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Does travel inspire? Evidence from the superstars of modern art

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Abstract This paper investigates whether travel increases the value of paintings produced by modern visual artists. The analysis is based on the 214 most prominent modern visual artists born between 1850 and 1945 and auction records of their paintings over the past 20 years. We find that artworks produced in the year of a journey are 7 % more valuable than paintings produced in periods with no travel. We attribute this effect to human capital investments, knowledge spillovers and inspiration from the travel destination itself. There are persistent, but declining benefits to travel over the subsequent 4 years. The analysis shows that the impact of travel is smaller for later periods as modern art becomes more abstract. The effect on the value of paintings differs depending on the purpose of a journey: work-related, recreational and politically motivated journeys have a positive contemporaneous effect on value, whereas educational journeys have a negative effect. In addition, we find that France, Germany and the United States are the most frequently visited destinations for modern artists and also yield considerable benefits during times of strong innovation.

Keywords Modern artists · Mobility · Travel · Economic geography · Human capital · Knowledge spillovers · Creativity · Peer effects

JEL Classification J61 · R39 · N90 · Z11

1 Introduction

In 1914, Paul Klee travelled with his colleague, August Macke, to Tunisia in what proved to be an important turning point in his career. Before this journey, his work

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was mainly focused on graphics, but upon his return he was able to combine his graphical approach with naturalism to develop what was soon to become his signature style. The impressions obtained during this journey and 'the scenery of Tunisia' allowed him to 'produce a number of extraordinarily beautiful watercolours that were important sources for Klee's work for the rest of his life' (Grove Dictionary of Art: Online 2010).

The example of Paul Klee illustrates that journeys often boost the productivity of the creative mind. Art history reveals many motivations for short-term mobility, such as a wish to paint in an inspiring landscape, train with a master or collaborate with peers in a city. If travel is a valuable resource for the creative process, the impact of short-term visits should be reflected in the quality of paintings—as measured by their market value—produced in the year of the journey or in subsequent years. This paper examines whether positive returns to travel exist and assesses the impact of the destination and purpose of a journey on the price of artworks.

This study employs a novel dataset of the results of modern art auctions from 1988 to 2007. The sampling of artists is based on a prominence indicator and the resulting dataset includes 214 'superstar' artists born between 1850 and 1945. Auction data on paintings produced are matched with biographical information on each artist. For each year of an artist's career, we identify whether an artist travelled, the destination of the trip and the journey's purpose.

With this unique dataset, the role of short-term mobility in creative production is assessed using a hedonic regression framework. First, the impact of travel on the quality of paintings is estimated contemporaneously as well as for subsequent years as it might take time for a travel effect to materialise. Second, the return to travel is estimated for different periods in history, as it is likely that the impact of travel evolves over time as modern art becomes more abstract. Third, the impact of travel is assessed for the different purposes of a trip (work, study, recreation or a short-term escape from the political climate) in order to test if particular motivations have different effects on artists' productivity. Finally, the effect of journeys to the most frequently visited destinations by modern artists is analysed.

The motivations for short-term movements of artists might be analogous to those of international business travellers or scientists, who travel to enhance their knowledge and expertise. Travel is particularly common for highly skilled labour (OECD 2002) and by extension one may expect that travel is also important for artists. Assuming that travel is a means of investing in one's career, it might be that artists increase their creative potential and thereby increase their future earnings capacity as a consequence of travel. This is in line with traditional human capital theory (as in Becker 1964; Ben-Porath 1967; Heckman 1976, among others).

