

The Origins of Creativity: The Case of the Arts in the US since 1850

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Abstract: This research illuminates the historical development of creative activity in the US. The focus is on clusters for the arts, and the analysis covers the associated dynamics, clustering intensity and geographic spread. US census data is used to identify creative occupations (i.e., visual artist, musician, author, actor) and is then linked with data on around 18'000 prominent creatives working in similar domains in the US, as listed in a comprehensive biographical compendium. The analysis sheds light, first, on the socio-economic background of the census creatives (the average artists) and this since 1850. Second, the spread of clusters over space and time is documented and quantified. Third, the importance of outstanding talent in a discipline on the local growth of an artistic cluster is investigated. In an attempt to shed light on the causality (and to deal with self-selection biases), the social unrest associated with World War II in Europe is explored as a source of exogenous variation in immigration rates.

Keywords: Creativity, artists, geographic clustering, agglomeration economies, urban history.

JEL Classification Numbers: D60, I31, J24, N33, Z11.

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1 Introduction

Creativity is seen as "the key ingredient for job creation, innovation and trade" (?) and cultural sectors are believed to constitute opportunities for developing countries to leapfrog into emerging high-growth areas of the world economy. Creativity and innovation are "driving the economy, reshaping entire industries and stimulating inclusive growth" (?). Despite the remarkable importance of creativity, economists have largely refrained from its study; creativity is explored even less by economic historians, especially since it was not regarded of that importance in the past, when employers valued disciplined and hard-working employees (?), as opposed to creative ones. Here by availing of the case of the arts, which incorporate some of the earliest creative occupations, unique insights on the long-term development, geographic spread and individual motivations to engage in creative activity are presented.

The focus in this research is on the US, and there are two reasons for this. First, the US census data allows to identify occupations that fall within the creative professions (i.e., artist, musician, author, actor) from as early as 1850. Since the census provides also considerable information on the socio-economic background of each individual, including precise information on the current geographic location of the respondent, interesting explorations of the covered creatives become possible. The focus on the US is further motivated by the contemporaneous role that US has on global arts. The United States are nowadays the domicile for many of the world's most important artists, who contribute not only to the creativity and innovativeness of the American society, but also shape significantly the global cultural heritage. While the importance of the American arts is well-known, little is established on the determinants of this success-story. This research is going to fill this gap by looking at the determinants and dynamics of the emergence of the arts and creativity in the US.

This research provides three main contributions. First, the rich individual-level

data is exploited and the determinants of having an artistic occupation are estimated. This illuminates how the socio-economic profiles of artists changed since 1850, delivering so unique insights on long-term patterns. Furthermore, by availing of one data source that cover similar geographic boundaries, differences across creative domains can be exploited. Previous (economic) history research focuses on individuals who have obtained some degree of fame - these people are after all observable nowadays. In the underlying study, by availing of census data, average artists are studied in history, and this may be for the first time.

The second contribution of the paper is the exploration of the dynamics associated with the historical developments of the US creative clusters. These investigations document and quantify the importance of specific geographic locations (cities), by looking at the census data along with the data covering around 18'000 famous creatives who worked in the US, as listed in the comprehensive biographical compendium - the Index Bio-bibliographicus Notorum Hominum (IBN). This allows important insights on the differences in the place and intensity of clustering between prominent and average creatives. Furthermore, it is possible to exhibiting differences in the geography across creative domains.

The third contribution is an analysis of how the presence of a significant artist affects the local creative activity. It is explored how the presence of famous artists in a place affect the probability of an individual becoming involved in a creative occupation. I further show how the size and location of a cluster of famous artists correspond with the concentration of average creatives. For example, how have the local clusters benefited due to the arrival of important European artists to the States? In an attempt to shed light on the causality (and to deal with self-selection biases), the social unrest associated with World War II in Europe is exploited as a source of exogeneous variation in immigration rates. The suggested identification allows thus to identify the causal influence of prominent artists on the local growth of a cluster

(whether by birth of creatives or migration). Furthermore, by availing of census data that cover average creatives, as opposed to prominent ones, it is possible to overcome the extreme non-random sample selection biases encountered in the fast growing, related literature (e.g. ?).

2 Literature Review

This research relates primary to three strands in the literature.

First, it relates to research on artists, their works and lives (see Benhamou, 2007, for an influential discussion of artists' labour markets). Some studies look explicitly at US artists and have typically a focus on famous achievers. ? show how American artists born 1870 to 1940 introduced innovation into their art and how it influenced their careers (conceptual vs. experimental innovators). ? explore the determinants of persistence in arts occupations, using the 1970 US Census. Smith (2000) uses same census edition to examine the movement of people into and out of artistic occupations. ? study employment and earnings of American artists using decennial US Census data from 1940 to 2000.

Earlier studies include Richardson (1980), who presents case studies of American opera singers and shows how the singers typically moved to Europe in order to gather experience and to develop a reputation (in particular black Americans). Bielby and Bielby (1987, i.a.) study members of the Writers Guild of America and investigate issues related to gender, age and minority status by using data from 1982 until more recent. Earnings of US artists and composers are studied by Filer (1986) and Felton (1978), respectively.

Relative to this strand, I am able to explore data for a period of an unprecedented length covering more than 160 years and shed light on the socio-economic background of average artists, as opposed to the famous achiever.

The second related strand focuses on geographic concentration of artistic activity. Artists exhibit remarkable clustering patterns, both in terms of birth and migration. The predominant location for visual artists born in the first half of the 20th century is New York City, with all prominent American artists clustering there (?). New York is also a major work location for music composers; the fifth most important city for composers born in the 19th century and the second most popular destination for 20th century composers, after Paris (??). Paris is the predominant music center and this is due to its large size (?). While the ranking of certain cities is established, little is known on how the relative importance (clustering intensity) differs across domains. The research conducted previously avails of heterogeneous samples, different data sources and time periods covered, to enable a more formal comparative framework.

The observed clustering patterns are partly attributable to the strong productivity gains experienced in geographic clustering. Literary artists born 1750 to 1925 experience significant productivity gains when working in London, the predominant cluster (Mitchell, 2015). Visual artists born 1850 to 1945 peak earlier in the geographic clusters of Paris and New York (?). Music composers born in late 18th and 19th centuries are more productive in the main hubs for music (?) and the benefits increase with the peer group size at a decreasing rate (?).

So far, these overviews focus on selected, specific artistic domains, and while interdisciplinary spill-over is sometimes acknowledged (e.g. ?, describes how composers in Paris have been in contact with literary and visual artists), little is known on how these domains interrelate or interlocate.

Third, this research relates to literature on the attractiveness of cities and increased levels of creative activity in urban agglomerations. For example, ? explore the role of density in knowledge spillovers and show how geographic proximity may enhance

innovation in US regions.¹

3 Data

There are two main databases used here. First, I use the US Census and American Community Survey, which is provided by ?. This comprehensive decennial population census was undertaken first in 1790, but provides only from 1850 a large array of variables, including information on the occupational status (*OCC1950*). This variable is used in order to identify the following artistic occupations: Artists and art teachers, Authors, Musicians and music teachers, and Actors and actresses.² The census data contains also information on age, gender, race, marriage status, number of children, type of residence (urban/rural), geographic location (state, city), and others.

I use the 1%-samples for each of the available decades and focus on household heads only. Narrowing down the analysis to household heads serves as an implicit proxy for the quality of their primary occupations reported.

Figure ?? shows the fast growth in the number of creative occupations since 1850. The number of creatives rises from about 107 in 1860 to almost 600 by 1900, close to 2'000 by 1950 and reaches almost 12'000 by the year 2000. Figure ?? visualizes the share of creatives among all household-heads, across the domains covered. Over the second half of the 19th century the share increases to about 0.1 percentage points, implying that one in 1'000 respondents has been involved in a creative occupation. The share of musicians is especially high and takes off during late 20th century until above 0.5 percentage points, while the remaining creative occupations fluctuate are

¹This strand will be discussed in more detail in the next version of the paper along with a discussion of research on clustering of the film industry.

²The records allow also to identify the creative occupations of: Architects, Dancers and dancing teachers, and Editors and reporters. However, these occupations are very rare and deliver only small numbers of observations, especially in the earlier periods.

found within a range between 0.1 and 0.15 percentage points. These figures provide an early illustration of the fast growth and increase in importance of the creative occupations. Furthermore, it becomes obvious that the number of observations is sufficient even for the earliest census editions, however one has to bear in mind a potentially higher volatility over those years.

The second database used is the comprehensive biographical compendium - the Index Bio-bibliographicus Notorum Hominum, which lists about 56'000 creatives (out of ca. 298'000 famous people). Around 18'000 of these prominent creative workers were born or died in the US.³

Figure ?? shows the number of available observations for the famous IBN creatives by presenting the number of deaths that occurred during the decade preceding a given census edition.

