Abstract

Elements of Innovators’ Fame: Social Structure, Identity and Creativity

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What makes an innovator famous? This is the principal question of this dissertation. I examine three potential drivers of the innovators’ fame – their social structure, creativity and identity. My empirical context is the early 20th century abstract artists in 1910-25. The period represents a paradigmatic shift in the history of modern art, the emergence of the abstract art movement. In chapter 2, I operationalize social structure by an innovator’s local peer network. I find that an innovator with structurally and compositionally diverse local network is likely to be more famous than the one with a homogenous local network. I find no statistical evidence for creativity as a link between social structure and fame. Instead, the evidence suggests that an innovator’s creative identity and access to promotional opportunities are the key drivers of her fame. In Chapter 3, I find that the creativity identity resulting from an innovator’s creative trajectory can lead to obscurity despite early fame and acclaim. The drastic change in the nature of a producer’s output can dilute her identity and cost her her niche. In combination with her peer network characteristics, these dynamics can mean obscurity even for talented and prolific innovators. In chapter 4, I undertake a large-scale analysis of the relationship between creativity and fame. Using a novel computational measure for the novelty of the artists’ works, I explore how their creativity and fame evolve over 1905-2000 in five markets. I find no statistical evidence for a positive relationship between creativity and fame; in fact, the statistical evidence is in favor of a negative relationship between creativity and fame through several time periods.
The results suggest that creativity (measured by expert or machines) is not a driver of fame.

In effect, it further supports the conclusions of chapter 2 and 3.
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Introduction

Fame, or the extent to which an individual is known, is a key metric of success as well as a resource. Yet it has received relatively little attention in the literatures on occupations and economic performance.

In this dissertation, I examine the determinants of the fame of innovators in creative markets. My empirical context is the early 20\textsuperscript{th} century abstract artists in 1910-25. The period represents a paradigmatic shift in the history of modern art, the emergence of the abstract art movement. I examine the fame of the leading innovators of this new paradigm. In this respect, the innovators in my data are among the most creative in their field.

Famous innovators might be creative but not all creative innovators are famous. This is reflected in the distribution (Figure 1) of the fame of 90 pioneers of abstract art. Despite being at the forefront of a new paradigm, these artists differ considerably in their fame. Some artists such as Pablo Picasso are household names, while others such as David Bomberg have barely escaped obscurity. My goal is to understand what aspects of an innovator’s social structure shapes her fame. In exploring this question, I examine how social structure is associated with creativity and also with creative identity. In order to model the social structure, I use peer network data which comes from the Museum of Modern Art and comprises the relationships between these artists.

In Chapter 2, I use the peer network data to evaluate the role of networks as pipes and prisms in shaping fame. As pipes, social networks function as conduits of resources such ideas and opportunities that affect an innovator’s creative output. As prisms, social networks shape an innovators creative identity and in effect shape how an innovator’s creative output is
perceived by different audiences. Chapter 1 theoretically and empirically adjudicates between two local network structures – brokerage and closure – and their relationship to fame. I decompose the role of these local network structures into pipes (exposure to audiences and creativity) and prisms (identity). Furthermore, I theorize and test how differences in the institutional structures and audience preferences in two markets – central and peripheral – affect the relationship between an innovator’s social structure and fame across the two markets. The results indicate that an artist in a brokerage rather than a closure position is likely to become more famous. This effect occurs because a broker’s alters are more nationally diverse i.e. they are likely to differ more from each other’s nationalities. Moreover, artists with nationally diverse networks were recognized as more creative in the contemporary media, although experts do not now evaluate these artists as having been more creative. This suggests that national diversity among an ego’s alters is associated with a more creative identity, though not necessarily with creativity itself. Thus, networks in this context served mainly as prisms, facilitating the fame of innovators by shaping their creative identities, rather than the actual creativity of artists.

In Chapter 3, I examine how social structural forces and an innovator’s creative trajectory can lead to obscurity despite early fame and acclaim. I focus on the British visual artist, David Bomber, who garnered fame as well as critical acclaim early in his career in 1913-14. Despite his promising start, he became “tragically neglected” (Cork 1987) to the point of being obscure during his life-time. The lack of attention to Bomberg is surprising given that he produced a large body of high quality work throughout his life; moreover he adapted his style to market tastes. In this chapter, I undertake a qualitative analysis of Bomberg’s career over 1910-30 to examine the evolution of his fame in light of changes in his
creativity and social network. I argue that Bomberg’s pre-war radical creativity defined a niche audience and identity for him. His more conservative post-war output was incongruent with the radical nature of his pre-war work.

The drastic change in the nature of his output diluted his identity and betrayed the expectations of his pre-war audience. As a result, he forfeit his niche and lost his audience. Combined with his post-war isolation, these dynamics resulted in a talented and prolific innovator fading from public attention.

The final chapter represents a large-scale analysis of an ancient question, one that looms throughout the prior chapters: What is the relationship between creativity and fame? Despite its importance, the question has only been explored by a handful of studies due to the challenges of measuring the complex and elusive construct of creativity. In this chapter, I undertake a cross-temporal analysis of the relationship between innovators’ creativity and fame across five markets. I use a novel computational method to measure the creativity of the works of 55 pioneers of the abstract art movement to examine how their creativity and fame evolves between 1905-2000. My measure of creativity specifically captures one dimension of creativity, novelty. I find no statistical evidence for a positive relationship between creativity and fame; in fact, the statistical evidence is in favor of a negative relationship between creativity and fame through several time periods. This result stands in contrast to lay opinion as well as past research which has documented a positive relationship between fame and creativity, at least until a threshold value of creativity. The results suggests that creativity is not a driver of fame. In effect, it further supports the conclusions of chapters 2 and 3, where I find the fame is driven by social structural elements that shape a producer’s identity and exposure to audiences. The results also suggest that markets for creative talent can be inefficient in that
they fail to pay attention to novel work. Such inefficiencies represent a loss for producers as well as creative markets which thrive on a diversity of talent.

**Figure 1: Distribution of 90 Early 20th Century Abstract Artists’ Fame (mentions in NGram US Enligh Corpus) in 1926**
Chapter 2

The Role of Social Structure and Creativity in Shaping Artistic Innovators' Fame

Introduction

“Not everyone can be famous. But much of our daily experience tells us that we should if we possibly can, because it is the best, perhaps the only, way to be.” (Braudy, 1997:6).

Fame is intrinsically valuable. Fame is a key metric of success for professionals in business, academia, politics and the arts (Braudy 1997). Fame also shapes access to resources and augments returns on individual effort. For the start-up, fame means access to prominent investors and talented employees; for the scientist, fame can determine the distribution of grants, labs and tenure; for the artist, fame wins benefactors, collaborators and marquee dealers. Thus, fame is both a means to success as well as an end in itself.

Despite its importance, fame has remained a relatively neglected construct in organizational theory and sociology. With the exception of a handful of studies, little research explores the factors that shape fame. The limited literature on fame suggests that it is the result of achievement or social standing (Braudy 1997). While achievement is partly dependent on individual abilities, it is also a function of the social structure in which an individual is embedded. Thus, whether we see fame as a result of an individual’s achievements or her social standing, in either case fame depends on social structure. Our goal is to explicitly examine the link between an individual’s fame and her position in social structure. We specifically focus on the fame of innovators.

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1 Co-authored with Paul Ingram
We define fame as being known by a wide set of people beyond an individual’s immediate social network. To explain which innovators rise to fame, we consider a specific aspect of social structure, the peer network, which comprises innovators who know each other through personal and professional relationships. Each innovator’s immediate set of peers, her alters, constitute her local network, which is a source of ideas (Burt 2004), social support (Coleman 1988) and identity (Podolny and Baron 1997). When many of an innovator’s alters are disconnected, we say she is a broker, or is in a brokerage position, and that her local network is sparse (Burt 2009). The disconnected alters of a broker represent distinct social worlds (Simmel 2010). In contrast, when an innovator has fewer disconnected alters, we say she is in a closure position and that her local network is dense. An ego in a closure position is connected to alters whose social worlds overlap.

Both brokerage and closure positions can help an innovator’s fame. A brokerage position can improve exposure to diverse opportunities and ideas (Burt 2004). This exposure can help an innovator disseminate her name to a large number of people and can enrich her creative contribution with new ideas, both of which can elevate her fame. The benefits of a brokerage position are also associated with compositional diversity of the local network. This diversity is reflected in the social diversity among an ego’s alters as well as between the ego and her alters. Both forms of compositional diversity can improve exposure to diverse opportunities and ideas (Burt 2004). In addition, the social diversity among an ego’s alters can shape her creative identity i.e. the extent to which her work is seen as original; the social diversity between an ego and her alters, which we call distinctive identity, can help an innovator attract more attention.

The benefits of closure include: Support and coordination necessary for availing dissemination
opportunities that require reciprocity and shared perspectives (Granovetter 1985, Coleman 1988, Obstfeld 2005); and repeated reinforcement from trusted peers, which can spur an ego’s alters to spread her name beyond the ego network (Centola and Macy 2007). The goal of this study is to theoretically and empirically adjudicate between these two local network structures and their relationship to fame.

As part of the theoretical framework, we examine how differences in the institutional structures and audience preferences in two markets – central and peripheral – affect the relationship between an innovator’s social structure and fame during the same period across the two markets. By testing our propositions in two markets which differ considerably in their institutional and historical contexts, we are able to investigate the robustness of our results.

We define a central market as the hub of production, distribution and consumption of the goods or services of an industry. The majority of the producers in an industry are concentrated in a central market. Such markets have an institutionalized eco-system of the production and distribution of the goods and services of an industry. The standards for production and evaluation of products are established and legitimized in a central market. In contrast, a peripheral market often witnesses the flow of labor and resources from it to a central market. In a peripheral market, the production, distribution and consumption of the goods or services of an industry occur at a relatively small scale and, at times, in an ad hoc fashion. A peripheral market is not the arbiter of legitimacy of industry standards (Phillips 2011). This typology characterizes markets for several industries. An example is the information technology industry, for which a central market is Silicon Valley: In contrast, other regions in the US and
the world are more peripheral\(^2\).

We test our propositions in the context of the emergence of the early 20th century abstract art movement. The emergence of abstract art during 1910-25 marked a radical departure from the representational art paradigm and ushered in numerous artistic innovations. We examine the relationship between the fame and the social structure of 90 artists from Europe and the US who were at the forefront of the movement. The two markets we focus on are the central French and the peripheral US art markets.

We find that an artist in a brokerage rather than a closure position is likely to subsequently become more famous in both France and the US. In order to account for this finding, we test two explanations—compositional diversity and creativity. We find that both forms of compositional diversity (diversity among an ego’s alters and between an ego and her alters) help an innovator’s fame. Specifically, we find that a broker’s alters are more nationally diverse i.e. they are likely to differ more from each other’s national affiliations (the countries wherein each artist lived and worked), and this difference is positively related to an artist’s subsequent fame in France and the US. Furthermore, we find that an innovator with nationally diverse alters is likely to be recognized as original in press; in other words the national diversity among an innovator’s alters shapes her creative identity. Moreover, we find that an artist who has a more distinct art movement based identity i.e. an artist who differs more from her alters’ art movement affiliations, is more likely to become famous in France but not in the U.S. We do not find statistical support for a positive relationship between an artist’s creativity and fame in either France or the U.S.

\(^2\) However, this is an ideal typical typology; in most industries, markets lie somewhere on the continuum of being central and peripheral.
Our study makes several key contributions. First, we highlight fame as an occupational outcome. Fame is a means and an end; a measure of a career and a route to resources and productivity. Yet it has been examined only rarely in the literatures on occupations and economic performance. Second, by decomposing the potential structural determinants of fame into two components—“prisms” (identity) (Podolny 2001) and “pipes” (creativity and exposure)—we present a fine-grained structural foundation for subsequent research on fame. The importance in our findings of identity, rather than creativity, differentiates fame from other occupational outcomes where creativity weighs more heavily (Burt 2005). Third, we contribute to the small literature that links the compositional diversity within an ego’s network to her creative identity (Chua forthcoming). Fourth, our study sheds light on the benefits of structural and compositional diversity for individuals in a peer network that formed voluntarily outside the confines of a formal organization. Our context allows us a rare glimpse into the actual ties between leading innovators who worked and lived in Europe and the US and were affiliated with an eclectic range of sub-fields represented by their art movements. The data therefore allow us to examine the relationship between fame and diversity among a truly international set of innovators. While the benefits of diversity have been examined for teams and individuals within and across organizations, relatively few studies have examined what structural and compositional features aid the success, let alone fame, of innovators who do not work within formal boundaries but instead are producers in “boundaryless” communities that characterize many labor markets (Arthur and Rousseau 2001).

Fame

We conceptualize fame as how widely known an individual is beyond her immediate
peer network (Van de Rijt, et al. 2013). Our definition of fame is similar to Rindova et al’s (2006) in that it involves “large scale public attention” (Rindova et al. 2006:50). However, unlike their definition, we do not require fame to have a positive valence. While fame is correlated with constructs such as recognition, visibility, reputation and status, it is not identical with these (Becker 1984, Lang and Lang 1988, Leahey 2007, Hellmueller and Aeschbacher 2010, Driessens 2013). The most critical difference between fame and these other constructs is that fame is associated with recognizability across domains and communities. Unlike fame, an individual’s reputation and status are often specific to a domain; while recognition and visibility occurs within specific communities. An individual’s status is derived from her affiliation to other actors and, hence, is defined by her network. Moreover, an individual can have widespread attention while having low status within her field. A reputable individual can be held in high regard among an audience beyond her immediate network. However, a reputable individual attracts public attention on a much smaller scale than a famous individual. Such widespread attention makes fame a distinct form of social capital—one that transcends domains (Driessens 2013) and enlarges the potential pool of social and economic resources an individual can access (as well as the public scrutiny they face).

Fame is particularly valuable for innovators. Innovation is often a risky undertaking with consequently uncertain access to resources. This uncertainty is compounded by the difficulty in establishing an objective criterion for evaluating an innovation’s merit, especially when it is very novel. An audience’s inability to comprehend and properly evaluate an innovator’s output can lead her to be ignored and neglected (Simonton 1980). Such “evaluative confusion” (Simonton 1998:207) can be even more acute when an industry or field undergoes a paradigm shift. During these shifts, the criteria for evaluating the worth of
innovations is in a state of flux, thereby accentuating the difficulties in assessing the value of innovations. Instead of soaring, an innovator’s career can flounder and fade because of an audience’s incomprehension and consequent lack of attention to her work. Audiences invest more time and effort to learn about famous individuals: The investment of attention can allow audiences to better understand the value of an innovation, which can in turn translate into access to human and financial capital. Fame is therefore a particularly valuable resource for radical innovators who are at the forefront of a paradigm shift.

Social Structure and Fame

The factors that produce fame can be broadly grouped into two categories—fame as a result of achievement and fame as a result of one’s social position (Braudy 1997). Achievement itself depends on an individual’s skills as well as her social structure, which can aid or impede her ability to acquire skills (Blau and Duncan 1967) and recognition (Lang and Lang 1988). Even access to the most democratized publicity channel, the internet, still depends on one’s socio-economic background (Guillén and Suárez 2005). Thus, irrespective of whether we see fame as an outcome of achievement or social position, fame depends on social structure. Therefore, in order to understand what shapes fame, we need to understand its relationship with the social structure in which an individual is embedded.

A core tenet of modern sociology is that an individual’s outcomes depends on her system of social relationships. Such a system, modeled as a social network, connects social structure to individual level outcomes (Granovetter 1985). We specifically focus on her network of peer innovators to understand how the structure of an innovator’s immediate relationships i.e. her local network of peers relates to her fame.
Local network structures that propagate an innovator’s name and provide her channels to new audiences are likely to increase her fame. Prior work has documented extensive evidence that individuals in brokerage positions are more successful because they have access to novel and non-redundant information about career opportunities (Burt 2009). Access to such diverse information can help an innovator learn about opportunities to showcase her work to different audiences. A brokerage position is particularly conducive to discovering these opportunities.

A broker’s access to diverse information can also result in her being recognized as creative. Non-redundant ideas offer opportunities for novel recombination of ideas resulting in creative breakthroughs (Perry-Smith 2006). A broker can translate and transfer ideas between disconnected alters, moving ideas from one context, in which they are familiar, to another context, in which they might be seen as novel and creative (Burt 2004). Furthermore, a broker with a sparse local network faces less pressure to conform to norms prevalent among her peers (Bienenstock, Bonacich and Oliver 1990), allowing a broker to experiment with new ideas and hence be more creative. Insofar as creativity fosters fame, innovators in brokerage positions have an advantage in becoming famous over those in closure positions.

The structural diversity in a broker’s local network can aid the diffusion of her name to a larger number of people. If we think of the spreading of fame as a multi-step diffusion process, we can imagine the name of an ego diffusing from her to her alters and from her alters to people beyond her local network. The more an ego’s alters are disconnected from each other, the greater is the likelihood of her name diffusing to a disparate and hence a larger group of people. In contrast, the name of an ego in a dense local network might circulate repeatedly within her connected alters and have a lower chance of diffusing beyond the local network.
The advantages of brokerage may extend beyond structural diversity to compositional diversity, that is, diversity in the types of people that make up the network (Campbell, Marsden and Hurlbert 1986). Relative to an ego in a closure position, an ego in a brokerage position is likely to have greater compositional diversity among her alters because individuals who differ along social dimensions, such as nationality, industry or disciplinary affiliation, are less likely to know each other.