Cohen and Levinthal (1989) argue that R&D not only results in innovation but also allows firms to absorb and exploit knowledge from their environment. Innovation requires an ongoing stream of new ideas as discussed by Mokyr (2002). Since knowledge and ideas are communicated best in personal interaction, physical proximity is a prerequisite to availing of knowledge spillover effects, especially when other communication channels are slow and inefficient. Given that artists have travelled frequently (O'Hagan and Hellmanzik 2008), it is likely that they have done so to obtain new ideas and inspiration. This is in line with Hellmanzik (2010), who shows that artists working in the modern art clusters of New York and Paris produce systematically

more valuable paintings due to human capital spillover effects in these cities. More generally, human capital externalities for the sciences are discussed by Azoulay et al. (2010) and Kim et al. (2006a) among others. Next to permanently relocating, however, short-term visits can have an important impact on productivity if they allow the artist to avail of such tacit knowledge (Glaeser et al. 1992).

This paper contributes to a growing literature on short-term mobility. Andersen and Dalgaard (2011) find that temporary cross-border flows of people facilitate the international diffusion of ideas and thereby increase aggregate productivity. Hovhannisyan and Keller (2011) specifically focus on business travel: they find a significant effect of short-term cross-border labour movements on innovation by estimating the impact of US business travel to foreign countries on domestic patenting rates. Tani and Dowrick (2011) develop a theoretical model to analyse the possible impact of international business trips on the stock of knowledge available to an economy. Using panel data for 12 Australian industries, they find that business trips are a significant source of productivity growth. In addition, as suggested by Tani (2008), countries which do not experience considerable permanent migration of highly skilled labour might experience growth effects resulting from skilled temporary migrants. Poole (2010) finds that business travel to the United States by highly skilled workers positively affects a country's extensive export margin, especially for differentiated products.

Consequently, business trips might be viewed as investments to gain access to the most recent ideas and technologies. Moreover, movements of scientists can contribute to the transmission of global knowledge flows (Kim et al. 2006b). For example, scientists collaborate internationally, and international conferences and visitor programmes facilitate the sharing of ideas. For academic economists, Hammermesh (2006) finds a significant impact of short-term research visits on the visitor's subsequent research. He reports that these temporary movements benefit researchers in terms of research quality and style, and are associated with salary increases. Borghans et al. (2010) conduct a survey among labour economists and observe substantial heterogeneity in preferences regarding conferences, especially with respect to location and content.

The next section presents the data and basic summary statistics. Section 3 discusses the findings on the benefit of travel overall, decomposed over time and with lagged effects. The impact on creative output of a journey's purpose and destination are also examined. Section 4 concludes.

2 The data

2.1 Construction of the dataset

The dataset used in this paper consists of a sample of the 214 most prominent modern artists born between 1850 and 1945. This type of superstar sampling is rather common in the literature on locational knowledge spillovers (e.g. Kim et al. 2006a; Azoulay et al. 2010; Waldinger 2009). These superstar artists are of particular interest and biographical data are sufficient to obtain detailed information on travel. Moreover, travel costs and conditions in this time period were already such that they no longer posed a

major impediment to one's mobility. Finally, the study period encompasses the most important innovations in modern art.

The sample entry criterion is based on a bibliometric measure by O'Hagan and Kelly (2005). Columns and inches dedicated to each artist in the Oxford Dictionary of Art: New Edition (1997) are recorded and a cut-off point of zero columns and 2.2 inches is applied. Using the column-inch measure, artists can be ranked according to their prominence: Vincent van Gogh for instance has 2.2 column-inches, Andy Warhol 1.45, and Pablo Picasso 3.0 (or three full columns), the highest score. The Appendix table provides a list of all artists and their column-inch measures. To avoid oversampling of anglophone artists, the sample is checked against Reclams Künstlerlexikon (2002) and only artists covered in both dictionaries remain in the study.

For the sample of artists, auction results of their paintings were collected. The auction results were obtained from artvalue.com (2007) and encompass art auctions held between 1988 and 2007. Only artists with a minimum of 10 auctioned paintings were considered. All prices are in real US dollar terms obtained from nominal hammer prices adjusted using the US CPI (retrieved from the IMF's *International Financial Statistics*). In addition to the price of the paintings, observable characteristics were recorded, such as the size, support, medium used, whether the work was signed, whether the artist was deceased at the time of auction and whether the painting was auctioned by Christie's or Sotheby's. Ultimately, each painting along with its price can uniquely be matched to its author, the year it was made, and any journeys undertaken in the year of production.