4 Results

4.1 The socio-economic background of creatives since 1850

In this section several socio-economic indicators of creatives covered are presented and discussed how they change over time and differ across domains.

Figure ?? shows the share of female for the four groups of creatives studied. The graphical analysis is provided along with an average for all household-heads (including non-creative occupations) in order to enable a comparative framework. While during most of the second half of the 19th century relatively fewer female are in-

³Refer to the next version of this paper for details on how this database was adapted. An alternative data source that may be used in robustness tests is the Allgemeines Künstlerlexikon, which is the most comprehensive scholarly artist lexicon in existence. The encyclopedia contains 153'794 birth-death records connecting 57'169 locations.

volved in creative occupations than in other occupations, from around 1890 the female share increases sharply and remains clearly above the average until about 1980, when it converges for some domains. This provides interesting insights on the involvement in creative occupations by women. Furthermore, this result is in stark contrast to prominent creatives, where women are practically unobservable (??).⁴

The creative occupations are also typically exercised by younger cohorts (Figure ??). The exception are authors who are on average up to ten years older than the average household-head until the 1930s.

The results presented in Figure ?? indicate that a very high share of the creatives based in the States have actually immigrated from abroad. The North American population consists in general from a relatively high share of foreign-born individuals, however this share is far greater for the creatives, reaching even 60% (e.g., musicians in 1880). The share of immigrants across creatives converges to the average for all household-heads by about 1960s, with the exception of actors, where the fraction remains about 7-8 percentage points higher. The creatives are in general highly mobile and are characterized also by a marked degree of internal migration (Figure ??).

Figure ?? provides insights on the educational attainment of the creatives covered. Until 1930 the only available measure is a dummy indicator for literacy, presented in the left panel of the figure. It can be viewed that the vast majority of creatives are literate and clearly more so than the average household-head. From 1940 the census provides a more sophisticated measure of educational attainment by indicating the grade of school finished or the number of college years completed. Based on this information an ordinal scale between zero and 11 has been compiled and is used in the right panel. The educational attainment is sharply increasing until about

⁴See the next version of this paper for a similar set of figures that controls for all other variables. The current set of figures has to be interpreted as "all else equal", which may lead to some biases.

1990's when the increase becomes less marked. In line with the pre-1940 period, the creatives have obtained significantly more education than the average household-head. There are also interesting differences across the creative domains, with authors being best educated, whereas actors are on the lower side of the creatives.

One can also prefer to depict the results in a more formal regression model, which is presented in Table ???. The results are in general consistent with the previously presented graphical analysis, which is encouraging as these estimations, including a wide set of control variables, state fixed effects and year fixed effects, are much stronger. In Table ??? the model includes in addition controls for migrants and the logged city population, which decreases the number of observations to about 1.3 million (from the previously almost 4 million observations). The results remain robust and suggest that the creatives were more often migrants than average household-heads and also that they located typically in larger agglomerations.

4.2 The historical development of artistic clusters

We begin the analysis of the geographic spread and clustering patterns by looking at the birthplaces and deathplaces of famous IBN creatives. By looking at the spread of births and deaths of famous creatives we approximate for the geography of creative activity. Even though creatives are in general highly mobile people, there exists a very high correlation between their workplace and deathplace. It is also established that births of famous creatives occur typically in places where a given artistic domain is already developed (for evidence and discussion refer to ??).

The maps depicting birthplaces or deathplaces of IBN creatives are presented in Figures ?? and ??, respectively. Each of the maps indicate with a scaled point the importance a city (for example, by measuring the number of artists born) and with shades the importance of certain states.⁵ Most of the creative activity is located in

⁵For some observations the exact city was not provided, and yet information on the county or

the Mid Atlantic, North East, Mid West and California. The activity is considerably more concentrated when looking at the deathplaces, which supports the previously posited high migration intensity (both internal and external). Across all creative domains studied, New York City emerges as the consistently largest cluster city; followed by Boston, Chicago, Los Angeles and San Francisco.⁶

There are however also clear differences across the domains. For example, New Orleans (Louisiana) is found to be a place with a very high concentration of births of musicians. This is in line with the city's reputation as being the origin place of jazz - perhaps not by coincidence New Orleans is called the birthplace of jazz; it is also the city where funk was supposedly played the first time. Another example is St. Louis (Missouri), a city strongly associated with blues, but also jazz and ragtime. Interestingly though, while these two cities emerge as unusually important birthplaces, markedly fewer deaths are observed there - this indicates that many of the famous individuals born here migrated away.⁷

The degree of geographic clustering of the famous creatives is remarkably and somewhat greater than geographic concentration of the census creatives (the "average" creatives), as visible in Figure ???. The geographic spread of the census creatives is considerably greater and this is caused by the higher numbers of observations as well as a potentially lower clustering intensity. There emerge nonetheless several dominant clusters, which are similar with our previous observations.

Next, an analysis of the changes in locations over time is presented. The famous IBN creatives are observed for a period from before the census, hence the earliest period covers years before 1850. Figure ?? depicts for this period the deaths of artists in the top-left panel, followed by three additional time intervals: 1850-1890, 1900-1940 and

state is available. This information along with the importance of a city are used in these depictions.

⁶Florida receives also some prominence when it comes to deaths, but this is possibly more related to the fact that it is a popular destination for retirement; this is probably the more obvious case of a bias of the pursued approach here.

⁷The most famous example is Louis Armstrong, who was born in New Orleans, but died in New York City.

1950-1980. The earliest period covers locations restricted to the East Coast: New York City, Boston, Philadelphia and Charleston. The spread extends over time to the Mid West and later also to the West Coast, in particular California. A comparable development is observed if one looks at the location of census respondents in Figure ??, now beginning with the period 1850 to 1890, but then extends with the last period to the years from 1980 to 2010. Qualitatively the story of geographic spread is comparable with the IBN creatives, however, as already previously noted, the clustering intensity is less marked. These maps reflect somewhat closer the geographic concentration of population across the States, however is not entirely driven by demographic factors. Some of the cities have a clearly overrepresented share of artists (e.g., Chicago), whereas other large cities are characterised by a relatively insignificant density of artists.

Figure ?? depict the clustering patterns of actors. All famous IBN actors that cease their life before 1840 died in New York City, later there emerge several cities in the Mid West and eventually on the West Coast. The most recent period shows however a remarkable concentration in just two cities: New York and Los Angeles. This is also consistent if one looks at the far more numerous observations from the census data in Figure ??: the two cities are the only cluster locations and consequently of a huge relevance. ⁸

One may want to explore quantitatively the association between cluster size across various domains. Table ?? illustrates these relationships for census creatives (columns 1 to 3) and famous IBN creatives (columns 4 to 6). The correlations are estimated with high statistical precision and are typically positive, implying that cities that are domicile for a certain type of creatives, are also more popular for other creative domains. The exception are actors, which do not cluster in cities popular for musicians and, in the case of the census individuals, neither where artists

⁸Changes over time in clustering patterns for musicians and authors are depicted in Figures ??, ??, ?? and ??.

are based. This appears to be in line with anecdotal evidence of how commercial and not artistic the Los Angeles cluster of the film industries is. For example, film directors in Los Angeles are not necessarily regarded as artists (as they may be in New York), but rather as followers of a business plan, producing entertainment.

4.3 The role of famous artists

This section investigates the interplay between famous and average creatives. First, it is explored how does the probability of a census respondent reporting a creative occupation change if famous creatives were based in the same city. This model is basically the same as reported previously in Tables ?? and ??, but accounts now for the history of significant artistic activity, measured with the number of deaths of famous IBN creatives that occurred in the decade prior to the given census. The results summarized in Table ?? imply that places with a greater artistic activity (i.e., where more creatives within a domain have died) are more likely to see more people involved in creative occupations within the same domain.

We have observed so far considerable evidence suggesting the existence of an association between famous creatives and the average ones. These analyses, including the maps presented in the previous subsection, depict nonetheless only the correlations, as opposed to the causal associations. In an attempt to shed light on the causal effect, an estimation with a sub-sample of famous creatives is used, namely those who immigrated to the States during the period of World War II. The years before and during the Second World War is associated in Europe with a general decrease in civil freedoms, including the liberty for expression, an indispensable condition for artistic activity. In the US, however, "freedom to think and to express (...) thought" was guaranteed by the First Amendment.⁹ The emigration of European creatives in

⁹The preservation and spread of the notions expressed in the First Amendment became even the main motivation why a group of Americans demanded the entry of the States into the European war in 1941.

this period are thus typically forced and unexpected, and often motivated by Anti-semitism (see, Waldinger, 2010), which is exploited in this research as an exogenous source of variation in the place of work of creatives.

Table ?? presents the effect of the number of famous IBN creatives that immigrated to the States during the period of World War II and remained (died), on the number of census creatives within each domain after 1990. The coefficients are found to be positive for all domains, and highly significant for artists, authors and actors, suggesting a positive and potentially causal effect of significant creatives on the clustering intensity of creative activity. These results support the view that a famous individual may determine the development of creative activity in a place in the years to come. Implicitly, these estimations indicate that the role of European creatives was an important factor influencing the development of the arts in the States.

