

Our research contributes to a more differentiated understanding of how an individual's structural position affects his or her choice for or against entrepreneurial entry. The findings not only open up fruitful questions and areas for further research, but they also have practical implications for policymakers aiming to foster entrepreneurship.

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Prolog

The year 2008 saw a passionate public debate between the two famous comic book authors Robert Kirkman and Brian Michael Bendis. Kirkman, a very successful writer, had published his "creator-owned manifesto" on YouTube. He had canceled his freelance association with the leading publisher Marvel earlier in the same year to focus entirely on creator-owned work. Creator-owned work means bringing a new comic series to the market based on original characters and retaining the intellectual property rights.

In his video manifesto, he called on comic book writers and artists to follow him and stop producing corporate comics under work-for-hire arrangements for the two major publishers, Marvel and DC. Under such arrangements with Marvel or DC, creators usually produce sequels of established comic series based on popular heroes such as Superman and Batman. The value-capturing rights to these characters belong to the large corporations.

Kirkman argued that while corporate comics sell in large quantities, the revenue share for employed or freelance creators is too small. Creator-owners receive a higher share of the sales revenue and can generate additional revenue (e.g., if their series is adapted for TV later). He added that focusing on creator-owned work would allow writers and artists to explore their creativity and foster new ideas, which would ultimately revive the whole industry.

Bendis, an award-winning author and artist with experience in both creator-owned and corporate projects, publicly intervened. He blamed Kirkman for drawing too rosy a picture, as most creator-owned projects are commercial flops. From Bendis' point of view, Kirkman was not acting responsibly by recommending passing up corporate contracts to instead take on risky creator-owned work. However, on one point, he wholeheartedly agreed with Kirkman: the freedom of creativity in one's own projects is an exceptional experience.

1. Introduction

The structure of social ties between individuals or organizations affects various important economic decisions and outcomes (Jackson, 2014; Jackson et al., 2017). Social networks shape how actors find new jobs, choose alliance partners, and adopt innovations (Granovetter, 2005). In this thesis, we study how the network structure affects a particularly challenging decision: the decision to pursue entrepreneurial entry or not. We define entrepreneurial entry as the event when an individual, either alone or with a team, creates a new product or service and brings it to the market.

1.1. Background and scope

The question of why some individuals and not others engage in entrepreneurial activities is vital for policymakers and researchers alike. Policymakers hope that entrepreneurial activity can positively affect economic growth and job creation. They seek orientation in how to design programs to encourage entrepreneurship in their countries or regions. Understanding what causes the transition to entrepreneurship is also central to the rising field of entrepreneurship research. The relationship between network structure and entrepreneurial entry lies at the heart of one of the field's most significant trends: the shift of focus from the entrepreneur as an individual with specific traits toward the context of

entrepreneurship in general (Zahra and Wright, 2011; Welter, 2011) and the social context in particular (Davidsson, 2016b).

Research on the social structural effects in entrepreneurship has thus far focused on the advantages that social relationships and networks provide during the entrepreneurial process. This social capital perspective is an important and frequently investigated concept in entrepreneurship research (Gedajlovic et al., 2013).

Social capital in general describes the access to resources and other benefits that an actor can derive from his or her social relationships (Adler and Kwon, 2002). Scholars distinguish two forms of social capital. Bonding social capital created through close and repeated social relationships leads to trust and reciprocity (Coleman, 1988). Bridging social capital provides individuals with access to non-redundant information and resources as well as the option for brokerage through a position between groups that are otherwise not connected (Burt, 2000; Burt, 2004).

Both forms of social capital can affect the entrepreneurial process (Davidsson and Honig, 2003). The central hypothesis of social capital research in entrepreneurship is that the social structural position of an actor determines if he or she succeeds in "discovering" entrepreneurial opportunities and mobilizing the resources to exploit them (Birley, 1985; Hoang and Antoncic, 2003; Stuart and Sorenson, 2005).

The social capital perspective can thus explain why some individuals succeed in the entrepreneurial process but not why they start it in the first place. In this thesis, we adopt a social homogeneity perspective to examine the social structural effects in entrepreneurship. The social homogeneity perspective focuses on the effects of network structure on beliefs, attitudes, and behaviors. Its central hypothesis is that network mechanisms induce similar

choices because of the flow of information between actors or the coordinating effect of similar structural positions (Borgatti and Halgin, 2011).

To narrow the scope of this research project, we focus on two aspects of network structure and their effects on entrepreneurial entry. The first is social proximity or being socially close or distant to other entrepreneurs. The process through which an individual's entrepreneurial entry results from the entrepreneurial actions of socially related others is known as social influence or contagion. The second social structural condition we investigate is social status or having a high or low rank in the social hierarchy. We call this "status effects" or "status convergence mechanisms" when an individual's relative position in the social hierarchy affects the decision to pursue entrepreneurial entry.

1.2. Gaps in the literature

The role of social influences in the transition to entrepreneurship has been demonstrated in several studies. The social transmission of entrepreneurial behavior has been shown to occur among family members (Sørensen, 2007b), neighbors (Giannetti and Simonov, 2009), university peers (Kacperczyk, 2013), and in the workplace (Nanda and Sørensen, 2010). Researchers usually explain the social transmission of entrepreneurial behavior using two arguments. First, entrepreneurs provide information and knowledge specifically relevant for entrepreneurial entry. Individuals who have access to this knowledge and information are more likely to become entrepreneurs (communication effect). Second, individuals overcome uncertainty during the early phases of the entrepreneurial process by comparing themselves with socially related others and imitating their behavior, which makes entre-

preneurship more likely to occur when individuals are exposed to entrepreneurial role models (comparison effect).

In the literature to date, both these social influence mechanisms have been discussed, but they have not yet been able to be separated. Most studies lack data on personal interactions and the resulting social networks (cf. Stuart and Ding, 2006, for an exception). Existing studies have measured social proximity through a common affiliation to an employer (Nanda and Sørensen, 2010), the simultaneous study of a subject at the same university (Kacperczyk, 2013), and a registration address in the same neighborhood (Giannetti and Simonov, 2009). This measurement of social proximity at the level of comembership in large groups limits the possibilities of separating the two mechanisms. Therefore, it has not yet been possible to validate whether a communication effect and a comparison effect in the transmission of entrepreneurial behavior exist independently and whether they complement or substitute each other.

Research on status effects in entrepreneurship has focused on the venture level and hence on the later stages of the entrepreneurial process. The results show that the survival and success of new ventures are related to their status. External audiences such as potential investors, customers, and employees cannot observe the actual quality of a new venture and instead use its status as a proxy to determine if they should engage in a transaction with it (Milanov, 2015).

However, social status effects on individual entrepreneurial entry have largely been excluded from the research agenda. One notable exception is the study by Stuart and Ding (2006) showing that at the beginning of the biotechnology era, predominantly high-status life scientists became entrepreneurs. They argue that entrepreneurial activity was regarded

as an inappropriate professional activity and that only the most prominent scientists could disregard this professional norm as their status protected them from social sanctions.

The lack of attention on the extent to which the social status effects impact on individual entrepreneurial entry is significant, as social status has been shown to influence several individual-level outcomes. Indeed, a comprehensive understanding of the social structural effects in entrepreneurship cannot be achieved without a consideration of these status effects.

1.3. Objectives and approach

The purpose of this dissertation is to advance our understanding of the relationship between network structure and entrepreneurial entry. To this end, we pursue two research objectives. The first is to gain a more differentiated understanding of the social influence mechanisms affecting entrepreneurial entry. We adopt a network analysis approach and seek to distinguish between contagion through cohesion and communication and influence through equivalence and comparison. The second objective of our research is to explore the relationship between individual status and the transition to entrepreneurship. We review several theoretical mechanisms and develop hypotheses for two types of social statuses: the status acquired by the bestowal of an award and the status obtained through taking a central position in the professional network of industry peers.

We empirically test our hypotheses in the context of the US comic book industry. Entrepreneurial entry into the market for comic books does not require large amounts of capital. Thus, this empirical context is particularly well suited to investigate the effects of social influence and social status on entrepreneurial entry, as any differences in access

to resources are unlikely to dominate the entrepreneurial process. Further, the US comic book industry provides us with unique data for carrying out empirical research on the social structural effects in entrepreneurship.

The often diverse careers of comic book creators can be reconstructed from comprehensive databases of collectors (with some effort). Most creators work as freelancers or employees of large publishers. There, they produce sequels of stories with well-known characters owned by publishers. However, some creators decide to produce a creator-owned series. They then develop new characters, owned by themselves, and introduce new comic series to the market. Some artists later switch back or perform creator-owned projects and corporate projects in parallel, meaning that experienced creator-owners often work together with employees or freelancers. Teams in general change frequently in the comic industry, and thus artists build professional networks based on direct collaborative relationships. These creative teams are partly self-organizing, partly staffed by editors. The latter can be seen as a form of the exogenous manipulation of the professional network. Creators typically work in more than one functional role (e.g., writer, artist, colorist, editor) and several product categories (e.g., superhero, western, science fiction) when developing an individual professional profile. Finally, there is a system of distinction in the comic industry, the annual Eisner Awards, at which individuals are publicly recognized for their creative achievements.

For our hypothesis tests, we adopt an empirical framework frequently used in entrepreneurship research, namely event history analysis. The event under investigation is the entrepreneurial entry of an individual. We consider the first time an individual publishes a creator-owned comic book as an author or artist, alone or with a team, as a form of entrepreneurial entry. Our data set is constructed with the help of ComicBase, a

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comprehensive commercial database of comic collectors. The sample contains data on the careers and professional relationships of 11,880 creators who published comic books in the US market between 1988 and 2014 and on all the nominees and winners of the Eisner Awards during this period.

Our results show that the relationship between network structure and transition to entrepreneurship is complex. We conclude that we can and have to distinguish two types of social influence processes on entrepreneurial entry. On the one hand, there are social influences through cohesion and communication via direct contacts within the professional network. On the other hand, there are social influences through equivalence and comparison. Here, the symbolic interaction through comparison with similar and observable others without any direct contact occurs and this leads to imitation. These two forms of social influence are complementary; in other words, the transition to entrepreneurship is more likely if both forms of social influence coincide. This result opens up new perspectives for the design of programs that foster entrepreneurship.

Furthermore, our results show that both social status received through awards and social status achieved through a prominent position in the network of industry peers are predictors of the transition to entrepreneurship. However, the direction of the influence depends on an individual's kind of status. If his or her status is based on the award of a prestigious industry prize, the individual entrepreneurship rate increases significantly. However, if his or her status is based on occupying a central position in the professional network of the industry, the probability of entrepreneurial entry decreases. These opposing effects open up a fruitful area for further research into the underlying mechanisms that cause this contradiction.

1.4. Structure of the thesis

The remainder of this dissertation is structured as follows. In chapter 2, we develop the theoretical background as well as review the conceptualizations of and theories on entrepreneurship, social influence, and social status. In chapter 3, we review the state of the empirical research on the social influence and status effects in entrepreneurship and develop our hypotheses. The empirical context of the study, the US comic book industry, is described in chapter 4, where we also provide an overview of the workflows and structure of this creative industry.

In chapter 5, we introduce the data together with our methodological framework. We describe the sources of the raw data and report how we measure entrepreneurial entry, social proximity, and status. We also explain the event history approach and statistical model we use to generate our results. In chapter 6, we report the estimation results of our statistical models. We discuss the results and limitations in chapter 7, where we also provide recommendations for further research. Chapter 8 concludes and lists the practical implications of our findings.

2. Theoretical Background

Our research topic lies at the intersection of the social homogeneity research tradition and field of entrepreneurship research. Both domains have rich bodies of conceptual and theoretical work. In this chapter, we cover the set of concepts and theories relevant to examining the effects of network structure on entrepreneurial entry. As a basis for our further investigation, we outline in the following the essential concepts and theoretical mechanisms related to entrepreneurship and entrepreneurial entry, social influence and role models, as well as the determinants and consequences of social status. We start with an outline of network theory as an organizing framework within which to structure the subsequent description of the concepts.

2.1. Network theory

In this thesis, we aim to advance our understanding of how the structure of social networks affects entrepreneurial entry. We employ a network analytic approach, which implies the use of network theory. In this section, we introduce network theory using the framework of Borgatti and Foster (2003) and Borgatti and Halgin (2011) and describe how our research employs it to develop a theoretical understanding of the social influence and status effects on entrepreneurial entry.

According to Borgatti and Halgin (2011), "network theory refers to the mechanisms and processes that interact with network structures to yield certain outcomes for individuals and groups." Put simply, network theory deals with the processes related to network structures and their consequences rather than explaining the antecedents of the network structure. Explaining how and why network ties form and hence the determinants of network structures are the domain of the theory of networks.

The core concept of network theory is the network. A network consists of two sets, a set of actors and a set of ties that connect some of those actors. The ties can represent a variety of relationship types. A network is an explicit representation or model of the social structure at the meso level. Networks have been used to study a broad range of phenomena such as the diffusion of innovations as well as job performance, promotions, and creativity (Burt, 1987; Burt et al., 2013). As an analytical tool, networks are not even limited to the social sciences and have been employed to study phenomena in physics and biology as well (Newman, 2003).

Why and how do network structures and processes influence outcomes? Borgatti and Halgin (2011) propose a classification of network mechanisms. They distinguish between two foundational models of the functions of network ties: the flow model and the coordination model. In the flow model, ties function as pipes that enable the flow of information and resources. In the coordination model, ties are bonds and their central function is to align actors, leading to coordinated actions.

Further, Borgatti and Halgin (2011) distinguish between the two types of outcomes studied in network theory, each associated with a broader research tradition. First, social homogeneity research studies the choices (e.g., beliefs, attitudes, and behaviors) of actors, particularly how the similarity of choices can be explained by interactions with network

structures and processes. Second, social capital research explains how the network structure and process bring about success (e.g., achievement, performance, and reward).

From this system of network theory dimensions, Borgatti and Halgin (2011) develop four main network mechanisms: contagion, convergence, capitalization, and cooperation. First, contagion is a mechanism by which the flow of information through the network ties results in similar choices by actors. For example, actors influence each other to adopt beliefs, attitudes, and behaviors. Second, convergence describes how actors make similar decisions through the coordinating effect of similar structural environments. As actors adapt to the structural environment, those with similar structural environments start to share similar beliefs, attitudes, and behaviors. Third, capitalization is the mechanism by which an actor's success results from his or her position in the network, as this facilitates access to the information and resources flowing through the ties. Finally, cooperation describes how an actor's success is due to the coordinating bonds with other actors that allow them to act as a unit while excluding others and exploiting their lack of coordination. Table 2.1 summarizes these four mechanisms in a two-by-two matrix.

How does this typology of network mechanisms inform this research project? As previously mentioned, it is not our goal to explain why individuals are successful after they have decided to become entrepreneurs. Instead, we explore why individuals choose to transition to entrepreneurship. With the help of this typology, we can place our research project in the social homogeneity research tradition. Social homogeneity mechanisms have thus far received comparatively little attention by entrepreneurship studies, possibly because of the preference (or bias) toward explaining success. This boundary helps us focus on the effects of the structure of social networks on choices during the early phases of the entrepreneurial process and not be drawn away by the much better developed

Table 2.1.: Typology of network mechanisms adapted from Borgatti and Halgin (2011)

Network model (tie function)	Research tradition (Outcome)	
	Social homogeneity (Choice)	Social capital (Success)
Flow (ties as pipes)	*Contagion* Actors influence each other to adopt their traits	*Capitalization* Social position in a network provides access to resources
Coordination (ties as bonds)	*Convergence* Actors adapt to their environments, and thus actors with similar structural environments will demonstrate similarities	*Cooperation* Actors act as a unit, excluding others and exploiting divisions among them

literature on entrepreneurial social capital. Further, the typology is useful to study the social influence and status effects through a network-theoretical lens. The distinction between flow-based contagion and bond-based convergence models allows us to classify the theoretical mechanisms of social influence and social status. Before we turn to the theoretical descriptions of social influence and social status, however, we continue with the treatment of entrepreneurship and entrepreneurial entry, the outcome of interest in this dissertation.

2.2. Entrepreneurship

Instead of starting with a definition, we open our theoretical treatment of entrepreneurship with a quote from the recent *Academy of Management Review* paper by Ramoglou and Tsang (2016):

> [T]he subject matter of entrepreneurial discourse lies at the crossroads of
> some of the most intellectually challenging matters, such as the metaphysics
> of potentiality and the nature of human intentionality. It would not be an
> exaggeration to say that the study of entrepreneurial phenomena touches on
> some of the most demanding aspects of philosophy.

This statement might help explain why although the field of entrepreneurship research can look back on a long history and is developing dynamically, it lacks a generally accepted conceptual and theoretical framework. Early contributions to the field date to the 18th century and more systematic entrepreneurship research began in the 1970s (Landström and Benner, 2010). The years since the turn of the millennium have been called a golden era for entrepreneurship research, with an increasing number of dedicated entrepreneurship journals as well as an increase in their impact (Wiklund et al., 2011). However, a generally accepted definition of entrepreneurship is still lacking (Davidsson, 2016a).

Although it is conceptually difficult to grasp, the relevance of entrepreneurship is not in question. Researchers attribute three relevant economic functions to entrepreneurship (Shane and Venkataraman, 2000). First, it is a mechanism by which society converts technical information into products and services (Arrow, 1962). Second, entrepreneurship is a mechanism through which the temporal and spatial inefficiencies in an economy are discovered and mitigated (Kirzner, 1997). Third, innovative entrepreneurship is the crucial engine that drives change in capitalistic societies (Schumpeter, 1942).

A comprehensive presentation of the ongoing controversial discussions about the conceptual framework of entrepreneurship research would clearly go beyond the scope of this empirical dissertation because of the philosophical depth and complexity of this

discourse. Instead, in the following subsections, we briefly introduce the main ideas of the theoretical views or approaches most prevalent in the current discussion. We then turn to the treatment of an individual's entrepreneurial entry as the phenomenon of interest in our research. In the next subsection, we briefly describe the agenda setting and debated contribution of Shane and Venkataraman (2000)

2.2.1. The individual–opportunity nexus and some consensus about entrepreneurship

The current discourse on entrepreneurship theory is shaped by the article "The Promise of Entrepreneurship as a Field of Research" by Shane and Venkataraman (2000). They characterize entrepreneurship as the "discovery and exploitation of profitable opportunities" (Shane and Venkataraman, 2000, p. 217). Further, they highlight that in their view, entrepreneurship involves the nexus of two phenomena: lucrative opportunities and enterprising individuals (Shane and Venkataraman, 2000). This idea contrasts with previous views, which primarily tied entrepreneurship to the individual, the entrepreneur, and his or her traits. The idea of entrepreneurship as an interaction between individuals and opportunities became a point of reference for most subsequent theorizing for supporters as well as opponents of this view.

As a natural consequence of the individual–opportunity nexus idea, the concept of entrepreneurial opportunity received much more attention and still divides entrepreneurship scholars. Shane and Venkataraman (2000) define entrepreneurial opportunities as those "situations in which new goods, services, raw materials, and organizing processes can be introduced and sold at greater than their cost of production." In the current discussion, partially contradictory theoretical perspectives on entrepreneurship prevail that differ

fundamentally in their understanding of the opportunity concept. These are called the opportunity discovery view and the opportunity creation view herein. Several researchers have identified and contrasted these two views as opposing poles. Why do they differ so fundamentally? Researchers have suggested that they are based on alternative ontological and epistemological assumptions and have shifted the discourse on the nature of entrepreneurial phenomena to the level of the philosophy of science (Ramoglou and Tsang, 2016). A third stream of the literature rejects the opportunity concept. We describe these views in the following subsections.

Besides the controversial discussion of the entrepreneurial opportunity construct, there is relatively broad agreement on the other two aspects of entrepreneurship under the framework of Shane and Venkataraman (2000). First, entrepreneurship is not defined by a specific state or setting and hence is not to be confused with research on small businesses or the study of self-employment. Entrepreneurship can happen under various organizational arrangements. It is not even limited to the creation of new organizations or firms but can also happen within existing ones. Second, entrepreneurship involves some level of innovation. Efforts to pursue profit opportunities without recombining resources such as arbitrage (buying resources in one market and selling to another at a higher price) are not entrepreneurial. Definitions of entrepreneurship as the "creation of new economic activities" (Davidsson, 2016a) and "the emergence of new ventures" (Wiklund et al., 2011) nicely express the latter two ideas.

2.2.2. Opportunity discovery view

According to the opportunity discovery view, entrepreneurial opportunities exist objectively and are observable in principle. They result from exogenous shocks to product or

factor markets because, for example, of changes in consumer preferences, technological inventions, and new regulations (Shane, 2003). This view reflects a disequilibrium perspective in opposition to the neoclassical equilibrium approach in standard economics in which undiscovered profit opportunities cannot exist (Kirzner, 1997). Certain "alert" (Kirzner, 1973) individuals can recognize these opportunities because of their better information acquisition and higher cognitive ability. After the discovery of an entrepreneurial opportunity, the individual exploits the opportunity if he or she can mobilize the required resources.

Criticism of the opportunity discovery view addresses the conception of entrepreneurial opportunities as an objective phenomenon. Scholars that have tried to develop a deeper understanding have characterized entrepreneurial opportunity as an elusive concept (McMullen et al., 2007). Others have noted a lack of empirical instruments for measuring opportunity variation (Dahlqvist and Wiklund, 2012). As a consequence, once again, individuals and their different traits and abilities have come into focus. However, research on the identification of individuals who can recognize opportunities has not significantly advanced.

2.2.3. Opportunity creation view

According to the opportunity creation view, opportunities are constructed by entrepreneurs. This view has been systematically described by Alvarez and Barney (2007) and Alvarez, Barney, and Anderson (2013), who state that opportunities do not preexist objectively. Rather, they result from the actions of potential entrepreneurs and hence are formed endogenously by those who seek to exploit them. Potential entrepreneurs start

with a set of initial beliefs and engage in an iterative process of actions and reactions that leads them either to the creation of an opportunity or abandonment.

Two prominent theories are related to the opportunity creation view: effectuation (Sarasvathy, 2001) and entrepreneurial bricolage (Baker and Nelson, 2005). Sarasvathy (2001) summarizes the process of effectuation as follows:

> Effectuation begins with a given set of means and contingent human aspirations to select from a set of possible effects imagined by the effectuator(s). Both means and aspirations change over time. The particular effect selected is a function of the level of loss or risk acceptable to the effectuator(s), as well as the degree of control over the future that the effectuator(s) achieves through strategic partnerships along the way (Sarasvathy, 2001, p. 253).

Entrepreneurial bricolage, a related approach that aims to explain how some entrepreneurs manage to create unique services even though they face severe resource constraints, is defined as "making do by applying combinations of the resources at hand to new problems and opportunities" (Baker and Nelson, 2005). In his comparison, Fisher (2012) identifies four consistent behavioral dimensions between the effectuation and entrepreneurial bricolage approaches: (1) existing resources are a source of entrepreneurial opportunity and (2) resource constraints catalyze creativity and innovation; and (3) to overcome resource constraints, entrepreneurs take action and (4) engage in a community of demand- and supply-side stakeholders to enable venture emergence or growth. Hence, the opportunity creation view in general and effectuation and entrepreneurial bricolage approaches in particular emphasize the role of creative human agency in entrepreneurship.