All yearly information on the artists' lives, and most importantly on their short-term mobility, were obtained from Grove Dictionary of Art: Online (2010). Only journeys which are covered in the Grove Dictionary of Art: Online (2010) are considered in this study. Given the concise quality of a dictionary, it is assumed that all trips mentioned are formative for the artist's career.

In this study, we only consider short-term visits as travel, and define short-term as any visit lasting up to 12 months. This cut-off is used to ensure that there is no overlap between long travels and short-lasting re-locations.[1] This is in line with the United Nations and the International Monetary Fund, which employ a cut-off point of 12 months to distinguish between migrants and visitors to a country. When an artist travelled to more than one destination, all these destinations are considered separately.

For the analysis of the purpose of the journey, only those years in which a single journey was undertaken are considered in order to avoid ambiguity. The purpose of the journey is known for 701 out of 808 trips. If more than one purpose was mentioned in the dictionary, we chose the purpose for which the journey was initially intended. In each case, the main motivation for the trip given in Grove Dictionary of Art: Online

[1] Although there are some artists who have travelled for longer than a year, they often travelled to various destinations such that these types of journeys are fully captured in the dataset. Only for cases in which artists travelled to one place and stayed there for longer than a year, but never fully relocated, is the short-term move not recorded in the dataset. However, as this is the case for only a few journeys in the dataset imposing this cut-off point is assumed not to have a great impact on our findings.

(2010) is used to uniquely categorise the journey's purpose as being: recreational, educational, political or work-related.

1. *Work* refers to a journey undertaken for the purpose of teaching, collaborating, carrying out a commission or conducting personal work. Henri Matisse, for example, carried out works in the port of St. Tropez in 1904. The majority of journeys are directly work-related with a total of 391 journeys (55.8 %).
2. *Recreational* refers to any journey undertaken for the sake of holidays and relaxation. If none of the other purposes apply, this category was chosen to be the default. An example of a recreational journey is that of Wilfredo Lam, who travelled to Haiti in 1964 to experience the culture, in particular magic rituals, which inspired his later work. In total, 192 journeys (27.3 %) were undertaken for recreational purposes.
3. *Political* refers to any journey undertaken in order to avoid restrictions on the artist's work, harm to his or her life or if the motivation was otherwise political, for example, to serve in the army. One such case is David Siqueiros, who 'joined the Spanish Republican Army and fought in the Spanish Civil War, returning to Mexico City 2 years later' (Grove Dictionary of Art: Online 2010). In total, 62 journeys (8.8 %) were undertaken for political reasons.
4. *Educational* refers to any journey undertaken in order to learn from a master or to attend formal art training. For example, Alberto Giacometti went to Geneva in 1919 to study painting at the Ecole des Beaux Arts. In total, 56 journeys (8.0 %) were undertaken for educational purposes.

The resulting dataset contains a sample of the 214 most prominent artists worldwide and 29,243 auction results. As artists in this sample were active from 1870 to 2007, the sample period was classified in line with historical phases: a prewar period that spans from 1870 to 1913, followed by the First World War, the interwar years, the Second World War, the postwar years up to and including 1975 and the years from 1976 to 2007.

2.2 A first glance at the data

All artists covered in this study are listed in the Appendix table along with their countries and years of birth, column-inch measures, number of paintings observed and number of journeys undertaken during their careers.

Overall summary statistics are presented in Table 1. Notably, the highest average price is observed for paintings produced during the First World War, which coincides with modern art's biggest innovation, namely the move toward abstraction with the invention of Cubism. However, in terms of paintings per artist, the years after the Second World War up to 1975, which coincide with the two major art innovations of Abstract Expressionism and Pop Art, dominate.