5 Conclusions

The role of creativity and the presence of creative people is nowadays of immense importance for economic growth and welfare, but also to the overall well-being of societies. And yet research on these topics is limited to contemporary approaches and is conducted usually outside the field of economics. This study adds new insights on the *historical* development of creative centers and creative activity of people. This is achieved by looking at the case of the arts, where the earliest creative achievements can be observed in a consistent and comparable way.

The study sheds light on who and when is involved in a creative occupation and illuminates further how the socio-economic background of creative people has changed over a period of 170 years. This research illuminates also the geography of creative clusters in the States and how they have evolved over time and across various domains. Even though it may seem that some of the patterns are already known,

for example, that New York City is an important center for the arts, the extent of the dominance has not been yet quantified before and compared across creative domains. Finally, by linking the census data with data on famous IBN creatives, the role of famous individuals on the growth of local clusters and creative employment is explored. Famous creatives, in particular European immigrants during the Second World War, have had a persistent influence on the size of creative centers and creativity profiles of people nowadays. Typically, superstar economies (Rosen, 1981) are heavily criticised by the public, mainly due to the extreme earnings received by a small group of individuals at the very top of the income scale. The insights presented here point at a positive externality of superstars, in the form of a potentially long-lasting heritage that famous creatives leave behind.

It remains however open for new research to dismantle how the influence works - is it that the famous individual introduces new knowledge and practices, which persist over time? Or perhaps the presence of a famous person influences the demand within a creative domain due to factors related to local identity and heritage (for related discussion see ?).

Of interest for contemporary policy makers and the public is whether and how is the historical development of creative activity related to creativity nowadays. Anecdotally, there seems to be a very high overlap between the creative clusters historically and the startup landscape in the States these days. The global top-10 startup ecosystems, according to Compass (2015), consist of the same cities that we have identified as significant creative clusters in history, including New York City, San Francisco (Silicon Valley), Los Angeles, Boston, Chicago and Seattle. With the insights presented in this research, we are just one step away from linking the documented historical development of creative clusters with creative, entrepreneurial activity nowadays.

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6 Tables

VARIABLES	(1) Probit artist	(2) Probit author	(3) Probit musician	(4) Probit actor
male	-2.26e-05 (4.18e-05)	-0.000117*** (2.40e-05)	-0.00166*** (8.58e-05)	2.84e-05** (1.28e-05)
age	8.47e-05*** (6.32e-06)	4.22e-05*** (3.49e-06)	0.000175*** (1.11e-05)	1.25e-06 (1.86e-06)
age_sq	-1.04e-06*** (6.66e-08)	-4.50e-07*** (3.55e-08)	-2.24e-06*** (1.12e-07)	-4.36e-08** (1.92e-08)
separated	-0.000291*** (8.61e-05)	-0.000212*** (3.72e-05)	-0.00108*** (0.000150)	-3.21e-05 (3.65e-05)
divorced	-3.77e-06 (6.17e-05)	-0.000187*** (2.57e-05)	-0.000300*** (0.000106)	9.96e-05*** (3.28e-05)
widowed	-0.000611*** (5.14e-05)	-0.000373*** (2.33e-05)	-0.00181*** (9.82e-05)	-2.97e-05 (2.23e-05)
single	0.000348*** (6.58e-05)	5.53e-05 (3.51e-05)	0.000451*** (0.000111)	0.000110*** (2.71e-05)
famsize	-0.000230*** (3.15e-05)	-0.000218*** (2.27e-05)	-0.000553*** (5.68e-05)	-3.80e-05*** (1.06e-05)
nchild	-3.43e-06 (3.52e-05)	0.000101*** (2.58e-05)	-0.000148** (6.53e-05)	-3.59e-05*** (1.22e-05)
black	-0.001000*** (3.03e-05)	-0.000425*** (1.80e-05)	-0.000969*** (8.58e-05)	-6.02e-05*** (1.57e-05)
native	0.000138 (0.000241)	-0.000246*** (8.13e-05)	-0.000424 (0.000406)	-8.50e-05* (5.15e-05)
asian	-0.000175** (7.93e-05)	-0.000317*** (2.43e-05)	-0.00127*** (0.000133)	-0.000132*** (1.20e-05)
other	-0.000645*** (6.33e-05)	-0.000429*** (1.88e-05)	-0.00210*** (0.000125)	-0.000111*** (1.66e-05)
mixed	-0.000123 (0.000152)	-0.000142** (5.91e-05)	-0.000357 (0.000271)	0.000129** (6.28e-05)
Observations	3,920,693	3,886,419	3,924,696	2,616,117
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 1: Socio-economic background of creatives

VARIABLES	(1) Probit artist	(2) Probit author	(3) Probit musician	(4) Probit actor
male	0.000170*** (6.44e-05)	-2.11e-05 (2.18e-05)	-0.000457*** (0.000133)	6.87e-05*** (2.18e-05)
age	7.60e-05*** (1.06e-05)	3.39e-05*** (4.19e-06)	0.000179*** (1.98e-05)	5.88e-07 (3.45e-06)
age_sq	-9.97e-07*** (1.13e-07)	-3.82e-07*** (4.47e-08)	-2.41e-06*** (2.04e-07)	-5.39e-08 (3.55e-08)
separated	-0.000262* (0.000156)	-0.000158*** (3.13e-05)	-0.000585** (0.000286)	-9.78e-05* (5.82e-05)
divorced	0.000281** (0.000126)	-0.000103*** (2.51e-05)	0.000524** (0.000215)	0.000237*** (7.91e-05)
widowed	-0.000453*** (9.37e-05)	-0.000198*** (2.64e-05)	-0.00149*** (0.000175)	2.46e-05 (4.46e-05)
single	0.000538*** (0.000112)	-2.21e-05 (2.75e-05)	0.000887*** (0.000187)	0.000132*** (4.42e-05)
famsize	-0.000229*** (4.45e-05)	-0.000139*** (2.13e-05)	-0.000466*** (7.78e-05)	-3.36e-05** (1.54e-05)
nchild	-8.38e-05 (5.20e-05)	8.21e-06 (2.53e-05)	-0.000302*** (9.25e-05)	-7.16e-05*** (1.86e-05)
black	-0.00125*** (4.75e-05)	-0.000323*** (2.37e-05)	-0.00142*** (0.000120)	-0.000148*** (2.35e-05)
native	-0.000408 (0.000307)	-0.000176*** (6.70e-05)	-0.000204 (0.000757)	-0.000136* (8.07e-05)
asian	-0.000388*** (9.98e-05)	-0.000207*** (2.05e-05)	-0.00194*** (0.000166)	-0.000198*** (2.16e-05)
other	-0.000867*** (6.70e-05)	-0.000276*** (2.06e-05)	-0.00245*** (0.000155)	-0.000200*** (2.15e-05)
mixed	-0.000241 (0.000218)	-0.000199*** (3.07e-05)	-0.000538 (0.000435)	6.34e-05 (8.04e-05)
migrant	0.000245*** (5.26e-05)	0.000149*** (2.05e-05)	0.000970*** (0.000103)	0.000116*** (2.13e-05)
l.citypop	0.000234*** (2.40e-05)	0.000105*** (1.13e-05)	0.000385*** (4.36e-05)	0.000104*** (1.18e-05)
Observations	1,324,794	1,313,696	1,330,482	910,614
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 2: Socio-economic background of creatives: City size and migration patterns

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	OLS artist (Census)	OLS author (Census)	OLS musician (Census)	OLS artist death (IBN)	OLS author death (IBN)	OLS musician death (IBN)
artist						
(Census)		0.155*** (0.0263)	0.479*** (0.0725)			
author	0.225*** (0.0381)		2.224*** (0.0532)			
(Census)		0.290*** (0.00693)				
musician	0.0904*** (0.0137)					
(Census)		0.197*** (0.0261)	-0.125* (0.0744)			
actor	-0.199*** (0.0317)					
(Census)						
artist						
death (IBN)					0.129*** (0.0186)	0.363*** (0.0182)
author				0.368*** (0.0530)		0.230*** (0.0357)
death (IBN)				0.804*** (0.0403)	0.179*** (0.0278)	
musician				0.731*** (0.0729)	0.600*** (0.0411)	0.0404 (0.0514)
death (IBN)						
actor						
death (IBN)						
City	0.000975*** (3.31e-05)	-0.000171*** (3.75e-05)	0.000188* (0.000105)	1.94e-05** (8.21e-06)	-2.07e-05*** (4.83e-06)	5.34e-05*** (5.25e-06)
population						
Observations	1,158	1,158	1,158	1,158	1,158	1,158
R-squared	0.831	0.889	0.900	0.700	0.614	0.643
Number of city_fe	176	176	176	176	176	176
City FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Interrelation of clusters across artistic domains