2.2.4. Actualization approach

In a noteworthy contribution, Ramoglou and Tsang (2016) point out that the discovery and creation approaches are based on different ontological and epistemological assumptions. The discovery view is based on an empiricist world view according to which opportunities, just like other things, exist objectively but are initially undiscovered until an entrepreneur recognizes them. The underlying philosophical assumptions of the opportunity creation view are consistent with a constructivist perspective under which reality is socially constructed and so are entrepreneurial opportunities. They cannot be detected, as they do not exist independently of the entrepreneur's and other involved individuals' subjective perception of them. Entrepreneurs endogenously create opportunities, which only become real if the entrepreneur and (potentially) other involved individuals regard them as real.

Ramoglou and Tsang (2016) suggest a third alternative conceptualization of entrepreneurial opportunities, the actualization approach, which is based on a realist philosophy of science. In the realist ontology, the world objectively exists but the real is broader than the empirically observable. The latter is relevant for their conceptualization of entrepreneurial opportunities. They define an entrepreneurial opportunity as the "propensity of market demand to be actualized into profits through the introduction of novel products or services." They argue that entrepreneurial opportunities objectively exist, but cannot be identified with certainty before an entrepreneur takes action on them. Only when profits are realized during an entrepreneurial project can an entrepreneur be sure that an opportunity existed beforehand. This process is described as the actualization of an oppor-

tunity into profits through entrepreneurial agency. Table 2.2 compares these opportunity concepts and the respective underlying philosophical assumptions.

Table 2.2.: Comparison of the opportunity concepts and respective underlying philosophical assumptions adapted from Ramoglou and Tsang (2016)

View	Discovery	Creation	Actualisation
Conception of entrepreneurial opportunities	Opportunities exist as undiscovered entities until they are discovered by entrepreneurs.	Opportunities do not exist until they are created endogenously by entrepreneurs.	Opportunities exist as propensities of market demand that can be actualized into profits by entrepreneurs.
Philosophy of science	Empiricism	Constructivism	Realism
Ontology	The world exists objectively "out there," with an emphasis on material existence. Things that exist must be empirically observable. Causation is indicated by the constant conjunction of empirical events.	There is no objective reality and hence no single way the world is or can be. Agents can willingly create their own realities as long as they regard them as real.	The world exists objectively, albeit in various modes of being. The real is broader than the domain of the empirically observable. Tendencies are not observable and operate transfactually.
Epistemology	Knowledge must be based on sensory experience, testable by observation and experiment. The objectivity of research outcomes requires the elimination of subjective interpretations.	Contradictory interpretations of external reality can be equally valid. There are no objective criteria for assessing the truthfulness of knowledge claims, particularly those that relate to social or cultural knowledge.	We can know the world indirectly. Our observations are theory laden and fallible. We may use our imagination in explaining phenomena, but reality imposes constraints on what should be accepted as plausible knowledge.

2.2.5. Other views rejecting the opportunity concept

A third stream of the literature argues that the opportunity construct is not fruitful, or even suggests abandoning the concept altogether. Here, we present two exemplary views. After a thorough review of the various definitions of entrepreneurial opportunity in the literature, Davidsson (2015) notes that entrepreneurship scholars have fundamentally different ideas about what entrepreneurial opportunities are. Their conceptions range from external conditions to individual cognitions and social constructions. Nonetheless, he acknowledges that several relevant ideas discussed under the term "opportunity" would be better considered to be separate constructs. He suggests replacing the notion of entrepreneurial opportunity with three concepts, namely (i) external enablers, (ii) new venture ideas, and (iii) opportunity confidence, and defines them as follows.

An (i) external enabler is "a single, distinct, external circumstance, which has the potential of playing an essential role in eliciting and/or enabling a variety of entrepreneurial endeavors by several (potential) actors" (Davidsson, 2015, p. 683). A (ii) new venture idea is "an 'imagined future venture'; i.e., an imaginary combination of product/service offering, markets, and means of bringing the offering into existence" (Davidsson, 2015, p. 683). Finally (iii) opportunity confidence is "the result of an actor's evaluation of a stimulus (External Enabler or New Venture Idea) as a basis for the creation of new economic activity.(Davidsson, 2015, p. 683)."

An example of a perspective that rejects the opportunity construct is the judgment-based view formulated by Foss and Klein (2018) and Foss and Klein (2015). They argue that the opportunity construct is metaphorical. Entrepreneurs neither discover nor create but *imagine* opportunities (Klein, 2008). In this sense, the word "opportunity" is just

a paraphrase of a desirable future outcome. Rather than pursuing opportunities, entrepreneurs pursue future profits and sometimes further desirable non-monetary results. These authors further argue that entrepreneurship should primarily be seen and studied as action under uncertainty. They define the concept of entrepreneurial judgment (Foss and Klein, 2018) as "decision-making under uncertainty about the use of scarce resources to service customers' future preferences in pursuit of economic profits." Remarkably, the judgment-based view links entrepreneurship to the ownership of assets. It states that the entrepreneur must be or become the owner of the resources on the use of which he or she exercises his or her judgment because entrepreneurial judgment is difficult to trade (Foss, Foss, et al., 2007). This view further focuses on entrepreneurial action as the central phenomenon of entrepreneurship where the decisive action is investment in scarce resources.

Hence, Foss and Klein (2018) suggest a simple three-step framework comprising (i) beliefs, (ii) actions, and (iii) results for characterizing the core process of entrepreneurship. (i) The starting point of entrepreneurship is subjective beliefs about the present, possible futures, and one's own ability to bring about a particular, subjectively preferred future. These beliefs revolve around resources, production outcomes, consumer preferences and demand, technological and regulatory conditions, as well as one's own knowledge, skills, and abilities. (ii) Actual entrepreneurship begins when an entrepreneur acts in the form of making investments. Entrepreneurial action means acquiring and deploying resources under uncertainty. It comprises taking responsibility for productive assets. The investment may happen in the context of the creation of a new company, product, service, or process. (iii) After having deployed the resources, the entrepreneur can see the results and assess whether his or her actions brought about his or her subjectively preferred future. These

results are typically venture survival, profits (or losses), and the market value of owned assets; however, they may also include non-monetary aspects such as personal or goal achievement. After having assessed the results, the entrepreneur typically adjusts his or her plans in an iterative learning process. He or she might also be forced to exit owing to a lack of capital.

The previous examples showed the diversity among the perspectives on entrepreneurship in the literature. The concepts and theories about the conceptualization of entrepreneurial opportunities differ considerably, as do those concerning the underlying ontological and epistemological assumptions. For our further investigation, the actualization approach and judgment-based view are of particular importance. From the actualization approach, we take the view that business opportunities exist objectively, but are not ex-ante recognizable. Thus, business opportunities are relevant to explain entrepreneurial success but not to explain entrepreneurial entry. From the judgment-based view, we take the idea that action in the form of resource investment under uncertainty is the central element of entrepreneurship. In the next subsection, we introduce our understanding of entrepreneurial entry as an outcome.

2.2.6. Entrepreneurial entry

The event of interest in this thesis is entrepreneurial entry, which we also call the transition to entrepreneurship. We define entrepreneurial entry as the event when an individual, either alone or with a team, creates a new product or service and brings it to the market. To achieve conceptual clarity about the specific aspect of entrepreneurship we are studying, we contrast our definition of entrepreneurial entry with the framework of the explananda of entrepreneurship research proposed by (Davidsson, 2016a, p. 195). Like other researchers,

(Davidsson, 2016a) understands entrepreneurship as a process that consists of several phases ranging from intention to actual impact, with outcomes related to each phase at the individual level, at the venture level, and at further aggregated levels such as industry and nation.

We study entrepreneurial entry from a career perspective and thus as an outcome at the individual level. On the one hand, individual entrepreneurial entry is by definition linked to an entrepreneurial venture pursued until market entry. On the other hand, the person in question may not be the initiator of the entrepreneurial project; rather, he or she might have contributed sufficiently early or significantly to become a cofounder.

We characterize entrepreneurial entry as an intermediate step in the individual entrepreneurial process. It is clearly not the starting point of the entrepreneurial process as it is preceded by intention formation and idea generation. Note that an actor may have created and rejected concepts and ideas for years. He or she may have already worked with a team on the implementation of an idea, but these efforts may have been discontinued before market launch. Our definition of entrepreneurial entry hence describes the first time that an individual's entrepreneurial commitment has been persistent and has lasted until the completion and market launch of a new offering. Further, entrepreneurial entry is clearly not the final step. Subsequent phases and steps include the continuation and further development of the new market offering but also the failure and discontinuation.

An interesting question is whether the individual transition to entrepreneurship as an intermediate outcome is already a sign of entrepreneurial success. At the time of the transition, it is not yet clear if the new product or service will gain market share or otherwise create significant economic effects. In this sense, entrepreneurial entry is not a measure of individual financial success. However, one can argue that it represents the achievement of

a goal with a clear result in the form of a new market offering. An individual can achieve a high degree of self-fulfillment and satisfaction through entrepreneurial entry and hence consider him- or herself to be successful at this stage.

While one can debate whether entrepreneurial entry is a form of success at the individual level, it is clearly not a measure of success at the macro level. This raises the question of the relevance of the phenomenon. The most common arguments to motivate entrepreneurship research are related to the positive effects of successful entrepreneurship on the economy. So-called high-impact entrepreneurship arises when micro-level behavior by individuals or firms such as entrepreneurial activity drives positive macro-level outcomes such as job growth, the availability of better or cheaper products and services, and so on. Judging the macro-level impact of entrepreneurial entry would require a focus on the medium- to long-term effects of the newly offered product to determine, for example, whether it leads to the creation of jobs.

Nevertheless, entrepreneurial entry is a highly relevant aspect of the entrepreneurial process for two reasons. First, individual transition to entrepreneurship is necessary for high-impact entrepreneurship. Without individuals transitioning to entrepreneurship, the emergence of new economic activity is not possible. In this respect, our study of entrepreneurial entry contributes, albeit indirectly, to raising our understanding of successful entrepreneurship. Second, precisely because individual entrepreneurial entry is not necessarily a form of success, it is important to understand the underlying mechanisms driving this behavior. Entrepreneurial entry is generally associated with risks and the consumption of resources. Hence, unsuccessful entrepreneurial entries are a socially and economically relevant phenomenon. With this understanding of entrepreneurial entry as

an individual-level intermediate step in the entrepreneurial process, we describe the social influence and status effects in the following sections.

2.3. Social influence

We begin our description of social influence theory with a general definition: "Social influence is defined as change in an individual's thoughts, feelings, attitudes, or behaviors that results from interaction with another individual or group" (Rashotte, 2007). This definition illustrates that social influence is characterized by both a cause, interaction with another individual or group, and an outcome, a change in behavior. It is not defined by a specific mechanism but rather refers to all the mechanisms triggered by interaction with others that result in a change of attitude or behavior. Put in our own words, social influence occurs whenever an actor's beliefs, attitudes, or actions are affected by the beliefs, attitudes, or actions of other actors.

As a consequence of this broad conceptualization, several social influence theories exist. The only general requirement for social influence to occur is visibility. The influenced individual must at least have information about the opinions or behaviors of others. Note that visibility does not necessarily require direct communication.

Further, researchers differ in their understanding of the concept depending on their discipline. A significant amount of work on social influence processes stems from the field of social psychology. Social psychologists are interested in the principles and processes that make an individual susceptible to outside influences (Cialdini and Goldstein, 2004). The results of this research have informed the techniques and methods of intentional influencing.

Early contributions on social influence from social psychology focused on situations in which individuals are confronted with and are aware of explicit social forces. The three most important influence mechanisms discussed in social psychology are (i) obedience, influence through the instructions of an authority figure (Milgram, 1963), (ii) compliance, influence by explicit or implicit requests, and (iii) conformity, influence through real or perceived group pressure (Asch, 1951). This line of research was motivated by horrifying historical incidents such as the holocaust and war crimes in the Second World War.

Later contributions focused on subtle indirect influences that operate outside of an individual's awareness. This line of research forms the basis for the formulation of persuasion techniques for practitioners in management and marketing. One example is reciprocity, the tendency of people to repay in kind, which leads to the suggestion to give what you want to receive. Another example is authority, the tendency of people to defer to experts and that people willing to influence others should expose their expertise (Cialdini, 2001)

Sociologists have also intensively studied the phenomena of social influence. They tend to focus on the actual adoption of others' beliefs, attitudes, or behaviors as a result of unintentional influences. According to Rashotte (2007), the sociological understanding of social influence explicitly excludes cases in which actors express beliefs or pretend to have attitudes to meet social expectations. Further, the sociological concept of social influence excludes adaption resulting from enforcement by a legitimate authority or coercion by an illegitimate power. Hence, the sociological concept of social influence looks at *real* as opposed to forced or pretend changes. However, the lines between these processes are blurred in empirical research. Empirical studies based on the observation of behaviors

cannot separate changes in behavior caused by compliance from changes that result from alterations in attitudes.

The most relevant branch of the sociological literature for our research is the structural approach to social influence. The structural approach is equivalent to the contagion mechanisms in the system of network theory dimensions proposed by Borgatti and Halgin (2011), which was introduced earlier. The structural approach draws attention to the (preexisting) network of social relations and the positions of the actors within it. The network structure determines the composition of the reference group and relative influence of each actor within it. Influence requires the existence of ties. These network ties act as pipes through which information flows between actors, which results in similar choices. Through the ties of the network, actors influence each other to adopt beliefs, attitudes, and behaviors. Ties may be indirect but typically decay with the addition of each extra mediator. To differentiate the influence of the other actors, network analysts have developed the concept of social proximity, which corresponds to the weight or thickness of the ties. The more proximate two actors are, the larger is the weight of the tie and the thicker is the pipe. As actors in networks typically have ties to several other actors, social influence occurs by weighting and integrating the views of the related others. For example, the opinions of an actor reflect the weighted opinions of his or her referent others (Marsden and Friedkin, 1993; Friedkin, 1998).

We now turn to the contagion mechanisms driving social influence. The structural approach distinguishes two main types of social influence mechanisms, namely communication and comparison, which differ in the definition of social proximity as cohesion and equivalence (Leenders, 2002). Communication describes the social influence through direct interaction. An individual adapts his or her behavior as a result of discussions or

interactions with others with whom he or she has a personal relationship (e.g., family members, friends, and colleagues). Social proximity is defined here as cohesion. The level of social proximity through cohesion increases with the communication frequency and degree of empathy or obligation between two individuals (Burt, 1987). The most restrictive definition of cohesion requires adjacency in the sense that two individuals are socially proximate only if they are directly tied in a network (Marsden and Friedkin, 1993). The information shared via direct ties tends to be richer and more personalized and hence more influential than generally available information (Rogers and Kincaid, 1981).

Comparison is an indirect form of social influence. Here, social proximity is defined as structural similarity. Two actors are said to be equivalent when they have similar profiles of network relations (Marsden and Friedkin, 1993). In the strictest case, two actors have ties to the identical set of other actors and are then called structurally equivalent (Lorrain and White, 1971). An example would be two people who are not friends but have friendship relationships with the same set of other people. Structurally equivalent actors are located in the same area of the network. Further definitions of equivalence exist such as automorphic equivalence and regular equivalence (Everett and Borgatti, 1994). These notions of equivalence define similarity by the way an actor is related to others instead of who these other actors are. This can be seen as the structural notion of occupying a social role. For example, two mothers have the same or similar types of relationships with their husbands and children (Borgatti and Everett, 1992).

Equivalence between actors can lead to similarity in their behavior due to comparison. Equivalent actors can recognize each other as role models. Social influence occurs when comparison leads to identification with, and the imitation of, similar others. In a market setting, social influence through comparison can be driven by competition, when actors

evaluate their relative adequacy by comparing themselves with their competitors. The higher the degree of substitutability between two actors, the more likely it is that one adapts his or her behavior to the behavior of the competition (Burt, 1987). Closely related to the notion of social influence through equivalence and comparison is the concept of role modeling. As this concept is particularly relevant to our investigation, we introduce role model theory in the next section.

2.3.1. Role model theory

Role model theory provides a complementary perspective on social influence. It was developed by scholars of organizational behavior in the context of career theory. The term "role model" combines two concepts: (i) roles, behaviors and activities associated with or expected from people occupying a specific position (e.g., teacher, manager), and (ii) modeling, the matching of skills and behaviors between a target and an observing individual (Gibson, 2003). In the following, we describe the conceptualization of role models in career development proposed by Gibson (2004) and Gibson (2003). This framework offers a definition as well as a helpful delineation of role modeling from cognate developmental relationships to behavioral models and mentors. This distinction helps improve our understanding of social influence processes.

Gibson (2004, p. 136) formally defines a role model as a "cognitive construction based on the attributes of people in social roles an individual perceives to be similar to him or herself to some extent and desires to increase perceived similarity by emulating those attributes." This definition implies, on the one hand, that an individual compares him- or herself with many similar people as opposed to with just one role model. Furthermore, it implies that the individual might construct a role model synthetically from the attributes of

several similar others. The main functions of role models are to illustrate proper behavior and aid the definition of a self-concept. Social roles are associated with expectations about what to do and what not do in this role. Role models (i.e., others with a similar social role) efficiently illustrate the norms, skills, and performance standards associated with that role. Furthermore, they are used to develop a self-concept. Looking at the attributes and characteristics of similar others helps construct and evaluate one or more self-concepts to find out how one wants to be today or in the future (Gibson, 2004).

Gibson (2004) further highlights that the defining process of role modeling is not interaction with the role model. Hence, no direct communication with a role model is necessary. Instead of direct interaction, identification and social comparison are the defining processes for role modeling. Identification here means that individuals feel a connection with role models they perceive to be similar. Social comparison means that an inner drive to evaluate their own beliefs, opinions, and capabilities leads individuals to compare themselves with similar others (Festinger, 1954).

An interesting and relevant aspect of Gibson's (2004) framework is the delineation of role models from behavioral models and mentors that are conceptually different but often confused. Behavioral models facilitate the learning of specific tasks and skills by vicarious observation. Examples of behavioral models in organizational settings include supervisors and trainers. An individual can have a variety of behavioral models with typically short-term interactions. Mentors, on the contrary, are senior people that provide advice and support to juniors. In an organizational setting, mentors help their younger protégés make career-related decisions and deal with career-related issues. An individual usually has just one or two mentors and maintains a long-term relationship with them.

Table 2.3 summarizes the aspects of role models and compares behavioral models and mentors.

Table 2.3.: Comparison of the behavioral model, role model, and mentor constructs adopted from Gibson (2004)

	Behavioral model	Role model	Mentor
Defining process	Observation and learning Based on the capabilities of the target and desire to learn by the individual	Identification and social comparison Based on perceived similarity and desire to increase similarity by the individual	Interaction and involvement Based on an active interest in and action to advance the individual's career
Attributes sought in the target by the individual	Task skills; demonstrated high organizational performance levels	Role expectations; self-concept definition	Career functions; psychosocial functions
Length of interaction between parties	Short-term	Variable	Typically long-term
Flexibility in selection	Little	High; somewhat shaped by context	Moderately high; substantially shaped by context
Potential number	Multiple, depending on availability	Multiple; individual seeks requisite variety	Typically one or two primary
	Usually explicit awareness by both parties	Typically one-way on the part of the observing person	Usually explicit awareness by both parties

The comparison of the concepts proposed by Gibson (2004) with the social influence mechanisms described above reveals the following. Social influence through cohesion and communication corresponds to the related but conceptually different notions of behav-

ioral modeling and mentoring relationships. These describe the explicit developmental relationships of which both involved actors are aware as they require personal interaction. Individuals who seek to learn a specific task might turn to a behavioral model that has previously demonstrated his or her ability to perform that task. People seeking support and advice in challenging career situations might contact a senior mentor if one is available.

Social influence through equivalence and comparison corresponds to the concept of role modeling, which is driven by the wish to learn about role expectations and ongoing search of a self-definition. Role modeling can happen in the form of the active observation of similar others and does not rely on direct communication, knowledge transfer, or intentional advice giving. Rather, by means of a one-way process, individuals adapt and reject the attributes of multiple role models.

Social influence through role modeling and equivalence and comparison is still a form of contagion. The social tie between the focal actor and his or her role model exists in the form of the attention paid by a focal actor to the role model. What flows along the tie is information about the visible attitudes and behaviors of the role model. We now close our treatment of the social influence concepts and describe the status effects in the following section.

2.4. Social status

We begin our review of theories of social status with a general definition: "Status, for organizations as well as individuals, is broadly understood as the position in a social hierarchy that results from accumulated acts of deference" (Sauder et al., 2012). This definition describes status as a positional concept under which the defining structural characteristic

is a hierarchy or rank order. It further mentions deference relations as a determinant of the ranking. Hence, from a social structural or network-analytic perspective, social status is a configuration of deference relations.

For most readers, the notion of status ordering is intuitive, as status orderings are ubiquitous in everyday social life. They develop among children in schoolyards as well as among companies in markets. Social rankings are a particularly relevant phenomenon of social life, as one's position within the ranking can lead to and sometimes reinforce inequality in social and economic outcomes (Azoulay et al., 2014). Accordingly, there are several theories of the concept of social status and a diverse literature on status processes. In this section, we review the theoretical explanations of the determinants of social status and summarize the most important mechanisms and consequences related to an actor's position in the status hierarchy.

2.4.1. Determinants of social status

An essential part of the theories of social status is the explanation of what determines the position of an actor within a status ranking. In the definition quoted at the beginning of this section, deference relationships were mentioned as a source of social status. In deference relationships, one actor expresses his or her respect or admiration for the other or indicates in another way that the other is superior. The position of a focal actor within the overall status ranking is then determined by the number of other actors that defer to the focal actor and by the status of these differing other actors. In Podolny's (2005) words, status flows through deference relationships such that the status that one actor draws from deferential behavior from another actor increases with the status of the other actors. Examples of deference-based status orderings include rankings based on the degree

to which an actor is sought after for advice or how often research articles or patents are cited by other researchers.

Status-conferring acts of deference not only occur between actors of the same type (e.g., individuals and organizations). A classic example is the bestowal of an award (Merton, 1968). Receiving a prestigious prize often dramatically increases the status of an actor, and this is referred to as a positive status shock (Reschke et al., 2017). The status-conferring counterpart of award-based status is usually a committee or association. Examples include the Nobel Prize for academics or the Academy Award in the motion picture industry. At the organizational level, status orderings can also be based on third-party evaluations by arbiters. Arbiters or critics pronounce judgments, which are then noted by audiences and influence their social evaluations. The gain in status from an external public evaluation by a critic, just as in the case of awards, depends on the prestige of the deferring actors. Examples for arbiter-based status include Michelin stars for restaurants and the company ratings published by Moody's and similar agencies (Sauder et al., 2012).

Bothner, Godart, et al. (2009) highlight a dominance-based view on the relational foundations of social status. In contrast to passively received status from highly regarded others, the dominance-centered view emphasizes that in competitive settings, actors actively take status. Examples include the pecking order of street gangs, which is based on winning or losing in one-on-one street-fights, and rankings in sports based on victories or defeats in tournaments or leagues (Bothner, Kim, et al., 2012).