Compositional diversity offers a number of benefits to innovators. Individuals with ties to diverse alters are more cosmopolitan in that they have access to multiple social contexts—countries, organizations, industries, disciplines—which vary in cultural and institutional schemas, opportunities and processes. Access to diverse social realms exposes an ego to a wider range of novel ideas and practices (Campbell, et al. 1986, Constant, Sproull and Kiesler 1996, Reagans and Zuckerman 2001). This in turn can not only spur an ego’s creativity but also help her create work that may appeal to a wider range of audiences (Godart, Maddux et al. 2015).

Furthermore, disconnected and diverse alters constitute audiences from distinct sub-domains. As such they represent distinct opportunities for an ego to spread her name among a disparate and hence a broader range of audience.

The compositional diversity among an ego’s alters also shapes how she is perceived by others (Chua forthcoming). A cosmopolitan identity, which derives from compositional diversity, can have multiple interpretations (Padgett and Ansell 1993), which might confuse audiences who prefer a narrowly defined identity (Podolny & Barron 1997). Alternatively, a cosmopolitan identity may appeal to a range of audiences from different social backgrounds. The multiplicity of meanings associated with a cosmopolitan identity can also result in an
innovator’s work being seen as more creative. Furthermore, a cosmopolitan identity is associated with an “outsider identity” because cosmopolitans have ties to others outside the local community (Gouldner 1957) or the core of a field (Dahlander and Frederiksen 2012); as such cosmopolitans are open to conventions and perspectives that depart from the mainstream. Thus, they are more likely to challenge and subvert traditional practices (Godart, Maddux et al. 2015) and bring novel ideas and practices into a community (O'Mahony and Bechky 2008, Dahlander and Frederiksen 2012, Zou and Ingram 2013). Audiences may reject or embrace such a challenging creative identity, but it is more likely to garner attention.

The above discussion was about differences among alters, but differences between an ego and her alters constitutes another form of compositional diversity, which we refer to as distinctive identity since it differentiates an ego from her peers. An ego in a brokerage position is likely to have a more distinctive identity than an ego in a closure position. We expect a distinctive identity to help an innovator stand out among peers and attract more attention. Thus the compositional diversity in a broker’s network can function as a prism, influencing how she is perceived, and allowing her to draw the attention of a wider audience.

So far we have argued for the benefits of brokerage position (and its association with compositional diversity) for an innovator’s fame. Yet, the trust, coordination and support associated with closure positions can also help an innovator’s fame. The shared perspective and reciprocity prevalent in a dense local network can help an innovator access distribution platforms that require coordination and peer support (Coleman 1988). For instance, researchers working in a common field can leverage their network to assemble a conference, which would promote their work. Distribution platforms that attract the attention of a large and interested audience can increase an innovator’s fame substantially. The cooperative norms that
characterize the dense local networks can help an innovator elicit the peer support and
coordination (Reagans and McEvily 2003) vital for access to such platforms. In contrast an
innovator with a sparse local network may not be able to achieve the cooperation and common
vision required to promote her work in such distribution platforms. A second argument in
favor of closure is akin to the one underlying the process of complex contagion which governs
the diffusion of phenomena like social movements, where diffusion requires the adoption of
some costly behavior (Centola and Macy 2007). A risk averse individual usually adopts such a
behavior only when she learns about it from multiple peers in her local network. Adoption is
more likely when the peers are themselves connected to each other. Spreading the name of a
radical innovator can involve a risk to one’s reputation. Learning about an innovator from
multiple friends who know each other can provide the reinforcement needed to spur an alter to
spread an ego’s name beyond the local network.

Central and Peripheral Markets

Now we consider how industry and market level features can affect which social structure
helps an innovator’s fame. Past work has examined how the same producers and their output
are evaluated and recognized across different markets (Griswold 1987, Lamont 1987).
However, limitations of data have confined such analysis to individual producers and thus
prevented any inference about a larger group of producers. We exploit a feature of our data
that allows us to compare the fame of a group of innovators in two markets, one central and
one peripheral. If the relationship between social structure and fame is consistent across
markets, it would be evidence of the robustness of that relationship. If the relationship varies
across markets, it would indicate how the benefits of brokerage and closure might be
contingent on market features.
We focus on two aspects that distinguish central markets from peripheral ones: (i) the degree of a market’s institutionalization, which shapes the opportunities producers have to disseminate their work; (ii) the extent to which a market is entrenched in a traditional paradigm, which shapes how audiences’ value a producer’s background and output. We argue that brokerage (closure) will be more (less) advantageous in a peripheral market than in a central one.

Relative to a peripheral market, a central market is more likely to have well-established distribution platforms that draw many producers. Access to such platforms might require coordination with others whose “interests and perspectives are pre-aligned” (Obstfeld 2005:101). Innovators in dense local networks, where shared vision and reciprocity is more prevalent, are more likely to be able to access such distribution platforms. To the extent that such platforms determine the fame of an innovator, innovators in closure positions are likely to be more famous in a central rather than a peripheral market.

In a peripheral market, the absence of an institutionalized distribution system can create uncertainty over how to access an audience. In such markets, information about opportunities is unevenly distributed. In such a market a producer in a brokerage position, through her ties to diverse social worlds, is likely to learn about a wider breadth of opportunities and hence access the unevenly distributed information (Podolny, 2001:39). The compositional diversity of a broker’s local network also improves her access to such unevenly distributed information. This provides more reason to expect the relationship between brokerage and fame to be more positive in a peripheral than in a central market.

Audiences in peripheral and central markets have very different historical and social contexts within which they evaluate an innovator’s creativity. A central market, particularly
one that has been at the center for a long period, is the arbiter and upholder of the dominant standards of an industry. The audience in such a market is likely to be more entrenched in the traditional industry standards. It is more likely to favor producers who conform to “a field’s canons and expectations” (Cattani & Ferriani 2014:259) and to resist innovations that depart from the dominant paradigm. Further, an audience employing the evaluation criteria of the traditional paradigm might find highly original innovations, i.e. the ones that depart more sharply from the traditional paradigm, hard to comprehend. Audience resistance and incomprehension can result in highly original products and their creators receiving little to no attention (Simonton 1980) in a central market.

In contrast, the audience in a peripheral market is likely to be less entrenched in the standards of the traditional paradigm. By definition, a peripheral market has a marginal role in establishing and legitimizing industry standards, so the audience there is less likely to be motivated to defend those standards. Either because of their social and cognitive distance from the entrenched members (Cattani & Ferriani 2014) or because of their desire to redefine the field (Pontikes 2012) a peripheral audience is more open to creative output that departs from the traditional paradigm. For these reasons, producers of highly original output are more likely to find an audience and become famous in a peripheral market. Since an innovator in a brokerage rather than a closure position is likely to produce output that departs more sharply from the traditional paradigm, we expect a broker to accrue more fame in a peripheral rather than a central market.

Similarly, the cosmopolitan identity of a producer with diverse alters is more likely to appeal to audiences less entrenched in the traditional paradigm. The outsider identity associated with a broker’s cosmopolitan identity might be more congruent with such an
audience’s own identity. Furthermore, an outsider identity could reinforce the perception of such a producer’s work as departing from the traditional paradigm and thus being more innovative. Thus, brokerage and its associated mechanisms will be more positively related to fame in peripheral markets.

**Empirical Context**

We examine a set of abstract artists from Europe and the US who were at the forefront of the abstract art movement that began around 1900. Until then, representational art had dominated the Western fine art world. A critical criterion for evaluating a work of representational art was how accurately it depicted the real world. This began to change in the 1900s with the work of post-impressionists, Cubists, and Expressionists among others. While these movements differed in their styles, they all represented a radical departure from the aesthetic of representational art.

The new aesthetic paradigm, which later came to be known as abstract art, encompassed several innovations in artistic style.

The pioneers of abstraction came from several European and American cities and worked in several different styles and media. For instance, *Fountain*, an inverted urinal by French Dada artist Marcel Duchamp, destabilized the very idea of what constitutes art. Another pioneer of the abstract art movement, the Russian artist Kazimir Malevich created “a new pictorial language of geometric shapes” (Chlenova 2012:206) with his Suprematist paintings exemplified by a black square against a white background.

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3 While, departures from representational art can be traced back to the mid-nineteenth century, the first decade of the twentieth century marks a much a clearer break from the representational paradigm.
Past accounts of the emergence of abstraction have often portrayed these pioneers’ work as a result of individual genius and solitary epiphanies. Yet, these artists did not work in isolation, and the development of their paradigm was much more of a collective process than is generally acknowledged. They were connected to each other as collaborators, friends, advisors, patrons, lovers and relatives. They exchanged ideas, promoted each other’s work and exhibited at salons and galleries together (Dickerman 2012). For instance, the friendship between Marcel Duchamp, Francis Picabia and Man Ray began during this period and endured over four decades. During this period “they shared ideas and experiences, and socialized with each other and each other’s partners as close friends. They played chess endlessly, and even holidayed together. They discussed what they were working on, and when apart kept in touch by letter. They exhibited together and helped each other with sales, commissions and contacts” (Mundy 2008:11).

Focusing on these artists we examine how networks relate to the fame of innovators from diverse aesthetic and national backgrounds amidst the emergence of a new paradigm. We examine the artists’ fame in the art markets in France and the United States in the year 1926, as predicted by networks formed over the preceding 15 years. In this era France and the US represent antipodes of the art world: France was the central market while the US was peripheral.

**French and US art markets**

In 1910-1926, France, was the center of the Western fine art world. It was the seat of art academies such as Academie des Beaux Arts, whose members were among the leading practitioners of two key representational art movements—Neoclassicism and Romanticism
(Kleiner 2013). The academies’ standards of artistic style, referred to as academic art, had been dominant in France until the mid-nineteenth century. Art schools in other countries emulated the French model of fine art training and practice. Artists from all over the world came to live and work in France, especially Paris. The city hosted numerous salon exhibitions that showcased artistic developments (Cottington 1998). Newspapers and art journals regularly featured these developments, which were actively debated by critics, dealers and collectors in salons and cafes (Gee 1977).

In contrast, United States was a peripheral market separated by more than an ocean from France. Before 1913, it was relatively isolated from the developments in the art world (Gee 1977). Until then, only a small section of the US audience, composed primarily of the art cognoscenti, discovered the developments in abstract art through travel in Europe (Risatti 1978) or through the abstract art exhibitions organized by small galleries in the US (Baur 1958). The developments in the art world received relatively marginal attention in the American press which often treated these developments with a “society page flavor” (Risatti 1987:17). In the US, in the absence of an institutionalized distribution system, abstract artists faced considerable uncertainty about the opportunities to showcase their work before critics, dealers and collectors. The process through which these abstract artists’ work came to be shown in the US illustrates the potential advantage of brokerage positions for becoming famous in peripheral markets.

Unlike France with its institutionalized system of salons, the United States was introduced to abstract artists ad hoc, as they happened to be discovered by individual patrons, artists and dealers, each of whom learned about abstract artists through diverse channels and experiences (Martinez 1993). Starting in 1908, the artist Alfred Stieglitz showcased the work of modern
artists in his gallery 291 in New York. He had met many of these artists during his visit to Paris. In 1913, another American artist, Arthur B. Davies, in collaboration with wealthy US art patrons such as Arthur Aldis, organized the first large scale abstract art exhibition, the Armory show, in the US. It was through this show, first held in New York and later in Chicago and Boston, that the general public became acquainted with the innovations in abstract art (Risatti 1978). Davies and Aldis were introduced to the abstract artists and their studios through expatriate collectors like Leo and Gertrude Stein, who lived in Paris.

Artists with greater structurally and compositionally diverse networks were better positioned to access the diverse set of foreign artists, patrons, dealers and collectors, who were instrumental in introducing these artists to a wider audience. For instance, the Spanish-born Pablo Picasso knew an eclectic group of artists, dealers and patrons from all over the world. As a resident of the Montmartre district in Paris until 1914, he met other fellow residents such as the Italian artist, Gino Severini, and his future collaborator, Georges Braque. In 1911, Picasso met Alfred Stieglitz during the latter’s visit to Paris; later that year, Stieglitz exhibited Picasso’s work in his 291 gallery in New York. In 1917, Picasso travelled to Italy and designed the sets for the Russian choreographer Sergei Diaghilev’s ballet Parade. Later that year, the Russian art critic, Ivan Aksionov published the first book on Picasso in Moscow (Kleberg 2015). Thus, access to diverse social worlds likely helped an artist’s fame in peripheral markets like the US.

As an artist at the forefront of the abstract art movement, Stieglitz sought out originality and diversity in artistic styles. In his gallery he showcased artists whose innovative work had never been seen before in the US (Risatti 1978:20). Similarly, Aldis was regarded as “rather wild and radical in his [artistic] taste” (Martinez 1993:37). As institutional
entrepreneurs (DiMaggio 1988) and market makers (Pontikes 2012), artists like Stieglitz and Davies and patrons like Aldis saw the new paradigm of abstract art as an opportunity to redefine the US art market. Their preferences shaped which artists were among the first to receive widespread public attention in the US. Since artists spanning diverse social worlds were more likely to depart from the traditional paradigm, we expect them to be more famous in the US.

The French distribution system was fragmented: it had institutionalized and relatively less institutionalized aspects. The institutionalized channel comprised salons which had been the chief means for artists to showcase their work since the nineteenth century (Gee 1977). Coverage by newspapers and art journals typically followed the exhibition of artists’ work at the salons. We do not expect an artist in a brokerage position to be at an advantage in accessing opportunities to disseminate her work within such an institutionalized distribution system.

In contrast, artists in closure positions could have benefited within the distribution system of the salons. Artists played a decisive role in the organization of the two main salons, Salon d’Automne and Salon des Indépendants. Accessing opportunities to show one’s work at these venues required other artists’ support. Works exhibited at the Salon d’Automne were selected by a jury of artists. Salon des Indépendants was not juried, but its sheer size created a different kind of challenge for attracting audience attention. Between 1896 and 1910, the number of artists exhibiting at the salon increased from one hundred and fifty to over a thousand (Cottington 1998). As such, a large and increasing number of artists competed for audience attention in these salons. In order to avoid their work getting lost among the sea of
other works, artists tried to hang their works with peer artists (Cottington 1998). Relative to an artist in a brokerage position, an artist in a closure position, with her close-knit community of peers, was likely to be more successful in organizing these groups and accessing favorable opportunities to display her work. For instance, the French artists Fernand Leger and Robert Delaunay were part of a group known as the *salon cubists*. The group orchestrated their leader, Le Fauconnier, to be the chair of the Commission de Placement for the 1911 Salon des Indépendants. Given the power to decide the placement of artists’ works in the exhibition, Fauconnier placed the *salon cubists’* works prominently in Room 41. The strategy positioned the *salon cubists* as the public face of Cubism. Even though exhibition attendees expressed a myriad of reactions—amusement, protests, ridicule—they gravitated towards room 41 throughout the opening day. In the words of one *salon cubist*, Albert Gleizes, “I passed through the first group of rooms, in which there were few people. But the further I went the denser became the crowd ….our room was packed…..Overnight, we had become famous” (Cottington 2004:5). A year later, the efforts of this group culminated in the well-known Salon de la Section d’Or exhibition which rivalled the Salon d’Automne. The “impressively big” (Cottington 2004:5) Section d’Or comprised thirty artists showing around 200 paintings and sculptures and is regarded as the most important exhibition of Cubist work in Paris before World War I.

The dealers and their galleries comprised the relatively less institutionalized distribution channel in the French market. Yet they played an increasingly important role in shaping artists’ careers during this period. Around 1910, a salon was “a sort of art-trade fair, a stepping stone to the private gallery” (Gee 1977:22). By 1930, exhibiting at “a Salon became a gesture rather than an economic necessity” (Gee 1977:22-23). An artist in a brokerage rather than a
closure position was likely to be more successful in accessing opportunities to showcase her work through the less institutionalized gallery channel.

The French market was fragmented also along its audience’s entrenchment in the traditional representational paradigm. On the one hand were critics who unambiguously dismissed abstract art and its radical innovations. In *The Prejudice of Novelty in Modern Art*, the French critic Camille Mauclair regarded the “pretension to reinvent the technique and style of an art” as a “fatal mania” and as a gimmick for artists to draw attention to themselves (Weiss 1994:53). On the other hand were critics like Waldemar George who passionately embraced the new paradigm of abstract art; In George’s view “a new era demanded a new form of art based on revolutionary mystique” (Gee 1977:142).