VARIABLES	(1) Probit artist (census)	(2) Probit author (census)	(3) Probit musician (census)	(4) Probit actor (census)
Deaths of IBN artists	2.35e-05*** (3.81e-06)			
Deaths of IBN authors		1.50e-05*** (3.06e-06)		
Deaths of IBN musicians			6.42e-05*** (9.99e-06)	
Deaths of IBN actors				3.04e-05*** (4.18e-06)
Observations	1,300,655	1,230,947	1,316,620	1,186,399
Socio-economic controls	✓	✓	✓	✓
State FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓

Deaths measured at residence of census respondent during 10 years prior to the given census.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4: Artistic occupation as a function of historical artistic activity

VARIABLES	(1) OLS total census artists (since 1990)	(2) OLS total census authors (since 1990)	(3) OLS total census musicians (since 1990)	(4) OLS total census actors (since 1990)
WW2 IBN artist immigration	19.00*** (1.056)			
artist census (pre 1940)	7.110*** (0.566)			
WW2 IBN author immigration		25.29*** (1.651)		
author census (pre 1940)		29.72*** (5.114)		
WW2 IBN musician immigration			27.39*** (2.853)	
musician census (pre 1940)			11.25*** (1.339)	
WW2 IBN actor immigration				39.01*** (2.024)
actor census (pre 1940)				-5.184*** (0.662)
Observations	440	440	440	440
R-squared	0.857	0.729	0.803	0.648
State FE	✓	✓	✓	✓

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: WW2 immigration of IBN creatives (preliminary)

7 Figures

Figure 1: Number of people with artistic occupations

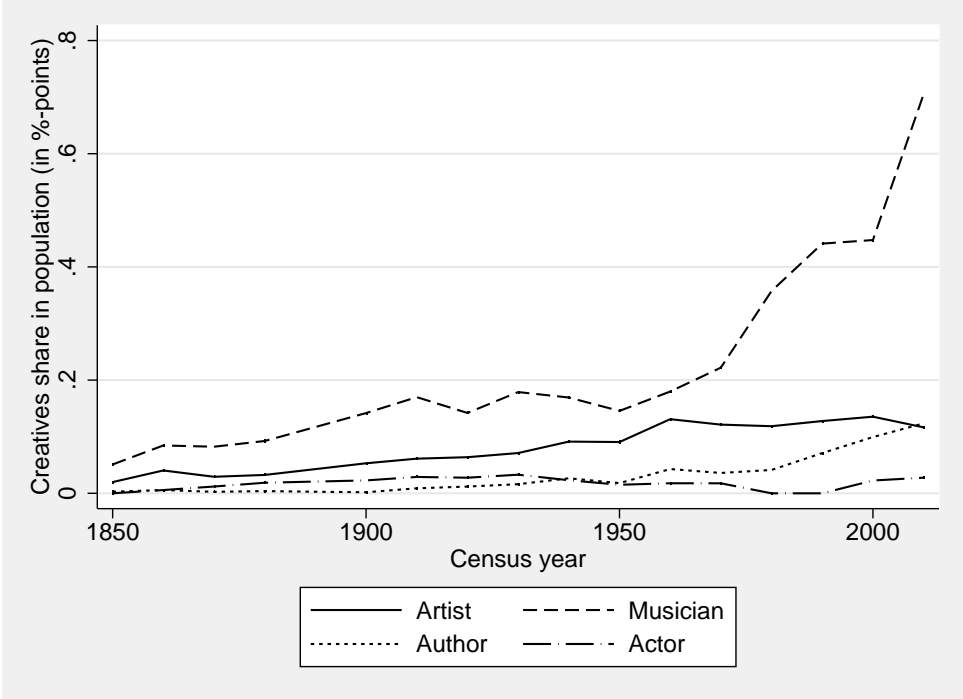


Figure 2: Share of household heads with artistic occupations

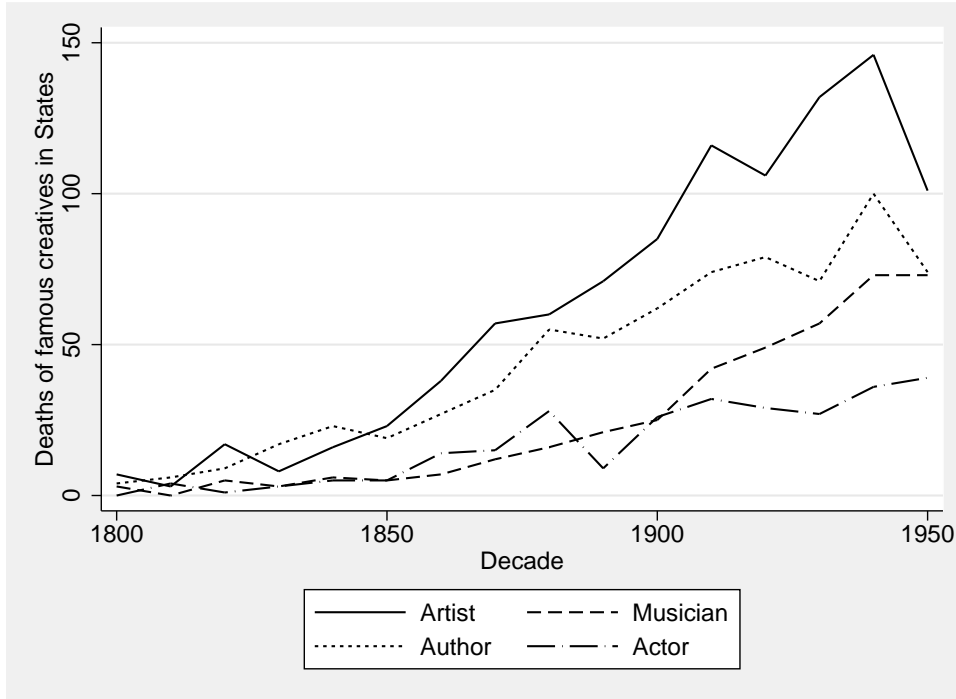


Figure 3: Deaths of famous creatives (IBN) by occupation

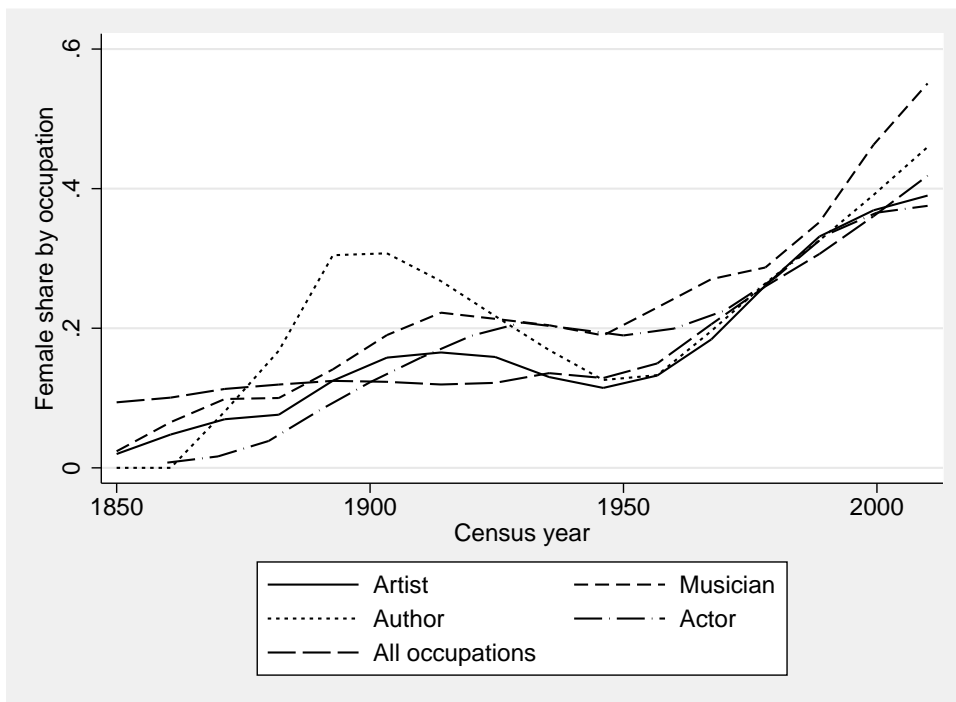


Figure 4: Female share by occupation

Note: The "All occupations" category provides the average for all household-heads.