The sample of artists travelled 808 times in total which is equivalent to an average of 3.8 journeys per artist. This results in 12.7 % of all paintings being made in years where at least one journey was undertaken (columns 1 and 2, Table 2). Table 2 lists all travel destinations visited along with the frequency visited and the number of

Table 1 Overall summary statistics

	All	1870–1913	1914–1918	1919–1938	1939–1945	1946–1975	1976–2007
Year of birth	1895	1870	1875	1881	1887	1905	1920
	(21.3)	(9.8)	(10.4)	(11.6)	(13.3)	(16.1)	(11.9)
Year of execution	1946	1903	1916	1928	1941	1960	1984
	(26.1)	(8.7)	(1.4)	(5.7)	(2.1)	(8.0)	(6.6)
Age at execution	51.1	33.1	40.6	47.1	54.6	55.3	63
	(16)	(9.2)	(10.4)	(12.1)	(13.2)	(15.2)	(12.2)
Year of sale	1998	1998	1998	1998	1998	1998	2000
	(5.5)	(5.3)	(5.4)	(5.3)	(5.28)	(5.6)	(5.4)
Price (US$)	438,320	692,736	883,139	425,855	438,533	384,463.50	222,709
	(2,106,310)	(3,495,812)	(2,955,791)	(1,756,784)	(2,521,888)	(1,718,427)	(889,875)
Area (cm^2)	7,382	4,206	3,918	4,015	3,957	9,511	11,670
	(45422)	(21460)	(3916)	(4544)	(8445)	(66958)	(15,618)
Canvas	0.58	0.69	0.66	0.72	0.62	0.65	0.56
	(0.49)	(0.46)	(0.47)	(0.45)	(0.48)	(0.48)	(0.49)
Column-inches	0.47	0.51	0.5	0.49	0.49	0.46	0.4
	(0.17)	(0.24)	(0.11)	(0.11)	(0.10)	(0.20)	(0.11)
Observations	29,252	3,926	1,229	5,849	1,860	12,738	3,650
Number of artists	214	109	98	159	134	157	66
Paintings per artist	136	36	12	37	14	81	55

Notes: Year of birth, year of execution and age at execution show average values across all artists active in the respective period. The other variables are averages across paintings produced. Standard deviations are in parantheses. The nominal prices were adjusted using the US CPI retrieved from the IMF's *International Financial Statistics*

Sources: All information on artists were obtained from Grove Dictionary of Art: Online (2010). All data on paintings were obtained from artvalue.com (2007)

paintings produced in the year of travel. In terms of frequency visited, France stands out with 237 visits, followed by the USA with 80 visits, Germany with 79 visits, the UK with 67 visits, Italy with 58 visits and Spain with 48 visits. Clearly, France has the biggest magnetism for short-term visits, which is underpinned by its dominance in terms of paintings produced (1,460). Interestingly, the Middle East and Northern Africa (MENA) is also a popular destination for modern artists with 48 visits.

The most active period of travel is the early twentieth century, while the number of trips undertaken after 1938 falls (see Fig. 1; Table 2). An explanation might be that the artists simply became older and travelled less, as most travel in our sample took place between an age of 20 and 50 (which coincides with the average age of artists before 1938, Table 1). Nevertheless, there is strong persistence over time in the dominance of some travel destinations, such as France, Germany and the USA (Table 2).