The fragmentation in the French audience’s aesthetic preferences was intertwined with its attitude towards cosmopolitanism and nationalism. Many of the artists in the forefront of the abstract movement were part of a cosmopolitan milieu of artists who had lived and worked in different countries. Also part of this milieu were dealers and collectors who played a key role in promoting the abstract artists’ careers. For instance, collectors such as Helene d’Oettingen anderge Jastrebozoff, expatriate Russians who immigrated to France, acquired and edited prominent publications such as *Les Soirees de Paris* which promoted these artists works (Cottington 1998). The section of French critics who valued abstract art’s innovations also valued cosmopolitanism. In contrast, the critics and artists who defended the traditional representational paradigm were often French and nationalistic. They saw the rise of the eclectic community of immigrant artists and their innovations as a threat to the French institutions and artists (Cottington 1998).
The cosmopolitanism and nationalism of an artist’s milieu also informed critics’ evaluation of her creative identity. A cosmopolitan identity stemming from a diverse milieu was consonant with an artistic identity of creating art for art’s sake and of estrangement from the “mainstream cultural apparatus” (Cottington 1998:132). In contrast, a nationalist identity was more consonant with an identity of belonging to the “establishment”.

Brokers, given their access to diverse and disconnected social worlds, were more likely to be part of the cosmopolitan community. This community comprised dealers and collectors who played an increasingly crucial role in promoting an artist’s careers. Thus, we expect that artists in brokerage positions to be famous in France as well. However, we expect the relationship between brokerage and fame to be weaker in France than in the US given the presence in France of institutionalized salons and audiences entrenched in the traditional paradigm.

Insofar as we expect artists in brokerage positions to have more distinctive identities, a brokerage position benefitted an artist’s fame in both the French and the US markets. Artists who could differentiate themselves from their peers were more likely to attract audience attention in the crowded French salons. As such, we expect the distinctive identity associated with brokerage positions to be particularly beneficial for an artist’s fame in France. We expect distinctiveness to be beneficial in a peripheral market like the US as well. An individual with a distinctive identity is unique. The congruence between a broker’s unique identity and the US audience’s marginal identity could have also increased such an artist’s appeal to the US audience.

Data
Dependent Variable: Fame

Our measure of fame is similar to past measures in that it is based on the mentions of names in a corpus. However, our measure differs from previous measures in a key respect: instead of confining the corpus to those in a specific library (Martindale 1995) or industry journal (Giuffre 1999), we use the Google n-gram corpus which comprises over 8 million books which represent six percent of the books ever published. Recent work has demonstrated the promise of this corpus in understanding the evolution of fame of artists (Michel et al. 2011). Using this much larger corpus allows us to measure the mentions of an innovator’s name in a much larger “volume of public discourse” (van de Rijt et al. 2013:267) thereby allowing us to better measure how widely an innovator is known. Moreover, since the corpus spans multiple languages, using this measure allows us to hold constant attributes of the producers and their output while varying the features of the audience across two markets, France and the US.

We measure each artist’s fame in this corpus by the mentions of her name which typically corresponds to a 2-gram (e.g. Fernand Leger) or a 3-gram (e.g. Morton Livingston Schamberg). The measure is standardized for the size of the corpus by dividing the count of an artist’s name in the corpus by the number of 2-grams (or 3-grams) in the corpus. We use a log-odds transformation of this fame measure, which is a proportion and follows a skewed distribution.
We measure fame in 1926 (the year after the formation of the network) in the French and US English corpus.

**Independent**

**Variables Artist**

**Network**

In collaboration with the curatorial division of the Museum of Modern Art, we identified the connections (Figure 2) between 90 artists who were at the forefront of the abstract art movement.

A connection between two artists means they knew each other through a personal or professional relationship. Evidence for these connections comes from MoMA curators specializing in this period. The curators relied on biographies documenting the lives of these artists to construct the network. These curators, like any expert art historian, have deep expertise about the lives of artists which involves not only knowing the artists’ works but also their social milieu. The ties in our data were formed in the period 1910–1925. However, the data on the ties does not vary over time. Thus we are able to construct a static network that formed over 1910–25.

**Brokerage and Centrality**

We operationalize our main independent variable, brokerage, by subtracting the local density of the ego network from one. Local density is the proportion of the actual number of connections between an artist’s peers (alters) and the maximum possible connections between those peers (Obstfeld 2005). A low local (high) density value means a high (low)
brokerage value. Another network related independent variable is degree centrality, which is a measure of the number of ties an artist has to other artists.

Figure 2: Peer Network of 90 Early 20th Century Abstract Artists
**Alter Diversity**

We used data on our artists’ social backgrounds to examine whether an artist in a brokerage position has more diverse alters. Alter diversity has several dimensions—nationality, art movement affiliation etc. These dimensions represent different aspects of an artist’s social milieu and identity. We examine how diversity along each of these dimensions shapes the relationship between brokerage and fame.

We measured the diversity in an artist’s alters’ national affiliations by the index of qualitative variation used for categorical variables (Marsden 1987). An artist is affiliated with a country, if that country was her primary place of residence and work. The measure is calculated as a proportion of the actual distribution of alters across the countries and maximum possible distribution of alters across the countries. If all the alters belong to one country, then the index is 0 in which case the ego has no diversity in her local network. If each alter belongs to a different country then the index is 1 in which case the ego has maximally diverse network. We called this measure Alter National Diversity. In order to measure the diversity among the alters based on their art movement affiliations, we used a cosine distance measure. Such a measure is appropriate given that an artist could be affiliated with multiple categories (in our case movements) (De Vaan, Stark, Vedres, 2015). For every ego we calculated the cosine distance between each pair of alters’ movement affiliations. We averaged these cosine distances to get the mean movement-based diversity among an artist’s alters. The greater the average distance, the greater the movement-based diversity among an ego’s alters. We called this measure Alter Movement Diversity. Note that, like the national diversity measure, this
variable measures the movement diversity amongst her alters and ignores the ego’s movement affiliations. We created a similar cosine distance measure (Alter Media Diversity) for the media that an artist’s alters worked in.

**Distinctive Identity**

In order to measure how much an artist differed from her alters with respect to their national affiliations, we calculated the cosine distance between her and her alters’ national affiliations. We averaged these distances to get a mean measure of how much an ego differed from her alters with respect to her national affiliation. We called this measure *Distinctive National Identity*. We calculated similar measures based on the art movement they were affiliated with (*Distinctive Movement Identity*) and the media they worked in (*Distinctive Media Identity*).

**Creativity**

We relied on expert opinion to measure creativity: Specifically, we asked art historians to rate the average creativity of each artist’s work in 1910–25 along five dimensions: *originality* (the extent to which an artist breaks from known aesthetic precedent), *uniqueness* (the extent to which an artist’s work was distinct, different or one-of-a-kind), *stylistic diversity* (the extent to which an artist worked in many different styles, media, technique etc.), *abstraction* (the extent to which an artist’s work was non-figurative) and *innovativeness* (the extent to which an artist was among the first to come up with a new artistic style).

We asked the experts to rate the artist’s creativity along the five dimensions as well as the quality of each artist’s work in 1910–25. Raters were given the option to not rate an artist and briefly describe why they were not able to do so. Each creativity dimension in our survey
varies along a five point scale. Two out of the four raters rated each artist on all six dimensions. We used the ratings of the two raters in our model. The inter-rater reliability score for the two raters’ ratings measured by the inter-class coefficient (consistency) varied between 0.6 and 0.78. Factor analysis reveals that all six dimensions including quality load onto a single factor.

**Control Variables**

We included several artist level control variables which can affect an artist’s fame. The data for these variables comes from the MoMA, artists’ biographies, Oxford Art online and the n-gram corpus. The variables include, age in 1926 (Age1926), gender (Female), initial fame in the US (USFame1910), initial fame in France (FrenchFame1910), number of media the artist worked in (No. of Media), number of countries an artist worked and lived in (No. of Countries), number of art movements an artist belonged to between 1910-25 (No. of Movements), the primary media an artist worked in (Primary Media), the primary art movement or school an artist belonged to during 1910–25 (Primary Movement) and whether the artist’s nationality was French or American. Four artists in our data died while serving in the military during World War I. Dying in war could have increased an artist’s fame by making him a national hero or could have limited his fame by cutting short his artistic career. Hence we included a dummy variable (Died in WWI) for whether an artist died in the war.

The descriptive statistics and correlation matrix for the unstandardized variables is included in Table 1. For the regression analyses, all except the dummy variables are standardized.
### Table 1: Descriptive Statistics and Correlations

|        | mean | standard deviation | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   | 23   |
|--------|------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| U.S.2016 | -0.08 | 19.32              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| U.S.2015 | -0.31 | 23.31              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| France 2016 | -3.45 | 20.39              | 0.65 | 0.42 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| France 2015 | -0.32 | 24.28              | 0.41 | 0.57 | 0.49 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Iceland 2015 | 0.87  | 8.04               | 0.06 | 0.02 | 0.28 | 0.22 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Female   | 0.54  | 0.35               | -0.16| -0.10| -0.21| -0.25|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Deal in 1777 | 0.04  | 0.21               | 0.16 | 0.14 | 0.16 | -0.02| -0.09 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| No. of Media | 1.6   | 0.50               | -0.21| -0.19| -0.09| -0.10| -0.06| -0.12 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| No. of Countries | 1.64  | 0.59               | -0.08| 0.09 | -0.02| -0.02| -0.13| -0.03 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Primary Media | 1.78  | 1.86               | 0.04 | 0.02 | 0.05 | 0.15 | 0.10 | -0.12 | 0.18 | -0.08 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Primary Movement | 1.9   | 2.77               | 0.03 | 0.15 | 0.23 | 0.03 | 0.15 | -0.13 | 0.06 | 0.26 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| No. of Movements | 1.42  | 1.10               | 0.11 | 0.13 | 0.01 | 0.02 | 0.07 | 0.23 | 0.16 | -0.31| -0.37 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| America  | 0.33  | 0.34               | 0.17 | 0.68 | -0.12| -0.05| -0.07| -0.16| -0.04| -0.11| 0.39 | 0.07 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| French   | 0.1   | 0.3                | 0.29 | 0.23 | 0.31 | 0.29 | 0.04 | -0.03| 0.14 | 0.02 | 0.02 | 0.18 | 0.08 |      |      |      |      |      |      |      |      |      |      |      |      |
| Creativity | -0.02 | 0.16               | 0.19 | 0.30 | 0.21 | 0.16 | 0.10 | -0.18| 0.15 | 0.15 | 0.15 | -0.19| -0.21| 0.46 | -0.08| 0.00 |      |      |      |      |      |      |      |      |
| Degree Centrality (squared) | 0.15  | 0.04               | 0.12 | 0.21 | 0.34 | 0.31 | 0.11 | -0.14| 0.08 | 0.06 | 0.04 | 0.06 | 0.02 | -0.11| -0.06| 0.04 | -0.11| -0.06| 0.09 | 0.14 | 0.29 | 0.38 | 0.60 |      |
| Brokerage (squared) | 0.36  | 0.21               | 0.43 | 0.23 | 0.44 | 0.31 | 0.1   | -0.14| 0.09 | 0.14 | 0.04 | 0.16 | 0.01 | 0.18 | 0.23 | 0.01 | 0.02 | 0.06 | 0.08 | 0.14 | 0.00 | 0.07 | 0.35 | 0.05 |      |
| After National Diversity | 0.60  | 0.20               | 0.47 | 0.25 | 0.48 | 0.18 | 0.08 | -0.13| 0.07 | 0.14 | -0.04| 0.01 | 0.18 | 0.23 | 0.31 | 0.07 | 0.02 | 0.06 | 0.13 | 0.13 | 0.26 | 0.26 | 0.35 | 0.59 | 0.26 |
| After Migration Diversity | 0.72  | 0.17               | 0.26 | 0.11 | 0.22 | 0.1   | 0.06 | -0.11| 0.11 | 0.07 | 0.16 | -0.06| 0.21 | 0.13 | 0.26 | 0.14 | 0.07 | 0.01 | 0.06 | 0.08 | 0.09 | 0.24 | 0.06 | 0.4  | 0.06 | 0.37 |
| After Media Diversity | 0.49  | 0.12               | 0.25 | 0.18 | 0.21 | 0.14 | 0.06 | -0.06| 0.16 | 0.13 | 0.07 | 0.16 | 0.09 | 0.22 | 0.05 | 0.01 | 0.06 | 0.13 | 0.13 | 0.26 | 0.26 | 0.35 | 0.59 | 0.26 |      |
| After Distinctive National Identity | 0.39  | 0.3                | 0.27 | 0.19 | 0.27 | 0.11 | 0.01 | -0.18| 0.17 | 0.02 | 0.02 | 0.07 | 0.03 | 0.11 | 0.09 | 0.05 | 0.04 | 0.13 | 0.18 | 0.18 | 0.34 | 0.63 | 0.2  | 0.15 |      |
| After Distinctive Movement Identity | 0.68  | 0.24               | 0.19 | 0.12 | 0.21 | 0.03 | 0.2   | -0.05| 0.07 | 0.14 | 0.16 | 0.06 | 0.44 | 0.23 | 0.27 | 0.14 | 0.02 | 0.12 | 0.24 | 0.00 | 0.7  | -0.05| 0.12 |      |      |      |
| After Distinctive Media Identity | 0.48  | 0.19               | 0.07 | 0.03 | 0.05 | 0.15 | -0.08| -0.02| 0.07 | 0.08 | -0.05| 0.33 | 0.09 | 0.22 | 0.05 | 0.01 | 0.08 | 0.09 | 0.24 | 0.06 | 0.4  | 0.06 | 0.37 |      |      |      |
Analysis and Results

We use ordinary least squares (OLS) regression to estimate the relationships between local network density and fame controlling for the variables described in this section.

Table 2 shows the results for fame measures in US English (Models 1-3) and French (Models 4-6) in 1926. Across all models, an artist’s initial fame in 1910 is positive and significant. Model 1 is the baseline model with the control variables. We find that an artist’s age in 1926 is positive and significant. Model 2 introduces the variable for degree centrality for which the coefficient is positive but not significant. Model 3 introduces the brokerage measure, which has a positive and statistically significant relationship with fame. An artist with more disconnected alters is likely to more famous in the US than an artist with fewer disconnected alters.
Table 2: Models with control variables and brokerage

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<th>Log Odds of US English Fame in 1926</th>
<th>Log Odds of French Fame in 1926</th>
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<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Ages1925</td>
<td>4.065***</td>
<td>3.805**</td>
</tr>
<tr>
<td></td>
<td>(1.820)</td>
<td>(1.850)</td>
</tr>
<tr>
<td>Female</td>
<td>-0.374</td>
<td>-0.180</td>
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<tr>
<td></td>
<td>(5.204)</td>
<td>(5.176)</td>
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<tr>
<td>USFame1910</td>
<td>0.408***</td>
<td>0.403***</td>
</tr>
<tr>
<td>FrenchFame1910</td>
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<td>0.410***</td>
</tr>
<tr>
<td>Died in WWI</td>
<td>10.143</td>
<td>10.729</td>
</tr>
<tr>
<td>No. of Media</td>
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<td>-2.851</td>
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<tr>
<td></td>
<td>(1.880)</td>
<td>(1.882)</td>
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<tr>
<td>No. of Countries</td>
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<tr>
<td></td>
<td>(1.785)</td>
<td>(1.784)</td>
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<tr>
<td>Primary Media</td>
<td>1.468</td>
<td>1.653</td>
</tr>
<tr>
<td></td>
<td>(1.010)</td>
<td>(1.013)</td>
</tr>
<tr>
<td>Primary Movement</td>
<td>0.013</td>
<td>0.141</td>
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<tr>
<td></td>
<td>(0.640)</td>
<td>(0.643)</td>
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<tr>
<td>No. of Movements</td>
<td>3.173</td>
<td>1.946</td>
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<tr>
<td></td>
<td>(2.070)</td>
<td>(2.243)</td>
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<tr>
<td>American</td>
<td>8.656</td>
<td>9.677*</td>
</tr>
<tr>
<td></td>
<td>(5.615)</td>
<td>(5.632)</td>
</tr>
<tr>
<td>Degree Centrality</td>
<td>2.933</td>
<td>-1.519</td>
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<tr>
<td></td>
<td>(2.129)</td>
<td>(2.541)</td>
</tr>
<tr>
<td>Brokerage</td>
<td>7.060***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.417)</td>
<td>(2.417)</td>
</tr>
<tr>
<td>French</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>R²</td>
<td>0.389</td>
<td>0.403</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.311</td>
<td>0.319</td>
</tr>
<tr>
<td>Residual Std. Error</td>
<td>16.030 (df = 79)</td>
<td>15.940 (df = 78)</td>
</tr>
<tr>
<td>F Statistic</td>
<td>5.022***</td>
<td>(df = 10; 79)</td>
</tr>
</tbody>
</table>

Note: 
* p<0.1; ** p<0.05; *** p<0.01
In *Models 4-6*, the dependent variable is an artist’s fame in France in 1926. In *Model 6*, we find a positive and statistically significant relationship between brokerage and fame. An artist with more disconnected alters is likely to be more famous in France than an artist with fewer disconnected alters.

*Alter diversity*

Models 7 and 11 in Table 3 below shows the regression results for US and French fame with the variables for the alters’ national diversity. We see that the coefficient for the alters’ national diversity is positive and significant in the US (*Model 7*) as well as French case (*Model 11*). In these models, the coefficient for brokerage is no longer significant. The coefficients for variables for movement and media diversity are not significant in either the US or French case (the models with these variables are not included in the tables). Using the bootstrap mediation test (Shrout and Bolger 2002), we find that the alters’ national diversity mediates the relationship between brokerage and fame in France and the US in 1926.
### Table 3: Models with variables national diversity, distinctive identity and creativity

Note: Models 10 and 14 represent the full models for the DVs of US and French fame respectively. Control variables are suppressed in all models in this table due to space constraint.