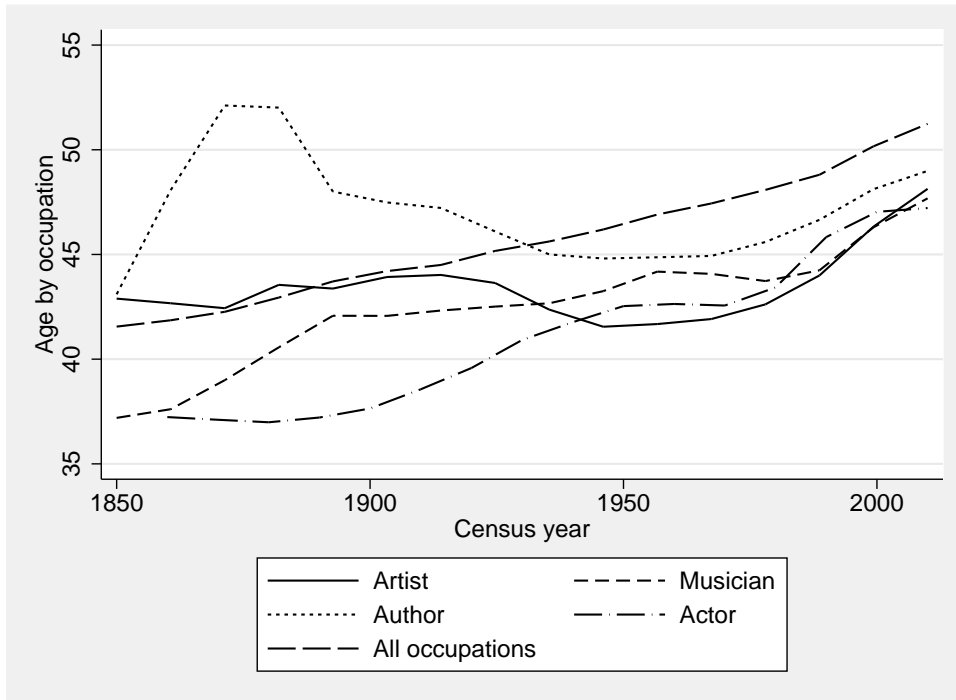


Figure 5: Age by occupation
 Note: See Table ??

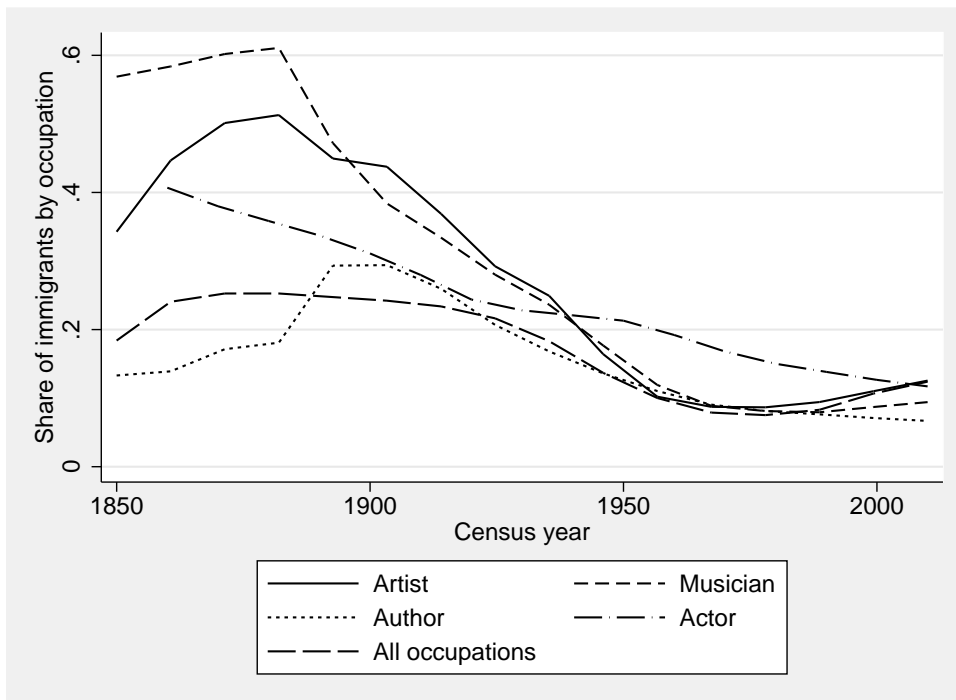


Figure 6: Share of immigrants by occupation
 Note: See Table ??

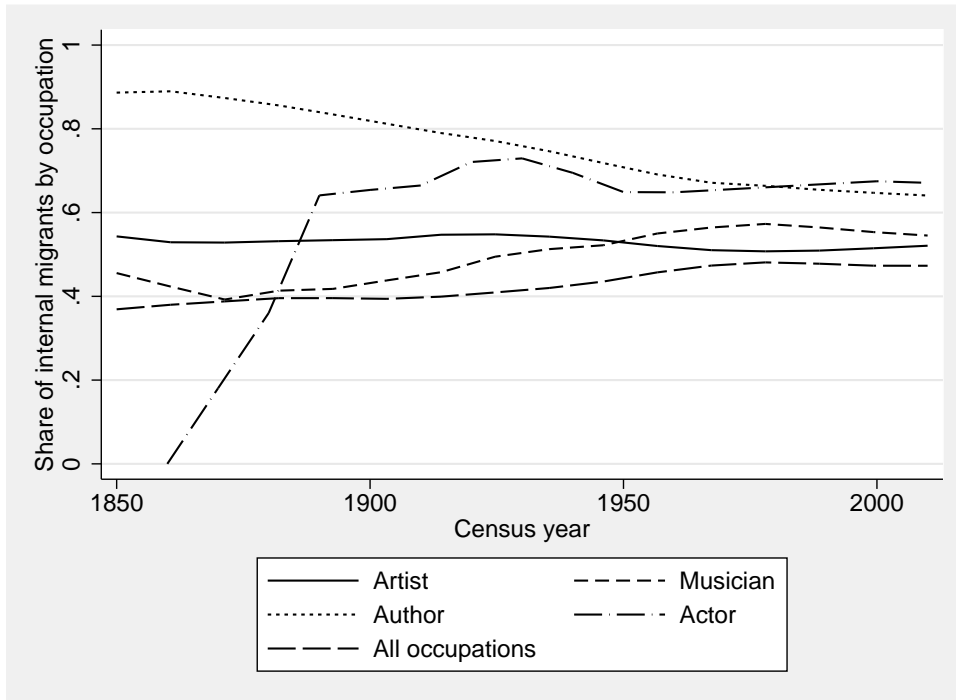


Figure 7: Share of internal migrants by occupation
 Note: See Table ??

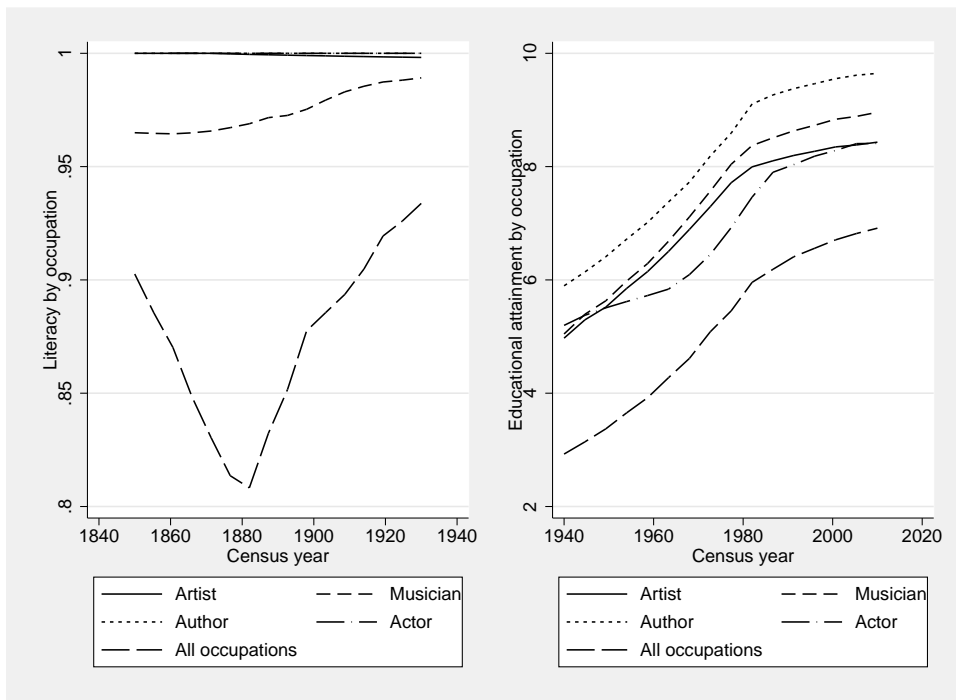


Figure 8: Educational attainment by occupation
 Note: See Table ??