Deference and dominance relationships tend to be asymmetric and hence are naturally linked to the conception of status as relative standing. However, status can also be based on symmetrical relationships or affiliation. This perspective states that the status of an actor is determined by the status of the other actors or entities with which he or she is

affiliated. Classical examples include affiliation to a profession or social group (Blau and Duncan, 1967; Berger et al., 1972).

Another form of status-conferring affiliations that has received much attention in the literature is exchange relationships (Podolny, 1993), which are characterized by a transfer of things of approximately equivalent value between two actors. This can be seen as a mutual act of deference. Podolny (2005) conceptualizes in analogy to deference relations that status "leaks through exchange [...] relations." As a consequence, he theorizes that when two actors engage in a discernible exchange relationship, a forced alienation of status occurs. Hence, the two actors' statuses are mutually dependent. High-status actors that engage in an exchange relationship with low-status actors transfer some of their status to the low-status actor.

This overview of status determinants shows that social status is a positional concept. It describes the position of an actor within a vertical social structure in the form of a hierarchy or ranking. The status hierarchy is a relational concept; it is determined by the structure of the relationships between the actors. Asymmetric deference and dominance relationships as well as symmetrical affiliation and exchange relationships can form the basis of a status hierarchy. We continue our review of status theories by focusing on the mechanisms involving social status and their respective outcomes.

2.4.2. Social status mechanisms

To structure the treatment of status mechanisms, we again use the network theory framework proposed by Borgatti and Halgin (2011) in Table 2.1. First, we can distinguish between status mechanisms by their outcomes. The most prominent status mechanism is the Matthew effect, which is an example of a capitalization mechanism describing how

social status attracts the resources that lead to higher performance and success. Therefore, it is not within the scope of our consideration in this dissertation. However, owing to the importance of this mechanism in the status literature, it cannot remain unmentioned here.

The Matthew effect was first described by Merton (1968), who argues that scientists are rewarded much more for a contribution when they are prominent because they have previously received a prestigious award. Conversely, an equivalent contribution by an unknown researcher achieves comparatively little recognition. This observation is relevant, as prestigious prizes and awards are scarce. The Nobel Prize is awarded only once per year and category, regardless of the number of outstanding scientists. Merton (1968) also cites the example of the French Academy of Sciences, which by definition has only 40 members. The imaginary 41st member is probably similarly qualified to the 40th but will have a much lower social status. Hence, the dynamic of the Matthew effect tends to amplify negligible individual differences (Lynn et al., 2009). Later research has shown that an assumed relation between an actor's status and the quality of his or her products or outcomes can become self-fulfilling. First, high-status individuals are recognized and rewarded more positively than low-status individuals, even if their characteristics or outcomes are equivalent. Second, the higher recognition for high-status individuals leads to more resources being made available to them. Finally, with the superior resources at hand, high-status actors generate higher-quality results (Simcoe and Waguespack, 2011).

In the following, we focus on convergence mechanisms, which explain how similar choices result from the coordinating effect of similar status positions. Here, network ties function as bonds that coordinate the behavior of distant actors with a similar status ranking. The following three status mechanisms belong to a category based on the conception

of status as a means, often in the form of a signal or informational cue for the quality of an actor (Podolny, 2005). This perspective emphasizes the role of status as a form of social evaluation. As such, it forms the basis of the perceptions of individuals or organizations and affects their interactions with external stakeholders and audiences (George et al., 2016).

2.4.3. Courage: status and behavioral tendencies

Phillips and Zuckerman (2001) theorize how an actor's position in a status ranking affects his or her behavioral tendencies in a market setting. In their theoretical model, a group of actors makes competing offers to enter into a relationship with the actors of a second group, the audience. To be selected by the audience, an actor first needs to gain legitimacy by conforming to the criteria the audience uses to derive its consideration set. The audience sorts out illegitimate actors and considers the remaining actors to be "players." Second, those actors considered to be players need to differentiate themselves from the other players, as the audience will compare them and finally choose the one they consider to be the best. From this theoretical model, the authors predict the behavioral tendencies of the offering actors as a consequence of their position in the audience's ranking.

Phillips and Zuckerman (2001) argue that middle-status actors' behavioral tendency is conformity. They choose actions that meet the expectations of the audience to preserve and enhance their legitimacy as players. As middle-status actors are peripheral players, their evaluations of potential courses of action are driven by the threat of becoming non-players. High-status actors' behavioral tendency is differentiation. They enjoy a fixed identity as full-fledged players. Their legitimacy is well beyond doubt by the audience and thus not affected by their actual behavior. High-status actors can undertake actions usually seen by the audience as evidence of illegitimacy. They deviate from conventions to a certain extent

when they see the potential to gain benefits (e.g., to differentiate their offer from those of other players). Finally, low-status actors tend to show deviant behavior. Their identity as mere candidates or observable outsiders is also rather fixed. Having nothing to lose, low-status actors or non-players take bold actions and try to change the rules of the game.

2.4.4. Constraint: status and the choice of market segments

In another important contribution, Podolny (2001) theorizes how the status of producing actors in a competitive market setting influences their choice to participate in specific market segments. He categorizes market segments by two types of uncertainty: altercentric and egocentric. Altercentric uncertainty is the uncertainty faced by consumers or alliance partners about the relative quality of an actor's products or services. Egocentric uncertainty is the type of uncertainty a producer faces about consumer preferences and the best resource allocation to meet them. The concept of egocentric uncertainty corresponds closely to the judgment-based view of entrepreneurship as action under uncertainty.

Podolny's argument builds on his definition of status as "the perceived quality of that producer's products in relation to the perceived quality of that producer's competitors' products" (Podolny, 1993). This understanding of status as a quality signal is based on the assumption of a loose connection between status and actual quality. The status of an actor is determined by his or her exchange relationships with buyers and alliance partners. Network ties serve as informational cues of the underlying quality, which is not observable or too costly to assess. Other market participants use the status as an observable signal to infer the underlying quality.

It follows that the relevance of status increases with the level of altercentric uncertainty in a market segment. High-status producers that operate in market segments with high

altercentric uncertainty gain from tangible advantages (Podolny, 1993). On the one hand, they can charge higher prices for the same level of quality. Consumers are willing to pay more, as the status signal lowers their risk of buying a product with a lower-than-expected quality. On the other hand, high-status actors can produce a product of a given quality at a lower cost. They have, for example, more options and better conditions to obtain financial capital and need less advertising effort to market their products.

Podolny (2001) continues his argument by noting that status does not help reduce egocentric uncertainty. If a producing actor is in doubt about what to offer and whom to employ or partner with to meet consumer preferences, status is not helpful. The central hypothesis is that high-status actors are more likely to sort into market segments that are low in egocentric uncertainty. As there are no gains from status in market segments high in egocentric uncertainty, high-status actors sort away from them (Podolny, 2001).

2.4.5. Contamination: status and the choice of exchange partners

One way to overcome egocentric uncertainty would be to enter into relationships that provide informational advantages. However, this often implies creating network ties with actors with a lower status, which would lead to status contamination and a loss of competitive advantage. Podolny (2001) argues that tie formation involves trading between creating informational advantages and contaminating one's own status and that high-status actors cannot maintain a network position that creates informational advantages to reduce egocentric uncertainty. He refers to this trade with the notion of ties as pipes over which information flows compared with ties as prisms that signal quality (Podolny, 2001).

The argumentation presented so far can be summarized as follows. Actors with a high status are aware of the tangible advantages they have in market competition. To

maintain and exploit these advantages, they tend to avoid market segments in which they are either uncertain about consumer preferences (what to produce) or uncertain about the appropriate mode of sourcing as well as the production of goods and services (how to produce). Further, they tend to avoid entering into exchange relationships with other low-status actors, as this might contaminate their status.

2.4.6. Complacency: status and ambition

The complacency mechanism differs from the ones described above. Here, status is conceptualized as an end in itself. This view is also referred to as status as a good (Bothner, Godart, et al., 2009). The central claim is that individuals have a fundamental desire for status. They thus engage in activities to increase or protect their status as their well-being and self-esteem depend on the amount of deference they receive from others (Anderson et al., 2015). This view predicts that actors choose their actions to attain status. That is why, for example, status-enhancing awards are used as an alternative to monetary incentives to raise employee motivation (Gallus and Frey, 2016) as well as to foster volunteer contributions to public goods (Gallus, 2016). However, the effect can reverse if an actor has achieved a high status. The notion of status as a liability states that instead of becoming motivated, occupants of high-status positions become distracted, satisfied, or even arrogant, which erodes their ambitions and performance (Bothner, Kim, et al., 2012).

Table 2.4 summarizes the status mechanisms leading to convergence in choice behavior. To conclude our treatment of the social status effects, we differentiate the logic of these status convergence mechanisms from social influence by equivalence and comparison. In these two types of mechanisms, the similarity of the structural position plays a central but different role. In the equivalence and comparison mechanism, the similarity in the

structural positions of two actors functions as a pipe. This is a prerequisite for the two actors to observe each other and adopt each other's behavior. A special case would be to view a high-status position as a social role. One can argue that high-status individuals view each other as equivalent and use each other as role models. We do not investigate this special case in this dissertation but instead focus on status convergence. The status convergence mechanisms lead to similar behavior but are not social influence mechanisms in the proper sense of the above definition. Here, the ties act as bonds that coordinate the behavior of the actors—even when they do not know or observe each other. Therefore, status convergence mechanisms explain the similarity in the behavior of two actors by their consistent reactions to a similar position in the status hierarchy.

Table 2.4.: Overview of status convergence mechanisms from the theoretical literature

Effect name	Courage	Constraint	Contamination	Complacency
Outcome	Differentiation by deviance	Choice of market segment	Choice of exchange partner	Level of ambition
Description	A high social status encourages bold decisions and deviant actions as it protects against negative consequences from breaking social norms.	High-status actors choose market segments which are low in egocentric uncertainty and high in altercentric uncertainty as they thereby gain most from their status functioning as a quality signal.	High-status actors are limited in their choice of exchange partners as entering into an exchange relationship with a low status partner leads to a transfer of and loss in status.	High-status actors lower their aspirations as status is an end in itself. Achieving a high status leads to satisfaction and reduces the motivation to face new challenges.
Source	Phillips and Zuckerman (2001)	Podolny (2001)	Podolny (2005) and Podolny (1993)	Bothner, Kim, et al. (2012)

3. State of the Research and Hypotheses

In the previous chapter, we reviewed the theoretical foundations of entrepreneurship, social influence, and the status effects separately. In this chapter, we relate the concepts and consider the social influence and status effects in entrepreneurship. We review the state of the empirical research on the contextual effects, social influence, and status effects in entrepreneurship and develop the research hypotheses.

3.1. Social influence in entrepreneurship

3.1.1. State of the research on social influence in entrepreneurship

The focus of empirical entrepreneurship research has shifted from the individual traits of entrepreneurs to the context in which entrepreneurial behavior occurs (Thornton, 1999). One important contextual factor for later entrepreneurship is the family. Research has shown that actors from socioeconomically privileged families have a higher preference for entrepreneurial working conditions (Halaby, 2003). Children of self-employed parents have a significantly higher tendency to become self-employed (Dunn and Holtz-Eakin, 2000). Self-employed parents are not only potential intermediaries of specific knowledge, they are also used as role models (Sørensen, 2007b).

Another potentially formative context for entrepreneurship is education. It has been shown that the entrepreneurial intentions of students positively depend on the entrepreneurial inclination of their school peers (Falck et al., 2012). The influences of fellow students from university have also been investigated as contextual factors. A higher proportion of entrepreneurial colleagues in a section of the Harvard MBA program leads to a lower entrepreneurship rate. Students within a section with many ex-entrepreneurs learn from them and refrain from founding unsuccessful startups (Lerner and Malmendier, 2013). Another study showed that the entrepreneurial entry of university graduates after leaving university has a positive effect on the probability of an actor's entrepreneurial entry. This is theorized by the social transmission of information and mitigation of the associated uncertainty (Kacperczyk, 2013).

Entrepreneurs are further seen as products of organizations, as they can build confidence in their skills in the context of organizations, build industry knowledge and information about entrepreneurial opportunities, and build social relationships and networks that help mobilize the resources for a new enterprise (Audia and Rider, 2012). An indicator of the importance of the organizational context for entrepreneurship is entrepreneurial spawning. At its core is the observation that entrepreneurial companies generate entrepreneurial companies. The empirical results suggest that entrepreneurial spawning occurs because the employees of such firms learn from their colleagues about how to set up a new venture and are exposed to a network of suppliers and customers open to cooperating with startups. Finally, entrepreneurial companies may attract employees more willing to take the risk of creating a startup (Gompers et al., 2005).

Organizational context effects can also be negative. Employees of large and old companies are less likely to become entrepreneurs, which is interpreted as the negative effect of

bureaucracy on entrepreneurship (Sørensen, 2007a). A similar effect has been observed in the public sector. For example, the already low transition rate to entrepreneurship among public service employees tends to decline further with an increasing length of service, with entrepreneurial activity exceptionally occurring because of frustration (Özcan and Reichstein, 2009). However, an alternative explanation of the low rate of transition to entrepreneurship from large and old companies is that they offer many opportunities for internal ventures. Indeed, large and mature companies have significantly higher intrapreneurship rates. Hence, the process of bureaucratic stultification in such organizations could be less dominant than previously assumed (Kacperczyk, 2012).

A significant factor behind entrepreneurial entry is the workplace influences of colleagues with entrepreneurial experience. Entrepreneurially experienced coworkers create an environment that promotes the transition to entrepreneurship both informatively and normatively. The social influence of colleagues with prior entrepreneurial experience is comparable to the influence of self-employed parents (Nanda and Sørensen, 2010). Likewise, for scientists at universities and academic entrepreneurship, social influence also plays an essential role. In this context, entrepreneurial commitment is not seen by everyone as an appropriate professional practice. Here, role models in the workplace and in professional networks serve the additional purpose of overcoming the tendency to adhere to a professional standard that is partly averse to entrepreneurship (Stuart and Ding, 2006). In the case of norms concerning the desirability of entrepreneurship, there is also evidence for the reverse case. Individuals living in an entrepreneurial neighborhood can derive non-financial benefits from a transition to entrepreneurship, as this behavior is socially desirable and valued in such an environment (Giannetti and Simonov, 2009).

3. State of the Research and Hypotheses

Beyond the contexts already mentioned, the social network of potential entrepreneurs is discussed as an influencing factor by entrepreneurship scholars. The structural position of a potential entrepreneur determines whether or how early he or she recognizes entrepreneurial opportunities and whether he or she succeeds in mobilizing the necessary human and financial resources (Stuart and Sorenson, 2005). In particular, general access to resources via the social network is intensively discussed under the concept of social capital. As social capital is not within the scope of our investigation, we refrain from a further discussion here and refer readers to the reviews by Gedajlovic et al. (2013) and Hoang and Antoncic (2003).

It is thus clear that entrepreneurial entry is driven by many contextual factors. In particular, several empirical studies have found clear evidence of the positive social influence on entrepreneurial entry via peer effects. Further, social proximity to individuals with prior entrepreneurial experience influences the decision to transition to entrepreneurship. There are, however, two aspects that the existing literature has yet been unable to address.

First, the theory of social influence distinguishes two mechanisms: (i) influence through cohesion and communication (direct interaction with others) and (ii) influence by equivalence and comparison (identification with and imitation of similar others). In existing work on social influence and entrepreneurship, to the best of our knowledge, this distinction has never been explicitly modeled or studied. Instead, both mechanisms are used as parallel arguments to derive a combined hypothesis about the extent to which peer effects alter the transition to entrepreneurship. One example is the study by Kacperczyk (2013) of the social transmission of entrepreneurship among university peers. She argues that two distinct mechanisms cause social influence. On the one hand, university peers share information and knowledge, which is consistent with the cohesion and commu-

nication mechanism. On the other hand, entrepreneurial university peers reduce the uncertainty associated with entrepreneurial entry, as they are used as socially proximate referents to infer whether such an entry is an appropriate course of action. This second mechanism is consistent with the equivalence and comparison argument. However, Kacperczyk (2013) uses both arguments to derive one hypothesis, predicting a positive peer effect. A second example is the study by Nanda and Sørensen (2010) of social influence through workplace peers with prior entrepreneurial experience. To derive their social influence hypothesis, they also combine two types of arguments. First, they suppose that through interactions with former entrepreneurs, individuals acquire specific skills, knowledge, and contacts that facilitate entrepreneurial entry. Second, they claim that coworkers with entrepreneurial experience may demystify the transition to entrepreneurship because of their similar social position and may shape their aspirations as role models. Again, these arguments closely correspond to the two contagion mechanisms of cohesion and communication as well as equivalence and comparison.

Second, existing empirical studies have not thus far explicitly modeled social proximity with the help of network analysis methods. Network-theoretical approaches to social influence have mostly been used as a metaphor (with Stuart and Ding, 2006, being an exception). The reason might be a lack of fine-granular data on personal interactions and the resulting social networks. Social proximity has been modeled as working for the same employer (Nanda and Sørensen, 2010), having a common university background (Kacperczyk, 2013), and sharing a registration address in the same neighborhood (Giannetti and Simonov, 2009). The fact that social proximity has been measured at the level of comembership in large groups has prevented a more detailed study of the two underlying contagion mechanisms. Indeed, it has not yet been possible to validate whether a commu-

nication effect and a comparison effect in the transmission of entrepreneurial behavior exist independently or whether they complement or substitute each other.

3.1.2. Cohesion, communication, and entrepreneurial entry

To derive our hypotheses, we revisit the argument from the last section and formulate them using the terminology of network theory. The first mechanism is contagion through cohesion and communication. Cohesion is a form of social proximity defined as the number, length, and strength of ties between actors in a social network. The most restrictive definition of cohesion requires that two actors are socially proximate only if there is a direct tie between them (Leenders, 2002). Contagion occurs through the flow or diffusion of behavioral attributes along the ties of the social network.

In the context of the entrepreneurship literature, this mechanism translates into the following. When an individual has direct and strong social ties to entrepreneurs, it is likely that these parties communicate regularly and trustfully. In this type of conversation, it is common to discuss plans and share insights. The experienced entrepreneur can share information specifically relevant for the creation of a new venture or the launch of a new product or service either in the sense of behavioral modeling (e.g., learning some of the necessary tasks or skills) or in the form of mentoring depending on the relative level of seniority. The experienced entrepreneur can further provide hints to facilitate access to the resources specifically needed for entrepreneurial entry.

The more people with entrepreneurial experience an individual has in his or her social network and the stronger the social ties to these people, the more opportunities there are to acquire entrepreneurship-specific knowledge, skills, and advice and the more likely the individual is to transition to entrepreneurship. However, this positive effect may diminish

when more entrepreneurial knowledge is available. The more sources of entrepreneurship-specific information to which an individual has access, the more redundant information he or she receives. In other words, the different options for knowledge transfer are likely to substitute each other to some degree (cf. Nanda and Sørensen, 2010, p.1118).

Hʏᴘᴏᴛʜᴇsɪs 1 (H1). *Individuals are more likely to transition to entrepreneurship when they have direct and strong social ties to other entrepreneurs. This effect diminishes at higher levels of cohesion (marginally decreasing positive effect of cohesion).*

Before we move onto the next hypothesis, we conceptually delineate social influence through cohesion and communication from social capital in entrepreneurship, as the difference is not trivial. Social capital describes the resources embedded in an actor's social relationships. The concept of social capital is context-independent. If someone has the intention to transition to entrepreneurship, he or she can use his or her social relations to mobilize the required resources. The same social relations can be equally useful to pursue a management career in a large corporation.

It is valid to argue that access to the specific informational resources required for entrepreneurial entry is a form of entrepreneurial social capital. However, this perspective implies that entrepreneurial entry is a form of success. As discussed in subsection 2.2.6, we do not necessarily see entrepreneurial entry as a success outcome. It is only in the further course of the entrepreneurial process that it becomes clear whether entrepreneurial success or failure will occur. Until it is clear whether it will lead to success or not, entrepreneurial entry encouraged by exposure to experienced entrepreneurs fits better into the category of contagion mechanisms.

3.1.3. Equivalence, comparison, and entrepreneurial entry

The second mechanism we examine is contagion through equivalence and comparison. The theoretical argument can be summarized as follows. Equivalence is a form of social proximity defined as the similarity of the structural position in a social network. Equivalent actors in social networks have a similar social role without being directly connected (Marsden and Friedkin, 1993). They observe each other to evaluate and plan their behavior. Observing similar others allows a more accurate evaluation of their own opinions and skills Festinger (1954). The more similar other actors are, the easier it is to empathize with them. It is further easier to model the consequences of the own behavior when observing the consequences of the behavior of similar others. Contagion between equivalent actors happens when an actor imitates a behavior that he or she observed in an equivalent actor to which he or she compared him- or herself. This type of influence does not require direct communication—or even a personal relationship between the two actors. However, it is a prerequisite that one actor can observe the other.

In the context of entrepreneurship, this contagion mechanism is characterized as follows. When individuals evaluate whether they should transition to entrepreneurship, they might have doubts and search for a comparison to aid orientation. They will then observe others they perceive to be similar to them. Survey research has shown that prospective entrepreneurs mainly choose role models that have a similar industrial sector, gender, and nationality (Bosma et al., 2012). The probability of entrepreneurial entry increases with the perceived similarity to other entrepreneurs. In other words, the larger the share of entrepreneurs in the group of people with a similar social role profile, the more likely it is that individuals transition to entrepreneurship.

HYPOTHESIS 2 (H2). *Individuals are more likely to transition to entrepreneurship when entrepreneurship is more prevalent among other individuals with similar roles and specializations (positive effect of equivalence).*

3.1.4. Complementarity of the cohesion and equivalence effects

Nanda and Sørensen (2010) find that social influence through workplace peers with prior entrepreneurial experience and social influence through entrepreneurial family members are substitutes. We also assume that the overall social influence of different groups is substitutable, whereas the influence through communication and through comparison are complements, as they are different processes often observed at the same time. Individuals who have access to relevant entrepreneurial knowledge and information through their professional network *and* who observe the entrepreneurial activity of people with similar role profiles are even more likely to become entrepreneurs. We therefore expect that the cohesion effect and equivalence effect complement each other; in other words, there is a positive interaction effect.

HYPOTHESIS 3 (H3). *The positive effect of the direct and strong social ties to other entrepreneurs is larger when entrepreneurship is more prevalent among other individuals with similar roles and specializations (positive interaction of cohesion and equivalence).*

3.2. Status effects in entrepreneurship

3.2.1. State of the research on the status effects and entrepreneurship

A significant stream of the research on the status effects in entrepreneurship focuses on capitalization mechanisms. The studies show that success in the form of venture survival, access to financing, and so on is at least partially caused by the status of a venture or of the founder-owners. The central intuition is that the quality of a new venture cannot be assessed by potential investors, business partners, and customers based on its reputation, as young companies do not yet have a track record. This information asymmetry is a typical prerequisite for status effects (Milanov, 2015).