Table 2 Frequency visited and paintings made by destination

	Number of paintings	Number of journeys	Number of journeys					
			1870–1913	1914–1918	1919–1938	1939–1945	1946–1975	1976–2007
Asia	34	14	1	1	7	0	5	0
Benelux	117	35	17	7	8	0	3	0
Canada	24	6	1	2	0	3	0	0
Eastern Europe & Russia	69	15	6	1	6	0	2	0
Europe round trip	33	14	9	1	1	0	3	0
France	1, 460	237	78	29	48	22	49	11
Germany	288	79	36	3	12	7	21	0
Italy	221	58	16	10	25	0	7	0
Latin America	32	14	0	1	5	5	3	0
MENA	281	48	9	3	29	0	5	2
Mexico	49	17	0	0	8	8	1	0
Nordic countries	26	11	8	2	1	0	0	0
Other	52	13	4	2	2	2	3	0
Pacific	29	14	0	0	0	0	10	4
Spain	262	48	17	5	19	1	6	0
Switzerland	119	38	1	10	19	5	2	1
UK	262	67	19	10	24	3	11	0
USA	368	80	4	6	24	16	29	1
Total	3, 726	808	226	93	238	72	160	19

Source: All information on artists were obtained from Grove Dictionary of Art: Online (2010)

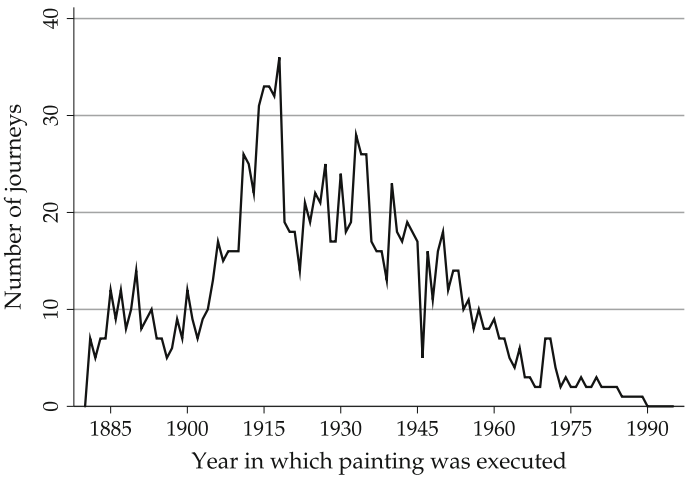

Fig. 1 Number of journeys over time

3 Empirical results

3.1 Empirical strategy

In order to estimate the effect of travel on artistic output, we use a hedonic estimation which allows all observations to be included as discussed by Ashenfelter and Graddy (2006). A hedonic regression framework is suitable as it implicitly prices observable value-adding characteristics of an artwork. However, when applying the hedonic framework to auction results of modern art, incorporating unobservables might be important. In addition to the observable features of a painting, like size and medium used, less tangible characteristics may impact its price. For example, Picasso's work may sell for more because of his unique, cubist style and international reputation. Traditionally, hedonic models would only use an artist fixed effect to account for these artist level unobservables. In this paper, we expand on this by explicitly including a biographical factor, namely an artist's travel history. Due to the difficulty of obtaining data on artists lives and working methods, this has only been a relatively recent development in the literature.

Although there is no formal decision criterion for variables to include in a hedonic framework, the trend in the literature is to go beyond features observable at auction to include artists' characteristics as explanatory factors for prices yielded at art auctions. For example, Renneboog and Spaenjers (2009) use proxies for artistic reputation in order to explain prices at auction while Galenson and Weinberg (2000, 2001) use birth cohorts—interpreted as innovation methods—to explain price variations over artistic careers. Hellmanzik (2010) estimates the effect for modern artists of being located in New York and Paris—two clusters of modern art—on auction prices.