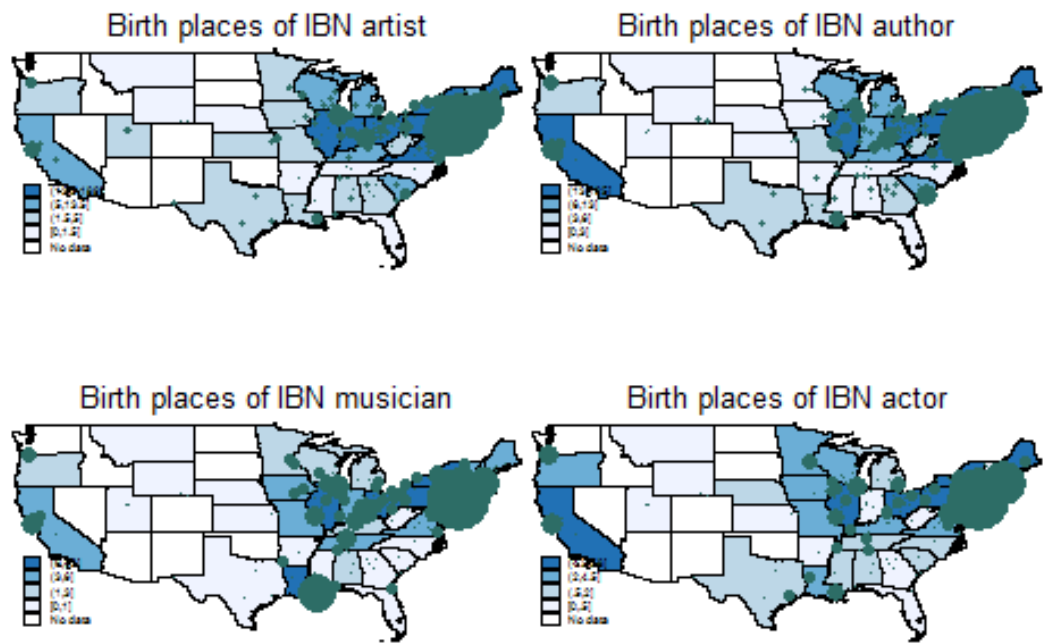


Figure 9: Birthplace of IBN creatives

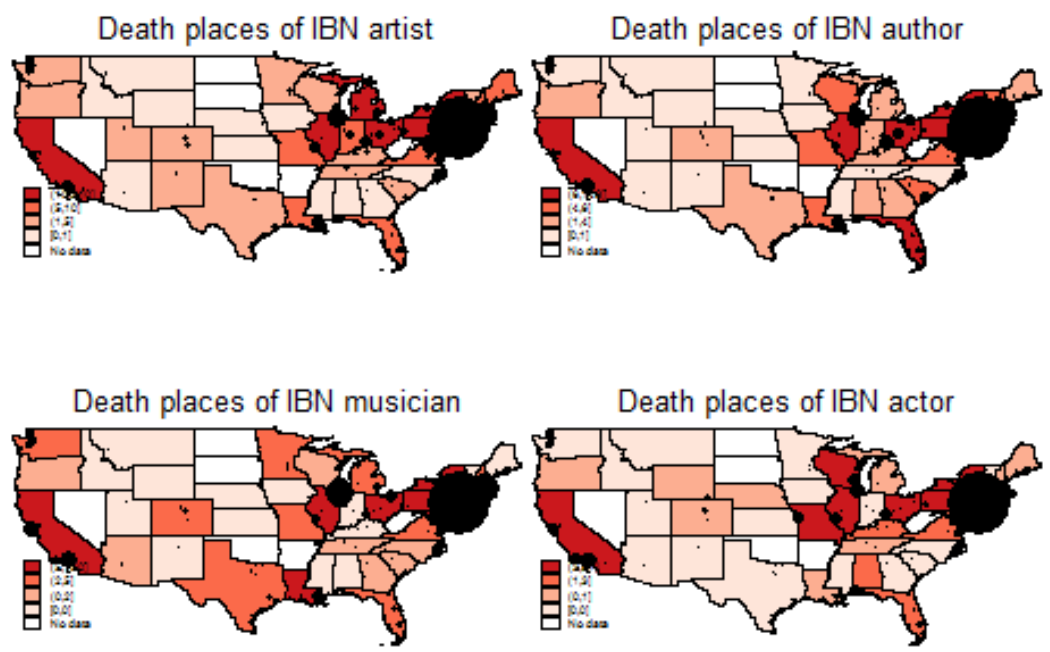


Figure 10: Deathplace of IBN creatives

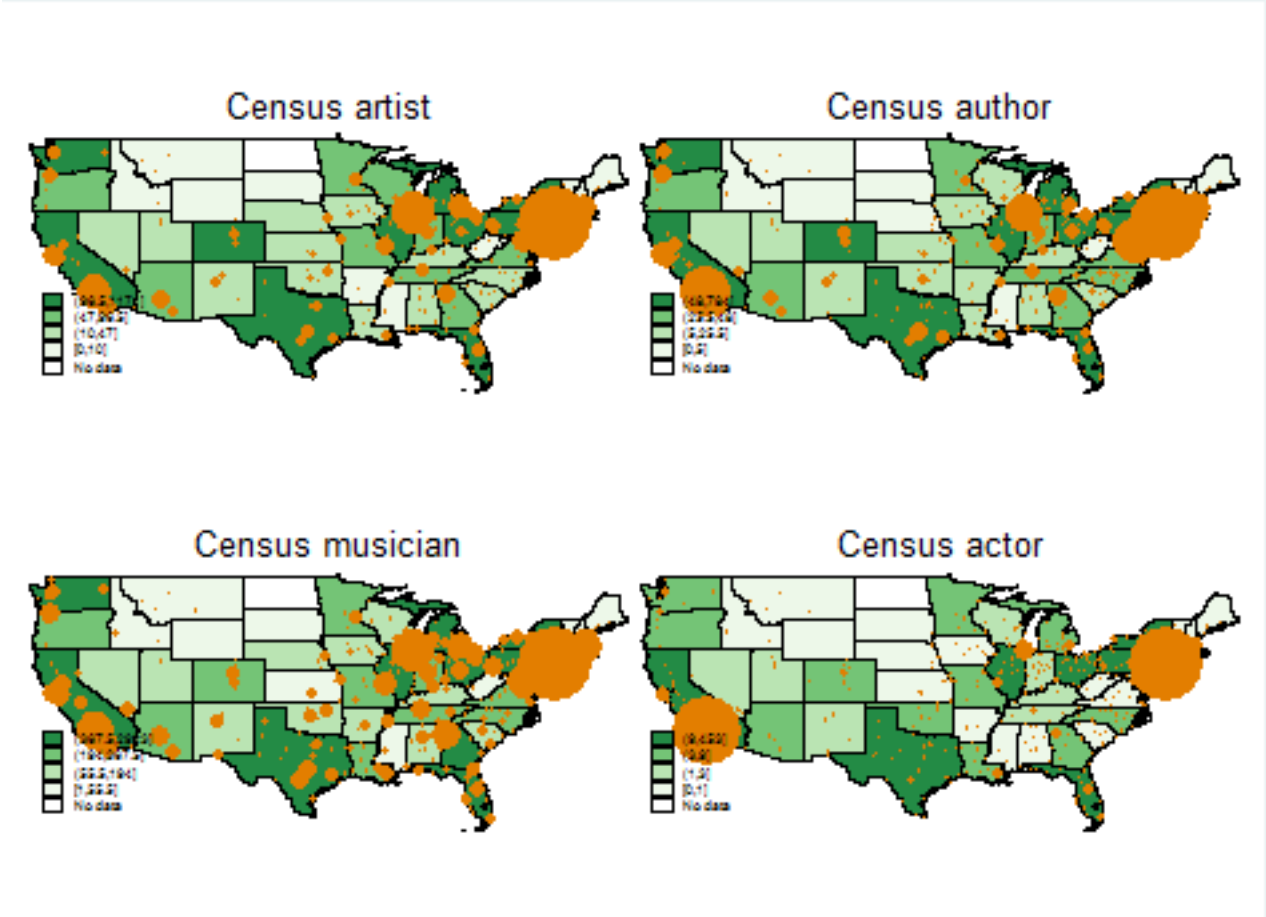


Figure 11: Location of census creatives

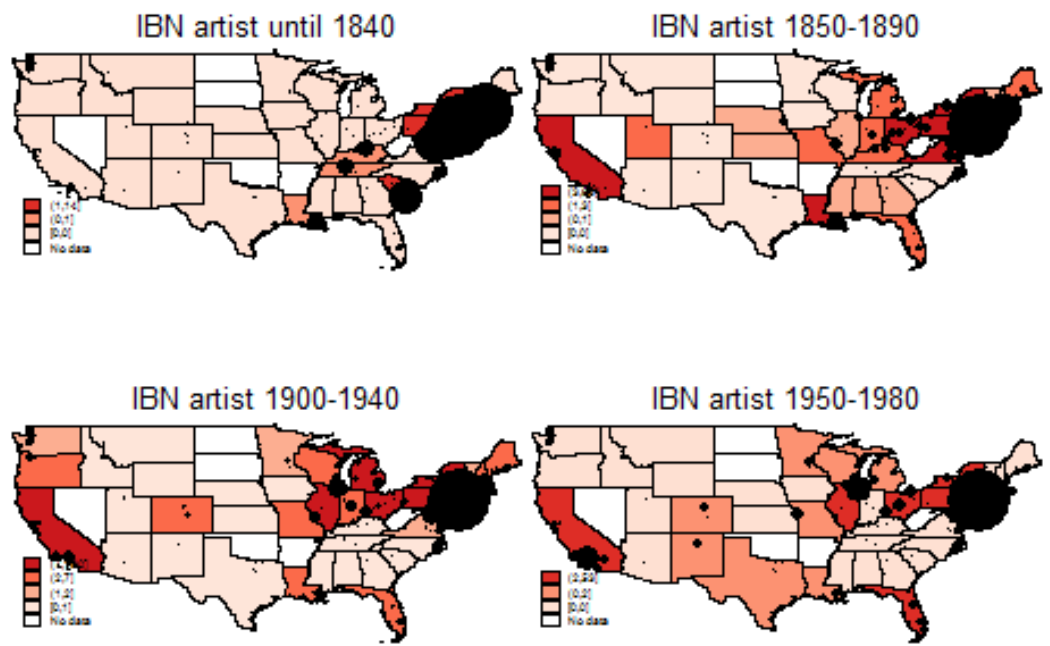


Figure 12: Geographic distribution of deaths of artists (IBN)