External audiences use the observable attributes of founders' previous careers or relationships with other companies to assess the quality of the venture. Studies in this area have shown that the entrepreneurial prominence of a founder's previous employer is transferred to his or her venture. The prominence of an employer is used to indicate the quality of the former employer, assuming that prominent employers are in a position to hire comparatively capable employees. This assumption of the person's performance leads to the assessment that his or her venture has a higher chance of success. It then allows founders who have previously worked for prominent companies to obtain funding, even for innovative ventures (Burton et al., 2002). Furthermore, there is an argument that the industry-specific status of founders is of particular importance (Packalen, 2007). For example, investors base their decision to invest in a biotechnology venture on whether the top management previously had professional affiliations with well-known pharmaceutical companies (Higgins and Gulati, 2006).

3. State of the Research and Hypotheses

The above-described capitalization mechanisms are typically unsuitable for explaining the decision about entrepreneurial entry. All the studies cited thus far consider either entrepreneurs or startups and compare the extent to which their success is related to their status. The decision to pursue entrepreneurial entry is not reflected. The only piece of empirical research we know that explicitly examines a status convergence mechanism is the study by Stuart and Ding (2006). In the context of academic entrepreneurship in the biotechnology industry, they show that the social standing of a scientist, measured by the prestige of both the university in which he or she is employed and the prestige of the university that awarded his or her doctorate, positively correlates with the likelihood of participation in a venture. In an academic context, the potential advantages of acquiring resources are not the only valid explanation for these status effects. High-status scientists enjoy protection from social sanctions. Since entrepreneurial activity was still regarded as an inappropriate professional activity at the beginning of the study period, only the most prominent scientists could disregard this professional norm (Stuart and Ding, 2006).

The brevity of this literature review illustrates that scholars have scarcely examined the impact of individual social status on the decision to pursue entrepreneurial entry. Existing contributions argue that status advantages facilitate resource access and that high-status actors refuse to be deterred by standards that classify entrepreneurship as an improper professional practice. Concerning the various determinants of social status, the existing literature focuses on the affiliation of individuals to organizations and the characteristics of those organizations acting as a quality signal. We are unaware of any empirical research that has investigated the individual-level status derived from the position within the professional network of the respective industry as a potential driver for the

transition to entrepreneurship. Furthermore, no study has thus far investigated the effects of a positive status shock by receiving a prestigious award.

3.2.2. Preliminary considerations on status and entrepreneurial entry

As the literature on status convergence mechanisms in entrepreneurship is scarce, our research is to some degree exploratory. In the following, we present additional arguments on how the status effects influence the transition to entrepreneurship, which reflect the four status convergence mechanisms identified in the review in chapter 2.

High-status individuals tend to avoid entrepreneurial entry, as it is associated with an increase in uncertainty about consumer preferences and about the best resource allocation to meet them. High-status actors enjoy advantages in market competition, as their status is seen as a quality signal. However, these advantages are only useful when an individual knows the consumer preferences, which enables him or her to offer the right product or service. He or she further needs to know an appropriate mode of sourcing and production to create and deliver the new product or service (Podolny, 2001). As uncertainty about consumer preferences and the best resource allocation is usually high in entrepreneurial projects, we expect a negative effect of status on entrepreneurial entry.

For high-status individuals, the transition to entrepreneurship is associated with a risk since it often requires creating ties to low-status actors either on the production or on the consumption side. Collaboration with lower-status partners is expected to lead to status contamination, which is an additional cost that high-status individuals have to bear. The threat of status contamination is a further argument in favor of a negative effect of status on entrepreneurial entry.

Further, high-status individuals might not transition to entrepreneurship because of complacency. To the degree that status is a good and hence a live goal in itself, the achievement of that goal can erode ambition (Bothner, Kim, et al., 2012). High-status individuals can be satisfied with their current situation and hence lack the motivation required for entrepreneurial entry. The complacency effect is thus a third argument to expect a negative effect of status on entrepreneurial entry.

Finally, individuals with a very high or a very low status and thus fixed identities as players or non-players in the sense of Phillips and Zuckerman (2001) do not have to fear the possible disadvantages of unsuccessful entrepreneurial entry. We expect a positive effect on entrepreneurial entry for those individuals. For actors with a very high status, this argument contradicts the predictions of the above-described relationships, as it is the only one predicting a positive relationship between status and entrepreneurial entry. However, it is also the only one underpinned by empirical evidence in the context of entrepreneurship, as provided by the study of Stuart and Ding (2006). As we described above, these authors find that high-status life scientists transition to entrepreneurship by disregarding a professional norm in academia that once regarded entrepreneurship as an inappropriate professional activity.

The effect of social status on individual entrepreneurial entry can be negative or positive. The direction of the total effect thus depends on the relative strength of the different underlying effects. In the following, we investigate two forms of social status that differ in their determinants: status achieved through an award and status achieved through a central position in the social network. We discuss the possible differences between award-based status and network-based status with respect to the relative importance of the four identified status convergence mechanisms and derive a hypothesis.

3.2.3. Award-based status and entrepreneurial entry

We define award-based status by referring to the classification presented by Frey and Gallus (2017). Award-based status is a very high social ranking achieved through receiving a prestigious, symbolic, and discretionary award. An award is prestigious if it is rarely conferred and the awarding organization itself is honorable. A symbolic award is an award without significant material compensation (e.g., no or negligible prize money). The bestowal of such a prize typically takes place in a public ceremony and the results are usually discussed in the media. The winner receives a certificate or a medal to be able to display his or her award to others later. Thus, the awarding process is specifically designed to increase the status of the winner. As the status of a person who receives an award often increases abruptly, researchers speak of a positive status shock in this context (Reschke et al., 2017). Discretionary prizes primarily function as a reward for exceptional behavior in the eyes of the giver (Heinich, 2009). They are not based on any observable quantitative criteria and fixed rules. It follows that the award of a discretionary prize is not legally contestable. Awards givers can organize the selection process of the winners according to their preference. Prizes are often awarded in two stages: (i) a shortlist of several candidates is proposed and (ii) one or more winners are selected from the nominees. Depending on how prestigious the prize is, even a nomination without subsequently being selected as the winner can significantly enhance the status of a person.

Award-based status is not determined by the winner's social network of exchange relationships, which may reduce the risk of status contamination by working with low-status actors during entrepreneurial entry. Further, it is likely that a winner will consider the uncertainty of demand for products or services created by him or her to be lower. He

or she might anticipate that potential customers tend to evaluate the market offerings of award winners positively (Kovacs and Sharkey, 2014). The higher the subjectively expected demand for a new product or service, the more attractive is entrepreneurial entry (Shane and Venkataraman, 2000).

A prestigious award is likely to provide the winner with a fixed identity as a relevant player for demand-side and supply-side audiences. Award winners do not have to fear negative social evaluations when they make unexpected decisions. This degree of independence is likely to encourage entrepreneurial entry. Among other things, this mechanism can reduce the fear of negative social consequences in the case of entrepreneurial failure. Such a level of security requires a very high social ranking. Middle-status individuals that do not yet have stable membership in the group of highly respected market players can be blamed for a serious mistake.

Finally, the potential complacency effect of award winners could make their entrepreneurial entry less likely. Why should someone who has reached such a high distinction take the trouble to transition to entrepreneurship? We assume, however, that the erosion of ambition for a winner of a prestigious award is not too strong and that the overall effect of award-based social status is a positive predictor of the transition to entrepreneurship.

HYPOTHESIS 4 (H4). *Individuals are more likely to transition to entrepreneurship after they have publicly received a prestigious award (positive effect of award-based status).*

3.2.4. Network-derived status and the transition to entrepreneurship

Network-based status describes the social ranking an individual obtains through his or her position in a social network. It is derived from the network ties the actor has with other

(important) actors. The more relations an actor has with other actors and the more prominent these other actors, the higher is his or her social ranking. The connections within a professional network are created through joint work and therefore reflect professional exchange relationships. For external audiences, these professional relationships are a signal of the quality of an actor and his or her work. This argument was summarized by Podolny (2001) as "status leaking through relations." Business partners are likely to use professional network relationships to evaluate the quality of a potential founder.

Network-based status produces a more comprehensive and differentiated status ranking than award-based status. For example, an actor can have a medium network-based status if he or she has predominantly cooperated with lower-ranking colleagues but has cooperated with higher-ranking actors once or twice. In other words, the network-based status hierarchy also serves to distinguish and classify low- and middle-ranking individuals. Further, network-derived status is built over time, meaning that changes to it usually occur in smaller steps than the status shock caused by an award.

As exchange relationships determine the level of network-based status, we expect the contamination and constraint mechanisms to be predominant. The advantages of network-derived status can be maintained by continuing the collaboration with the same set of suppliers and customers or with partners of an even higher status. If entrepreneurial entry requires cooperation with low-status partners, the actor risks losing his or her status advantage by contamination. For example, if an entrepreneurial project requires cooperating with a team of unknown people, other business partners might no longer regard him or her as a high-profile businessperson. Further, we expect the decline in demand uncertainty due to network-based status to be significantly lower than the decline due to award-based status. Hence, actors with high network-derived status would lose their

advantageous market position through entrepreneurial entry. It is unlikely that a person with high network-based status would feel such a strong sense of security that they would then be encouraged to transition to entrepreneurship.

We also do not expect a clear complacency effect associated with network-derived status. However, the strength of a possible complacency effect should not be decisive in this case. Since we assume a predominantly adverse effect through contamination and constraint, we also expect an overall negative effect of network-based status on individual entrepreneurial entry.

HYPOTHESIS 5 (H5). *Individuals are less likely to transition to entrepreneurship when their centrality in the professional network is high (negative effect of network-based status).*

We add here that network centrality can also be seen as a form of social capital and hence an enabler for entrepreneurial success. Individuals that occupy central positions in professional networks might have tangible advantages in the implementation of entrepreneurial projects (e.g., access to information and resources). Actors with a central network position receive more information and thus they can recognize entrepreneurial opportunities earlier than others. At the same time, their central position provides them with a greater communication capacity, which they can use to promote an entrepreneurial project within the industry (Ferriani et al., 2009). Again, these arguments are suitable to explain why some entrepreneurs are more successful than others, but not why some and not others become entrepreneurs. As we stated before, social capital is also helpful for being promoted to a management position as well as achieving other career outcomes. It is therefore unsuitable for explaining why some individuals pursue entrepreneurial entry.

4. Empirical Context: The Comic Book Industry

Empirical research on social influence and status convergence in entrepreneurship requires a proper and well-understood context. For our analysis, we chose the US comic book industry as the empirical context, as it allows us to observe the careers of individuals over time, transitions to entrepreneurship, and evolving professional networks and changing status rankings. In this section, we present background information on the US comic book industry.

4.1. Historical background

The comic book industry developed during the 1930s after the comic book was established as a product. Illustrated narratives had existed long before the invention of the comic book, however. Since the end of the 19th century, newspapers had printed amusing comic strips to attract readers. In the 1930s, the comic book—a book mainly or exclusively containing illustrated stories—was established as a product in its own right. The following years saw the rise of many new comic book publishers from one publisher in 1934 to more than 50 in 1939 (Gabilliet, 2010).

The further development of the US comic book industry was driven by the invention of the superhero genre, which is associated with DC Comics, the oldest continuous publisher of comic books. The company was established in 1934 as National Allied Publications. In 1937, it published the first issue of the series Detective Comics. The abbreviation for the name of this comic series is still the company name. The archetypal superhero character is Superman, who first appeared in 1938 in the first issue of the then newly launched DC title Action Comics and became an enormous economic success. He has typical attributes such as superpowers, a mission to aid the helpless, a costume, and a secret identity. Many other DC superhero characters and stories followed. For example, Batman first appeared in 1939. DC continues to own these and most of the other important superhero characters of American pop culture (Booker, 2010).

The second major comic book publisher, Marvel Comics, grew large by publishing variations of the superhero genre combined with novel methods of comic book creation. Inspired by the success of DC's Superman and Batman, the predecessor of Marvel Comics called Timely Comics was founded in 1939. The company's best-known characters include Spiderman, the Incredible Hulk, and the X-Men. Marvel characters are known for their comparatively complex emotional and psychological characteristics and imperfections. Marvel's superheroes are more ambivalent and often conflict with other characters. In the early 1960s, Marvel also introduced an innovation in production, the "Marvel Method." Since, until that point, superstar-author and editor Stan Lee had written most of Marvel's titles, he began to collaborate closely with his artists to speed up production. Lee gave the artist a rough description of the plot, and the artist was then responsible for transforming this plot into a visual story. Lee then wrote and inserted the dialogues. This method was a success because he worked alongside talented artists such as Jack Kirby (Booker, 2010).

The big two publishers, Marvel Comics and DC Comics, have dominated the comic book industry since the 1960s with their business models focused on the exploitation of intellectual property related to famous characters. Today, both major publishers are owned by large media corporations. Since the 1970s, DC Comics has been owned by the media group Time Warner, while Marvel was acquired by the Walt Disney Company in 2009. They work with a variety of imprints and publish a wide range of comic books and graphic novels. The characters and stories initially appear in printed comic books but are later licensed and generate further income from merchandising. These large publishers often create more than twice as much revenue from the licensing and merchandising business as from the net sales of comic books (Rhoades, 2008).

An essential event in the history of the US comic book industry was the founding of Image Comics in 1992. After a dispute over the rights of creators, seven top-class artists left Marvel and founded their own publishing house. From the beginning, they decided that Image Comics would solely work under a creator-owned arrangement. This event not only led to a slump in sales at Marvel, but also established the creator ownership arrangement in the industry that until then had been a rare exception offered mainly by small independent labels or even requiring self-publishing by creators. Today, several other publishers offer creator-owned arrangements to writers and artists. Prominent examples are Dark Horse, Fantagraphics, and Eclipse Comics. The ownership strategies of Marvel and DC still focus on work-for-hire arrangements and the ownership of the intellectual property rights to thousands of characters. Nevertheless, Marvel and DC have now begun to offer creator-owned publishing in some specialized imprints to selected artists.

4.2. Intellectual property and ownership arrangements

The business of the comic book industry is the creation and exploitation of intellectual property related to characters. Some characters have the potential to attract and retain a large number of fans, which leads to enormous economic potential. A character has distinct attributes such as his or her appearance, costume, skills, and superpowers as well as a background story that explains his or her origin and mission. The mere idea for a character cannot be protected. Intellectual property rights to characters and stories arise once they are printed and published. Hence, the idea must be expressed through one or more stories on the character in a comic book. After the publication of the comic book, the character is protected by copyright and sometimes also as a trademark (Rhoades, 2008).

The intellectual property rights to a character include the right to use it for new stories in comic books, movies, and television shows as well as the right to sell related merchandise items such as toys and computer games. As noted earlier, the ownership of intellectual property rights in the comic book industry occurs under two arrangements: publisher ownership and creator ownership. Publisher ownership means that the publisher acquires the intellectual property rights to the characters and stories in one of two ways: either it purchases the rights from the creators after they have completed the work or it hires the creators and commissions them to create the work. Under this work-for-hire arrangement, the publisher immediately and directly owns the fruits of the creative work. Under creator ownership, by contrast, the authors hold all the intellectual property rights to his or her original work. Within this arrangement, the publisher is responsible for printing and marketing the comic books but only holds the rights to its company name and logo (Rhoades, 2008).

4.3. Comic book production and creators

The production process of a comic book is typically divided into five consecutive creative tasks: writing, penciling, inking, lettering, and coloring. Performing these five creative tasks requires different talents and skills. Accordingly, the tasks are often carried out by different people that collaborate as a creative team. Typically, each team member takes on one of the functional team roles: writer, artist, inker, letterer, or colorist. In many cases, the creative team is assigned by an editor who oversees the production of the comic book and provides guidelines for the development of the storyline (Rhoades, 2008).

The writer and the artist are the central figures in the process of creating a comic book. In some cases, an editor instructs them or influences the development of the plot as well as the visual design. In the first step, the writer develops a broad outline of events and character interactions. In this step, the writer often works closely with the artist and editor. Later, the writer also formulates all the dialogue and captions. Sometimes, two people share the writer's tasks. A plotter develops the basics of the story and a scripter writes the texts that appear in the final product. Then, the artist translates the story from text form into a visual representation. He or she creates the layout and draws the scenes and events of the story with a pencil. That is why the artist's role is also named the penciller (Griffh, 1998).

The next steps serve to develop the writer's and artist's preparatory work into a finished comic book. An inker embellishes the penciled art with black ink and adds shadings. This step has a significant influence on the look and mood of the result. Some inkers use a paintbrush, whereas others use a mechanical pen. In the penultimate step, the letterer inserts the lettering for all dialogue, captions, and sounds using computer software.

Finally, the colorist colors the pages of the comic book, which again influences the look of the overall result markedly. This step is also often carried out with the aid of a computer. In large productions, the cover of a comic book is drawn by a separate cover artist or a specialized art team consisting of a cover artist, cover inker, and cover colorist. Specialized studios offer services for the creation of cover art (Griffh, 1998).

Throughout their careers, comic book creators work in alternating project teams and occupy different roles within those teams. However, while comic books are almost always the result of the work of a creative team, in a few exceptional cases, a single person creates a book alone. This form of production can be found in underground and alternative productions but not in large-scale production (Gabilliet, 2010).

As in most cultural goods, comic genres have emerged, and these shape the production and marketing of comic books as well as the expectations of customers. A genre is a product category that groups comic books similar in style. Examples include superhero, science fiction, fantasy, comedy, and western. Genres play a vital role in creating comic books. Established genres provide specific rules and conventions that individual artists or the creative team can follow. Artists often operate in a small set of genres, since a change of genre requires an artist to learn and apply new skills (Taylor and Greve, 2006). Accordingly, artists who specialize in the same genres are both competitors and sources of inspiration. Furthermore, a genre also represents the audience's expectations of the narrative structure or other elements of the story. The positioning of a new series within or between different genres is a significant decision of an artist or editor that can affect artistic and economic success.

Creative and financial career opportunities for creators in the comic book industry are related to their talent, experience, and popularity, primarily when working with major

publishers. Young and unknown artists apply to publishers and editors and are hired for short-term freelance work. They often start in supporting team roles. If young creators want to realize their creative ideas, they have to pitch projects to publishers or self-publish comics in the hope of raising the awareness of potential employers and fans. More experienced artists receive long-term contracts with better conditions from publishers. These creators can become the writer or artist of well-known comic series and characters. Very popular authors and artists have bargaining power, as several publishers make bids to hire them for projects. Their participation in a project and the appearance of their name on the cover have the potential to raise the success of a product. Some artists pursue careers by occupying management roles in publishers. As editors, they are responsible for the coordination of creative teams as well as the new and further development of characters and comic book series. The highest level is the chief editor or executive editor. This position oversees the work of all the other editors and thus the publisher's product portfolio (Rhoades, 2008).

4.4. Fans and awards

Comic books reach their readers in three ways. In the so-called direct market, readers buy comic books in specialized comic book shops supplied by distributors, primarily the company Diamond. Comic books are also sold in bookstores, supermarkets, and drugstores. A small proportion are sent directly to subscribers (Rhoades, 2008).

The comic book industry serves as a unique data source for empirical research because comic books are not only read but also collected and sometimes even used for speculation. Dedicated products are available for collectors and speculators. They range from special

bags, boxes, and acid-free backing boards for storing comic books to magazines and price tables. To manage large collections, dedicated software products and databases document many of the details of comic books including the creative teams behind them, publishers, and further aspects of the industry.

As many creative industries, the comic book industry has a system of distinction to reward creative achievement. Several prizes and awards exist. The most prestigious are the prizes awarded by industry peers. Apart from smaller predecessors in the 1970s and 1980s, the most significant prizes are the Will Eisner Comic Industry Awards (Eisner Awards) and the Harvey Awards. These two prizes are similar and differ only in the group of voters, which includes comic industry professionals at the Eisner Awards and is limited to comic book creators at the Harvey Awards. Below, we explain how the winners of the Eisner Awards are selected and how the prizes are awarded.

The Eisner Awards are given yearly and are seen as the comic book industry's equivalent of the Academy Awards in the movie industry. They are given out in several categories that cover works (e.g., Best Single Issue) and creators (e.g., Best Writer). Every January, publishers and creators are invited to submit works for consideration. All proposed works must have been distributed in the United States in the previous year. A blue-ribbon panel selects five or six nominees in each category. The panel represents various roles and players in the comic book industry. It usually consists of a creator, a critic, a librarian, a retailer, a scholar, and a member of the organizing committee. A subsequent online ballot among members of the comic book industry, including comic book professional journalists, comic shop owners, distributors, historians, and educators, determines the winners in each category.

The awards ceremony is held in a ballroom at Comic-Con International in San Diego. This meeting is the largest of the numerous comics congresses and festivals organized by the active comics fan scene where they discuss the characters and stories with each other and with the respective creators. Comic-Con International regularly attracts more than 100,000 visitors. During the Eisner Award ceremony, well-known comic creators and comic-related celebrities announce the nominees on stage and hand out the trophies to the winners. The works of the nominees and winners are prominently displayed during the ceremony as well as at the convention.

5. Data and Method

Our empirical approach is based on an established methodological framework called event history analysis. This methodological framework has been used in a variety of research areas, whenever the goal is to model how the explanatory factors of interest influence the occurrence and timing of an event (Singer and Willett, 2003; Box-Steffensmeier and Jones, 2004). It is thus a standard methodology in empirical entrepreneurship research and has been used by several studies examining the factors that encourage or deter transition to entrepreneurship (cf. Stuart and Ding, 2006; Sørensen, 2007a; Özcan and Reichstein, 2009; Kacperczyk, 2013). To perform an event history analysis in our empirical context, we compiled data on the careers of individual comic book creators, their exposure to other entrepreneurs, their social status, and other control variables. In this chapter, we document how we constructed our sample from the selection of raw data sources to the data preparation and operationalization of the key concepts. We further describe the properties of the data set using summary statistics and explain the model specification.

5.1. Raw data sources and data preparation

5.1.1. Raw data sources

The first step in the construction of our sample was to choose one of the available comic book databases as the primary data source. We considered the three largest available comic book databases as potential primary data sources: the *Grand Comics Database*[1], the *ComicBookDB.com*[2], and ComicBase[3]. We chose ComicBase as the primary data source since it is the only option that provides information on copyright holders. This information is essential, as it allows us to detect creator ownership and hence the outcome of interest for this investigation. ComicBase is a commercial database and software for comic book collectors offered by Human Computing based in San Jose. We used ComicBase version 18 published in February 2015. This provides information on over 600,000 comic book products ranging from 1880 to early 2015. Taylor and Greve (2006) use an earlier version of ComicBase in their study of the effects of knowledge and experience on individual and team innovations.

We further collected data on the nominees and winners of the Eisner Awards, as this information is not available in the ComicBase database. The first additional data source was the *Comic Book Awards Almanac* website[4], which lists all the nominees and winners from 1988 to 2007. The second source was the press releases listing Eisner Award nominees and winners for 2008 to 2014 taken from the *Comic Book Resources* website[5].

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[1] www.comics.org.

[2] www.comicbookdb.com.

[3] www.comicbase.com.

[4] www.hahnlibrary.net/comics/awards.

[5] www.comicbookresources.com.