In the aforementioned studies, the inclusion of those artist-specific characteristics in a hedonic framework yields consistent coefficients on the traditional hedonic estimators while at the same time provides new insights on the valuation of art works. In line with the recent literature, the same applies to this paper's analysis as shown in Table 3, column 1. We employ a broad set of traditional hedonic variables and complement these by including artist-specific variables on short-term travel. Formally, the baseline specification is given by

$$\begin{aligned}\ln(\text{price})_{ij} = \alpha_i + \left[\beta_1 \text{age}_{ij} + \beta_2 \text{age}_{ij}^2 + \beta_3 \text{age}_{ij}^3 + \beta_4 \text{age}_{ij}^4\right] \\ + \sum_{t=1}^{6} [\delta_t(\text{period made}_{ij})] + \lambda \text{travel}_{ij} \\ + \gamma X_{ij} + \sum_{y=1988}^{2007} \theta_y(\text{saleyear}_{ij} = y) + e_{ij} \end{aligned} \quad (1)$$

where index i indicates the artist and j the painting. Age_{ij} reflects an artist's career age and enters as a fourth-order polynomial. This functional form has been used to describe the career paths of modern artists by Galenson and Weinberg (2000, 2001) for French and American painters, Hellmanzik (2009, 2010) for international artists

Table 3 The travel effect

Log (price)	(1)	(2)	(3)	(4)	(5)
Age	0.388	0.389	0.384	0.383	0.380
	[0.033]***	[0.033]***	[0.033]***	[0.033]***	[0.033]***
Age^2	−0.011	−0.011	−0.011	−0.011	−0.011
	[0.001]***	[0.001]***	[0.001]***	[0.001]***	[0.001]***
Age^3	0.000	0.000	0.000	0.000	0.000
	[0.000]***	[0.000]***	[0.000]***	[0.000]***	[0.000]***
Age^4	0.000	0.000	0.000	0.000	0.000
	[0.000]***	[0.000]***	[0.000]***	[0.000]***	[0.000]***
World War I	0.056	0.056	0.057	0.049	0.045
	[0.038]	[0.038]	[0.042]	[0.038]	[0.039]
Interwar	0.126	0.133	0.159	0.129	0.144
	[0.035]***	[0.035]***	[0.036]***	[0.035]***	[0.035]***
World War II	0.310	0.319	0.335	0.314	0.332
	[0.049]***	[0.049]***	[0.050]***	[0.049]***	[0.049]***
Postwar I	0.339	0.351	0.381	0.343	0.358
	[0.056]***	[0.056]***	[0.056]***	[0.056]***	[0.057]***
Postwar II	0.212	0.224	0.254	0.212	0.230
	[0.071]***	[0.072]***	[0.072]***	[0.072]***	[0.072]***
Log (size)	0.582	0.582	0.581	0.582	0.581
	[0.007]***	[0.007]***	[0.007]***	[0.007]***	[0.007]***
Canvas	0.350	0.350	0.351	0.350	0.349
	[0.016]***	[0.016]***	[0.016]***	[0.016]***	[0.016]***
Oil	0.304	0.304	0.304	0.305	0.303
	[0.021]***	[0.021]***	[0.021]***	[0.021]***	[0.022]***
Signature	0.120	0.121	0.121	0.124	0.127
	[0.031]***	[0.031]***	[0.031]***	[0.031]***	[0.032]***
Artist deceased	0.139	0.139	0.138	0.139	0.137
	[0.029]***	[0.029]***	[0.029]***	[0.029]***	[0.029]***
Christie's	0.377	0.377	0.376	0.377	0.377
	[0.015]***	[0.015]***	[0.015]***	[0.015]***	[0.015]***
Sotheby's	0.346	0.345	0.345	0.345	0.347
	[0.014]***	[0.014]***	[0.014]***	[0.014]***	[0.014]***
Travel		0.069		0.096	0.086
		[0.021]***		[0.022]***	[0.023]***
Prewar*travel			0.187		
			[0.053]***		
WW1*travel			0.159		
			[0.075]**		
Interwar*travel			0.051		
			[0.035]		