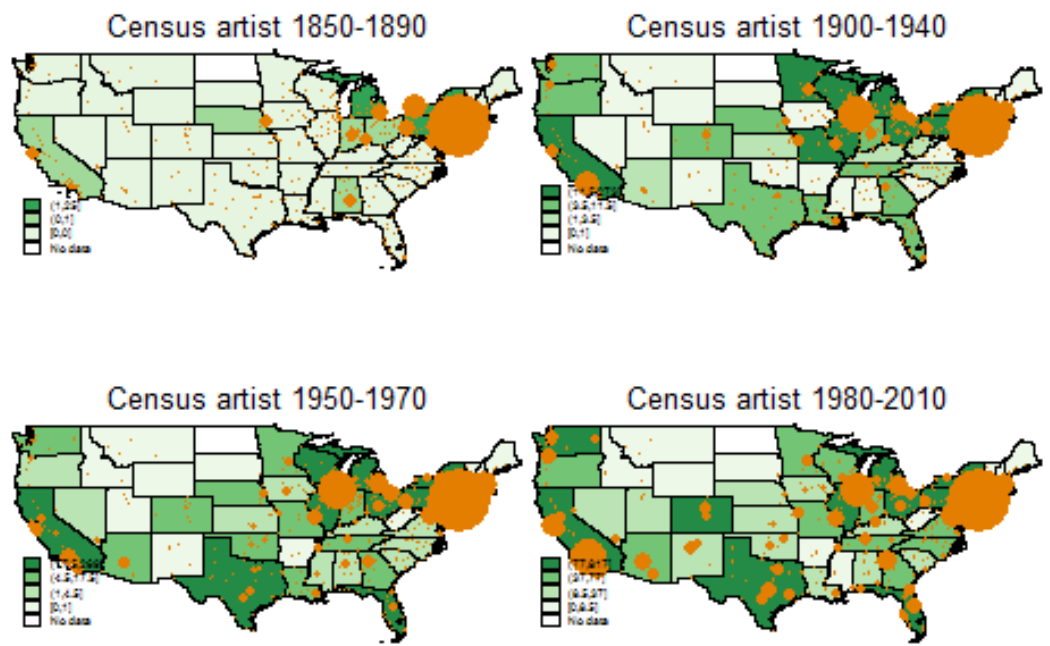


Figure 13: Geographic distribution of artists (Census)

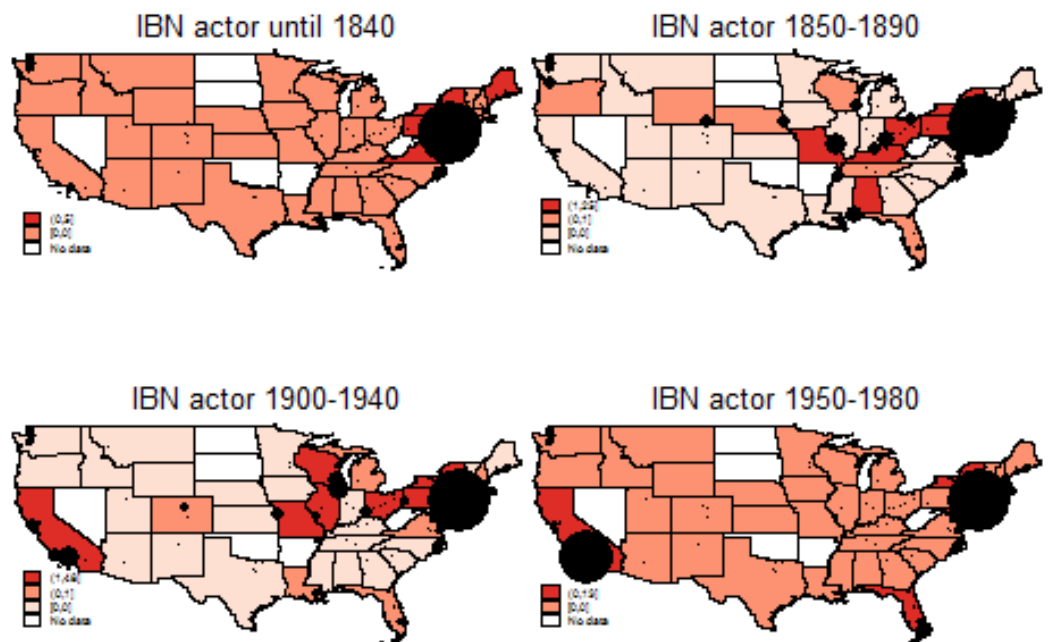


Figure 14: Geographic distribution of deaths of actors (IBN)

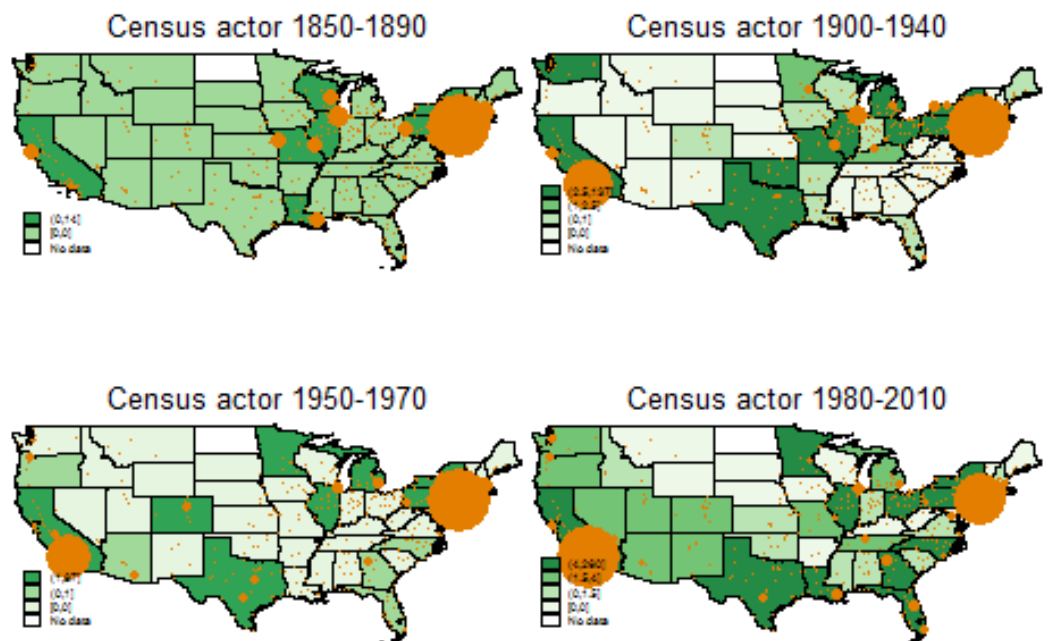


Figure 15: Geographic distribution of actors (Census)