5.1.2. Data preparation

The first major task in the data preparation stage was to drop irrelevant or misleading entries taken from the raw ComicBase data. We first dropped data beyond the regional scope of this research project and only kept data on comic books published in the US market and with a cover price in US dollars. We further dropped data on books published before 1936, as the modern comic book industry emerged in the second half of the 1930s. We also had to drop some low-quality entries with too many missing data fields (e.g., where no information on the year of publication was available). We further dropped all books that did not contain original work. We only kept first printings and dropped all trade paperbacks, collections, annuals, and yearbooks. Further, we excluded entries that reflected different versions of the same comic book into a single entry. This step was necessary, as it is common practice in the comic industry to publish the same comic with several cover variations.

The second major task was to deduplicate the creator names. The raw data do not contain unique identifiers for comic book creators but merely the names of the creators as text strings for each functional role. For every comic book, ComicBase lists the members of the creative teams in a separate field for each comic book and team role (writer, artist, inker, colorist, letterer, cover artist, cover inker, and editor). Hence, it does not distinguish between name components (first names, last names, or suffixes). Whenever more than one team member holds the same team role, the respective field contains all those names separated by commas. This data format is prone to duplicates, which can arise when two or more spellings refer to the same creator because of, for example typos or a different order of name components. To deduplicate the names, we applied the three-step method

developed by scholars studying patent data facing the same challenge (Raffo and Lhuillery, 2009). In the first or parsing step, we split the comma-separated strings, removed excess whitespaces, translated all the characters into lower case, and removed accents and other special symbols. In the second or matching step, we generated a list of potential matches using approximate string matching. We treated any pair of names as a potential match when its string distance was below a threshold. String distance is a metric that quantifies the similarity of two text strings. We treated all names with a 2-gram cosine distance below 0.3 as potential matches. For a discussion on and the derivation of sting distance metrics, see Loo (2014). In the last or filtering step, we first obtained complementary information on the periods in which the potential matches were active. Our first criterion was that the creator names of potential matches appear in overlapping or consecutive time periods. Among those potential matches from overlapping or consecutive time periods, we applied three criteria. We treated two names as matches if their Jaro string similarity is greater than 95%, if they only differ in the order of first, middle, and last names, or if they only differ in the position or number of whitespaces. Table 5.1 shows examples of the duplicates we detected and resolved as one of the three criteria was met. The result of our data preparation efforts was a preliminary data set listing 149,768 original comic books created by 38,640 creators published between 1936 and 2014.

Table 5.1.: Examples of identified and resolved creator name duplicates

Name	Duplicate	Jaro	Whitespace	Order
melanie j morgan	melanie morgan	95.83		
melanie j morgan	j morgan melanie	59.72		x
noelle giddings	noell giddings	97.78		
noelle giddings	noelle c giddings	96.08		
noelle giddings	noel giddings	95.56		
rafael aura leon	rafael auraleon	97.92		
rafael aura leon	rafael leon aura	91.67		x
sam de la rosa	sam de larosa	97.62		
sam de la rosa	sam delarosa	95.24		
sam de la rosa	sam dela rosa	93.77	x	
sam de la rosa	samde larosa	91.07	x	

5.2. Operationalization of entrepreneurial entry, social influence, and status effects

5.2.1. Dependent variable: transition to entrepreneurship

We operationalized entrepreneurial entry as an indicator variable that captures whether a creator for the first time in his or her career published a creator-owned comic book in the US market in the given year. Publishing a creator-owned book requires creating a novel comic book based on original characters and stories and retaining the intellectual property rights. The production of a new creator-owned book also requires the investment of resources in one's own creative work. The creator-owner bears the risk of a commercial flop and can in turn fully appropriate the commercial upside potential of a hit. The operationalization of transition to entrepreneurship requires that the same person has worked in the same industry before as an employee or freelancer under a work-for-hire arrangement. In contrast to other empirical entrepreneurship studies, this operational-

ization of entrepreneurial entry does not rely on the creation of a company or any other type of legal entity. We saw in the previous chapter that large publishers offer contracts that allow creators to retain the copyright ownership of their original work. Our operationalization of transition to entrepreneurship is thus consistent with the characteristics of entrepreneurship discussed in chapter 2, as it involves innovation and the investment of resources under uncertainty.

To determine whether a person is a creator-owner of a comic book in our data, we compared information from the copyright notice, the creator's names, his or her functional team roles, and the publisher name according to the following four rules. First, the copyright notice mentions the name of the creator as the copyright holder. Second, the copyright notice states that the copyright is held by the "respective creators" and the creator is the writer or artist. Third, the publisher is known to publish solely under a creator-owned copyright arrangement (e.g., Image Comics) and the creator is the writer or artist. Fourth, the creator name is listed as the writer or artist as well as the publisher, which indicates self-publishing.

5.2.2. Operationalization of social influence

To operationalize social influence, we adapted the network exposure model (Valente, 2005). Together with the network autocorrelation model (cf. Sewell, 2017) and the network effects model (Marsden and Friedkin, 1993, cf.), network exposure is an established operationalization of social influence. We used network exposure for both social influence measures, namely cohesion and equivalence. Network exposure measures the extent to which a focal individual is exposed to a behavioral attribute of the others in a network. Such exposure

is presumed to influence the focal individual's probability and timing of adopting that behavior. The formula for network exposure is

$$E_i = \frac{\sum_{j=1} w_{ij} y_j}{\sum_{j=1} w_{ij}},$$

where E_i represents the proportion of actors in actor i's network that adopted a behavior. w represents an $N \times N$ weighted adjacency matrix. The elements of the weight matrix w_{ij} represent the social proximity of actor i and actor j. The weights w_{ij} are zero if no social relationship exists between the two actors. y is a vector representing the behavioral attribute of interest. The elements y_j indicate whether or to what degree actor j shows the behavior of interest (Valente, 2005).

Network exposure is a flexible modeling framework that can be used to model several forms of social influence by adapting the weight matrix (Leenders, 2002). We used the same behavioral attribute vector for both social influence measures. The only difference between the two dimensions was the construction of the weight matrix. We calculated the behavioral attribute y_j as the yearly updated creator ownership ratio of the respective creator j. The creator ownership ratio measures the intensity of the entrepreneurial activity of a creator in his or her prior career. Hence, this is the share of creator-owned comic books in all the comic books ever published by a creator. The attribute varies between zero and one. Zero indicates that creator j never published a creator-owned comic book before and one indicates that all comic books published by the respective creator were creator-owned. We describe the construction of the two network weight matrices for cohesion and exposure next.

5.2.3. Cohesion

We constructed the cohesion measures to reflect the degree to which each individual is exposed to the entrepreneurial experience of others based on comembership of the same creative teams. People working in the same team usually develop cohesive social relationships. They not only communicate regularly but also collaborate toward the same goal. The members of a team are also likely to discuss practices and share insights and experiences from their prior careers. We argue that the professional network of former teammates thus represents an important reference group for an actor.

The cohesion measure was calculated as affiliation exposure, a variant of network exposure for two-mode networks (Fujimoto et al., 2011). The weight matrix was constructed as follows. First, we constructed an affiliation network with two types of nodes: creators and teams (comic books). The links in the affiliation network indicate the membership of creators in teams. The result was an $N \times K$ affiliation matrix A. The elements of the matrix were equal to one if the respective creator was a member of the team depicted in the respective column and zero otherwise.

This two-mode matrix was projected to a one-mode creator-by-creator weight matrix by multiplying the two-mode affiliation matrix by its transpose ($W = AA'$). The elements of the resulting weight matrix indicated how often each pair of creators had collaborated in the same team to create a comic book. The diagonal of the resulting weight matrix was set to zero. The elements of the diagonal of a projected affiliation matrix were equal to the total number of teams a creator had worked with in his or her career. We used the project count as a separate control variable in our models.

Finally, we employed the resulting weight matrix and creator ownership ratio vector to calculate the cohesion measure according to the general formula described above. We repeated this calculation for every year, which led to a time-changing measure of exposure to entrepreneurial teammates weighted by the relative frequency of collaboration and the creator ownership ratios of the other teammates. The measure ranged between zero and one, with one indicating that all teammates produced exclusively creator-owned work before and zero indicating that none of the prior teammates had ever performed creator-owned work before.

5.2.4. Assigned cohesion

Assigned cohesion measures the degree to which each individual is exposed to the entrepreneurial experience of others based on the comembership in editor-led and assigned creative teams. It is an alternative measure of the exposure of individuals to entrepreneurially experienced others. The calculation of this measure aimed to mitigate possible self-selection effects that can occur when creators with a strong tendency to start an entrepreneurial project purposefully seek to create ties with other creator-owners.

We took advantage of the fact that comic book projects vary in terms of the involvement of an editor. If a project was accomplished without an editor, the team formation is a rather free and self-organizing process that may lead to self-selection. If, however, a project is led by an editor, he or she is responsible for assigning the creative team. As the lead of the project, the editor selects team members based on the criteria he or she believes are associated with creative and economic success. We assume that the assignment of the creative team reduces the likelihood of self-selection.

We calculated the measure for assigned cohesion in the same way as the cohesion measure described above. The only difference was that we derived the professional network exclusively based on those collaborative relationships that originated in an editor-led and assigned team.

5.2.5. Equivalence

Our measurement of equivalence focused on the professional profile in terms of the functional roles that a creator has performed in his or her previous career in combination with his or her fields of specialization. We assume that actors use other actors with a similar professional profile as a frame of reference, as they can draw more accurate conclusions from the comparison with this reference group. For example, a specialist in online marketing who wants to start an entrepreneurial project will find orientation in comparison with other marketing people and their entrepreneurial activities. On the contrary, a comparison with the entrepreneurial behavior of software engineers is less informative for such an actor.

Our equivalence measure was calculated as yearly updated network exposure, indicating the degree of entrepreneurial activity among equivalent others. As the basis for the construction of the weight matrix, we used the role genre profiles of the creators expressed as vectors. The elements of the vectors were counts reflecting how often the creators had performed a specific team role during the creation of a book of a specific genre (e.g., a creator was six times the writer of superhero comics or 10 times the inker of a manga. ComicBase distinguishes 22 genres and nine team roles, which leads to $K = 198$ role–genre combinations.

The weight matrix indicated the similarity of the role genre profiles of the creators, while each weight was calculated as the cosine similarity of the role genre profile vectors of the respective pair of creators. The cosine similarity measures the angle between the two count vectors and varies between zero and one.

In the last step, we multiplied the resulting weight matrix by the creator ownership ratio vector to calculate the equivalence measure. We again repeated this calculation for every year, which led to a time-changing measure of exposure to role genre equivalent others weighted by the similarity of their role genre profiles and the respective creator ownership ratios. The measure theoretically ranged between zero and one; however, a value of one was unlikely. The higher the equivalence value, the more other creators not only share a similar team role and genre profile but also have prior entrepreneurial experience as creator-owners.

5.2.6. Operationalization of social status

In this study, we differentiated between two types of status according to their determinants. Hence, we operationalized status in two ways. We created several measurements for award-based status using the lists of nominated artists and winners of the Eisner Awards. As the measure for the relationship-based status of individuals, we calculated the centrality of individuals in the professional network of industry peers. In the following, we describe how we defined and calculated the status measures.

5.2.7. Award

Award is an annually updated dummy variable that indicates whether an artist has ever been nominated for an Eisner Award without taking into account whether he or she won

the prize later. The variable reflects the increase in the status of an artist when he or she has been involved in the awards ceremony at least once.

5.2.8. Winner

The variable winner is an annually updated dummy variable coded as one if a creator has won at least one Eisner Award and zero otherwise. The variable makes it possible to measure whether the potentially greater status gain from winning a prize also has a greater effect on the probability of starting an entrepreneurial project.

5.2.9. Nominee

Nominee is an annually updated dummy variable indicating whether an artist has been nominated for an Eisner Award at least once but has not yet won an Eisner Award.

5.2.10. Award count

We defined the variable award count as the yearly updated cumulative number of nominations a creator has received in his or her career. Again, this measure does not distinguish between the number of nominations and number of prizes won. It rather reflects the increase in status that may be achieved by each additional nomination for a prize.

5.2.11. Winner count

The variable winner count reflects the annually updated cumulative number of Eisner Awards received by a creator. With this variable, we can measure if the added status gain from receiving multiple prizes affects a creator's possible transition to entrepreneurship.

5.2.12. Nominee count

The variable nominee count reflects the annually updated cumulative number of nominations received by an artist without winning the award.

5.2.13. Centrality

We computed a time-changing variable based on the eigenvector centrality of each creator within his or her professional network in the comic book industry as an alternative measure of status (Bonacich, 1987). The logic of eigenvector centrality is that the centrality of an individual is a function of the centralities of the teams to which he or she belongs. The centralities of teams are a function of the centralities of their members and so on (Bonacich, 1991; Borgatti and Everett, 1997). An actor's eigenvector centrality in a network is high when he or she has collaborated with other actors that themselves collaborated with many other actors. The use of the eigenvector centrality measure is consistent with the notion that status leaks through relations (Podolny, 2005).

Our use of this measure relied on two assumptions. First, the collaboration in a creative team is a mutual act of dereference by team members. Second, the amount of deference that an actor receives by collaborating increases with the centrality of the creative team, which in turn increases with the centralities of the other team members. For every year in our observation period, we constructed the industry network, consisting of all the collaborations that each creator had made since he or she became active in the industry. We then calculated eigenvector centrality using the function *eigen_centrality* from the R-package *igraph* in version 1.1.2 for all creators in the large component of the industry network. In the last step, we scaled the values to the unit interval $(0 - 1)$ and applied a

power transformation ($centrality = eigenvectorcentrality^{0.33}$) to reduce the skewness of the untransformed values.

5.3. Definitions of the control variables

Following prior research, we constructed and included the following set of variables to control for creator heterogeneity, which might be related to our explanatory variables, as well as for other characteristics related to individual rates of entrepreneurship.

5.3.1. Tenure

We constructed the variable tenure, dating from the first year in which a creator was recorded as having worked in the comic book industry (i.e., first appearance in the data set). Prior research has shown a negative influence of tenure on job mobility, including entrepreneurship (Haveman and Cohen, 1994; Özcan and Reichstein, 2009, e.g.)

5.3.2. Project count

The variable project count was defined as the annually updated total number of comic books to which a creator had contributed during his or her career. This reflects the creator's general level of work experience. The variable can further be interpreted as the number of teams to which an individual has belonged during his or her career.

5.3.3. Publisher count

Based on the publisher and imprint names of the comic books of a creator, we tracked the number of employer changes of each creator in the data set over time. The variable publisher count captures the breadth of offers received by a creator from publishing

companies. A change of employer can also indicate that the publisher was dissatisfied with the quality of the creator's work. Frequent changes, however, are a signal of the high quality of the work, as it shows that a creator could receive new contract offers regularly. It further captures the job mobility of a creator that might be positively related to the propensity to transition to entrepreneurship.

5.3.4. Role genre variety

This variable is an annually updated index reflecting the variety of creative tasks performed by a creator during his or her career. Creators that are flexible in the functional team roles they perform and in the genres of projects can draw from diverse experience. Presumably, this flexibility and diversity of experience is positively associated with the ability to create new characters and stories and hence the likelihood of publishing a creator-owned comic.

We calculated Blau's index, which is defined as $B = 1 - \sum_k p^2$, where p is the proportion of the creator's work in the k'th of the 198 role–genre combinations (Blau, 1977). Role genre variety can range from zero to $(K-1)/K = 99.5\%$. This index increases with the total number of role–genre combinations (or the richness of the experience) as well as with the uniformity of the distribution (or evenness) (Harrison and Klein, 2007). Its maximum would occur if the creative tasks of a creator were spread evenly over all 198 role–genre combinations. Its minimum would occur if a creator focused all his or her creative work on just one functional role and one genre.

5.3.5. Workload by functional role

We included four control variables that reflect the workload of creators in the last year by the respective functional team role: writer workload, artist workload, supporter workload,

and editor workload. Our operationalization of the transition to entrepreneurship was related to performing the functional role of the writer or artist. When people performed these roles regularly in past projects, we assume that it is easier for them to carry out the same type of task in their own projects. Supporting artists that start an entrepreneurial project transition not only to entrepreneurship but also to the functional role as the writer or artist of a comic book project, which is more unlikely.

Relative to artists and writers, editors already enjoy greater creative freedom and a more prestigious position within their organizations. Hence, some of the factors that presumably push creators to start their own entrepreneurial projects do not apply to creators with a high workload in the editor role. Controlling for the functional role profile in combination with the genre workload described in the next paragraph is particularly important, as we used the role genre profile to measure equivalence. This set of control variables allows us to interpret the social influence effect through comparison with similar others net of any role profile effects on entrepreneurial entry.

5.3.6. Workload by genre

We constructed 22 control variables that reflect the number of comic books an artist has published in each of the 22 genres in the last year. Since our equivalence measure was calculated using the role genre profile of creators, we controlled for possible genre workload effects on the transition to entrepreneurship to prevent confounding.

5.3.7. Year dummies

Finally, we included a set of year dummies for our sample period, each coded one if the observation was from the corresponding period and zero otherwise. The year dummies

controlled for all kinds of macroeconomic effects as well as industry-wide trends that affect the transition to entrepreneurship.

5.4. Sample construction and characteristics

To construct our sample, we chose an observation period starting from 1988 for two reasons. The late 1980s were the first period that saw a significant rise in creator-driven comic book production and creator ownership (Gabilliet, 2010) and 1988 was the first year in which the Eisner Awards were handed out. The year 2014 was the last year we could fully observe since we gathered raw data in 2015. As we performed an event history analysis, we focused on the individual careers of creators from the time at which they entered the industry until they either transitioned to entrepreneurship or became inactive, or until the observation of their career was censored. Censoring happens when a creator was actively producing comic books under a work-for-hire arrangement until 2014. As our observation period ends in this year, we can only use the career history data we obtained until the censoring date. We further limited the sample to contain individual careers up to an industry tenure of 40 years. Our sample contained data on creators that published their first books long before 1988. When they did not publish a creator-owned book before and were still active after 1988, they entered the sample in 1988 with a higher tenure.

To ensure better causal interpretability, we lagged all the explanatory and control variables by one year except the variable tenure. The use of first lags implicitly leads to dropping all individuals from the sample that were active for just one year. Therefore, to be represented in the sample, the creator needed to publish comic books in at least two separate years. It is further vital to understand that some data indirectly entered the sample.

Consider the example of a creator that published a creator-owned book in the middle of his or her career and did not appear in our sample at another point. However, from this year on, he or she becomes a potential influencer and indirectly enters the sample through the cohesion measure of his or her subsequent teammates and via the equivalence measure of role genre equivalent others. Figure 5.1 visualizes the construction of the sample in a Lexis diagram using the careers of six creators as examples.

Figure 5.1.: Lexis diagram illustrating the synthetic cohort sample design
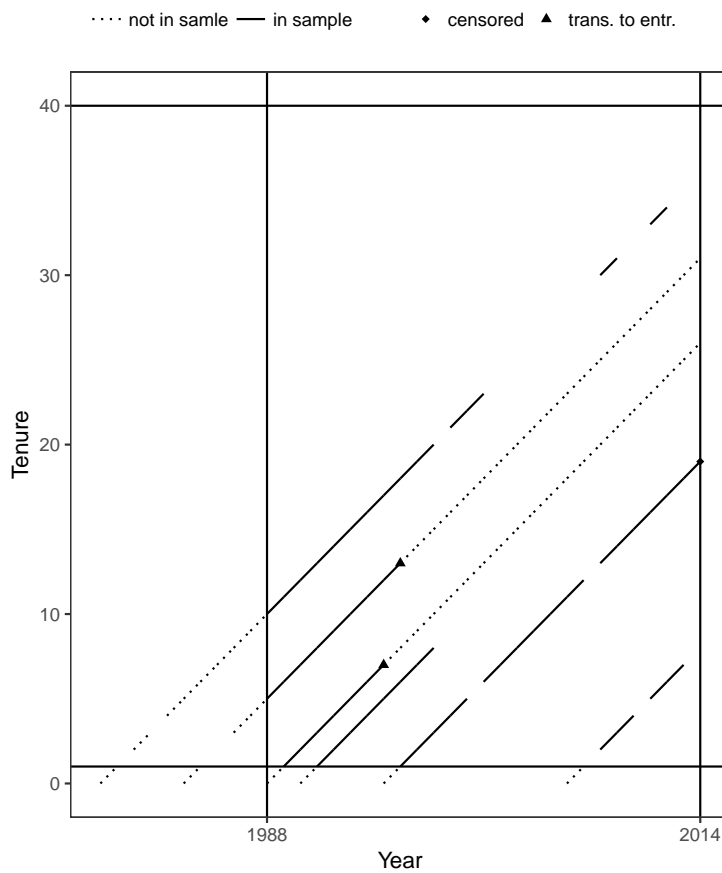
Table 5.2 shows the summary statistics of the dependent, explanatory, and main control variables and Table A.1 in the appendix shows the summary statistics for the

genre workload counts. The final sample consists of 37,672 person-years that reflect the freelance or work-for-hire careers of 11,880 comic book creators. The sample contains 2,627 entrepreneurial entries. About 7 percent of the creators in the sample transition to entrepreneurship. The descriptive statistics for the explanatory and control variables show no irregularities. In the following, we comment on some of the values and explain their industry context.

Table 5.2.: Descriptive statistics of the main sample variables

Variable	N	Mean	St. Dev.	Min	Max
Entrepreneurial entry	37,672	0.070	0.255	0	1
Cohesion	36,947	0.067	0.097	0.000	1.000
Assigned cohesion	36,947	0.029	0.041	0.000	0.950
Equivalence	36,523	0.118	0.078	0.000	0.554
Award	37,672	0.021	0.143	0	1
Award count	37,672	0.036	0.301	0	8
Winner	37,672	0.003	0.059	0	1
Winner count	37,672	0.006	0.125	0	8
Nominee	37,672	0.018	0.131	0	1
Nominee count	37,672	0.031	0.257	0	6
Centrality	36,947	0.086	0.106	0.000	1.000
Tenure	37,672	8.599	7.618	2	40
Project count	36,947	54.167	147.500	1	2,829
Role genre variety	36,760	47.750	30.053	0.000	98.571
Writer workload	37,672	1.076	3.240	0	78
Artist workload	37,672	1.293	2.638	0	49
Editor workload	37,672	1.766	9.792	0	308
Supporter workload	37,672	3.957	10.884	0	348

The average industry tenure of creators in the data is 8.6. This number seems to be high, as our sample contains about three observations per individual. The reason for this difference is that many creators have gap periods in which they do not publish comic

books for one or more years and hence do not appear in our sample. When they become active comic book creators again, their tenure increases more than the respective count of active years in the industry.

The proportions of observations reflecting award nominees and winners is very low at 0.0 percent and 0.3 percent, respectively. The low proportions illustrate the exclusivity of the Eisner Awards. Further, the sample does not contain cases, where a (former) creator-owner received an award as his or her career is not longer directly represented in the sample after the first transition to entrepreneurship.