Table 3 continued

Log (price)	(1)	(2)	(3)	(4)	(5)
WW2*travel			0.122		
			[0.076]		
Postwar1*travel			−0.028		
			[0.033]		
Postwar2*travel			−0.076		
			[0.064]		
1 and 2 years after journey				0.064	0.067
				[0.023]***	[0.023]***
3 and 4 years after journey				0.046	0.044
				[0.021]**	[0.021]**
Artists fixed effects	yes	yes	yes	yes	yes
Year of sale dummy	yes	yes	yes	yes	yes
Observations	29,243	29,243	29,243	29,243	28,871
R^2	0.70	0.70	0.70	0.70	0.70

Notes: * Significant at 10 %; ** significant at 5 %; *** significant at 1 % level. Robust standard errors are in parantheses

as well as Hodgson (2011) for Canadian artists. However, the results are similar if a lower order polynomial is used. In addition to the painter-specific variables, several standard controls for the hedonic characteristics of the painting are included in X_{ij}: an indicator for the support material, for an oil painting, for signed works, for works by artists deceased at time of auction, for works sold by the two main auction houses Christie's and Sotheby's and the size of the painting in square centimetres. In addition, there are dummies for the sale year of painting j to account for trends in the art market. Dummies for the period *t* in which the painting was produced and fixed effects for each artist are included to capture any time- or artist-specific features that might explain auction results. The subperiods were chosen according to historic events, as displayed in Table 3 and the prewar period from 1870 is the base group.

$Travel_{ij}$ is the variable of interest and it is analysed along various dimensions. First in Sect. 3.2, a binary indicator for the year in which the journey was undertaken is employed to measure the overall contemporaneous impact of travel on the quality of art. This variable is then decomposed for the separate historical periods covered in the sample in order to detect any changes in the return to travel over time. Moreover, we investigate if short-term visits bring a longer lasting benefit to modern artists. To this end, we include dummy variables for the first 2 years after a journey and for the two following years.

In the next stage (Sect. 3.3), the impact of the purpose of a journey is assessed as it is expected that returns to travel largely depend on why the trip was undertaken. Finally, the travel effect is further decomposed by evaluating if the travel destination plays a role in the productivity effect of a journey. For this analysis, the seven main destinations in terms of frequency visited and paintings produced as displayed in Table 2

are considered. Again, the effect of the travel destinations is decomposed over time (Sect. 3.4).

3.2 Travel effect: overall and over time

The impact of travel on the quality of art works produced is examined in this section. In addition, how this impact varies over time with the incidence of artistic innovation is considered. In particular, we test whether or not returns to travel decline over time as art becomes more abstract. Increased abstraction renders journeys undertaken for landscape painting less useful. However, journeys to facilitate personal interactions might still play an important role. Results of both specifications are displayed in Table 3, columns (2) and (3). In addition, it is tested if the effect of travel persists over time by using lags for the years following the trip. Two versions of the estimation are considered, one with the full sample (Table 5, column 4) and one with a reduced sample that only encompasses years in which a single journey was undertaken (Table 3, column 5).

The benchmark hedonic model for this sample of modern artists is reported in column 1 of Table 3. All hedonic coefficients have the expected signs, are significant, and their magnitudes are in line with the literature on art prices at auction. This is still the case when we add the variable of interest, namely if the artist has travelled in a given year (Table 3, column 2). For conciseness, the hedonic variables will not be reported in subsequent tables, however, they are included in all estimations.

Looking at the overall impact of travel on art works produced, we find a positive effect of 6.9 %, which is significant at the 1 % level. This implies that works painted in the same year a journey was undertaken yield higher prices at auction. This positive contemporaneous effect is net of opportunity costs, as spending time travelling implies less time for painting, unless the trip was solely work-related. Thus, it can be concluded that there are significant returns to travel for modern artists and that travelling is a boost for creative productivity.