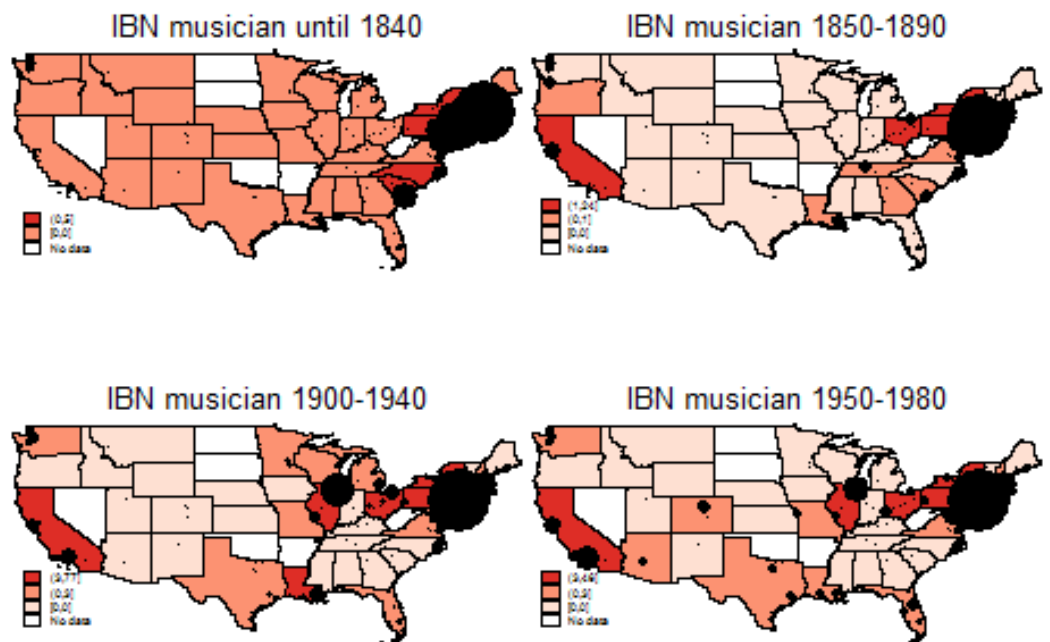


Figure 16: Geographic distribution of deaths of musicians (IBN)

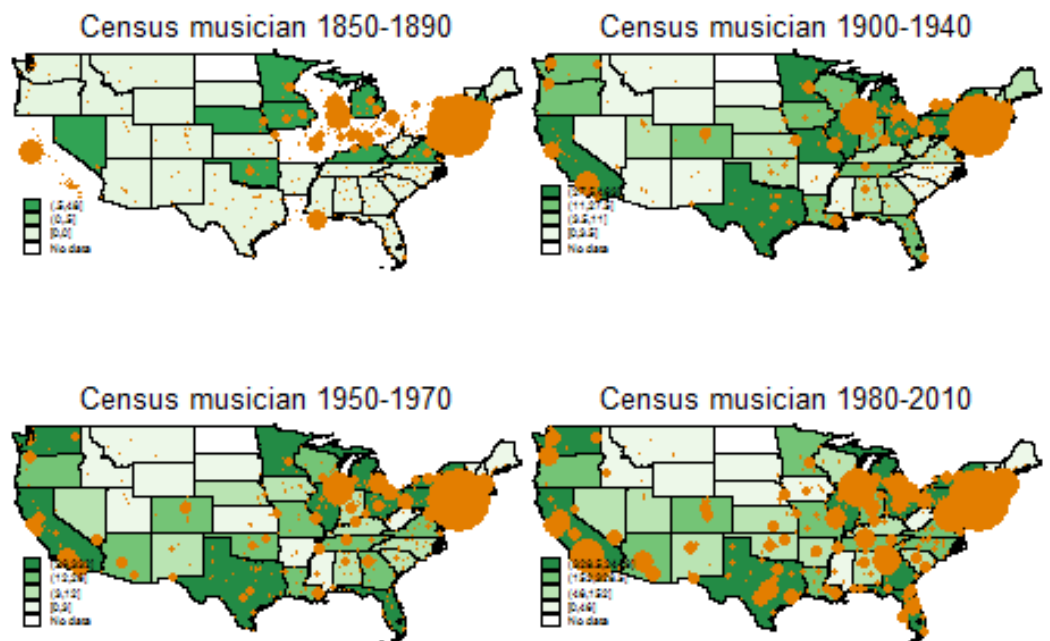


Figure 17: Geographic distribution of musicians (Census)

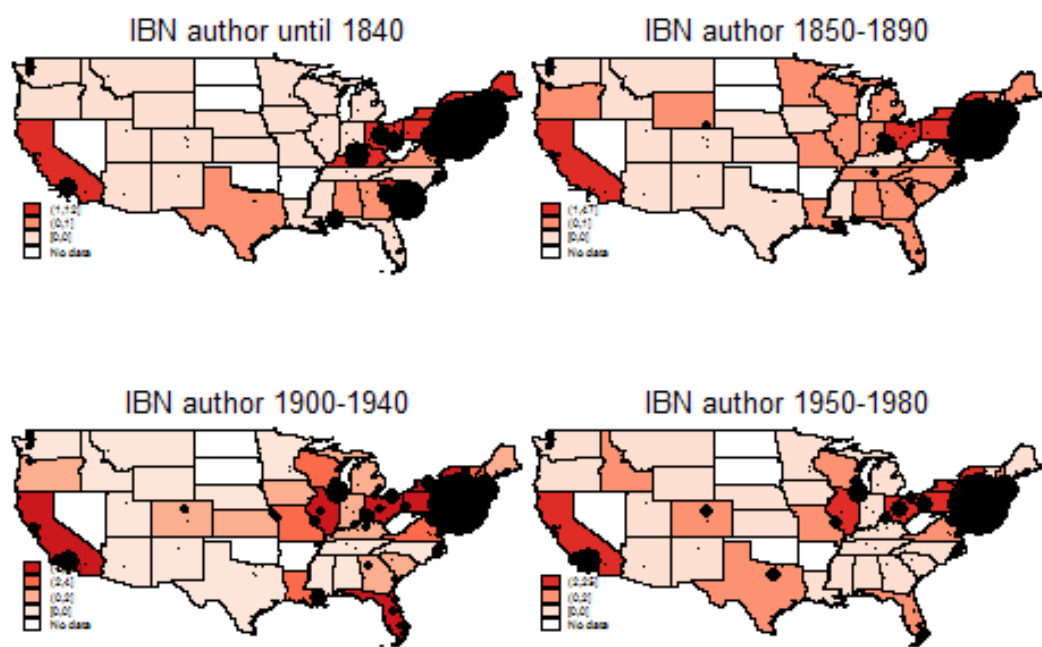


Figure 18: Geographic distribution of deaths of authors (IBN)

A Appendix

B Additional Figures

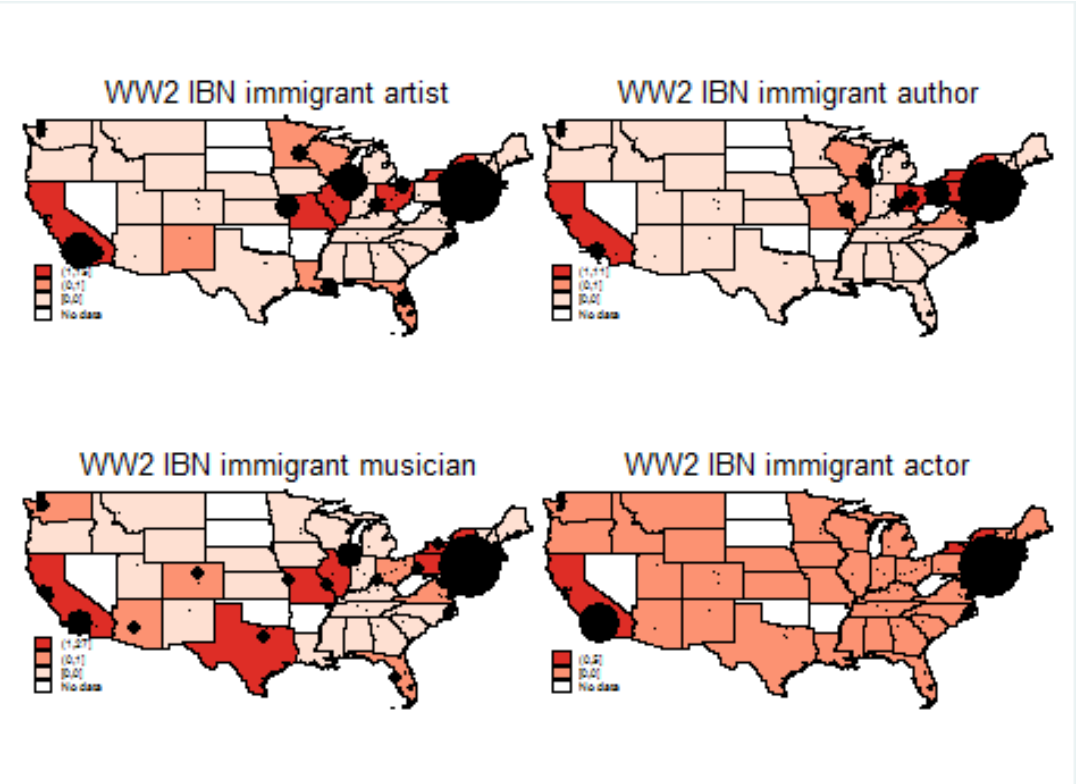


Figure 20: WW2 immigration of IBN creatives