<table>
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</thead>
<tbody>
<tr>
<td>Alter National Diversity</td>
<td>5.545*** (1.956)</td>
<td>5.414*** (1.997)</td>
<td>7.211*** (2.126)</td>
<td>8.054*** (2.184)</td>
<td>5.609*** (2.166)</td>
<td>4.223* (2.342)</td>
<td>5.304** (2.394)</td>
<td>5.639** (2.394)</td>
</tr>
<tr>
<td>Distinctive Movement Identity</td>
<td>-0.020 (2.166)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
<td>0.030 (2.190)</td>
</tr>
<tr>
<td>Creativity</td>
<td>2.864 (1.982)</td>
<td>2.495 (1.930)</td>
<td>2.864 (1.982)</td>
<td>2.495 (1.930)</td>
<td>2.864 (1.982)</td>
<td>2.495 (1.930)</td>
<td>2.864 (1.982)</td>
<td>2.495 (1.930)</td>
</tr>
<tr>
<td>Brokerage</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
<td>3.685 (2.440)</td>
</tr>
</tbody>
</table>

Control Variables? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes
Observations | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60
R² | 0.514 | 0.463 | 0.477 | 0.525 | 0.669 | 0.414 | 0.402 | 0.519
Adjusted R² | 0.431 | 0.371 | 0.388 | 0.429 | 0.378 | 0.314 | 0.300 | 0.422
Residual Std. Error | 14.571 (df = 76) | 15.318 (df = 76) | 15.115 (df = 76) | 14.599 (df = 76) | 15.908 (df = 76) | 16.810 (df = 76) | 16.978 (df = 76) | 15.429 (df = 76)
F Statistic | 6.185*** (df = 13; 76); 5.040*** (df = 12; 76); 5.533*** (df = 13; 76); 5.455*** (df = 15; 76); 5.166*** (df = 13; 76); 4.124*** (df = 13; 76); 3.932*** (df = 13; 76); 3.522*** (df = 15; 74)

Note: *p<0.1, **p<0.05, ***p<0.01
An artist in a brokerage position is likely to be connected to peers from diverse countries instead of a clique of nationally homogenous peers. The diversity mediates the relationship between brokerage position and fame in both markets. This result offers support across markets for our argument that a broker’s access to diverse alters augments her fame.

**Distinctive identity**

*Model 8 and 12 in Table 3 show the regression results for US and French fame with variables for an artist’s distinctive identity with respect to her movement affiliation. The coefficient for artist’s distinctive movement identity is significant in the French case but not in the US case. The coefficient for an artist’s distinctive identity based on media affiliation and nationality was not significant in the French or US case. Thus, an artist with a more distinctive creative identity, based on her affiliation to art movements, is more likely to be famous in France in 1926. We do not find any statistical significance for a distinctive movement based identity mediating the relationship between brokerage and fame in France.*

The results support our argument that innovators are more likely be famous because they are more likely to be differentiated from their peers and can therefore stand out and attract attention. It also suggests that such differentiation is especially valuable in a central market which is likely to have many producers competing for the audience’s attention.

**Creativity**

*Model 9 and 13 in Table 3 show the regression results for US and French fame with variables for an artist’s creativity. Surprising to us, creativity is not significantly related to fame in any model (the sub-components of our creativity measure likewise do not have individual effects on an artists’ fame). We also do not find any statistical support for brokerage
mediating the relationship between creativity and fame.

**Full Model**

When we enter all three mechanisms—national diversity, distinctive movement identity and creativity—in our model for US fame (Model 10 in Table 3), national diversity remains significant. In case of the model for French fame (Model 14 in Table 3), national diversity and distinctive movement identity remain significant. Mediation analysis confirms that national diversity mediates the relationship between brokerage and fame in France and the US in 1926. The results remain the same when we orthogonalize the brokerage variable and the variables for all three mechanisms. It is worth noting that the national diversity is significant even when controlling for an artist’s nationality. This indicates that the benefits associated with cosmopolitanism accrue not only to immigrants because of their ability to adapt to a foreign culture but also to native French artists.

To summarize our results: We find that brokers are more likely to be famous in two very different markets—France and the US. The national diversity in an innovator’s ego network mediates the relationship between brokerage and fame in both markets. Furthermore, we find that an innovator with a distinctive movement based identity is more likely to be famous in France but not in the US. We do not find any evidence for a link between creativity and fame.

**Further Analysis and Robustness Checks**

In order to quantitatively test the relationship between the national diversity in an artist’s local network and her creative identity, we gathered data on the number of co-mentions of an artist’s name and the term “original” in five French newspapers and fourteen
US newspapers\(^4\). Public discourse in the press captures how an artist is perceived, so co-mentions are a reasonable proxy for an artist’s creative identity. We re-ran our analysis using the co-mentions as a dependent variable in zero-inflated negative binomial models (results available from authors). National diversity is significant and positive in the models of co-mentions in French and US newspapers. This corroborates the qualitative evidence that a more cosmopolitan artist was perceived as more innovative.

Our measures of fame are based on the spellings of artists’ names used by the MoMA curators. We expect these spellings to be widely used in texts discussing these artists’ work. Yet, many of the artists had alternate names. In order to account for other versions of the artists’ names we re-ran our analysis using the sum the of fame measures\(^5\) the alternate names specified in the Library of Congress Name Authority File\(^6\) (LCNAF) and J. Paul Getty Trust’s Union List of Artists Names\(^7\) (ULAN) databases. Brokerage and alters’ national diversity remain significant in the models for sum of fame measures of the alternate spellings of each artists’ name (regression table available from the authors). Moreover national diversity mediates the relationship between brokerage and the fame measure based on these alternate spellings.

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\(^5\) Since Google n-gram allows us to search for names up to five grams in length, the sum excludes the fame measures of names greater than five words. Excluding these measures is likely to have a negligible impact on the combined sum, since such long names were used scarcely, particularly during the early 20th century when printing was still expensive.

\(^6\) [http://id.loc.gov/authorities/names.html](http://id.loc.gov/authorities/names.html), accessed July 2015

Since the ties in our network were formed in 1910–25, one might wonder whether ties formed earlier on in this period persisted throughout this period. Interviews with a MoMA curator and qualitative analysis of artists’ biographies confirmed that this is a reasonable assumption. For instance, Georgia O’Keeffe came to know Arthur Dove, Paul Strand and Alfred Stieglitz around 1911. Her letters indicate that she continued her friendship with Dove and Strand throughout her life (Cowart, Hamilton, Greenough, 1987). And her relationship with Alfred Stieglitz, as her mentor, lover and husband continued till his death in 1946. In order to account for ties that ended due to artists’ deaths, we removed from our analysis nine artists who died during 1910–25. Brokerage and alters’ national diversity remain significant in the models for US and French fame after removing these nine nodes (results available from the authors).

We undertook further analysis to confirm that our results accord with our conceptualization of fame as widespread public attention by re-running our analysis for an artist’s fame in different time periods until the year 2000. Once again we find a broker is likely to be more famous across both markets and this relationship is mediated by the national diversity among an ego’s alters. Table 1a in the appendix lists the results for the dependent variable of fame in French and US English in 2000 (results for other years are available from the authors). This provides further evidence that our measure of fame is distinct from measures like visibility which is temporally limited.

**Discussion and Conclusion**

To the best of our knowledge, this is the first study to document a positive relationship between brokerage and fame in two very different markets. Our study makes several
contributions: It illustrates how and why social structure relates to the relatively overlooked construct of fame. Our results show that the structure and composition of an innovator’s immediate network is associated with her fame beyond that network. We decompose the benefits of structural and compositional diversity of an innovator’s network into pipes—creativity and exposure, and prism—identity. In doing so, we illuminate the role of compositional diversity in shaping an innovator’s identity.

The results of our study are correlational rather than causal. Causality in either direction is plausible: greater structural diversity leads to greater fame; alternatively a famous innovator is more likely to occupy a position of structural diversity. The former is consistent with our theoretical framework where an unknown artist with a structurally and compositionally diverse local network becomes famous because of exposure to a wider audience. We get some support for this view of causality in the analysis shown in the appendix, which takes the measure of fame out to 2000, long after all of the relationships in our network data had disappeared. But, we also admit the possibility that a famous innovator might attract more friends and hence have a more structurally diverse network: however, this does not contradict our theoretical framework. We expect structural diversity to further augment the fame of such an innovator. Future studies using longitudinal data can help us better understand how network structure and composition co-evolve with an innovator’s fame and creativity.

Perhaps the most interesting surprise in the results is that brokerage is positively and equally related to fame in both the U.S. and French markets. We had expected brokerage to pay off more in the peripheral U.S. market than in the central French market. To understand this result, we consider another industry-level influence, a paradigm shift that may trump the
effect of market centrality. In our context, abstract art was a paradigm shift throughout the western art world. When an industry undergoes a paradigm shift, producers face uncertainty in both peripheral and central markets. During such a period, producers in brokerage positions are better positioned to learn about new and evolving opportunities to disseminate their work. Brokers might also have the advantage of “adaptive implementation” (Burt 2005) whereby they are more aware of how to avail these opportunities. A broker’s ties to diverse peers is likely to aid her ability to successfully recognize and avail “non-traditional opportunities in changing processes and schemas” (Godart, Maddux et al. 2015:198). Thus, during a paradigm shift brokers have an advantage in accessing audiences, irrespective of market centrality. This result highlights the importance of taking into account the state of the industry while investigating the relationship between social structure and fame in a given market.

Our results add to prior work on typologies of cultural markets (Dowd 2004, Dowd 2003). While France was a central market during this period, it could also be characterized as a fluid market. Instead of a static center that adopted and legitimized innovations created at the periphery, France was a fluid center where innovations were produced, challenged and celebrated. Such fluid yet central markets abound not only in cultural industries (e.g. fashion industry in New York) but in high-technology industries (e.g. computer industry in Silicon Valley). A fluid market comprises several kinds of audiences and institutional structures, the latter varying in their degree of institutionalization. A fluid view of central markets recognizes how market features, such as the composition of an audience or the degree of fragmentation in the institutional landscape, shape an innovator’s fame. Whether brokerage or closure furthers an innovator’s fame in a market depends on which features of the market dominate in aggregate. Our study suggests that preferences of audiences who were open to innovation,
such as art dealers, prevailed over those entrenched in the traditional paradigm. Moreover, within a fragmented distributional structure, an innovator with greater structural and compositional diversity in her local network was better positioned to disseminate her name. A fluid view of a market, which examines the relative importance of audience factions and fragmentation of the institutional structure, can help us understand why radical innovators can succeed in central markets or the “core” (Sgourev 2013) of a field despite the presence of audiences entrenched in the traditional paradigm.

Prior work has provided rich insights on how paradigm shifts and innovation arise out of the fragmentation of producer niches (Sgourev 2013). We add to this literature by arguing that the success of innovators of a new paradigm can also be understood by examining the fragmentation in the distributional and consumption side of a market. Future studies can build on prior work and our results by examining paradigm shifts from a more integrated view—one that integrates the supply and demand sides of a market.

A second surprising result was that our analysis did not show a mediating link between brokerage, creativity and fame. In fact, we did not find that artists who were coded by experts as more creative became more famous. This non-finding may be understood by recognizing that we focus on artists at the forefront of radical innovation. Being widely known can be seen as a two stage process (Zuckerman, Kim et al. 2003): in the first stage an innovator becomes recognized as a legitimate member of the field, and then in the second stage the innovator gains widespread attention. As the leading innovators of the abstract art paradigm, the artists in our study can be regarded as top members of their field, and thus the second rather than the first stage of the model is more applicable. Our results imply that, within this set of top members of a field, creativity is not a differentiator. Future studies can
explore how the relationship between creativity and fame might vary among innovators at different echelons of creativity and success.

Among the results we expected, we find that a broker is likely to have more nationally diverse peers; moreover, this diversity is positively associated with a broker’s fame. Being connected to diverse peers gives an innovator access to diverse audiences. Furthermore, the relationship between brokerage, national diversity and fame can be interpreted as evidence of a subtle relationship between social structure and creative identity. The cosmopolitan identity associated with an artist with diverse national alters shaped how critics, dealers, patrons and even other artists viewed the artist and her work. It was consonant with an artistic identity of being outside and opposed to the traditional paradigm. Such an identity constituted a more authentic creative identity (Fine 2003), one that was not circumscribed by allegiance to either a traditional paradigm or a nationalistic political agenda. The creative identity of the cosmopolitan artist was congruent with the aesthetic preferences of the dealers and collectors who viewed themselves as champions of an aesthetic credo which valued art for art’s sake (Cottington 1998). Thus, the compositional diversity in an innovator’s local network can constitute a rich creative identity which can help an innovator’s work stand out as authentically innovative.

The significance of a distinctive movement based identity in France is consistent with critics’ complaints about the sheer number of innovations flooding the French art market during this period. In a market where innovations are ubiquitous, being creative by itself might not be as valuable as having a distinctive identity. Such an identity allows an ego to differentiate herself from her peers and attract audience attention. In a central market such differentiation might be more crucial for becoming famous given that such a market is likely to
have a larger number of innovators competing for attention.

Our study contributes to the literature on the role of networks as prisms (Podolny 2001). Specifically, our study suggests that a cosmopolitan identity is associated with a creative identity. This enriches our understanding of networks as signals not only of legitimacy (Galaskiewicz 1985, Baum and Oliver 1991, Stuart, Hoang and Hybels. 1999) but also of a rich creative identity, one that is positively associated with an innovator’s fame. Furthermore, the relationship between structural and compositional diversity in our study implies that prism-related effects of networks might be better understood by taking into account the compositional characteristics of the network. Structural and compositional diversity in an innovator’s local network give her access to opportunities to disseminate her name across wider audiences. This is consistent with the information processing approach, according to which diversity is beneficial because it gives access to new and diverse information and perspectives (Hoffman and Maier 1961, Gruenfeld, Mannix et al. 1996, Mannix and Neale 2005). We add to this model by documenting evidence that compositional diversity is not only associated with informational advantages but also an identity—in our case, the creative identity (originality) of an artist. The significance of a differentiated movement-based identity supports the role of networks as prisms in shaping one’s fame. The lack of significance of the variables for creativity further suggests that the role of networks as prisms might matter more than pipes for becoming famous among top members of a field. A differentiated identity arising from diverse alters is key for gaining attention not only in a crowded market but also when a producer is competing with top members of a field.

Our results have implications for the relationship between structural and compositional diversity. Past research suggests that structural and compositional diversity are distinct but
related constructs (Campbell, Marsden et al. 1986). However, evidence for the relationship between compositional and structural diversity remains mixed (Balkundi, Kilduff et al. 2007). A possible condition for a positive relationship between structural and compositional diversity might be that ties in a network are formed outside formal organizations. Considerable prior research has focused on diversity within teams where individuals belong to formal organizations (Reagans and Zuckerman 2001). In contrast, our study examines the relationship between structural and compositional diversity in communities where individuals do not belong to formal organizations.

When a network is formed within an organization, we might not observe a positive relationship between structural diversity and compositional diversity based on race, gender etc. because (i) organizations may attract individuals who are relatively similar along these characteristics; and/or (ii) within an organization, characteristics such as tenure, department, or functional roles, might be more salient than characteristics such as race, gender etc., and as a result the former characteristics might be more likely to influence interactions and thus shape an individual’s peer network. In contrast, in a network where individuals’ affiliations with formal organizations plays little or no role in tie formation, we expect compositional diversity based on characteristics such as nationality, ethnicity or gender to be more salient and hence more important in shaping an innovator’s local network.

Our context is a cultural market where innovation is a key aspect. In this context, we find that national identity is salient. This is consistent with prior work which suggests geographic origins of innovators and their innovations might be a salient lens through which audiences understand and value these innovations (Phillips 2011). Moreover, other forms of cosmopolitanism also shape an individual’s creative identity. For instance, Dahlander &
Frederisken (2012) find that in an online community of software developers, cosmopolitans, i.e. those with ties outside their community, are more likely to be recognized as innovative. In contexts where innovation is a key aspect, we can expect the cosmopolitan identity associated with compositional diversity to be interpreted positively. In non-innovation contexts, we remain agnostic about the benefits of a cosmopolitan identity. At the same time, we expect compositional diversity to be associated with access to information to disseminate one’s name, and this benefit may be less dependent on the cultural context. Thus the relationship between compositional diversity and fame will depend on the contexts and how benefits (and costs) of compositional diversity balance out.

The mechanisms in our study suggest that as a construct, fame might crucially hinge on an individual’s access to diverse dissemination opportunities and an identity which differentiates her. Thus, our arguments and propositions can be meaningfully applied to other non-innovation contexts such as the social structure and fame of CEOs, social activists, organizations and brand labels. For instance, future studies can examine whether a social activist who protests with peers from social movements with diverse platforms or protest tactics is more likely to attract broader media attention. Similarly, future studies can examine if a CEO with ties to peers from diverse industries and countries is likely garner more widespread media attention.