The descriptive statistics for the award-related variables are difficult to interpret, as the award-based status can change several times during a career. A creator can, for example, become a nominee at some point in his or her career and some years later become a winner (none →nominee, nominee →winner). Table 5.3 compares the observed changes in the award-based status of creators who became entrepreneurs during the sample period and non-entrepreneurs. The table shows that changes in the award-based status occur very rarely (125 out of 37,672 observations). However, a comparison of the relative frequency shows that changes in the award-based status are particularly frequent in the careers of later entrepreneurs. 7,225 person-years, about 19% of all observations in the sample, represent careers of later entrepreneurs. These entrepreneur's careers account for 40% of all observed changes in the award-based status in the sample (42% none →nominee, 33% none →winner, 33% nominee →winner). The relatively high frequency of changes in the award-based status in the careers of later entrepreneurs can be seen as first descriptive evidence for a positive association of gains in award-based status and entrepreneurial entry.

Table 5.3.: Comparison of the observed changes in the award-based status in the careers of later entrepreneurs and non-entrepreneurs

	Entrepreneurs		Non-entrepreneurs		Total
	obs.	perc.	obs.	perc.	
Change in award-based status	50	40%	75	60%	125
none →nominee	44	42%	62	58%	106
none →winner	5	33%	10	67%	15
nominee →winner	1	25%	3	75%	4
No change in award-based status	7,175	19%	30,372	81%	37,547
none →none	7,038	19%	29,843	81%	36,881
nominee →nominee	113	20%	441	80%	554
winner →winner	24	21%	88	79%	112
Total	7,225	19%	30,447	81%	37,672

5.5. Model specification

The purpose of our empirical approach is to model how the occurrence and timing of "publishing a creator-owned comic book for the first time in a career" is related to social influence and social status. As the statistical framework within which to test our hypotheses, we used discrete-time hazard models with a complementary log-log link function, using random effects and linear time dependence.

Because our data set records the career histories of comic creators aggregated yearly, time is measured in discrete steps. The unit of observation is a creator-year. In many cases, our career history data are censored, as a proportion of creators quit their careers without ever publishing a creator-owned book. Moreover, some creators might have published a creator-owned book after the data collection ended in 2014. Hence, discrete-time hazard models are suitable for addressing this characteristic (Allison, 1982; Singer and Willett, 2003).

5. Data and Method

The key idea of discrete-time hazard models is to define an unobservable variable called *hazard* as the dependent variable that controls both the occurrence of the event *and* the length of time until the event occurs. Let T be a discrete random variable denoting the unobserved time of the event occurrence. The discrete-time hazard is the conditional probability that individual i experiences the event at time t_i given he or she did not experience the event in an earlier period

$$\lambda_i(t) = \Pr(T_i = t | T_i \geq t).$$

In our analysis, this translates into the following definition: hazard is the conditional probability of publishing a creator-owned comic book in the t-th year of his or her career, given a creator has never published a creator-owned comic book before and the particular values for the explanatory variables in that period.

The link function mathematically specifies how hazard depends on time and the explanatory variables. In his landmark paper, Cox (1972) uses the logistic regression function, which remains a popular choice today because most researchers are familiar with its interpretation. However, the logit model is the most suitable when the event happens in discrete time steps. The logit link is no longer the best choice when events unfold in continuous time (i.e., we observe the event occurrence grouped or aggregated in discrete time). The analysis of grouped data based on the logit specification can lead to inferences sensitive to the choice of interval length (e.g., monthly vs. yearly) (Singer and Spilerman, 1976). Prentice (1978) derives the discrete-time hazard function

$$\lambda_i(t) = 1 - \exp[-\exp(x'_{it}\beta)]$$

that does not suffer from this problem. Solving this equation yields the complementary log-log link function

$$\text{cloglog } \lambda_i(t) = \log[-\log(1 - \lambda_i(t)] = x'_{it}\beta.$$

As we observe the event grouped in yearly time intervals, the complementary log-log link function is thus the appropriate choice for our models.

Another relevant specification decision is how to model the effect of time. We specified two types of time effects: a linear tenure effect and year fixed effects using a dummy variable specification. The usual starting point to model how tenure relates to the transition hazard is the so-called general specification, which would have implied using 39 dummy variables, one for each possible level of tenure in our sample. Since our data set is huge (more than 30,000 creator-years) but sparse (fewer than 3000 transitions to entrepreneurship), this general specification performs poorly for higher tenure values where the risk set becomes small as only a few creators remain in the sample for so many years. Table 5.4 shows the decrease in the size of the risk set.

Figure 5.2 shows that the estimated rate of transitions to entrepreneurship varies regularly around an almost linear negative trend. We hence used the variable tenure, which counts the number of years since the respective creator published his or her first comic book in a linear specification to control for the main effect of time. The transition rate per calendar year shows strong fluctuations that indicate macroeconomic or other industry-wide effects on the entrepreneurial entry rate. Figure 5.3 depicts these fluctuations. To control for these types of effects, we chose a dummy variable specification for the calendar years. In comparison to the general specification of the main effect of time (tenure), the

Table 5.4.: Sample size and transitions to entrepreneurship by tenure

Tenure	Sample size	Transitions	Transition rate	Survival rate
2	6,999	468	0.07	0.93
3	4,549	415	0.09	0.85
4	3,571	297	0.08	0.78
5	2,882	232	0.08	0.71
6	2,427	187	0.08	0.66
7	2,016	132	0.07	0.62
8	1,784	152	0.09	0.56
9	1,524	107	0.07	0.52
10	1,284	73	0.06	0.49
11	1,101	81	0.07	0.46
12	1,034	85	0.08	0.42
13	926	70	0.08	0.39
14	786	36	0.05	0.37
15	714	28	0.04	0.36
16	660	27	0.04	0.34
17	594	30	0.05	0.32
18	582	31	0.05	0.31
19	515	18	0.03	0.30
20	461	21	0.05	0.28
21	418	14	0.03	0.27
22	358	17	0.05	0.26
23	282	8	0.03	0.25
24	242	9	0.04	0.24
25	233	14	0.06	0.23
26	189	13	0.07	0.21
27	195	9	0.05	0.20
28	161	10	0.06	0.19
29	149	6	0.04	0.18
30	132	4	0.03	0.18
31	104	2	0.02	0.17
32	96	2	0.02	0.17
33	99	7	0.07	0.16
34	80	4	0.05	0.15
35	91	3	0.03	0.15
36	92	2	0.02	0.14
37	83	4	0.05	0.14
38	90	4	0.04	0.13
39	85	2	0.02	0.13
40	84	3	0.04	0.12

dummy specification is feasible here, as we observe a sufficient number of transitions per calendar year.

A potential source of bias in our models is the unobserved heterogeneity among individuals. For example, some artists could come from a family with entrepreneurial role models and have a higher propensity toward entrepreneurship than others, which is not captured by the covariates. To address this potential source of bias, we included individual-level random effects in all our models. The random effects model can deal with the correlation between repeated observations (creator-years) obtained for the same individual. In that sense, the random effects account for the unobserved covariates or other forms of heterogeneity between individuals (cf. Scheike and Jensen, 1997). The implicit critical assumption of the random effects model is that the unobserved covariates are not correlated with the explanatory variables.

5. Data and Method

Figure 5.2.: Graph of the transition rates to entrepreneurship per tenure
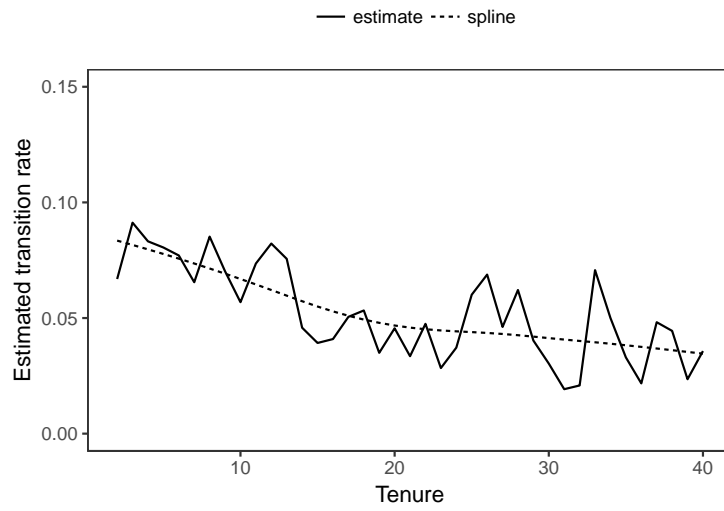
Figure 5.3.: Graph of the transition rates to entrepreneurship per year
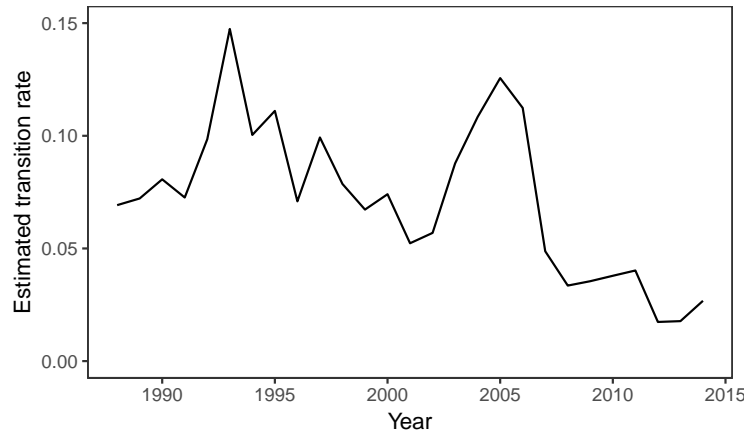
6. Results

To test the proposed hypotheses using our data, we estimated a series of discrete-time event history models. We used the statistical programming language R version 3.3.1 (R Core Team, 2016) and the function *glmer* from the *lme4* package version 1.1-15 (Bates et al., 2015) for all the estimations. We started with a baseline model comprising all the covariates and then consecutively added the explanatory variables measuring cohesion and equivalence to test for social influence or award winning and centrality to test for the status effects. We further varied the model specification and used alternative operationalizations to check the robustness of our results. In this chapter, we summarize the estimation results and provide tables as well as graphics to illustrate the empirical findings.

6.1. Baseline model

The first column of Table 6.1 shows the results of our baseline model. All the individual-level covariates affect entrepreneurship in the expected ways. Tenure and project count are negatively correlated with the probability of becoming an entrepreneur. The coefficients of publisher count and role genre variety are both positive and significant. The coefficients of the variables that reflect the functional role workloads of the creator are also significant and point in the expected direction. Creators that had high workloads in the writer or artist

6. Results

Table 6.1.: Social influence effects: regression results part 1

Variable	(1)	(2)	(3)	(4)	(5)
Cohesion		1.880•••	5.593•••		6.193•••
		(0.167)	(0.413)		(0.423)
Cohesion squared			−5.549•••		−6.694•••
			(0.625)		(0.657)
Equivalence				4.940•••	5.248•••
				(0.370)	(0.369)
tenure	−0.019•••	−0.017•••	−0.015••	−0.020•••	−0.016••
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Project count	−0.002•••	−0.002•••	−0.002•••	−0.002•••	−0.001••
	(0.0005)	(0.0005)	(0.0004)	(0.0005)	(0.0004)
Publisher count	0.129•••	0.127•••	0.117•••	0.141•••	0.130•••
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Role genre variety	0.007•••	0.008•••	0.007•••	0.006•••	0.006•••
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Writer workload	0.072•••	0.075•••	0.074•••	0.051•••	0.052•••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Artist workload	0.096•••	0.099•••	0.101•••	0.078•••	0.082•••
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Editor workload	−0.020	−0.019	−0.023•	−0.015	−0.019
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Supporter workload	−0.037•••	−0.036•••	−0.039•••	−0.025••	−0.027••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Constant	−3.442•••	−3.585•••	−3.713•••	−3.976•••	−4.322•••
	(0.170)	(0.171)	(0.171)	(0.176)	(0.178)
Year dummies	Yes	Yes	Yes	Yes	Yes
Genre workloads	Yes	Yes	Yes	Yes	Yes
Observations	36063	36063	36063	35652	35652
Log Likelihood	−7875.310	−7816.179	−7764.420	−7704.352	−7579.726
AIC	15866.620	15750.360	15648.840	15526.700	15281.450
BIC	16359.220	16251.450	16158.420	16027.120	15798.830

•$p < 0.05$; ••$p < 0.01$; •••$p < 0.001$

role during the last year are more likely to transition to entrepreneurship. Individuals that had high workloads in supporting roles (e.g., coloring and lettering) are less likely to start an entrepreneurial project. The same is true for individuals that had a high workload as the editor in the last year. The editor workload coefficient points in the expected direction; however, it is not significant in many of the following models. To save space, we omit the coefficients of the genre workloads and year dummies from the table. The results show that the propensity to transition to entrepreneurship varies significantly between years and between individuals with different genre workloads. The detailed model output can be found in the appendix.

6.2. Social influence effects

To test the hypothesized social influence effects on entrepreneurial entry through cohesion and equivalence, we created a series of regression models shown in Table 6.1 and Table 6.2.

6.2.1. Cohesion effect

We included the variable cohesion into model (2) in a linear specification and in model (3) in a quadratic specification to test H1 on the effect of cohesion on entrepreneurial entry. The linear specification in model (2) yields a positive and significant coefficient with an anti-logged value of 6.6 $[\exp(1.880)]$. The anti-logged coefficients are equivalent to the respective hazard ratios and reflect the relative risk of transitioning to entrepreneurship. Hence, the linear specification model predicts that creators that worked exclusively with creator-owners are 6.6 times more likely to transition to entrepreneurship than creators that never worked with any creator-owner. A one standard deviation (0.1) increase in the

6. Results

Table 6.2.: Social influence effects: regression results part 2

Variable	(6)	(7)	(8)	(9)	(10)
Assigned cohesion		1.940•••	1.481	2.796•••	−0.083
		(0.492)	(0.767)	(0.490)	(1.166)
Assigned cohesion squared			1.867		
			(2.364)		
Assigned cohesion × equivalence					17.745••
					(6.292)
Cohesion × equivalence	−6.122••				
	(2.037)				
Cohesion	7.009•••				
	(0.508)				
Cohesion squared	−6.061•••				
	(0.673)				
Equivalence	5.948•••			5.184•••	4.760•••
	(0.435)			(0.373)	(0.403)
Tenure	−0.016••	−0.019•••	−0.019•••	−0.020•••	−0.021•••
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Project count	−0.001••	−0.002•••	−0.002•••	−0.002•••	−0.002•••
	(0.0004)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Publisher count	0.131•••	0.125•••	0.126•••	0.135•••	0.137•••
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Role genre variety	0.006•••	0.007•••	0.007•••	0.006•••	0.006•••
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Writer workload	0.051•••	0.072•••	0.072•••	0.050•••	0.050•••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Artist workload	0.082•••	0.096•••	0.096•••	0.078•••	0.076•••
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Editor workload	−0.018	−0.022	−0.022	−0.017	−0.016
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Supporter workload	−0.026••	−0.038•••	−0.038•••	−0.026••	−0.026••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Constant	−4.427•••	−3.458•••	−3.457•••	−4.025•••	−3.962•••
	(0.182)	(0.170)	(0.170)	(0.176)	(0.178)
Year dummies	Yes	Yes	Yes	Yes	Yes
Genre workloads	Yes	Yes	Yes	Yes	Yes
Observations	35652	36063	36063	35652	35652
Log Likelihood	−7576.106	−7867.174	−7866.956	−7688.153	−7683.325
AIC	15276.210	15852.350	15853.910	15496.310	15488.650
BIC	15802.070	16353.440	16363.490	16005.200	16006.020

•p < 0.05; ••p < 0.01; •••p < 0.001

variable cohesion leads to a 21 percent $[\exp(1.880 \times 0.1) - 1]$ increase in the transition hazard.

The estimates for cohesion in the quadratic specification indicate an inverted u-shape. Figure 6.1 visualizes the relationship. The plot indicates that the relative hazard of transitioning to entrepreneurship varies with the level of cohesion. At very low and very high levels of cohesion, the relative hazard is smaller than 0.05. At a medium level of cohesion, the relative hazard peaks at about 0.15. The confidence band drawn in gray is narrow in the left ascending area of the curve and wide around the maximum and in the descending area of the curve. We can conclude that the models indicate the positive effect of cohesion on the hazard of entrepreneurial entry with a peak at an intermediate level of cohesion.

6.2.2. Equivalence effect

H2 predicts that the hazard of transitioning to entrepreneurship is affected by the entrepreneurial activity of role genre equivalent others. In model (4), we included the variables from our baseline model and the variable equivalence. The estimate is positive and significant. A one standard deviation increase in the equivalence measure is associated with a 48 percent $[\exp(4.940 \times 0.08) - 1]$ increase in the hazard to transition to entrepreneurship. In model (5), we combined cohesion, cohesion squared, and equivalence. Although the cohesion and equivalence measures are correlated, the coefficients do not decrease. All three coefficients remain significant and retain the same signs as in the previous models. The estimates become slightly larger, while the order of magnitude remains the same. The results show the strong and significant positive effect of the entrepreneurial activity of role equivalent other actors on the transition to entrepreneurship.

Figure 6.1.: The inverted u-shaped relation between cohesion and entrepreneurial entry
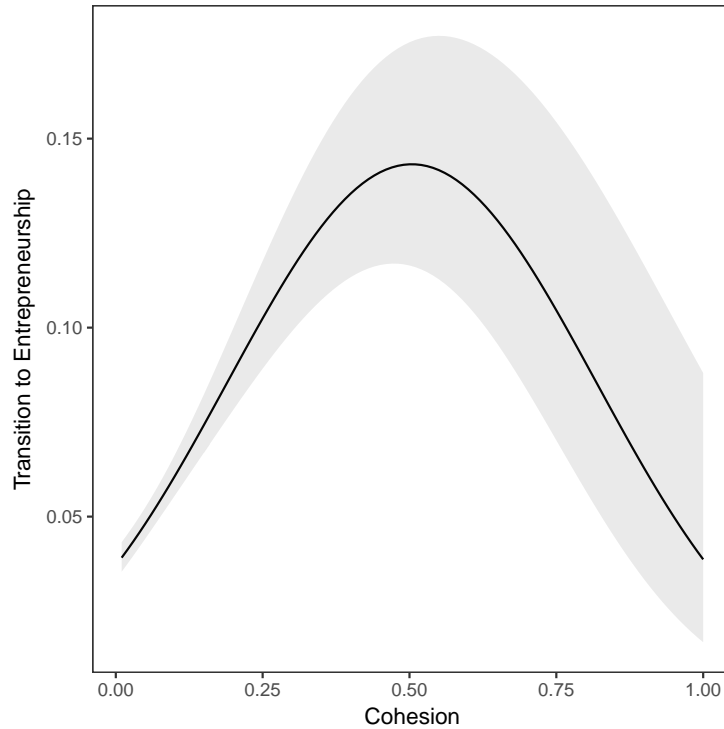
6.2.3. Interaction effect of cohesion and equivalence

Finally, we tested H3 by estimating model (5) in Table 6.2, where we added the interaction variable between cohesion and equivalence. The results show the positive and significant interaction effect of equivalence and cohesion on entrepreneurial entry. Figure 6.2 depicts the predicted transition to entrepreneurship by cohesion and equivalence for low, medium, and high values of equivalence. The graph shows the clear positive interaction effect for small and medium values of cohesion. The interaction with the variable equivalence shifts the curve upward. At high values of the variable cohesion, the confidence bands marked in gray overlap (i.e., there is no significant interaction effect in this range). These results show that equivalence further increases the positive curvilinear effect of cohesion on the

transition to entrepreneurship. The positive interaction effect occurs at low values of cohesion and is the greatest at medium values. At high to very high values of cohesion, there is no positive interaction effect of equivalence.

6.2.4. Robustness checks of the cohesion and interaction effects

To check the robustness of the cohesion and interaction effects, we estimated models (7) to (10) of Table 6.2, employing the assigned cohesion variable instead of the cohesion variable used in the previous models. This variable was calculated in the same way as the cohesion measure used before but focused on the potential influences of the teams put together by an editor. The models using this assigned cohesion variable are less susceptible to the possible self-selection of interested individuals in teams with former entrepreneurs.

The coefficient in the linear specification in model (7), which is a replication of model (2), predicts an eight percent increase $[\exp(1.94 \times 0.04) - 1]$ in the transition hazard for a one standard deviation (0.04) increase in assigned cohesion. A comparison of the two values is difficult to interpret as the standard deviations of the two variables differ. The standard deviation of the variable assigned cohesion (0.04) is smaller than the standard deviation of the variable cohesion (0.1). To compare the effect sizes, we calculated the effect of an increase in the assigned cohesion variable by the same factor (0.1). The effect is about 21 percent, too $[\exp(1.94 \times 0.1)-1]$. Hence, the results of the linear specification are robust.

The quadratic specification in model (7) with the assigned cohesion measure leads to insignificant results for both coefficients. The curvilinear relationship for cohesion cannot be replicated with the assigned cohesion variable. We specified model (9) with linear assigned cohesion and equivalence and found that both variables are significant.

The coefficient of assigned cohesion increases in size, while the size of the equivalence coefficient decreases slightly. To understand the robustness of the interaction effect, we added an interaction effect of assigned cohesion with equivalence into model (10). The effect is positive and significant.

We interpret this result as an indication of the robustness of the positive interaction between the cohesion and equivalence effects. Figure 6.3 shows a plot of the interaction between assigned cohesion and equivalence. The plot looks different, but tells a similar story as Figure 6.2 in the left part, that is for low to medium levels of cohesion. For low values of assigned cohesion, there is a significant positive interaction with equivalence, whereas for high values of assigned cohesion, the interaction effect is not significant as the confidence bands overlap.

6.3. Social status effects

To test the hypothesis about the social status effects on entrepreneurial entry, we created the series of models shown in Table 6.3 and Table 6.4.

6.3.1. Award effect

To test H4, we added the indicator variable award into the baseline model in model (11). The effect is positive and significant. Individuals that were at least once involved in an awards ceremony as nominees, regardless of whether they won later or not, are 87 percent $[\exp(0.625)-1]$ more likely to transition to entrepreneurship. In model (12), we added the variables nominee and winner to check whether we could differentiate the effects of being merely nominated and winning. Again, both the coefficients are positive and significant.

The relative hazard of 80 percent $[\exp(0.587) - 1]$ of the nominee status is substantial. The relative hazard of the winner status is even larger at 144 percent $[\exp(0894) - 1]$. The hazard of the entrepreneurial entry of award winners is about 2.4 times larger than the hazard of the entrepreneurial entry of people that were never nominated.

In models (13) and (14), we used the same specification as in models (11) and (12) but with count variables instead of the respective dummy variables to check the robustness of the results. The award count coefficient is positive and significant. The hazard of a transition to entrepreneurship increases by 24 percent $[\exp(0.215) - 1]$ with each nomination for an award. Again, we checked the results with the two separate variables of nomination count and winner count. We found a positive and significant increase in the relative hazard with each additional nomination without winning by 21 percent $[\exp(0.193) - 1]$. The effect of the variable winner count is positive but not significant $[156\% = \exp(0.939) - 1]$.

6.3.2. Centrality effect

In model (15), we introduced the centrality variable into the baseline model to test H5. The estimation yields a negative and significant coefficient. A one standard deviation increase in centrality leads to a decrease in the probability of entrepreneurial entry of 38 percent $[\exp(-4.386 \times 0.11) - 1]$. Hence, there is a significant negative effect of centrality on the transition to entrepreneurship.