CEOs, activists, scientists and innovators all benefit from fame. Meanwhile, the struggle for fame is becoming ever more intense and complex. This is particularly true of industries where actors experience high variance and mobility in their careers. Such variance and mobility characterize an increasing number of industries. As such, it is imperative to understand what factors shape fame. Our study sheds light on a pivotal factor, social structure,
and the associated implications for a producer’s identity, creativity and access to distribution opportunities.
Chapter 3

Path to Obscurity: The Creative and Social Trajectory of a Neglected Genius

“His [David Bomberg’s] precocious work, which he executed with such stubborn assurance between 1912-14, won widespread admiration from innovative artists and critics alike. At age of 23, only a few months after leaving the Slade school, his leading position in the new generation of British painters seemed assured.” -- Richard Cork, 1987

“David Bomberg (1890-1957) suffered greatly for lack of recognition, but the fame that eluded him in life seems no closer in death, notwithstanding the presence of his work in numerous English collections, public and private”. -- Vivien Raynor, NYT 1988

Introduction

The foregoing quotes about the British visual artist, David Bomberg, reflect the unexpected trajectory his fame. Despite an unequivocally promising early career in the British and European art world, by 1930 Bomberg had become largely obscure. Figure 3 plots the mentions of the artist’s name in the google Ngram corpus in British English and French from 1910 to 30. The mentions of the artist’s name in the n-gram corpus – which I call “fame” in chapter 2—resemble the mentions of his name in British newspapers and periodicals (Figure 4) during the same period⁸. As can be seen from the data, despite his work receiving a good measure of attention over this period, by 1930 he is longer discussed. One might suspect that this fall from attention to neglect is symptomatic of a lack of creativity and substance, a public reception that was no more than a passing fad. Such was the case, one might argue, with Henri Le Fauconnier, who was among the most feted artists of the period: Interest in Le Fauconnier’s work has since declined, and he is now regarded as somewhat derivative. With

Bomberg, on the contrary, there is good reason to believe that the decline in interest in his work by 1930 is not reflective of any inherent lack of quality. His formal training and early critical acclaim indicate both creativity and technical skill.

**Figure 3: Fame (mentions in Google NGram Corpus) of the British Artists David Bomberg and Vanessa Bell**

![Graph showing mentions of David Bomberg and Vanessa in Google N-Gram Corpus in 1910-30.](image)

**Figure 4: Fame (mentions in British Newspapers) of the British Artists David Bomberg and Vanessa Bell**

![Bar chart showing mentions of David Bomberg and Vanessa Bell in British Newspapers in 1910-30.](image)

The lack of attention to Bomberg is even more surprising given that he adapted his style for the rise and fall of Bomberg’s fame.
In this chapter, I undertake a qualitative analysis of Bomberg’s career over 1910-30 to examine the evolution of his fame in light of changes in his creativity and social network.

Bomberg’s career is illuminating for several reasons. After a promising early career, he enlisted in WW I, which altered both his post-war creative output and his social relationships. Contrary to psychological theories which posit a positive relationship between “biographical stress” (such as loss of family and peers, Simonton 1977) and creativity, after the war Bomberg veered away from his prior radical innovations towards more conservative representational work. He was responding not only to changes in his own tastes but also to the post-war British art market which had reverted back to more traditional representational art. I find that adapting to market tastes is not sufficient to keep a producer from fading from public attention. Thus, examining his career can help us understand how talented producers with initial success can become obscure despite adapting to market tastes.

I argue that Bomberg’s pre-war radical creativity defined a niche audience and identity for him. His more conservative post-war output was incongruent with the radical nature of his pre-war work. The drastic change in the nature of his output diluted his identity and betrayed the expectations of his pre-war audience. As a result, he forfeited his niche and lost his audience. His conservative post-war work placed him in a distinct and long established genre, where he found himself in the shadows of artists more authentically associated with the style.
The qualitative analysis in this chapter also sheds light on the evolution of a producer’s creativity and social network in response to a biographical stress. I find that such stress can disrupt promising careers of producers of great talent by disrupting their social networks. Bomberg’s post-war conservative output was adversely affected by social isolation. The study highlights the importance of social networks in cultural markets even for talented producers who pragmatically adapt to market changes.

THEORY

In this section I examine theories of both supply and demand sides of creative careers. These theories are shown to be incapable of accounting for the career trajectory of David Bomberg. I then examine how biographical stress impacts a producer’s network and creativity. Thereafter, I delineate the effects of a producer’s network on fame. Subsequently, I argue that a producer creative identity, which stems from the sequence of her creativity output, can decisively shape her fame or obscurity.

Path Dependence: Initial Fame Begets Later Fame

Initial success can determine subsequent success in the form of monetary reward, attention and critical praise (Merton 1988, Salganick, Dodds & Watts 2006, van Rijt et al. 2014). Producers who receive attention early in their careers are likely to continue receiving attention over time provided they attain a threshold level of productivity and quality. Producers who receive attention at an early stage of their career are more likely to receive attention at the subsequent stage than those who fail to garner that initial attention. Arguably, producers who receive attention and critical acclaim early in their career are poised to continue becoming more famous over time, albeit perhaps at slower rates. How might we reconcile Bomberg’s initial rise to fame and subsequent obscurity with past empirical work
documenting the self-reinforcing nature of fame. A potential explanation for the Bomberg’s fame trajectory might be that fame is enduring only for those who attain a threshold of initial fame. Prior work suggests that even though initial fame leads to subsequent fame, continued fame depends on attaining an initial threshold of fame (van Rijt et al. 2014). While plausible this explanation is still at odds with the fact that Bomberg was one of the most acclaimed abstract artists in the UK before WW I. His service in WW I should have only earned him greater attention as a war hero. And as an artist who adapted to changing market tastes, it is hard to understand the near obscurity his career faded into. Even if we grant that Bomberg’s initial fame in Britain was not large enough for sustained attention, “threshold effect” explanations beg the question as to what factors might make “small” bursts of initial fame so vulnerable to oblivion.

**Early vs Later Bloomers**

Creative careers have been characterized by two patterns: (a) Early peak, where a producer creates their best work and earns recognition very early in the career (b) Late Bloomer, where a producer’s creativity and recognition peaks at a later stage of the career (Galenson 2011). This simplistic single peak view of creative careers has been fruitfully revised by recent work which suggests that the peaks in creative careers are associated with the creative peaks of the organization with which a producer is affiliated (Accominotti 2009). In his study on early 20th century modern artists, Accominotti demonstrates that the artists’ peak fame (measured by attention to their work in 30 major art historical texts) was associated with the peak of the art movements that an artist was associated with.

The single peak theory and its refinements assume a strong link between a producer’s productivity and their fame which is not necessarily supported by empirical evidence. The
fame trajectories of Bell and Bomberg (see Figure 2), defy this early peak vs later bloomer pattern. Both artists’ fame, measured by mentions in the n-gram corpus, peak well after the peak of their productivity. In fact, despite being productive throughout his life, Bomberg remains largely obscure. Moreover, contrary to Accominotti’s prediction, Bomberg’s career not does not track the success of the Vorticist art movement (figure 5) he was associated with: As reflected in Figure 3 the correlation between the fame of the Vorticist art movement and Bomberg’s career is weak.

**Figure 5: Fame (mentions in Google Ngram British English corpus) of the British Artists David Bomberg and the art movement, Vorticism, he was affiliated with.**

Career peak and path dependence theories largely focus on the supply side of the creative careers and ignore the demand side, which requires attention to the cyclical nature of consumer preferences, particularly in cultural markets.

**Cyclical Nature of Cultural Markets**

Cultural markets are prone to fads and trends (Hirsch 1972). This implies that attention to
individual producers will fluctuate with trends. This is particularly true for younger producers who are likely to have a stylistically narrow “oeuvre”. Since attention is determined by a producer’s aggregate output, a producer with a stylistically diverse output is simply more likely to find at least some portion of his oeuvre in fashion at any given moment, and is consequently is less vulnerable to fluctuations in taste (Simonton 1998). However, much of this work ignores what happens when producers do respond to changing market tastes. If this theory is correct, producers who adapt to the prevailing market taste by creating output that matches that taste, should continue to receive attention rather than suffer neglect. Yet, my case study reveals that adapting to market taste does not guarantee continued attention. Arguably, successful adaptation is contingent upon the trajectory of a producer's creativity and the producer’s social network.

**Biographical Stress and Creative Careers**

Simonton (1980, 1977) provides some evidence that a producer’s creativity increases with biographical stress. Examples of such stresses include loss of friends and loved ones, financial setbacks, etc. (Simonton 1977). Biographical stress and the resulting emotional stress likely shape a producer’s creativity, though not necessarily positively. Such stresses can also alter a producer’s own taste for creativity. Negative experiences can make individuals more risk averse and hence less willing to explore novel approaches.

Moreover, producers in creative markets respond to not only their own emotional state but also to market tastes (Laycock 2009), which might favor more traditional and less innovative output.

I present the case study of a producer who received attention and critical acclaim early in his career for his radically innovative output; yet biographical stresses and changes in market taste moved him to create less innovative work.
Biographical Stress and Network Changes

Prior work on the relationship between biographical stress and creativity ignores the effect of such stressors on a producer’s social milieu. For instance, loss of peers, friends or loved ones directly alter a focal producer’s social network. Such losses also indirectly shape a producer’s social network by affecting her psychological state. Trauma or strong negative experiences can cause an individual to withdraw socially leaving her socially isolated. Such changes in a producer’s social world can diminish the extent to which she exchanges ideas and information with her peers. Thus, contrary to prior work that suggests a positive link between creativity and biographical stressors, we might observe such stressors diminishing a producer’s creativity.

Network and Fame

Prior work points to the importance of the social ties in shaping a producer’s fame during and beyond their life time (Lang & Lang 1988, Accominotti 2009). Much of this work assumes a static view of the social ties – once the ties are formed they endure. Archival evidence as well as my interviews with museum curators suggests that this is a reasonable assumption. In boundary-less markets, where social ties serve as conduits of information, financial capital and social support, producers have greater incentive to preserve ties. However, given the absence of formal organizational arrangements in such markets, we should observe greater variation in the endurance of ties, especially weak ties. Biographical stresses such as geographical displacement or loss of peers can be magnified by a lack of formal institutional arrangements. My case study presents an extreme instance of biographical stress — fighting in a war and losing a relative and a peer. My study reveals that such stresses can result in social isolation which can adversely affect a producer’s fame. My study is a
testament to the importance of social networks in accruing attention: Loss of network ties can contribute to the obscurity of high quality producers, even when they adapt to prevailing market taste. The negative effects of isolation have the potential to overwhelm any advantages such a producer might have through their affiliations to elite institutions and peers early in their career.

**Audience Expectations, Producer Identity & Fame**

A producer’s historical output shapes audience’s expectation about her future output. Meeting or defying those expectations influence the amount of attention a producer receives. Prior work has demonstrated that producers spanning multiple categories can be evaluated unfavorably by audiences because of inadequate attention to the producer (Hsu, Hannan, Koçak, 2009, Zuckerman 1999). Recent studies have surfaced a revision of the category spanning literature: producers who are able create outputs in different genres can be seen as versatile and sophisticated (Paolella & Durand 2016). I further probe the tension between prior and recent studies, by theorizing about how producers in a creative field gain and lose attention as they transition between different categories of output. I focus on two broad categories of output – one that is radical and novel (and whose legitimacy is contested) and one that is conventional and mainstream (and is therefore a legitimate and established category). Logically, producers who transition from a radical to a more conventional product category should not suffer neglect. A producer’s choice to create less radical and, in effect, less innovative work can be a “safe bet” in that she is likely to incur less resistance if her work falls in an accepted and traditional genre. On the other hand, such a transition can signal a lack of skill and hence authenticity.
In order to understand how transitioning from a radical to more conventional product can affect a producer’s fame, I examine how a producer historical output affects audiences’ expectations of her future output.

In creative fields, a producer’s output is seldom evaluated in isolation; instead each piece of work is evaluated in reference to the work of other producers’ works as well as those of the producer’s own prior work. Prior work on category spanning suggest that spanning categories can signal a lack of expertise (Hsu & Hannan 2005). Switching from a radical to more conventional form of output can be seen as spanning two broad categories of output, albeit sequentially. Producers, who shift away from innovative work to more conventional output, can be seen as inauthentic because they are seen as lacking expertise necessary to advance in their niche. Continued production within a novel and less accepted genre invites continued resistance from advocates of more traditional genres. Moreover, continued production within any genre requires deeper refinements of initial ideas and products. Producers who switch from a radical to a more conventional product category might be perceived as lacking the focus and grit needed to develop their work in the radical genre. Such producers can be seen as betraying their audience’s expectations⁹ and in the process can be deemed less authentic.

Switching between radical and conventional output alters the comparison set of works to which the producer’s audience compares her work to. The “evaluative confusion” (Simonton 1988) brought on by this change can result in the audience misunderstanding and neglecting her work. Arguably, a switch between radical and conventional forms of output can signal a

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⁹ Betraying expectations differs from subverting them. Arguably, a producer can retain her audience if she fruitfully subverts her audience’s expectation.
producer’s versatility. However, any such evaluation will depend on a producer’s ability to redefine herself as an authentic and high quality producer in the new genre (Hsu & Hannan 2005).

In the new genre, a producer will have to compete with other producers, who are more established in the genre and perceived as more authentically associated with it. In order to attract attention, the producer’s work in this more conventional genre will have to be distinctive and yet conform to the genre – a challenging goal in any category but even more so in a conventional category which is likely to be already saturated with the most optimally distinctive producers who occupy a dominant share of the audience attention.

The difficulty in attracting audience attention in a conventional category, with existing dominant producers, stems from the particularly finite nature of audience attention. The winner-take-all nature of most creative markets suggests that this attention is a zero-sum game. The attention that established producers gain comes as the expense of the attention lost by less established producers who are seen as less authentic producers in that genre. In the process, a producer switching from a radical to more conventional genre can unwittingly find herself in the shadow and not on the shoulders of giants. Such a producer can lose the niche and the associated audience that she had eked out for herself with her previous radical output without gaining a proportional amount of audience in the conventional category.

**Empirical Context & Method**

I use a qualitative case study to examine how changes in creative output, social networks and tastes can shape the career of a producer who begins with a promising career. I focus on the career of the British visual artist David Bomberg between 1910-30. Several aspects of
Bomberg’s career make it suitable for my study. In 1914, which marks the beginning of his professional career, Bomberg was recognized in the UK and abroad as one of the most innovative artists in Britain (Cork 1987). However, as the opening quotes in this chapter indicate, his initial success was followed by a lifetime of neglect by critics, museums and the public. During the period of my study, 1910-30, he experiences an unequivocal biographical stress—he enlists in WWI where he loses his close friend and witnesses large scale death and destruction. The post-war period represents a change in the tastes of the British art world, which, after a brief engagement with abstract art, reverts back to representational art. I examine the evolution of Bomberg’s creativity, social network and fame amidst these changes.

In order to understand Bomberg’s initial success and subsequent obscurity, I compare his career to another British artist, Virginia Bell. The comparison is not meant to serve as a matched sample design. Rather, Bell’s career serves as a contrast which brings into sharp relief the factors that can contribute to an innovator’s fame and oblivion. Apart from nationality, both were similar in the structure of their peer network used in the quantitative analysis of chapter 2. In the early stages of their career, both were embedded in similar and overlapping professional networks. Yet the artists differed in other respects. The pronounced paucity of women in the lists of most eminent artists across time periods, we might expect Bell to be less successful in the art world. However, Bell is substantially more famous than Bomberg both in Britain and abroad. I use artists’ biographies, catalogue raissons, and newspaper articles to understand the trajectory of their creativity, social milieu and fame.

**Findings**

Figure 1 plots the mentions of Bomberg’s name in the n-gram corpus in British English (see chapter 1 for details) in 1910-30. We observe an initial peak around 1914
followed by a drop to obscurity by 1930. Arguably, the peak and subsequent fall reflects the pattern of activity in the British art-world over this period. Yet, the fame trajectory of Vanessa Bell, Bomberg’s contemporary, does not support this argument. Over the same period, Bell’s fame increases monotonically. The artists’ fame measured in another database, which include British newspapers, mirrors the pattern of mentions in the n-gram corpus.

While similar in their local network structures, Bell was an order of magnitude more famous than Bomberg. Table 4 lists the values for other key variables for the two artists. Despite similarities in the structure of their cumulative social network over 1910-25, the artists’ creativity and social milieu followed different trajectories. In the following sections, I map the changes in the social world and creativity of Bomberg to better understand his rise and subsequent fall from fame. I contrast the characteristics of his creativity and social world with those of Bell to highlight forces that drove Bomberg’s obscurity.

**Table 4: Values for Creativity, Brokerage Alter National Diversity and US and French Fame in 1926**

<table>
<thead>
<tr>
<th>Names</th>
<th>David Bomberg</th>
<th>Vanessa Bell</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creativity (Factor Score Based on Six Dimensions)</strong></td>
<td>-0.78</td>
<td>-0.86</td>
</tr>
<tr>
<td><strong>Brokerage</strong></td>
<td>0.381</td>
<td>0.381</td>
</tr>
<tr>
<td><strong>Alter National Diversity</strong></td>
<td>0.65</td>
<td>0.73</td>
</tr>
<tr>
<td><strong>US fame 1926</strong></td>
<td>1.41E-10</td>
<td>6.37E-09</td>
</tr>
<tr>
<td><strong>French Fame 1926</strong></td>
<td>0</td>
<td>2.54E-09</td>
</tr>
</tbody>
</table>

**Pre-War Social Milieu**
Table 5 summarizes the two artists’ career histories. It includes their formal training, exhibition histories, dealers, social network, critics’ evaluation of the artists’ work in 1910-25 as well as their present day fame.