6.3.3. Robustness checks for the award and centrality effects

In models (16) to (19) in Table 6.4, we replicated models (11) to (14) from Table 6.3 but with centrality as an additional control variable in all the models. All the model coefficients

6. Results

Table 6.3.: Status effects: regression results part 1

Variable	(11)	(12)	(13)	(14)	(15)
Award	0.625•••				
	(0.170)				
Nominee		0.587••			
		(0.180)			
Winner		0.894•			
		(0.438)			
Award count			0.215•		
			(0.090)		
Nominee count				0.193•	
				(0.097)	
Winner count				0.393	
				(0.284)	
Centrality					−4.386•••
					(0.607)
Tenure	−0.019•••	−0.019•••	−0.019•••	−0.019•••	−0.009
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Project count	−0.002•••	−0.002•••	−0.002•••	−0.002•••	0.0002
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Publisher count	0.125•••	0.125•••	0.126•••	0.127•••	0.146•••
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Role genre variety	0.007•••	0.007•••	0.007•••	0.007•••	0.007•••
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Writer workload	0.071•••	0.071•••	0.071•••	0.072•••	0.068•••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Artist workload	0.096•••	0.096•••	0.096•••	0.096•••	0.101•••
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Editor workload	−0.021	−0.021	−0.021	−0.021	−0.023•
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Supporter workload	−0.039•••	−0.039•••	−0.039•••	−0.039•••	−0.037•••
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Constant	−3.417•••	−3.416•••	−3.427•••	−3.427•••	−3.250•••
	(0.170)	(0.170)	(0.170)	(0.170)	(0.171)
Year dummies	Yes	Yes	Yes	Yes	Yes
Genre workloads	Yes	Yes	Yes	Yes	Yes
Observations	36063	36063	36063	36063	36063
Log Likelihood	−7868.772	−7868.568	−7872.588	−7872.408	−7851.702
AIC	15855.550	15857.140	15863.170	15864.820	15821.410
BIC	16356.630	16366.720	16364.260	16374.400	16322.490

•$p < 0.05$; ••$p < 0.01$; •••$p < 0.001$

have the same direction, order of magnitude, and significance. Besides a slight decrease in most of the effect sizes and the effect of nominee count in model (19), which becomes insignificant, all of the previous results remain the same and hence seem robust.

Table 6.4.: Status effects: regression results part 2

Variable	(16)	(17)	(18)	(19)
Award	0.617•••			
	(0.168)			
Nominee		0.584••		
		(0.179)		
Winner		0.847•		
		(0.427)		
Award count			0.202•	
			(0.088)	
Nominee count				0.186
				(0.096)
Winner count				0.315
				(0.266)
Centrality	−4.415•••	−4.412•••	−4.385•••	−4.380•••
	(0.610)	(0.610)	(0.608)	(0.609)
Tenure	−0.009	−0.009	−0.009	−0.009
	(0.005)	(0.005)	(0.005)	(0.005)
Project count	0.0001	0.0001	0.0001	0.0001
	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Publisher count	0.141•••	0.141•••	0.143•••	0.143•••
	(0.012)	(0.012)	(0.012)	(0.012)
Role genre variety	0.007•••	0.007•••	0.007•••	0.007•••
	(0.001)	(0.001)	(0.001)	(0.001)
Writer workload	0.067•••	0.067•••	0.068•••	0.068•••
	(0.010)	(0.010)	(0.010)	(0.010)
Artist workload	0.101•••	0.101•••	0.101•••	0.101•••
	(0.009)	(0.009)	(0.009)	(0.009)
Editor workload	−0.024•	−0.024•	−0.024•	−0.024•
	(0.011)	(0.011)	(0.011)	(0.011)
Supporter workload	−0.039•••	−0.039•••	−0.039•••	−0.039•••
	(0.010)	(0.010)	(0.010)	(0.010)
Constant	−3.221•••	−3.221•••	−3.234•••	−3.235•••
	(0.171)	(0.171)	(0.171)	(0.171)
Year dummies	Yes	Yes	Yes	Yes
Genre workloads	Yes	Yes	Yes	Yes
Observations	36063	36063	36063	36063
Log Likelihood	−7845.206	−7845.058	−7849.191	−7849.111
AIC	15810.410	15812.120	15818.380	15820.220
BIC	16319.990	16330.190	16327.960	16338.300

•$p < 0.05$; ••$p < 0.01$; •••$p < 0.001$

Figure 6.2.: Interaction effect of cohesion and equivalence on entrepreneurial entry
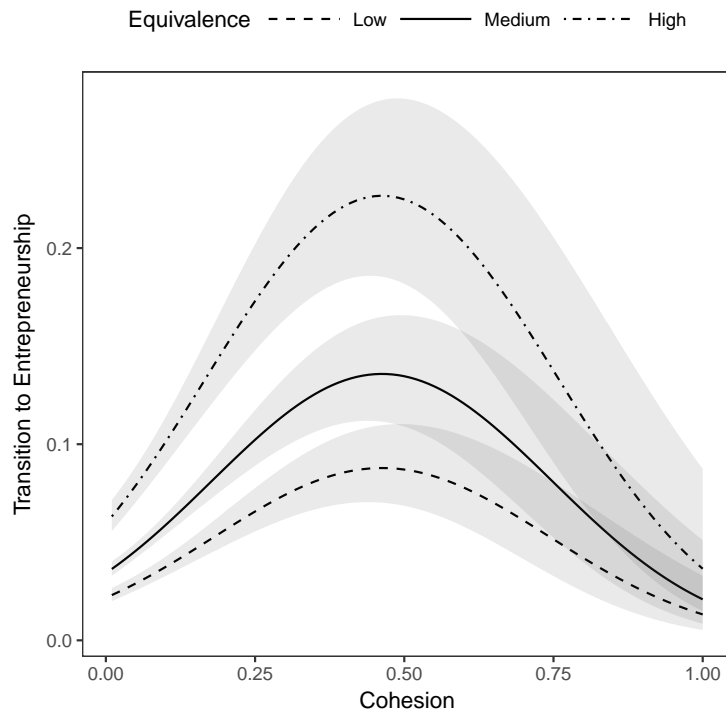
Figure 6.3.: Interaction effect of assigned cohesion and equivalence on entrepreneurial entry
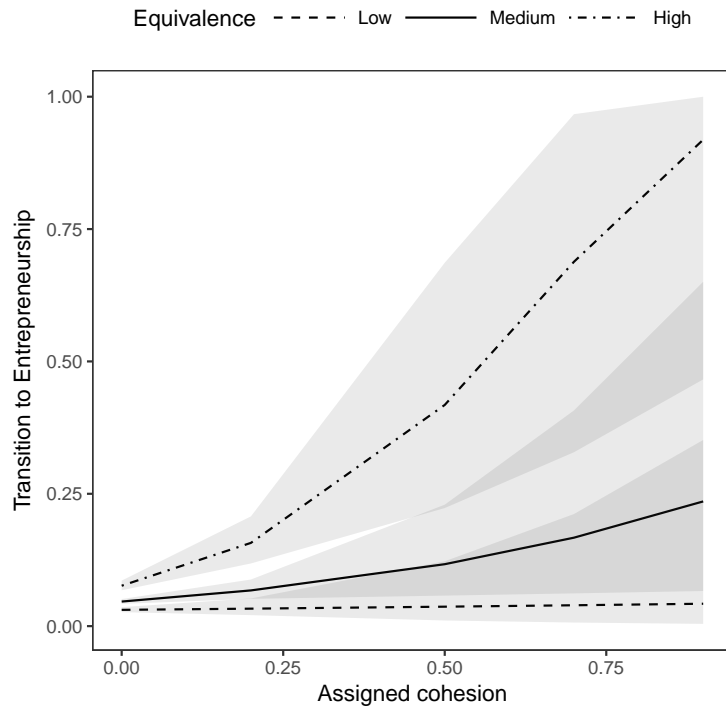
7. Discussion

Our analysis was motivated by the gaps in the literature on the social influence processes and status effects in entrepreneurship. First, the existing literature on social influence and entrepreneurship scarcely distinguishes between the influence through cohesion and communication, on the one hand, and the influence through equivalence and comparison, on the other. Second, the literature on status and entrepreneurship provides little insight into how an individual's social status affects his or her transition to entrepreneurship. We addressed these gaps by examining how the first transition to entrepreneurship of comic book creators is socially influenced by other comic creators with prior entrepreneurial experience. We further examined how the individual's social status operationalized either as award winning or as centrality in the social network of industry peers affects the entrepreneurial entry of comic book creators. In this chapter, we discuss the empirical results as well as their limitations and implications for future research.

7.1. Interpretation of the results

7.1.1. Social influence

H1 predicted that individuals are more likely to transition to entrepreneurship the more they have cohesive social relationships with other entrepreneurs, with this effect dimin-

ishing marginally as the proportion of entrepreneurial network contacts increases. Our results partially confirm this hypothesis. They show a positive effect of cohesion that is not caused by nascent entrepreneurs sorting into relationships with actors with prior entrepreneurial experience. The prediction that the cohesion effect decreases marginally the more an actor is exposed to other entrepreneurs via his or her network is not robustly supported.

H2 predicted that the likelihood of entrepreneurial entry increases with the prevalence of entrepreneurship among others with equivalent roles and specializations. Our results show a positive correlation between the role genre equivalence of other entrepreneurs and probability of entrepreneurial entry. 3 predicted a positive interaction between the cohesion and equivalence effects. This prediction is also supported.

Our results provide evidence of the influence of contagion or positive peer effects on entrepreneurial entry, which is in line with most previous findings (cf. Giannetti and Simonov, 2009; Kacperczyk, 2013; Nanda and Sørensen, 2010; Stuart and Ding, 2006). However, they contradict the results of Lerner and Malmendier (2013), who find a negative effect of exposure to prior entrepreneurs during an MBA program on the entrepreneurial entry rates of students. A possible explanation is that the actual entry rate in the US comic book industry is lower than the potential entry rate. Hence, contagion mechanisms unleash untapped entrepreneurial potential in this context. Such untapped entrepreneurial potential may be caused by the desire for creative autonomy and the entrepreneurial self-fulfillment of actors in creative industries, which remained unrevealed through doubt or a lack of knowledge on entrepreneurship. In the context of MBA students, the baseline individual entrepreneurship rates should be relatively high. Here,

the knowledge transfer of entrepreneurial peers prevents unpromising entrepreneurial projects from getting off the ground (Lerner and Malmendier, 2013).

Our main contribution is that we estimate the cohesion and communication effect net of the equivalence and comparison effect and vice versa. Hence, our findings support our theoretical assumption that social influence in entrepreneurship is based on two distinct but interacting mechanisms. This is significant, as it implies that the overall contagion effect may be caused by different sets of entrepreneurs. First, our results are consistent with the hypothesis that cohesive social ties to and hence direct communication with individuals with entrepreneurial experience lead to the social transmission of entrepreneurial behavior through information sharing or coaching. Second, the evidence suggests that contagion also occurs when actors observe role-equivalent entrepreneurs and imitate their behavior— even if these parties do not have any direct social relationships. Indeed, understanding the equivalence and comparison mechanism as a separate and independent effect is relevant, as the profiles and career paths of individuals are becoming increasingly transparent through professional networking platforms such as LinkedIn and Xing.

Further, the evidence clearly shows that the communication and the comparison mechanisms are complements. The individual transition rates are particularly high when individuals have direct social relationships to (former) entrepreneurs *and* entrepreneurship is prevalent among individuals with equivalent roles. For this positive interaction effect to occur, the influencing entrepreneurs do not necessarily have to be part of the direct social network or even have similar profiles.

The results do not support the hypothesis that the social influence affecting the decision on entrepreneurial entry is substitutable. Prior research has shown that contagion effects by one reference group can substitute contagion by another reference group. Nanda

and Sørensen (2010) find that when an individual is exposed to entrepreneurship in the family, he or she is relatively less susceptible to the contagion effect caused by entrepreneurially experienced coworkers. Compared with this previous finding, our results on the marginal effect of cohesion on entrepreneurial entry are surprising. Only to a certain extent do we find empirical support for our initial assumption that the positive contagion effect of cohesion marginally diminishes with the level of cohesion.

On the relationship between cohesion and the individual entry rate, the results indicate an inverted u-shaped relation. This finding implies that the most contagion occurs when an individual is exposed to a balanced mix of entrepreneurs and employees in his or her professional network. The individual entry rate is rather low if the proportion of former entrepreneurs among an individual's direct contacts is either very low or very high. In the first case, the individual seems not to have access to the critical amount of entrepreneurship-specific knowledge. The second case could be interpreted as a form of resistance against a perceived excess of entrepreneurial activity or experience in the direct personal environment, which is not representative of the behavior of the other actors in the industry.

For assigned cohesion, we find no decreasing marginal effect on the individual entry rate. To interpret this differing result, it is important to recall that the two measures are related. While the cohesion measure reflects all the social ties to other entrepreneurs, assigned cohesion reflects only the subset of those ties created via exogenous assignment. The other set of social ties might in part have been created as individuals with a prior interest in entrepreneurship sorted endogenously into collaborations with former entrepreneurs.

This leads to the following possible interpretation of the differing results. The study population is heterogeneous in terms of its interest in entrepreneurship. Most individuals

are not specifically interested in entrepreneurship but may be confronted with other entrepreneurs through exogenous or random assignment. When they have a critical level of exposure to other entrepreneurs, they experience a positive contagion effect, as the transfer of specific information and knowledge makes entrepreneurial entry relatively easy for them. Some individuals are, however, particularly interested in entrepreneurship and actively seek cooperation with ex-entrepreneurs. Thus, they actively create particularly high exposure to entrepreneurs for themselves in addition to the exogenously assigned or random exposure to entrepreneurship. Owing to the intensive discussion with the other entrepreneurs, however, many of them become disillusioned and finally refrain from entrepreneurial entry.

In addition, there is a rather technical explanation of the differing results for cohesion and assigned cohesion. By definition, the level of assigned cohesion is generally lower than that of cohesion. It might be that too few cases in our sample reach a very high level of assigned cohesion to reflect the hypothesized marginal decrease with statistical significance. We now discuss the findings on status effects.

7.1.2. Social status effects

H4 predicted that award-based status earned by receiving a prestigious prize increases the likelihood of the transition to entrepreneurship. Our results clearly confirm this prediction. The transition to entrepreneurship of nominees is about twice as likely as that of non-nominated people. The results also indicate that the entry rate of winners is even higher than the entry rate of those who do not receive an award after a nomination.

H5 on network-derived status predicted that individuals with a more central position in the industry's professional network are less likely to transition to entrepreneurship. The

results also support this prediction. Individuals with high network-derived status are less likely to undergo such a transition.

Our first key finding here is the contradiction between the positive award-based status effect and negative network-based status effect. This contradiction supports the theoretical argument that status convergence can both encourage and deter entrepreneurial entry depending on which of the following four underlying mechanisms is dominant.

The courage argument states that entrepreneurial entry is more attractive to high-status individuals, as it does not change their identity as relevant market players. A fixed status, which cannot be compromised by entrepreneurial entry, protects against social sanctions in the case of failure.

The constraint argument states that entrepreneurial entry is less attractive to high-status individuals, as it is associated with an increase in uncertainty. When transition to entrepreneurship would significantly increase a high-status individual's uncertainty about consumer preferences and the best resource allocation to meet them, his or her status advantages are comparatively less valuable.

The contamination argument states that entrepreneurial entry is less attractive to high-status individuals, as it requires entering into new exchange relationships with low-status actors. With an alteration of his or her network position during entrepreneurial entry, a high-status individual is likely to reduce his or her status advantage or lose it altogether.

The complacency argument states that entrepreneurial entry is less attractive to high-status individuals, as it requires ambition. As status is seen as a life goal itself by some individuals, having achieved a high status before is likely to reduce the ambition to transition to entrepreneurship.

7. Discussion

Our second key finding is that the overall status effect and hence the relative importance of the underlying mechanisms depend on the foundation or type of an actor's status. For individuals with award-based status, the encouraging effects for entrepreneurial entry exceed the deterring effects. For network-derived status, the opposite seems to be true.

In the case of award-based status, the estimated positive status effect suggests that the courage mechanism, which is the only one predicting a positive relationship, outweighs the constraint, contamination, and complacency effects. This finding supports the argument that a prestigious industry award provides the winner with a fixed status and thus mitigates the risks of losing the status advantage through entrepreneurial entry. This interpretation is in line with the theoretical argument of (Phillips and Zuckerman, 2001) and previous findings of the transitions to entrepreneurship of high-profile life scientists presented by Stuart and Ding (2006).

In the case of network-derived status, the estimated negative effect suggests that individuals whose status is based on and hence depends on a central position in the network of exchange relationships tend not to pursue entrepreneurial entry. This result shows that one (or a combination of) the other three mechanisms discussed, namely constraint, contamination, or complacency, is dominant. It follows that network-based status does not provide an individual with a fixed identity as a market player because it overcompensates the deterring effects of higher uncertainty, risk of status contamination, and lower ambition. However, our results do not allow us to draw conclusions about the relative importance of or interplay between the constraint, contamination, and complacency mechanisms. We leave this for future research.

Further, the results are in line with our last argument, saying that award-based status has a stronger impact on the social evaluations of the demand-side audience compared

with network-based status, as it increases the actor's visibility to a greater extent. Research shows that in creative industries, awards cannot predict fundamental aesthetic quality or talent; however, they can predict—and sometimes even determine—economic success (Ginsburgh, 2003). A prize winner might expect his or her new product to be in high demand because of high visibility. This mechanism seems to be less important in the case of network-based status.

An alternative explanation of the strong positive effect of award-based status on entrepreneurial entry is that the positive status shock does not induce complacency or saturation but rather overconfidence. Entrepreneurial entry has an uncertain outcome for the individual. The high failure rate of the numerous actors that have dared to enter into an entrepreneurial venture has been interpreted in the literature as the result of (over)confidence (Hayward et al., 2006). Award-based status can thus be seen as a cause of enhanced confidence, which influences the self-assessment of abilities and prospects for success and raises the probability of transitioning to entrepreneurship.

A second alternative explanation of the positive correlation between status and entrepreneurial entry is the rise in bargaining power. It could be argued that an entrepreneur succeeded in bringing the result of his or her innovative efforts to the market under his or her name. The actor was able to retain the intellectual property rights to a product that he or she codeveloped. The research by Ozmel et al. (2017) on the negotiations between R&D alliance partners shows that the relative prominence of the respective partners influences the allocation of value-capturing rights. Prominence strengthens bargaining power, leading to more favorable contractual conditions. Social position is therefore decisive for appropriating the potential financial returns of an innovation (Ozmel et al., 2017).

If we transfer this view to the individual level, the high social ranking of an actor can give him or her more dominance and bargaining power with which to appropriate the fruits of his or her work regarding intellectual property rights. High-status individuals can position themselves better as the inventors, authors, or initiators of a new product. Since we have defined the transition to entrepreneurship as the event when a person assumes the role of a founder-manager in a new venture, we expect to observe high-status actors listed as (co)founders of entrepreneurial projects more frequently.

However, the measurement of prominence in the study by Ozmel et al. (2017) is based on the centrality of companies in alliance networks and thus it partly contradicts our evidence on the negative effect of network centrality on entrepreneurial entry. An interpretation of this contradiction is that the status convergence mechanisms are context-dependent. For example, the status convergence effects at the individual level may differ from those at the organizational level. We now turn to the limitations and directions for further research.

7.2. Limitations and recommended directions for further research

One limitation of our results is this study's focus on the social structural antecedents of entrepreneurial entry in only one creative industry. A relevant question is how well the results obtained in the empirical context of the US comic book industry can be generalized. The comic book industry is an example of a creative industry concerned with the generation and exploitation of information and knowledge. Examples of other creative industries are advertising, architecture, art, design, software, and research and development. In

creative industries, entrepreneurial entry tends to be possible with fewer resources than, for example, in capital-intensive manufacturing and high-tech industries. Our results may therefore be less meaningful for industries that require huge investment before a new product can be launched. Nevertheless, high-impact entrepreneurship takes place in creative industries, too, as platform startups such as Airbnb and Uber fit into this category. Since, for example, in the computer games industry, comparably granular data are available on new products as well as the creative teams that developed them (cf. Claussen et al., 2012), a replication of the results in this or another comparable industry would be instructive.

Our results are also based on a huge longitudinal data set, allowing us to generate a detailed mapping of the professional networks in this industry that emerge from project collaborations. However, data on the relationships with actors from other industries are lacking and information on family background is unavailable. Our results are thus limited to the effects of the social networks within an industry to entrepreneurial entries into the same industry. In this respect, we cannot control for influences from the private lives and effects related to cross-industry social structures. We further cannot analyze the forces that led to leaving the industry and/or launching a product in another market. Hence, studying the effects of social influence and status on the transition to other industries (e.g., those with higher income levels) could enrich the insights from our research.

The scope of our research was limited to investigating how social influence and status processes affect the transition to entrepreneurship. Hence, further research should study how social influence and status processes affect subsequent outcomes such as the novelty of the product or service as well as its commercial success. A relevant research question is whether the social influence and status effects encourage or hinder the right people at the right time to start a promising entrepreneurial project. It is an established empirical fact

that the distribution of the returns of new ventures is highly skewed (Scherer and Harhoff, 2000; Hall and Woodward, 2010). In most cases, new ventures have low productivity and low levels of innovation. Indeed, rather than generating jobs and growth, they simply create churn and only a small fraction of new businesses have a positive impact on the economy (cf. Nightingale and Coad, 2014; Wong et al., 2005). As a consequence, some entrepreneurship scholars have concluded that policymakers should stop encouraging more people to become entrepreneurs and rather concentrate on the subset of entrepreneurial projects with growth potential (Shane, 2009). Accordingly, it is interesting and relevant for future studies to investigate whether contagion and status convergence lead to economically unfavorable transitions to entrepreneurship.

We close this section with two final directions for future research. Using a quantitative approach to study contagion cannot grasp the richness of the content of the information presumed to flow along network ties. Further empirical research on the contagion mechanisms in entrepreneurship should thus include qualitative research and consider the content of the communication between actors (cf. Jack, 2010). Further, entrepreneurial action often takes place in teams. Hence, future research on the extent to which the social structural effects impact on the decision to pursue entrepreneurial entry could examine the effects of social influence and status at the team level. A relevant research question would be how do the prior entrepreneurial experience and social status of potential cofounders alter the contagion and status convergence mechanisms?

8. Conclusion

The purpose of this dissertation was to advance our understanding of how the structure of social networks affects entrepreneurial entry, defined herein as the result of an individual career decision and an intermediate step in the overall entrepreneurial process. The individual transition to entrepreneurship is generally a vital career event associated with personal risks and consequences. It is necessary but not sufficient for individual entrepreneurial success. Further, individual entrepreneurial entry is necessary but not sufficient for high-impact entrepreneurship and hence may have positive transformational effects on the economy. We focused on the effects of two aspects of the structure of social networks, namely social proximity and social ranking, and answered the following two research questions: (1) how do social influence mechanisms affect entrepreneurial entry and (2) how does social status affect entrepreneurial entry? In this concluding chapter, we summarize our research findings and their implications.