Even though Bomberg was born into a working class family, his formal training placed him at the center of the British art world. He studied with eminent painters such as Walter Sickert at the Westminster Art School between 1908-10. Later on, he attended the premier art school in Britain, the Slade School of Art. At Slade he was part of an eclectic set of peers who were regarded as among the most promising young artists in England at the time (Haycock 2009).
Table 5: Career History of David Bomberg and Vanessa Bell

<table>
<thead>
<tr>
<th>Born</th>
<th>1890</th>
<th>1879</th>
</tr>
</thead>
<tbody>
<tr>
<td>Died</td>
<td>1957</td>
<td>1961</td>
</tr>
</tbody>
</table>
| Formal training | 1906-08: Apprenticed to German Lithographer Paul Fischer  
1908-10: Attended W. R. Lethaby’s evening classes in lithography and book production at Central School of Arts and Crafts and Walter Sickert’s Evening classes at Westminster school.  
1911-13 Attended the Slade school of Art | 1900-04: Attended Royal Academy Schools where for a time she studied with John Sargent. |
| Art Movement Affiliation | Vorticist (Though he never formally identified himself as a member) | Bloomsbury |
| Dealers | No dealers | Had contacts with art patrons and dealers such as Gertrude & Leo Stein. |
| Exhibitions 1910-26 | In 1913 exhibited three works in the Friday Club Exhibition at the Alpine club Gallery  
In 1914 Solo show at Chenil Gallery London where he showed 55 pictures  
In 1927: exhibition of of Palestine picture at Liecester Galleries.  
1910-30: Exhibited with some regularity at New English Art Club (before 1926) and then later at the National Art Society | 1905: Starts Friday Club for exhibitions.  
1911-12: Exhibited work as part of Friday Club along with members of Alpine Club Gallery  
1912: Exhibited work at the Exposition de Quelques Independants Anglais organized by Roger Fry in Paris at Galerie Barbazanges  
1912 Exhibited at the Second Post – Impressionist exhibition  
1914: Four paintings at 20th Century Art Exhibition, Whitechapel  
1915: Exhibition of costumes at Omega Workshops  
1916 First solo exhibition at Omega Workshops  
1917: Works included in “The New Movement in Art” and shown in galleries in Birmingham and London  
1918 Six works at Englische Modern Malerei at the Kunsthau, Zurich |
Table 5: Career History of David Bomberg and Vanessa Bell, cont’d

| Current reputation | 1918 Exhibited works with other Omega Artists in London  
1919: Becomes member of the London Group where she frequently exhibits till her death  
1920 Exhibited work with Duncan Grant at Grafton Gallery, London  
1922 Solo exhibition at the Independent gallery  
1926 Exhibited at Leicester Gallery with London Artists’ Association of which she was a founding member |
| Reviews: One of the finest 20th century painters in modern Britain. | Regarded as similar to other Bloomsbury artist. Not considered as innovative as her contemporary and husband Duncan Grant. |
| | Before 1910, her work was seen as “meditative”. |
| | Between 1914-1919, her work work was described as exotic. |
| | The critic Roger Fry, greatly admired Vanessa Bell’s personal sense of color and her directness of response to her theme. Yet, he found her work “lacking in formal invention”. |
| | Among the Bloomsbury artist she was she was “the most adamant” in her relegation of importance of subject matter. |
| | She was often compared to Duncan Grant. Gran’s work received closer attention when the two painters were bracketed together. |
| | “He was seen to be more ambitious and diverse. This gave the impression Bell was a pliant imitator, one of the several members of a high-profile Ecole de Grant. This was perhaps even more apparent when the critic in question was careful to distinguish between them, though rarely failing to place Bell after Grant and introducing her as one |

In 1913, Roger Fry wrote of his “ambition, energy and brain power”.

In 1914, T E Hulme in “The New Age”, reviewed Bomberg’s first London Group exhibition and called him an artists of “remarkable ability” but was skeptical of the limits to which Bomberg had “pushed his pursuit of pure form”.


In 1928, critics 1926 noticed his affinity Cezanne.

“His tight literal approach of the Palestine years” was seen as a “dramatic apostasy”. (pp. 3, Cork 1987).

“At the same gallery, Mr. David Bomberg makes triumphant amends for his earlier flirtations with cubism, which he deserted –
Given his elite education, he was able to exhibit his work while at Slade and immediately after Slade. In 1913, he showed his work in a group exhibition at the Friday Club in London. In same year, he founded the art society, the London Group, along with other leading artists such as Wyndham Lewis, Walter Sickert and Henri Gaudier-Brezska. Between 1912-15, Bomberg travelled widely and met an eclectic group of artists such as French painter and co-founder of Fauvism, Andre Derain, the Italian painter Amedeo Modigliani, the Polish-born French painter Moise Kisling and the co-founder of Cubism, Pablo Picasso. Over the course of his training at Slade, he was drawn to the Cubo-Futurists works of the British avantgarde group, the Vorticists which comprised Wyndham Lewis, Lawrence Atkinson and Ezra Pound among others. His pre-war peer network might be described as comprising a few close friends such as the painter and poet Isaac Rosenberg and a broader circle of associations.
comprising various artist groups such as the Vorticists and the London Group (“David Bomberg” n.d., Cork 1987). A defining feature of his associations outside his close circle of peers was his distance from these groups. This is best reflected in his reluctant association with the Vorticist group: Though he exhibited with the Vorticists in 1915, he refused to formally join the group\(^\text{10}\). Several social factors might account for this aloofness — his Jewish background, his lower socio-economic status relative to other affluent members of these groups and his desire to cultivate his individuality without excessive influence of other leading artists. In network terms, he might be described as disconnected (Phillips 2011), albeit voluntarily so, from the cliques of other prominent British artists. While loosely tied to these cliques, he remained an outsider to them.

In contrast, Vanessa Bell might be regarded as ensconced in the heart of the British elite art world. As the daughter of the literary critic Sir Leslie Stephens and sister of Virginia Wolf, Bell’s elite connections began in the family. Moreover, she was married first to the prominent art critic, Clive Bell and later to the artist Duncan Grant. She was part of the Bloomsbury Group which comprised several prominent artists and intellectuals such as John Maynard Keynes, E.M Forster, and Lytton Strachey. She was part of one of the key early 20th century modern art exhibitions in Britain, the Second Post-Impressionist exhibition held in London in 1912.

**Pre-War Creativity**

Bomberg was recognized for his artistic talent early in his career. At Slade he won

awards and acclaim for his work such as *In the Hold* (Figure 4) and *Ju-Jitsu*. After encountering the avant-garde works at the Second Post-Impressionist Exhibition and through his contact with other British avant-garde artists around 1912, he strongly veered away from the traditional figurative work and towards radical abstraction. His work was so radical that he was expelled from Slade for “breaching the conventional rules that governed the school of art” (Teitelbaum 2010, pp. 82). He was drawn to Wyndham Lewis’ abstract art group, the Vorticists with whom he exhibited in 1915. Like many abstract artists, he faced hostile reception from some critics but he quickly came to be regarded as one of the most innovative abstract artists at the time in England. Bomberg’s first substantial solo exhibition at the Chenil Gallery in 1914 was attended by leading abstract artists from all over Europe. These included the French artists Marcel Duchamp, the Romanian sculptor Constantin Brancusi, and the founder of Italian Futurism Fillipo Tomaso Marinetti. Prominent critics such as Roger Fry and T. E. Hulme heaped unequivocal admiration on Bomberg’s work for his “ambition, energy and brain power” (Cork 1987). Even critics like Hulme, who had been initially skeptical of Bomberg’s ability to realize his talent, were all impressed by his skill and originality (Cork 1987).

Despite gaining critical acclaim and considerable attention, financial pressures forced Bomberg to enlist with the Royal Engineers (British Army corps) in 1915. In the following year, he was transferred to the King’s Royal Rifles Corps and sent to fight in WWI. The war — the destruction and loss of his friend Isaac Rosenberg — took a steep psychological toll on him. His post-war depression affected his creativity as well as his relationships with friends, peers, and dealers (Cork 1987).

**Post-War Creativity**
Bomberg’s work changed substantially after the war. After witnessing the machine wrought death and destruction of WWI, Bomberg became disenchanted with the mechanistic idiom that had influenced his pre-war work. Like many artists in Britain and abroad, he embarked on exploring a more “rounded and organic” (“David Bomber”, n.d.) figurative style. Instead of developing his abstract work further, he increasingly gravitated towards a more realistic style which focused on landscapes. Figures 6 and 7 include four of his works which represent the sharp change in the nature of his pre and post-war creative output.

**Figure 6: David Bomberg’s pre-war works**

(Source: [http://artuk.org/discover/artists/bomberg-david-18901957](http://artuk.org/discover/artists/bomberg-david-18901957))

Bomberg was not the only artist to shift to a more conservative representation style after the war. Prominent artists from the British Vorticists such as Wyndham Lewis reverted to the more traditional representational paradigm after the war. In many respects, he and others were responding to a change in market taste. For instance, the Canadian commission rejected
the first and more abstract version of Bomberg’s painting, *Sappers at Work*. Later on, the commission accepted the revised realistic version. Thus in 1910-1930 his work evolved from being radically abstract to becoming more “naturalistic” (Cork 1987). It should be noted that while his style underwent a substantial shift in response to his experiences as well as changes in market taste, the quality of his work remained consistently high (Cork 1987).

Figure 7: David Bomberg’s post-war work
(Source: http://artuk.org/discover/artists/bomberg-david-18901957)

Barges, 1920
Southeast Corner, Jerusalem (Palestinian Landscape)
1926

Post-War Social Milieu

Bomberg lost his close friend and colleague, Isaac Rosenberg in the war. His acerbic personality combined with his post-war depression affected his ability to sustain ties with his other peers (Cork 1987). He alienated his dealers and in the process lost access to opportunities to promote his work.

In contrast Bell’s work and social milieu remained relatively unchanged before and
after the war. Her paintings, while winning critical recognition, were largely figurative, comprising still life and interiors. Many of her friends were conscientious objectors to the war and did not serve in it (Shone 1976).

**Post-War Attention**

Table 2 includes snippets of critics’ evaluations of Bomberg’s creative output. In 1920, he showed his work as part of a group exhibition at the Hampstead Heath Gallery. The exhibition review highlights the critics’ aversion to abstraction and his preference for traditional aesthetics. The critic dismissed Bomberg’s work *Bending a Woman* as “definitely a failure” because of the absence of any recognizable object or theme in the painting. The more representational *Woman at Machine*, however, was “much more satisfactory” because of the “undeniably emotional appeal” of the color scheme (“Exhibitions of the Week”, 1920). The reviewer’s sentiment reflects the British post-war shift from abstract to figurative style and the hostility that abstract artists faced before the war. Arguably, such reviews only reinforced Bomberg’s shift from abstraction to naturalism.

Bomberg’s transformation was greeted with mixed reviews. The critic J.B. Manson described Bomberg’s shift away from abstraction as, “making triumphant amends for his flirtations with cubism, which he deserted, a clear breach of promise…. ” (Manson 1928). His new style was seen as a combination of the styles of prominent British figurative painters such as Sargent, and thus his new work was regarded as derivative. Bomberg’s switch to representational art also changed the set of artists to which he was compared. While earlier reviews of his work recognized his “eccentric brilliance” (“The Revolutionaries of British Painting”, 1913), his later traditional style put him in the shadows of the established figurative
artists. The title of one post-war review said it all: “Mr. Sickert and Some Others” (Manson, 1928).

Reviews of Bomberg’s paintings of Palestine further echo this sentiment. He is compared to Reuven Rubin, an established Jewish painter of this particular genre. Reviews of the paintings Bomberg created while in Palestine and Petra hint at his classical training at Slade; in doing so they indirectly highlight his British, and hence non-native (to Palestine) background (Konody 1930). Arguably, his non-native background might have made his work seem less authentic to some reviewers.

Discussion & Conclusion

In light of these findings, Bomberg’s obscurity can be seen as an outgrowth of his creativity identity which was shaped the sequence of creative output. Bomberg’s post-war shift from a radical style to a more traditional style cost the artist his core audience. The relatively extreme nature of his pre-war innovations had created a niche audience for him. Both his core admirers and the broader audience expected him to continue his radical innovations after WW I. This is reflected in the reviews of even the conservative critic who did not miss an opportunity to characterize Bomberg’s shift as a “breach of promise”. His return to the “mimetic approach” was regarded as much more extreme than that of any of his former colleagues, who considered it a “dramatic apostasy” that left “his earlier admirers perplexed” (Cork 1987, pp.2-3). According to his posthumous biography, “Bomberg’s startling shift from pre-war innovation to post-war conservatism must have been hard to understand, and one friend pinpointed the difficulties by stressing that ‘it is almost like work of a new man who has to gain a new circle’” (Cork 1987, pp. 3).
By switching to the more conventional figurative style, he found himself competing with other established figures in this genre. Instead of cultivating his own distinct identity, his post-war work placed him in competition for attention with artists like Sickert and Rubin who had already established themselves as authentic and leading figures of their genres. In the absence of a core audience and in the shadows of established artists, Bomberg faded from public attention despite being a productive artist.

The case study reveals that being famous is not simply a matter of adapting one’s output to changing market tastes. Such an adaptation does not automatically ensure that a producer will continue to enjoy her audience’s attention, let alone expand her potential set of audience. Successful adaptation to market tastes requires creating product that represents a fruitful synthesis of her identity which has arisen out of the sequence of her prior work. Moreover, successful adaptation to market tastes requires finding a genre which is either unsaturated with established producers (i.e. it is not an oligopoly) or a niche where the producer can eke out a dominant role for herself.

It is simplistic to think that Bomberg became obscure simply because he became less creative. If that were the case, then other artists who transitioned from pre-war abstraction to post-war representational art should have also become obscure. Instead, we find that his peers such as Vanessa Bell continued gaining some measure of fame. A more accurate explanation of Bomberg’s fall from fame must take into account the identity and expectations created out of the deeply radical nature of his pre-war work and his post-war departure from it.

The case study reveals that an innovator’s fame is contingent on her identity which is a function of her current work as well as her prior oeuvre. The results in chapter 2 suggest that fame is a function of having a distinctive identity. The case study in this chapter further
supports that argument by documenting the fall to obscurity of a producer who abandons his distinctive style to compete in a conventional genre where he fails to distinguish himself from other producers despite adapting to market taste. More importantly, Bomberg’s career reveals that fame is not simply a function of creativity but of the identity of a producer. This identity is a function of a producer’s social structure which can take different forms. In chapter 2, I argued that a producer’s creative identity is a function of a producer’s social structure which emerges out of the compositional diversity of her immediate peer network. The case study in this chapter highlights another form of social structure, the sequence of her creative output, which shapes a producer’s identity. Across all chapters, I find that measures of creativity such as experts evaluations in Chapter 2, versatility in this chapter, and a computational measure in Chapter 3, do not account a producer’s fame or obscurity.

The phenomenon of a sequence of producer’s prior work shaping her identity and future career is not restricted the visual arts. Film actors who struggle to break from their typecasting are the most obvious example of this phenomenon. Other examples includewriters who have to carefully choreograph any shift in the genre of their writing. For instance, despite or perhaps because of her tremendous success as the author of the Harry Potter series, J. K. Rowling writes detective fiction under the pseudonym Robert Galbraith (Zax 2014).

The role of identity based on the sequence of a producer’s creativity in shaping her fame is subject to boundary conditions. This role is much stronger when a producer’s fame is still below a certain threshold such as that of an artist in the early stages of her career. Another boundary condition is the distance between a producer’s prior and subsequent category of output. A producer who switches her output between two product categories that
are less distant in innovativeness, is less likely to suffer greater evaluative confusion and neglect than a producer who switches between more distant categories.

A fuller explanation of Bomberg’s obscurity has to take into account not only the sequence of his creativity but also his social network. The loss of a core audience and a distinct identity was only compounded by his increased post-war social isolation, which diminished his access to ideas, information and other forms of support which are critical to gaining attention. In combination, these forces resulted in the neglect of one of the “most audacious artists” (“David Bomberg”, n.d.) in UK in this period.

The case reveals how social structure and creativity interact and evolve to shape a producer’s identity (and, in effect, audience’s expectations and reactions) as well her access to resources to get attention. Producers in disconnected social networks can elicit greater attention provided the creativity of their work is consonant with this position (Phillips 2011). However, given the highly social nature of cultural markets, social isolation can result in neglect and obscurity even when the producer adapts to the changing tastes and creates less radical output. A producer’s attempts to adapt to changing fashion or taste can be counterproductive when such a shift is dissonant with her earlier oeuvre and is accompanied by social isolation.

Apart from providing a counterexample to the idea that biographical stress increases creativity, my case study shows that Simonton’s (1980) analysis ignores the social context in which producer is embedded: Even the most rebellious and non-conformist producers respond to market taste, but such attempts can backfire in the absence of a conducive social structure.