8.1. Summary of the findings

Our theoretical insights and empirical results indicate the significant and diverse effects of structural positions on entrepreneurial entry. Both social influence and status effects are

aggregate effects. Each of these is based on more than one set of underlying mechanisms that interact or even counteract each other.

8.1.1. Theoretical insights

To analyze the effects of network structure on individual outcomes, network theory provided a valuable framework. The network is a versatile concept for explicating and modeling the relevant aspects of social structure. We chose to focus on a major branch of network theory, namely the study of social homogeneity, to explain how network mechanisms and processes affect the choices of actors. This perspective differs from the second major branch, social capital theory, which examines network processes as a source of advantage and success. According to the social homogeneity research tradition, two types of network processes affect individual choices: (i) contagion due to the flow of information along network ties and (ii) convergence as a result of the similarities of the structural environment or of the social roles of actors that coordinate their choices.

The choice outcome of interest in our study was individual entrepreneurial entry. Our review of existing theory showed that there is no broadly accepted theoretical framework for entrepreneurship in general and entrepreneurial entry in particular. Instead, there is some debate about the presupposed ontological status of entrepreneurial opportunities. We adopted the critical realist view of entrepreneurship proposed by Ramoglou and Tsang (2016) that implies that entrepreneurial opportunities are real and objectively exist. However, fundamentally, entrepreneurial opportunities can neither be recognized or discovered beforehand nor created through entrepreneurial agency. Only when profits arise in the aftermath can one then know that an entrepreneurial opportunity existed and that the right actions were taken to exploit it.

8. Conclusion

Our conceptualizations of entrepreneurship and entrepreneurial entry further draw from the judgment-based view of entrepreneurship. This view characterizes entrepreneurial action by the investment of resources under uncertainty with the aim of creating a new market offer. Entrepreneurial action results from individual (subjective) beliefs and doubts as to whether entrepreneurial entry is desirable and feasible. When an individual transitions to entrepreneurship, he or she believes that his or her choice is likely to bring about a more desirable future state compared with not doing it. This conceptualization of entrepreneurship focuses on the underlying mechanisms of the subjective choice by an individual to pursue entrepreneurial entry as opposed to the conditions for micro-level entrepreneurial success and macro-level entrepreneurial impact.

Social influence is a somewhat generic term for the mechanisms through which the beliefs or actions of an actor are a consequence of the beliefs or actions of structurally proximate others. They belong to the category of contagion mechanisms under network theory. Social influence theory further distinguishes two types of contagion mechanisms: cohesion and communication, on the one hand, and equivalence and comparison, on the other. Both these mechanisms explain how others influence an actor's views and actions. However, they differ in the logic of why and how such an influence occurs.

Under the cohesion mechanism, actors influence each other to adopt beliefs or behaviors by exchanging information. Structural proximity is conceptualized as cohesion, the strength of social ties and length of network paths between actors, which function as conduits for the flow of information. Cohesive relationships with entrepreneurs lead to a transfer of the information and knowledge required to start an entrepreneurial project, thereby facilitating entrepreneurial entry.

8. Conclusion

Under the equivalence and comparison mechanism, actors observe similar others and compare themselves with those parties to develop a self-concept and draw conclusions about the behavior appropriate for a particular social role. The comparison mechanism is based not on direct interaction but observation, analogous to the theory of role models. Here, structural proximity is the similarity of an actor, which favors identification and social comparison. Observing entrepreneurs with similar profiles concerning roles and specializations triggers imitation. It is easier for individuals to model their own (successful) entrepreneurial entry with the help of examples of equivalent entrepreneurs.

Social status is an individual's position within a social hierarchy or ranking. Determinants of status include the deference, dominance, and exchange relationships among actors. An actor's position in the status hierarchy can affect his or her choices. The underlying mechanisms belong to the category of convergence mechanisms under network theory.

Social status can both encourage and deter entrepreneurial entry depending on the relative strength of the underlying mechanisms which determines the overall effect. On the one hand, a very high social ranking can encourage actors to transition to entrepreneurship. High-status actors expect fewer (or no) social consequences in the case of entrepreneurial failure, as they have a stable social identity and others hardly doubt their legitimacy. On the other hand, status can deter the transition to entrepreneurship. The advantages of a high social status cannot be utilized when the transition to entrepreneurship brings with it an increase in uncertainty. At the same time, there is a risk of loss of status if the transition requires exchange relationships with low-status actors. Finally, a high status can reduce the ambition to transition to entrepreneurship.

8.1.2. Empirical results

Our empirical results on the social influence on entrepreneurial entry confirmed the presented theoretical assumptions. In line with previous research, we hypothesized that exposure to entrepreneurs via direct social ties (cohesion) is positively related to the transition to entrepreneurship. We found a positive and robust effect of exposure to teammates with prior entrepreneurial experience, thereby allowing us to rule out a selection effect.

We further hypothesized that the prevalence of entrepreneurial actions among others with a similar professional profile is positively associated with entrepreneurial entry. We found a positive effect of the prevalence of entrepreneurship among other actors that had previously performed a similar functional team role and operated in similar market categories. Finally, we hypothesized that the positive effect on entrepreneurial entry is particularly large when cohesion and equivalence occur together and found a positive interaction between both social influence mechanisms.

We found that an individual's social status significantly affects his or her choice to transition to entrepreneurship. However, the direction of the effect varies and is determined by the source or type of social status. We found that a high social status acquired through a prestigious industry award is a strong positive predictor of entrepreneurial entry for winners as well as for nominees. Having a high status by occupying a central position in a professional network of industry peers, on the contrary, is not a predictor of the transition to entrepreneurship but rather for remaining in employment or continuing to work under a freelance arrangement.

8.2. Practical implications

Our results shed light on the social structural effects on entrepreneurial entry. In particular, we demonstrated the significance and variety of the social influence and status mechanisms that affect entrepreneurial entry. However, the analysis of the extent to which the social influence and status effects impact on entrepreneurial success was not within the scope of our study. Hence, we cannot deduce any implications on who should engage in an entrepreneurial project and when.

Nevertheless, our results are of practical relevance for those considering becoming a founder-owner as well as for those working with prospective entrepreneurs. Therefore, we derive the practical implications of our results from the fact that the consequential decision on entrepreneurial entry is based on the subjectively perceived chances of success and, at the same time, is significantly influenced by the position within the social network structure. As a result of the social structural effects on the transition to entrepreneurship, two types of unfavorable situations can occur. We term these structurally induced entrepreneurial hubris and structurally induced entrepreneurial inertia.

Structurally induced entrepreneurial hubris arises when an individual is encouraged to transition to entrepreneurship despite a lack of suitable market opportunities or the key skills to execute an entrepreneurial project. In this situation, the individual as well as other affected stakeholders such as investors would be better off not starting an entrepreneurial project. We showed that contagion mechanisms operate directly and indirectly. Hence, individuals might transition to entrepreneurship because of the availability of communication opportunities with other entrepreneurs or because entrepreneurs with a similar professional profile are visible to them. We further showed that a positive status shock

could provide individuals with a sense of security that then encourages them to transition to entrepreneurship. Individuals might feel this sense of security when they consider their status to be fixed and not in danger—even when they engage in an unfavorable entrepreneurial activity with negative consequences.

Each prospective founder as well as potentially involved supply-side stakeholders should be aware of the possibility of structurally induced entrepreneurial hubris when they consider entrepreneurial entry or work with an individual in the early phases of an entrepreneurial project.

Structurally induced entrepreneurial inertia arises when contagion or convergence effects deter entrepreneurial entry by individuals who have the relevant capabilities and could pursue a real entrepreneurial opportunity. Inversely interpreted, our results indicate that the lack of cohesive ties to entrepreneurs or the lack of entrepreneurial role models can lead to entrepreneurial inertia. We also showed that a person's network-derived status deters him or her from transitioning to entrepreneurship. This situation can occur when a focal individual is positioned centrally in the professional setting and enjoys status advantages, which are at risk if he or she transitions to entrepreneurship. This is problematic when it prevents capable individuals from pursuing high-impact entrepreneurial projects.

Our results may inform strategies to overcome network-based status inertia in entrepreneurship. The prerequisite for those who intend to promote entrepreneurship among a specific group of people is that they consider the respective individuals as capable of exploiting a real entrepreneurial opportunity. A possible strategy to encourage entrepreneurship is to deliberately trigger contagion effects by facilitating the creation of direct social relationships with entrepreneurs. In addition, one can identify role models and familiarize the intended audience with their story. Think of showing an example of an

entrepreneur to students that studied the same subject at the same university. Getting to know examples of entrepreneurs with a similar profile, specialization, and background can trigger the imitation of entrepreneurial behavior. This approach is feasible, as it requires simple research and the preparation of exemplary information on entrepreneurial individuals with comparable profiles. The role model effect would be particularly strong if those similar entrepreneurs were available for direct communication.

In conclusion, we showed in this thesis that the network structure influences the individual's decision to pursue entrepreneurial entry. This decision can have significant consequences both at the individual level and at the level of the aggregate economy. Our findings based on a large-scale empirical study contribute to the body of research on this topic by providing a more detailed understanding of the underlying social mechanisms. We hope that our results inspire future entrepreneurship research as well as practical applications.

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A. Appendix

A.1. ComicBase data dictionary

Here, we list the original data field descriptions of the ComicBase user guide for the team roles and the system of genres available in the database.

EDITOR The editor of a comic.

WRITER Lists the name of the person who conceived the plot and wrote the script for the comic. Sometimes not the same person.

ARTIST Lists the name of the primary interior artist, also known as a penciller, of a comic.

INKER Lists the inker of a comic. The artist who applies inked outlines over the pencils of a comic.

COLORIST The name of the person or studio that colored the comic.

LETTERER The name of the person or studio that provided lettering for the interior text of a comic.

COVER ARTIST The artist for the cover of a comic. Sometimes this is the same as the interior artist, but just as often it is a separate artist.

COVER INKER The name of the artist who adds the black ink lines for a comic's cover.

COVER COLORIST The name of the person or studio that colored a comic's cover[1].

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[1] The original ComicBase data model does not have a separate field for the cover colorist role but lists the cover colorist in the cover artist or cover inker field and adds (colorist) after the name.

ACTION/ADVENTURE Any title with action-oriented stories, usually in contemporary settings (e.g., Young Indiana Jones, Punisher).

ADULT Titles with content (explicit sex, drug use, or extreme violence) that would earn it an NC-17 rating (e.g., Carnal Comics).

ANTHROPOMORPHIC Titles whose characters are animals acting like humans (e.g., Albedo, Porky Pig).

COMEDY Titles with lightweight stories, humorous characters, and happy endings (e.g., the Simpsons, MAD).

CRIME Titles that feature gangsters, gun play, and commissions of crimes. Emphasis is on the plotting, commission, and aftermath of crimes (e.g., Police Action, Crime Detective Comics).

DRAMA A focus on emotion and interpersonal conflict (e.g., Slacker Comics).

FANTASY Titles with stories in imagined settings and with mythical or folkloric heroes (e.g., Elfquest, Conan the Barbarian).

HORROR Titles featuring frightening characters such as monsters and vampires (e.g., Buffy the Vampire Slayer, Tomb of Dracula).

MANGA/ANIME Titles with stories and art in the style of Japanese comics or animated films (e.g., Bubblegum Crisis, Ninja High School).

MYSTERY Titles in which the characters solve a mystery or work out an enigma (e.g., Sherlock Holmes, Scooby Doo).

NON-FICTION Titles dealing with events or occurrences that are (allegedly) true (e.g., Who Really Killed JFK, Real Life Comics).

PIN-UPS/ART BOOK Books consisting primarily of comic art alone—not a story (e.g., Fathom Swimsuit Special, Hot Shots X-Men).

RELIGIOUS Titles involving religious characters or themes (e.g., Life of Pope John Paul II, The Brick Testament).

ROMANCE Titles with stories focusing on love or emotional attraction (e.g., Young Romance, Our Love).

SCIENCE FICTION Speculative fiction with a scientific factor such as aliens, time travel, or robots (e.g., Sigil, Timecop).

SPORTS Titles about sports, athletics, or sports characters (e.g., NASCAR Adventures, Champion Sports).

SUPER-HEROES Titles featuring characters with extraordinary powers and abilities, often wearing costumes (e.g., Superman, Spiderman).

UNDERGROUND Small print run titles with a decidedly non-mainstream feel, often dealing with topics such as sex and drugs (e.g., Hup, Anomaly).

WAR Titles about war and combat (e.g., Battlefield Action, Frontline Combat).

WESTERN Titles set in the late 19th century western United States. Usually involves cowboys and Indians (e.g., Tomahawk, The Rawhide Kid).

A.2. Supplementary descriptive statistics and correlation tables

Table A.1.: Descriptive statistics for the genre workload variables

Variable	N	Mean	St. Dev.	Min	Max
Genre action adventure workload	37,672	0.916	2.586	0	53
Genre adult workload	37,672	0.093	0.705	0	36
Genre anthology workload	37,672	0.338	1.278	0	38
Genre anthropomorphics workload	37,672	0.212	1.087	0	26
Genre comedy workload	37,672	0.524	1.989	0	77
Genre crime workload	37,672	0.156	1.048	0	31
Genre drama workload	37,672	0.092	0.712	0	18
Genre fantasy workload	37,672	0.666	2.145	0	39
Genre horror workload	37,672	0.663	2.221	0	46
Genre licensed workload	37,672	0.846	2.726	0	64
Genre manga anime workload	37,672	0.232	1.230	0	32
Genre mystery workload	37,672	0.117	0.825	0	18
Genre non fiction workload	37,672	0.110	1.760	0	53
Genre pin ups art book workload	37,672	0.052	0.263	0	6
Genre religious workload	37,672	0.005	0.125	0	11
Genre romance workload	37,672	0.034	0.342	0	16
Genre science fiction workload	37,672	0.920	2.758	0	55
Genre sports workload	37,672	0.014	0.216	0	10
Genre super hero workload	37,672	4.266	12.102	0	316
Genre underground workload	37,672	0.015	0.152	0	8
Genre war workload	37,672	0.113	0.956	0	36
Genre western workload	37,672	0.052	0.529	0	16

Table A.2.: Correlation table of the main sample variables: part 1

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Entrepreneurial entry									
2. Cohesion	0.09***								
3. Assigned cohesion	0.01	0.20***							
4. Equivalence	0.13***	0.05***	-0.10***						
5. Award	0.01	0.00	0.06***	-0.07***					
6. Award count	0.00	0.00	0.05***	-0.06***	0.82***				
7. Winner	0.00	0.00	0.02***	-0.05***	0.40***	0.52***			
8. Winner count	0.00	0.00	0.02**	-0.04***	0.32***	0.53***	0.78***		
9. Nominee	0.01	0.00	0.05***	-0.06***	0.91***	0.67***	-0.01	-0.01	
10. Nominee count	0.00	0.00	0.05***	-0.05***	0.81***	0.91***	0.23***	0.14***	0.78***
11. Centrality	-0.06***	-0.19***	0.00	-0.35***	0.19***	0.17***	0.13***	0.11***	0.15***
12. Tenure	-0.05***	-0.11***	0.04***	-0.10***	0.16***	0.15***	0.09***	0.09***	0.14***
13. Project count	-0.05***	-0.10***	0.00	-0.23***	0.20***	0.19***	0.15***	0.15***	0.16***
14. Role genre variety	0.07***	0.00	0.02***	0.13***	0.03***	0.04***	0.02***	0.02***	0.03***
15. Writer workload	0.06***	-0.06***	-0.04***	0.21***	0.01*	0.01	-0.01	-0.01	0.02***
16. Artist workload	0.09***	-0.05***	-0.04***	0.20***	-0.01	0.00	-0.02**	-0.02**	0.00
17. Editor workload	-0.04***	-0.04***	0.02***	-0.17***	0.05***	0.03***	0.06***	0.03***	0.03***
18. Supporter workload	-0.05***	-0.05***	0.03***	-0.28***	0.12***	0.12***	0.06***	0.08***	0.10***

Table A.3.: Correlation table of the main sample variables: part 2

Variable	10.	11.	12.	13.	14.	15.	16.	17.
1. Entrepreneurial entry								
2. Cohesion								
3. Assigned cohesion								
4. Equivalence								
5. Award								
6. Award count								
7. Winner								
8. Winner count								
9. Nominee								
10. Nominee count								
11. Centrality	0.15***							
12. Tenure	0.13***	0.60***						
13. Project count	0.15***	0.79***	0.49***					
14. Role genre variety	0.03***	0.02***	0.00	0.01*				
15. Writer workload	0.01*	0.09***	0.02***	0.10***	0.06***			
16. Artist workload	0.00	0.06***	0.01	-0.02***	0.23***	0.02***		
17. Editor workload	0.02***	0.26***	0.07***	0.32***	-0.03***	0.04***	-0.08***	
18. Supporter workload	0.10***	0.42***	0.17***	0.45***	0.10***	-0.08***	0.00	-0.06***

A.3. Detailed output of the baseline regression model

```
Generalized linear mixed model fit by maximum likelihood (Adaptive Gauss-Hermite
    Quadrature, nAGQ = 0) ['glmerMod']
 Family: binomial ( cloglog )
Formula: entr_act ~ tenure + yearf + project_count_l + publisher_degree_l +
    role_genre_blau_index_l + writer_workload_l + artist_workload_l +
    editor_workload_l + supporter_workload_l + gen_action_adventure_workload_l +
    gen_adult_workload_l + gen_anthology_workload_l + gen_anthropomorphics_
        workload_l +
    gen_comedy_workload_l + gen_crime_workload_l + gen_drama_workload_l +
    gen_fantasy_workload_l + gen_horror_workload_l + gen_licensed_workload_l +
    gen_manga_anime_workload_l + gen_mystery_workload_l + gen_non_fiction_workload
        _l +
    gen_pin_ups_art_book_workload_l + gen_religious_workload_l +
    gen_romance_workload_l + gen_science_fiction_workload_l +
    gen_sports_workload_l + gen_super_hero_workload_l + gen_underground_workload_l
        +
    gen_war_workload_l + gen_western_workload_l + (1 | creator_id)
    Data: c_surv_est
Control: glmerControl(optimizer = "nloptwrap")

     AIC       BIC    logLik deviance df.resid
 15866.6   16359.2   -7875.3  15750.6     36005

Scaled residuals:
   Min      1Q  Median      3Q     Max
-1.705  -0.274  -0.203  -0.143  45.708

Random effects:
 Groups     Name          Variance Std.Dev.
 creator_id (Intercept)   1.131    1.063
Number of obs: 36063, groups:  creator_id, 11288

Fixed effects:
                           Estimate Std. Error z value Pr(>|z|)
(Intercept)              -3.4418174  0.1701000 -20.234  < 2e-16 ***
tenure                   -0.0190437  0.0049102  -3.878 0.000105 ***
yearf1989                 0.0926016  0.2179077   0.425 0.670867
yearf1990                 0.2683575  0.2083631   1.288 0.197770
yearf1991                 0.2984124  0.2042084   1.461 0.143930
yearf1992                 0.5541083  0.1941779   2.854 0.004323 **
yearf1993                 1.0470865  0.1800203   5.816 6.01e-09 ***
yearf1994                 0.6833511  0.1830898   3.732 0.000190 ***
yearf1995                 0.7279702  0.1807743   4.027 5.65e-05 ***
yearf1996                 0.2511052  0.1936295   1.297 0.194689
yearf1997                 0.7215173  0.1866981   3.865 0.000111 ***
```

yearf1998	0.5659214	0.1927299	2.936	0.003321	**
yearf1999	0.3805057	0.2025689	1.878	0.060326	.
yearf2000	0.5136840	0.2013230	2.552	0.010725	*
yearf2001	0.2050721	0.2191836	0.936	0.349470	
yearf2002	0.2339545	0.2109724	1.109	0.267459	
yearf2003	0.6721856	0.1930478	3.482	0.000498	***
yearf2004	0.9149117	0.1838277	4.977	6.46e−07	***
yearf2005	0.9891459	0.1795211	5.510	3.59e−08	***
yearf2006	0.9200105	0.1795549	5.124	2.99e−07	***
yearf2007	0.1050794	0.2033960	0.517	0.605418	
yearf2008	−0.2874766	0.2237049	−1.285	0.198768	
yearf2009	−0.1381250	0.2106006	−0.656	0.511913	
yearf2010	−0.1083331	0.1992118	−0.544	0.586573	
yearf2011	−0.1173533	0.1992872	−0.589	0.555952	
yearf2012	−0.8785906	0.2406565	−3.651	0.000261	***
yearf2013	−0.9002041	0.2426543	−3.710	0.000207	***
yearf2014	−0.4744986	0.2164830	−2.192	0.028390	*
project_count_l	−0.0020234	0.0004754	−4.257	2.08e−05	***
publisher_degree_l	0.1291584	0.0122103	10.578	< 2e−16	***
role_genre_blau_index_l	0.0074689	0.0008840	8.449	< 2e−16	***
writer_workload_l	0.0721760	0.0100502	7.182	6.89e−13	***
artist_workload_l	0.0957769	0.0087534	10.942	< 2e−16	***
editor_workload_l	−0.0200621	0.0112551	−1.782	0.074668	.
supporter_workload_l	−0.0373455	0.0096891	−3.854	0.000116	***
gen_action_adventure_workload_l	−0.0041149	0.0138661	−0.297	0.766650	
gen_adult_workload_l	−0.0135385	0.0332628	−0.407	0.683997	
gen_anthology_workload_l	−0.0393866	0.0223147	−1.765	0.077555	.
gen_anthropomorphics_workload_l	−0.0853582	0.0358974	−2.378	0.017415	*
gen_comedy_workload_l	−0.1262115	0.0222517	−5.672	1.41e−08	***
gen_crime_workload_l	−0.0322596	0.0275268	−1.172	0.241223	
gen_drama_workload_l	0.0797252	0.0339517	2.348	0.018865	*
gen_fantasy_workload_l	−0.0390111	0.0147401	−2.647	0.008131	**
gen_horror_workload_l	0.0328057	0.0134472	2.440	0.014704	*
gen_licensed_workload_l	−0.0616598	0.0149234	−4.132	3.60e−05	***
gen_manga_anime_workload_l	−0.0809032	0.0200801	−4.029	5.60e−05	***
gen_mystery_workload_l	−0.0235639	0.0361310	−0.652	0.514284	
gen_non_fiction_workload_l	−0.0131522	0.0375442	−0.350	0.726104	
gen_pin_ups_art_book_workload_l	0.2667034	0.0596967	4.468	7.91e−06	***
gen_religious_workload_l	−0.3808259	0.3582988	−1.063	0.287840	
gen_romance_workload_l	−0.0868214	0.0742157	−1.170	0.242060	
gen_science_fiction_workload_l	0.0287271	0.0119806	2.398	0.016494	*
gen_sports_workload_l	−0.1439916	0.1204683	−1.195	0.231983	
gen_super_hero_workload_l	−0.0099865	0.0094349	−1.058	0.289844	
gen_underground_workload_l	0.3251802	0.0999767	3.253	0.001144	**
gen_war_workload_l	−0.0627545	0.0419832	−1.495	0.134979	
gen_western_workload_l	−0.0140241	0.0563908	−0.249	0.803596	

A. Appendix

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1