One might argue that Bomberg’s obscurity was indirectly determined by his economic
circumstances which forced him to enlist in WWI and also be more beholden to market tastes. The challenges faced by Bomberg echo the results of past studies which find that initial capital (from personal or government sources) is a strong predictor of entry as well as survival of self-employed individuals (Taylor 2001). The case study of Bomberg reveals a specific channel through which success as a self-employed individual is contingent on having some degree of a financial cushion. Lack of such a cushion can compel self-employed individuals to interrupt their career (such as enlisting in war) or drastically deviate from their original artistic vision, even one that brought them some measure of acclaim. Creative careers, such as one of being an independent artist, are often fraught with risk. Like self-employed entrepreneurs, artists face considerable uncertainty in creating something new and bringing it successfully to a market. Interruptions and deviation, especially in the early stages, can spell the end of a career. Having a certain amount of initial capital allows producers to remain committed to one's self-employment and also one's vision.

Contrary to past studies on path dependence, this case reveals that initially promising careers can be upended. Biographical stress can disrupt promising careers despite a producer’s talent and pragmatic choices. This can result in a market where the famous producers might be creative, but creative producers are not necessarily famous. And in fact, some can become obscure.

**Epilogue**

Bomberg was not permanently consigned to obscurity. Starting in 1960s, critics began rediscovering and highlighting his work. While most likely a result of chance, such rediscovery is consistent with Becker’s insight that “forgotten” artists can be rediscovered when market mediators like critics run out of material, and need to establish their own careers
by finding “new” original artists (Becker 1982). Bomberg’s career trajectory is also consistent
with Lang & Lang’s (1988) insight, in that his fame was revived after his death because of his
wife’s efforts. It helped that as the daughter of an art dealer, she was not a stranger to the art
world. Finally, the revival of his reputation is consistent with Simonton’s (1998) view that
creative work rises to eminence and fame over time.
Chapter 4

All’s that’s Novel is Famous? An Empirical Study of the Relationship Between Artistic Innovator’s Creativity and Fame across Time and Space.

*If we had an objective way of determining literary quality, it does not seem at all likely that we would find Shakespeare (with 9,118 books) to be 44 times better than Marlowe (with 205 books) or 4,559 times better than John Cleveland (with 2 books). – Colin Martindale*

**Introduction**

Creativity is often cited as the attribute that separates artists who are household names from those are obscure. Yet we can easily think of talented musicians, scientists, artists who remained obscure throughout their careers. Van Gogh wrestled with poverty and obscurity throughout his lifetime. Nonetheless, our abiding intuition is that a producer’s fame bears some relationship to their creative talent.

Prior empirical work on creative producer’s fame has focused on the relationship between the creator’s productivity and fame (Martindale 1998, Simonton 1998, Simonton 1997). While these studies reveal a positive relationship between productivity and fame, they acknowledge that even the skewed distribution of productivity cannot account for the much more skewed distribution of fame (Martindale 1998). Moreover, implicitly or explicitly, these studies conflate productivity with creativity. In part, this conflation stems from the challenges of measuring creativity, a complex and elusive construct. Most empirical studies of creativity operationalize the construct either with proxies such as productivity or with measures of creative success such as awards.

Research on sociology of fame has focused on theoretical and qualitative explorations
of the nature of the construct and its unequal distribution (Braudy 1997). Empirical studies of fame have been limited to understanding patterns on the construct\textsuperscript{11} (Van de Rijt, et al. 2013). Simonton’s studies of the originality of classical music scores and their fame represent a small set of empirical articles that directly examine the relationship between creativity and fame in a creative market. He found a curvilinear relationship whereby originality of the scores is positively related to their “thematic fame” up until a certain threshold of originality after which the relationship turns negative arguably because highly original scores are hard to comprehend. His level of analysis was the compositions. By his own acknowledgement his measure of the originality of the compositions is simplistic in that it is restricted to analyzing the rarity of notes and intervals of the first six notes of the compositions. Moreover, his measure of fame is the frequency of citations of the melodic themes of the compositions in 30 texts; 26 out these 30 texts were music related texts (e.g. 6 music appreciation texts, 5 record buying guides etc.) while the other four included general cultural histories and two “collections of popular excerpts” (Simonton 1980). The limitations of his measures can be partly attributed to the limitations of the data, statistical methods and computing power of the period (Simonton 1980, pg 211). Nonetheless, his work has shed light on a vital yet overlooked question. Arguably the same limitations have prevented scholars up until recently from investigating further the relationship between creativity and fame in the music or other creative contexts.

Two key factors plague empirical explorations of creativity and fame. The first challenge is measuring producers’ creativity on a large scale. Prior work has often relied on

\textsuperscript{11} For scholarship on causes and implications of CEO celebrity see Hayward, Rindova & Pollock 2004. However, the literature on CEO celebrity remains focused on firms and CEOs rather than innovator’s creativity as a driver of fame.
expert evaluations (Hennessey and Amabile 1999, Amabile 1983). Relying on experts can limit the number of producers and the work one might study. Asking experts to evaluate the creativity of even 100 producers entails a significant drain on their cognitive resources.

Having multiple experts might address the problem, but that involves introducing the experts’ own subjective aesthetic and hence more noise into the measures. Alternatively, scholars have had to resort to simplistic measures of creativity which only focus on part of a creative product (Simonton 1980). Every measure of creativity has its limitations. But present day advances in computational power, give us an opportunity to develop better measures of complex creative products. Not availing these methods amounts to missed opportunity to develop a more precise understanding of the creativity of these products.

Expert measures also confine our scale of our analysis, often to a relatively small sample of the most eminent producers in a field. Such limited samples can result in an incomplete picture of the relationship between creativity and creative success. If the samples only include already canonized writers, musicians, scientists etc., then it likely that more often than not, the relationship between creativity and fame will be biased positively.

Understanding whether creativity necessarily garners attention is crucial for efficient functioning of markets for creative talent. In such markets becoming famous is critical to gaining access to economic and social resources. Such markets are often winner-take-all markets where a few producers garner most of the attention as well as other resources (Salganick, Dodds & Watts 2006). However as reflected in the epigraph in the beginning, it is not clear whether the skewed distribution of creative talent can account for the skewness of fame. The unequal distribution of fame represents a market inefficiency which can undermine the market over time. To the extent creative markets thrive on a diverse set of producers, a
market’s failure to confer attention to a large number of creative producers can result in such markets functioning sub-optimally. Over time, such markets are likely to be less competitive and vibrant and be dominated by a narrow range of ideas. Moreover such markets can become less appealing to talented producers, especially those who have the skills to thrive in other markets which are more welcoming of their talents. In order to understand the drivers of inequality of outcomes in markets of creative talent, we need an understanding of how such markets value creativity (Lamont 2012). A crucial step in that direction is to understand whether and how creativity garners attention.

In this study, I address the two limitations of the existing literature. Using machine vision algorithms, I compute a novel measure of the creativity of 55 pioneers of abstract art. This method allows me to analyze the creativity of the artists’ output over time. Thus I am able to trace the artists’ creativity and fame over 95 years. My sample of artists is not restricted to already established artists. The artists in my sample vary considerably in fame, from artists who are household names to those whose have barely escaped obscurity. I examine whether the variation in creativity accounts for their variation in fame at the early stages of their career as well as throughout their career and beyond. By tracing the artists’ creativity and fame over time, I am able to control for the influence of their prior and subsequent creativity on their fame at any given point in time.

In the following section, I present the arguments for and against a positive relationship between fame and creativity. Thereafter, I present the data, methods and tests for the relationship between creativity and fame.

**Creativity and Fame**
Considerable scholarly effort has been devoted to understanding the success of creative output such as jazz, films and scientific discoveries (Uzzi & Spiro 2005, Phillips 2011, Cattani & Ferriani 2008). Most of these studies have focused on constructs related to but distinct from fame. Unlike citation counts or awards, fame is the extent to which a producer is known beyond one’s peers. Unlike other forms of creative success, fame can be positive and negative; rather being limited to a type of audience or a valence. Fame is measure of extent to which an individual known among the broadest possible set of audience (Driessens 2013, Currid-Halkett, 2010, Braudy 1997.). For further distinction between fame and other constructs such as status, please see chapter 1.

Creativity is a multifaceted construct. Its complexity is well reflected in the 250 plus measures which scholars have used to measure this crucial construct (Plucker & Renzulli 1999, Sternberg 19999). The attribute of novelty pervades most definitions of creativity; novelty is “at the heart of what makes ideas creative in the first place” (Mueller, Melwani, Goncalo 2012, pg 15). In this study, I focus on this aspect of creativity and examine its relationship to fame.

According to the optimal arousal model, a novel piece of music, art or idea can elicit greater excitement and hence attention (Berlyne 1971). Novel stimuli elicit higher cognitive and emotional arousal. At first blush, this argument is consistent with the lay intuition that a novel product (music, art, idea etc.) is more likely to evoke greater excitement and hence elicit greater attention. However the model’s predictions are unclear about a product’s fame when it is first introduced. In fact, a key premise in the optimal arousal model is that it requires users to be repeatedly exposed to a product: specifically, it states that more novel products are likely to elicit greater excitement than less novel works when users are repeatedly exposed to the
products. This implies that the model’s predictions are contingent on users being exposed to the product over time. The premise of repeated exposure also implies that the model’s prediction requires the presence of competing products that vary in novelty. Arguably, novel products will garner greater excitement and attention when they are competing with less novel products and both types of products receive similar amounts of audience exposure. However, the requirement of repeated exposure is itself a channel through which producers’ and products become famous. Such repeated exposure if possible to manipulate in laboratory setting. However, in a field setting, the optimal arousal model leaves unanswered the focal question of my study: why and how would a product receive repeated audience exposure?

Moreover, the model’s predictions are unclear in a field setting where producers’ creative output cumulate over time. What is the relationship between a producer’s cumulative creativity and her fame over time? Sociological theories of Matthew effect would suggest that a producer’s initial fame can shape her subsequent fame (Merton 1968). Yet, such theories implicitly assume that a producer’s creativity (and audience perception of it) is static: the deterministic view of a producer’s initial creativity overlooks the simple fact that a producer’s creative output cumulates and evolves with each successive output. Little research has explored the evolution of a producer’s fame and value in light of the evolving creativity of her cumulative output. This is, in part, due to the absence of a consistent and objective measure of creativity that can be applied to large samples of producers and their output over time.

Apart from the theoretical limitations, the empirical support for the optimal arousal model has been mixed. Recent research in the marketing literature has found that online news articles that evoke high-emotional arousal in the form of anger, awe or anxiety tend to be shared more widely than articles that evoke low-emotional arousal in the form of sadness (Berger &
Milkman 2012). However, the study found this relationship to be independent of the extent to which the articles contained elements of surprise. This suggests that intense emotions rather than novelty might drive the virality (or fame) of articles. Other scholars have argued that novelty does draw the attention that some products such as new articles receive (Wu & Huberman 2007). However, in the case of news articles, novelty has informational value for the audience and hence might elicit their attention. The informational value in the novelty of other creative products such as scientific discoveries is not always clear. This in part because of the specialized expertise needed to evaluate the information value of such products. Moreover, for many creative products, informational value is seldom the criterion that shapes audience attention for such products. Finally, even if novel work can elicit momentary attention, it might not result in a threshold level of attention needed to make the producer famous.

Several sociological and psychological factors can result in a novel output being neglected. Novel output can be ignored because it is hard to comprehend (Simonton 1998, pg. 200). Research in social psychology suggests that we are likely to underestimate highly original ideas because of the cognitive difficulties in accessing attributes relevant to evaluate such ideas (Licuan, Daily & Mumford 2007, Csikszentmihalyi, 1999) The lack of criterion to evaluate original ideas can result in audiences failing to appreciate and understand such ideas and dismissing them as incomprehensible.

The fame of a novel product is also determined by how its adoption shapes the adopter’s reputation. On the one hand, the adopters of new ideas or products can be seen as trend setters; on the other hand they can become outcasts if the product fails. Thus, if the fame of a producer is contingent on a large number of users adopting her output, the uncertainty
surrounding the value of a novel output and the associated reputational risk can limit its fame.

Novel ideas and products can also encounter resistance and suffer neglect because they disrupt existing orders. This is particularly true of highly novel products that disrupt the dominant paradigm of a field. The continued dominance of an existing paradigm serves the interests of several stakeholders. Examples include firms that are invested in certain traditional technologies or scientists, critics and market intermediaries who have built their expertise and reputation around the existing paradigm. Such stakeholders are unlikely to adopt or promote new products and products if doing so runs counter to their interests.

The theoretical and empirical lacunae around fame and creativity only grow larger when we consider the fame of paradigm-shifting creativity. Within the sociology of science, original discoveries can lead to recognition in science (Merton 1973) on the condition that these discoveries are “functional for scientific progress” (Guetzkow, Lamont & Mallard 2004, pg. 191). The limitations of data and measures that characterize the study of “normal creativity” are only magnified further for highly creative output. In scientific disciplines, theories and results that depart from the existing paradigm are regarded as “anomalous discoveries” which “are usually ignored and seldom welcomed by a scientific community, which is conceived as resistant to paradigmatic shifts.” (Guetzkow, Lamont & Mallard 2004, page 191). Such neglect leaves behind an impoverished record of such paradigm shifting creativity. The rare instances of paradigm shifting creativity further exacerbate the challenges of studying the relationship between such creativity and fame.

The challenge of finding an evaluative schema can be even more acute for novel output that departs from the established paradigm. Novel products’ deviation from existing paradigm can make existing evaluative schemas useless in understanding the product. The
lack of comprehension and hence inaccessibility can limit how much attention a novel output receives.

Market tastes influence the extent to which novelty is worthy of attention. Creative markets go through cycles of tastes. Clothing styles, topics of research and forms of representation in art rise and fall in their currency. For instance, during the Renaissance, fine artists were valued for their ability to create the most accurate representations of real life, often as an aid to enhance the scientific understanding of mechanical objects, buildings and human biology. In contrast, the Modernist period in fine art, valued the rejection of the traditional paradigm and embraced radically new ways of creating art that questioned the very form and means of representation. Such market tastes reflect the zeitgeist (Simonton 1980). They not only inform producers’ tastes and choices but also the broader public’s preferences. In effect, they shape to what extent creativity, specifically novelty, receives attention. Thus a key driver of which producers receive attention during a time period is the prevailing market taste. If novelty is in vogue, we can expect creators of novel products to be famous.

**Empirical Context**

My empirical context is the early 20th abstract art which is part of the Modernist period in fine art. My sample for this study comprises 55 artists who were the leading innovators of the abstract art movement between 1910-25 (For further details on the context, please see chapter 1). Despite their pioneering roles, the artists vary considerably in their fame. For instance, on the one the hand my sample includes the renowned German Expressionist painter Vasily Kandinsky whose works have sold for millions of dollars, on the other hand, my sample artist such as the Polish artist Waclaw Szpakowski who even till date have received marginal amounts of attention.
Focusing on the creativity and fame of the pioneers of abstract art allows me to examine how their creativity relates to their fame during a period of paradigm shift. The Modernist period not only witnessed radical innovations in art but in literature, science and commerce. It was a period that prized new ways of representation even if, and perhaps especially, if it violated existing aesthetic standards. The modern art market emphasized novelty as the key dimension of creativity. In this respect, this period represents a period where novelty is more likely to receive attention. Thus, studying the fame of creators during this period represents a conservative test of my proposition that creativity does not necessarily result in fame.

Another advantage of focusing on fine art, rather than other cultural products such as music or writing, is that once a piece of art is produced, its subsequent exhibition does not alter its objective qualities. In case of a musician, each recording and performance of her work is variable and has a strong effect on how that work is understood and received. In order to examine the effect of a musician’s creativity on her fame, we need to account not only for the creative qualities of the work when it was first performed but also the qualities of its performance over time. While a visual artist’s work also undergoes changes in interpretation over time, its objective qualities remain constant. Thus, an objective measure of an artist’s painting gives us a more precise sense of her creativity at a point in time.

Data
Fame

My measure of the fame is a proportion of an artist’s name mentions in the google n-Gram corpus in five languages – British English, French, German, and US English – for each year between 1905-2000. The Google n-gram corpus comprises over 8 million books which
represent six percent of the books ever published. As such it provides a closer proxy for a defining feature of fame, the “sheer numbers of people who know one’s name.” (Currid-Halkett, 2010, pg. 66). For further details on the measure please see chapter 1.

**Computational Creativity Measure**

In accordance with prior research on creativity, I measure creativity at the level of product which in this case is an art work (Reis & Renzulli 1991, Besemer, & O’Quin 1986). I used 2218 images of the works of 55 pioneers of abstract art. I accessed these images through the art database ArtStor.

My measure of creativity is meant to capture the novelty of a piece of work relative to works in the representational paradigm that preceded the emergence of the abstract art movement. For this I employ a novel measure of creativity that draws on advances in computer science and machine learning. I used a machine vision algorithm\(^\text{12}\), developed by a team of computer scientists, to represent each painting as a 1000 dimensional vector of features. I applied this algorithm to each work of the 55 pioneers of abstract in my data as well as to 2000 images of art works from the 19\(^{th}\) century representational paradigm.

In order to measure the novelty of each work of abstract art, I computed the cosine distance between its feature vector and the feature vector of each of 19\(^{th}\) century pieces of art in my data. Thereafter, I took the average of the cosine distances of a focal work of abstract art from all the 19\(^{th}\) century works of art. The greater this distance for a focal work of abstract, the more novel it is. For instance, the average cosine distance of the painter Vasily Kandinsky’s painting, *The Birds from Xylographies*, is 0.685. In contrast, the average cosine distance of his

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\(^{12}\) The machine vision algorithm is developed by Jolibrain. The algorithm uses neural networks to learn representations of images. The algorithm was trained and refined on a set of images and then applied to the images in my data set.
more abstract painting, *Several Circles* is 0.797 (see Figure 8).

**Figure 8:** Cosine Distance of two works of abstract art from 19th century representational works of art. Higher distance mean higher novelty

![The Birds from Xylographies (1909) by Vasily Kandinsky](image1)  
Cosine distance from 19th century art works = 0.685

![Several Circles (1926) by Vasily Kandinsky](image2)  
Cosine distance from 19th Century Art = 0.797

The computational creativity score for each artist is the average of the cosine distance of all her works. An artist’s cumulative creativity in each year is the average of her computational creativity score up until that year.

**Results**

Figure 9 depicts the distribution of the cumulative creativity of the 55 artists’ in 1926. The distribution is skewed, with almost 96 percent of the artists falling on the highly novel end of the spectrum (creativity score > 0.5). This is consistent with the fact these artists were the pioneers of the revolutionary abstract art paradigm.
Figure 9: Distribution of Computational Measure of Creativity of 55 Pioneers of Modern Art
Figure 10 shows the distribution for these artists’ fame for the year 1926 in US English. The figure stands in stark contrast to the creativity distribution: over 72% of the artists have no mentions in the US n-gram corpus. The distribution of artists’ creativity not only does not account for the skewness of fame but is in fact opposite to that of the distribution of fame.

Figure 10: Distribution of Fame (in US English) of 55 Pioneers of Abstract Art in 1926
Figures 11-15 plot the correlations between the artists’ creativity and fame between 1905 and 2000 in five languages. Each plot reveals the same overall trend: between 1905-1920, the correlations fall monotonically from 0.2 and 0; between 1920-1940, the correlations fall further monotonically to values ranging from 0 to -0.6; after 1940, the correlations increase slightly and plateau around -0.2 and -0.4. These results indicate that fame is at best weakly correlated with creativity even during periods of radical paradigm shift. In other periods, such as 1930-45, when market has arguably a “distaste” for novelty, fame and creativity are negatively correlated.

13 I was unable to access the fame measures in Spanish. An regrettable omission which I will correct in future studies.
Figure 11: Correlations between artists’ creativity and fame in US English between 1905-2000
Figure 12: Correlations between artists’ creativity and fame in French between 1905-2000
Figure 13: Correlations between artists’ creativity and fame in Italian between 1905-2000
Figure 14: Correlations between artists’ creativity and fame in German between 1905-2000
In order to control for an artist’s biographical details, I estimated an OLS model with the dependent variable as an artist’s fame in a year and the main independent variable as the cumulative creativity of an artist up until the preceding year. Table 6 lists the models for an artist’s fame in US English for nine years, 1910, 1926, 1935, 1945, 1955, 1965, 1975, 1985 and 2000.

Dependent Variable: Log odds transformation of US Fame of an Artist

<table>
<thead>
<tr>
<th>Cumulative Creativity 1909</th>
<th>USFame1910</th>
<th>USFame1926</th>
<th>USFame1935</th>
<th>USFame1945</th>
<th>USFame1955</th>
<th>USFame65</th>
<th>USFame75</th>
<th>USFame85</th>
<th>USFame2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.499</td>
<td>0.633***</td>
<td>0.419**</td>
<td>0.217</td>
<td>0.290</td>
<td>0.111</td>
<td>0.001</td>
<td>-0.115</td>
<td>-0.110</td>
<td>-0.119</td>
</tr>
<tr>
<td>(7.631)</td>
<td>(0.149)</td>
<td>(0.205)</td>
<td>(0.203)</td>
<td>(0.216)</td>
<td>(0.185)</td>
<td>(0.103)</td>
<td>(0.087)</td>
<td>(0.083)</td>
<td></td>
</tr>
<tr>
<td>Cumulative Creativity 1934</td>
<td>-6.952</td>
<td>5.776</td>
<td>10.678</td>
<td>5.844</td>
<td>-2.317</td>
<td>4.463</td>
<td>-0.099</td>
<td>0.624</td>
<td>-0.007</td>
</tr>
<tr>
<td>Cumulative Creativity 1944</td>
<td>-1.169</td>
<td>3.719</td>
<td>2.598</td>
<td>2.867</td>
<td>0.278</td>
<td>0.331</td>
<td>1.287</td>
<td>0.878</td>
<td>0.922</td>
</tr>
<tr>
<td>(1.954)</td>
<td>(2.738)</td>
<td>(2.810)</td>
<td>(2.797)</td>
<td>(2.588)</td>
<td>(2.213)</td>
<td>(1.232)</td>
<td>(1.042)</td>
<td>(1.047)</td>
<td></td>
</tr>
<tr>
<td>Cumulative Creativity 1954</td>
<td>-3.517</td>
<td>-1.782</td>
<td>-3.982</td>
<td>-1.009</td>
<td>-0.234</td>
<td>0.117</td>
<td>-0.243</td>
<td>0.355</td>
<td>0.158</td>
</tr>
<tr>
<td>(3.113)</td>
<td>(4.388)</td>
<td>(4.581)</td>
<td>(4.554)</td>
<td>(4.131)</td>
<td>(3.544)</td>
<td>(1.974)</td>
<td>(1.669)</td>
<td>(1.679)</td>
<td></td>
</tr>
<tr>
<td>Cumulative Creativity 1964</td>
<td>-0.056</td>
<td>0.328</td>
<td>-0.020</td>
<td>-0.065</td>
<td>0.512*</td>
<td>0.225</td>
<td>0.177</td>
<td>0.377***</td>
<td>0.355***</td>
</tr>
<tr>
<td>(0.217)</td>
<td>(0.298)</td>
<td>(0.305)</td>
<td>(0.304)</td>
<td>(0.287)</td>
<td>(0.246)</td>
<td>(0.137)</td>
<td>(0.116)</td>
<td>(0.117)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>R²</td>
<td>0.433</td>
<td>0.239</td>
<td>0.220</td>
<td>0.236</td>
<td>0.274</td>
<td>0.161</td>
<td>0.342</td>
<td>0.325</td>
<td>0.312</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.345</td>
<td>0.121</td>
<td>0.099</td>
<td>0.117</td>
<td>0.161</td>
<td>0.031</td>
<td>0.240</td>
<td>0.220</td>
<td>0.205</td>
</tr>
<tr>
<td>F Statistic (df = 7, 45)</td>
<td>4.909***</td>
<td>2.021**</td>
<td>1.818</td>
<td>1.984*</td>
<td>2.423**</td>
<td>1.236</td>
<td>3.342***</td>
<td>3.997***</td>
<td>2.917**</td>
</tr>
</tbody>
</table>

Note: *p<0.1; **p<0.05; ***p<0.01

Figure 16 plots the estimate of the coefficient of cumulative creativity for each of these nine models. The dotted red lines are the confidence interval bounds for the estimates. The coefficient for creativity is positive but insignificant for the 1910 and
1926 models, the coefficient for 1935 is negative but not significant, the coefficients are negative and statistically significant for the remaining six years.
Figure 17-20 plots the confidence intervals for the estimates for the models with the dependent variable in the four other languages. Overall, the estimates vary between zero and negative values though the width of the confidence intervals indicate greater uncertainty about these values than the estimates for the models of US Fame. For instance, we observe that the estimates for French and German fame models have large negative values but are not statistically significant.
It is worth noting that, in general, across all languages, the estimates become more negative over time. An exception to this trend are the estimates for British fame, where the negative value of the estimates decrease monotonically between 1911 and 1945. After this period, the estimate of the creativity coefficient remains negative but fluctuates, linear decreases in the coefficient values are succeeded by linear increases in its values.

**Discussion and Conclusion**

Contrary to lay opinion and prior research, I do not find a positive relationship between creativity and fame. My study encompasses creators who vary widely in their fame, some are household names while others are nearly obscure. Moreover, my study traces the relationship between a producer’s fame and creativity from the early stages of their career to well beyond their death. Throughout the time span of the 95 years covered in this study, I find little support for a positive relationship between creativity and fame of these producers. The lack of correlations between the artist’s fame and creativity during the modernist period can be explained by the “evaluative confusion” that pervades a market during a period of paradigm shift (Simonton 1998). Works produced during such a period can suffer neglect because the criterion for understanding and evaluating products are themselves thrown into flux during such periods. Simonton offers a similar explanation for the tepid contemporaneous response to Bizet’s Carmen which was produced in the 1880s, a period of substantial change in operatic forms. However, unlike the present-day popularity of Carmen, I find relatively greater trans-historical stability in the negative relationship between creativity and fame over time.

It is worth noting that the relationship between creativity and fame is at best non-existent even in the 1910-30 period, which represents the emergence of the abstract art paradigm. This period witnessed radical innovations not only in the field of art but also in
science and commerce. Thus the null finding is surprising and suggests that creativity and fame are at best uncorrelated. The equivalent of this finding during the Renaissance would be that the artists who excelled at creating the most life-like representations of real life objects received the least amount of attention in that period.

One explanation for this puzzling result is that during periods of radical paradigm shifts, when novelty is ubiquitous, numerous novel products compete for audience attention. Give the finite nature of such attention, audiences might attend to output that is novel yet more accessible. In other words, novelty might elicit attention only up to a threshold of novelty. The work of the pioneers of a new art paradigm might be too novel for audience comprehension and might require much greater cognitive and emotional resources to attend to. As such, in the competition for audience’s attention, highly novel products might lose out to less novel products. Arguably, highly novel producers might also elicit audience hostility and hence attention. However, my results suggest that any attention associated with this hostility translates not into attention but neglect.

Another potential explanation for this finding is that the period also overlaps with the beginning and end of world war I. Arguably, the chaos and destruction wrought by the war diminished the novelty zeitgeist and instead fueled a need for the familiar. At the same time, this period also coincides with the zenith of cultural experimentation in European countries such as the Weimar Republic. The competing desire for the familiar and novel can account for the greater uncertainty associated with the estimates of creativity in the German market during this period.

The overall negative relationship between creativity and fame is a negative one: more novel works are less likely to be famous across time and markets. A key implication of this
finding is that markets for creative talent might be inefficient in paying attention to (and valuing) highly novel works. This represents a loss not only for the producers but potentially for the market which fails to recognize original work. Creators in several fields such as the author J K Rowling, the astronomer Johannes Kepler (the first to propose the elliptical shape of planetary orbits), the monk and amateur biologist Gregor Mendel (the first to propose laws of genetic heredity), encountered resistance and rejection and were nearly overlooked. We’ll never know how many other producers’ visionary work never saw the light of the day. Such omission errors represents a loss for any market of ideas which thrives not only on originality but a diversity of output. Given the results of this study, future studies can explore interventions in market design that can allow for more equitable distribution of attention to creative talent.

The largely negative relationship between fame and creativity in this study supports my results in chapter 1 where I find that the positive relationship between the structural diversity of an artist’s network and her fame is mediated not by her creativity but by access to greater audience exposure and by a more cosmopolitan identity.

My study uses a novel yet simple measure of creativity. I expect future studies will refine the algorithms and methods used in this paper to reveal richer relationships that underlie the results in this paper. For instance, in British English, the correlation and regression estimates follow a pattern of troughs and peaks, suggesting that the relationship is not monotonic over time. Future studies can explore the changes in the institutional landscape (e.g. entry of museums or other distribution channels) as well as emergence of other innovations that can account for these fluctuations. It is also possible that other dimensions of creativity receive attention. Future refinements of the methods used in this study can help us
give us further insights about antecedents and consequences of this construct which is a defining aspect of our culture.
References


Csikszentmihalyi, Mihaly. 1999. 16 Implications of a Systems Perspective for the Study of Creativity. Handbook of creativity, 313.


Michel, Jean-Baptiste, Yuan Kui Shen, Aviva Presser Aiden, Adrian Veres, Matthew K. Gray,


Risatti, Howard Anthony. 1978. *American Critical Reaction to European Modernism, 1908 to 1917*. PhD dissertation, University of Illinois at Urbana-Champaign, IL.


# Appendix

## Table 1A: OLS Models for Fame over Time

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<th>Fame in year 2000</th>
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<tr>
<td></td>
<td>Log Odds of US English Fame 2000</td>
<td>Log Odds of French Fame 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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<tr>
<td>Age1926</td>
<td>2.462**</td>
<td>2.456**</td>
<td>0.485</td>
<td>0.175</td>
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<td></td>
<td>(1.008)</td>
<td>(0.983)</td>
<td>(1.883)</td>
<td>(1.652)</td>
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<td>Female</td>
<td>-5.969**</td>
<td>-6.222**</td>
<td>-1.600</td>
<td>-2.561</td>
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<td></td>
<td>(2.807)</td>
<td>(2.740)</td>
<td>(5.369)</td>
<td>(4.660)</td>
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<td>USFame1910</td>
<td>0.052</td>
<td>0.040</td>
<td>0.131</td>
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<tr>
<td></td>
<td>(0.058)</td>
<td>(0.056)</td>
<td>(0.133)</td>
<td>(0.117)</td>
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<tr>
<td>FrenchFame1910</td>
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<tr>
<td>Died in WWI</td>
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<td>-0.425</td>
<td>7.146</td>
<td>1.631</td>
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<td></td>
<td>(4.700)</td>
<td>(4.613)</td>
<td>(8.839)</td>
<td>(7.834)</td>
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<td>No. of Media</td>
<td>0.589</td>
<td>0.585</td>
<td>0.701</td>
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<td></td>
<td>(1.018)</td>
<td>(0.993)</td>
<td>(2.006)</td>
<td>(1.760)</td>
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<tr>
<td>No. of Countries</td>
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<td>0.725</td>
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<td></td>
<td>(0.993)</td>
<td>(0.973)</td>
<td>(1.864)</td>
<td>(1.641)</td>
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<td>Primary Media</td>
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<td>0.322</td>
<td>-0.157</td>
<td>-0.448</td>
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<td>(0.550)</td>
<td>(0.537)</td>
<td>(1.059)</td>
<td>(0.931)</td>
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<td>Primary Movement</td>
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<td>-1.724**</td>
<td>-2.029***</td>
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<td>(0.380)</td>
<td>(0.374)</td>
<td>(0.723)</td>
<td>(0.637)</td>
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<td>No. of Movements</td>
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<td>-6.032**</td>
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<td>(1.337)</td>
<td>(1.313)</td>
<td>(2.561)</td>
<td>(2.272)</td>
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<td>American</td>
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<td>(3.147)</td>
<td>(3.074)</td>
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</tr>
<tr>
<td>French</td>
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<td>8.037</td>
<td>7.810</td>
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<td>Degree Centrality</td>
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<td>(1.532)</td>
<td>(1.494)</td>
<td>(2.796)</td>
<td>(2.454)</td>
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<td>Brokerage</td>
<td>3.070**</td>
<td>1.508</td>
<td>9.330***</td>
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<td>(1.506)</td>
<td>(2.606)</td>
<td>(2.628)</td>
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<td>Creativity</td>
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<td>-0.615</td>
<td>4.906**</td>
<td>3.770*</td>
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<td></td>
<td>(1.126)</td>
<td>(1.102)</td>
<td>(2.142)</td>
<td>(1.893)</td>
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<tr>
<td>Distinctive Movement Identity</td>
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<td>-0.720</td>
<td>-1.418</td>
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<td></td>
<td>(1.214)</td>
<td>(1.203)</td>
<td>(2.84)</td>
<td>(2.044)</td>
</tr>
<tr>
<td>Alter National Diversity</td>
<td></td>
<td></td>
<td>2.517**</td>
<td>9.464***</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>(1.140)</td>
<td>(1.951)</td>
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<tr>
<td>Constant</td>
<td>-16.841***</td>
<td>-16.732***</td>
<td>-15.488*</td>
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<td>(3.700)</td>
<td>(3.608)</td>
<td>(8.045)</td>
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<td>Observations</td>
<td>90</td>
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<tr>
<td>R²</td>
<td>0.342</td>
<td>0.383</td>
<td>0.402</td>
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<tr>
<td>Adjusted R²</td>
<td>0.219</td>
<td>0.258</td>
<td>0.290</td>
<td>0.454</td>
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<td>Residual Std. Error</td>
<td>8.549 (df = 75)</td>
<td>8.337 (df = 74)</td>
<td>16.316 (df = 75)</td>
<td>14.308 (df = 74)</td>
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<td>3.609***</td>
<td>3.601***</td>
<td>5.940***</td>
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<td></td>
<td>(df = 14; 75)</td>
<td>(df = 15; 74)</td>
<td>(df = 14; 75)</td>
<td>(df = 15; 74)</td>
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*Note:* p<0.1; **p<0.05; ***p<0.01
Table 2A: Descriptive Statistics for Selected Variables in Chapter 4

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<td>Number of Movements</td>
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<td>Ave 1950</td>
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