One explanation could be that journeys have an inspirational effect not only due to the characteristics of the destination but also more importantly due to exposure to new peers and new ideas. Thus, despite the source of inspiration to the artist, a journey is always a form of investment in one's human capital which translates into higher priced paintings. Our results are in line with Hammermesh (2006) who finds a significant positive effect on economists' research performance following short-term academic visits. Moreover, this result ties in more generally with Hovhannisyan's and Keller's (2011) finding on the positive impact of business trips on innovation and Andersen and Dalgaard (2011) result that travelling enhances the international diffusion of ideas and thereby productivity. As Ben-Akiva and Bierlaire (1999) point out, short-term movements are conditional on long-term mobility decisions. Therefore, we tested if the inclusion of the artist's permanent work location in the estimations influenced the effect of travel; however, this is not the case.

When decomposing the travel effect over time, we find significant, positive effects for the first two periods: 1870–1913 and the period of the First World War. There is no travel effect for artworks produced after 1918. Travel has the greatest effect before the First World War with a 19 % mark-up on paintings, while during World

War I the mark-up amounts to 16 %. In the years between the two major Wars, however, the effect is positive, albeit not significant at the 10 % level. Interestingly, this result confirms the hypothesis that returns to travel decrease with ever more abstraction—as pioneered by Cubism—and potentially less need for direct inspiration from nature.

When focusing on the persistence of the effect of a journey on the career of an artist, we find a significant and positive effect during the first 2 years after a journey and during the third and fourth year (column 4). Crucially, the coefficients decline over time, both in terms of magnitude and significance (for the first 2 years, the coefficient equals 6.4 %, significant at the 1 % level, while for the following 2 years it amounts to 4.6 %, significant at the 5 % level). It is also worth noting that these coefficients are smaller than the contemporaneous travel effect which amounts to 9.6 % in this estimation. These findings also hold in the reduced sample excluding years of multiple journeys (column 5). Such a persistent effect of short-term visits is also found by Hammermesh (2006) for his sample of economists.

In summary, this section finds that artists' careers benefit from short-term mobility. The effect exists both in the year of the journey and in subsequent years.

3.3 The purpose of journeys

This section further analyses the role of travel by examining the purpose of the respective journeys. Four main motivations for a trip are considered: recreational, educational, work-related and political. The analysis along these trajectories provides insights into how the returns to travel come about. In terms of productivity, each category is expected to have a different effect on the quality of output, with work trips having the highest returns. The estimation is based on a variation of the baseline specification presented in Sect. 3.1 with binary variables for the trip's purpose replacing the travel indicator. Moreover, the estimations are based on a reduced sample that only includes years in which a single journey was undertaken in order to avoid ambiguity in the designated purpose of the journey. Results are presented in Table 4.

Interestingly, travel undertaken for political reasons has the largest effect on paintings' prices of 21.7 %. This is somewhat surprising, as these trips were often not planned by the artist; nevertheless, it is possible that escaping from political controls or general hardship provides an outlet for creative production.

Recreational trips have the second highest magnitude at 10.8 %. This suggests that artists could receive direct benefits even from recreational trips by expanding their horizons and channeling new impressions into their works; this is illustrated by the examples of Klee (mentioned in the introduction) and Matisse, who travelled to Marocco in 1912–1913 (Grove Dictionary of Art: Online 2010).

Work-related trips have a surprisingly small effect of 4.5 %. This could be explained by the fact that commissions, for example, offered less room for individual artistic progress, as they mostly reflected the style the artist was already famous for and/or the taste of the client. Thus, the benefit to the artist's creative development is limited.

The fact that educational trips bear a negative sign could indicate that these are investments in human capital as suggested by Eriksson (1991). It can be expected that

Table 4 The purpose of the journey

Log (price)	(1)
World War I	0.035
	[0.039]
Interwar	0.135
	[0.035]***
World War II	0.318
	[0.049]***
Postwar I	0.345
	[0.057]***
Postwar II	0.217
	[0.072]***
Political	0.195
	[0.094]**
Study	−0.377
	[0.091]***
Recreation	0.108
	[0.046]**
Work	0.045
	[0.026]*
Artists fixed effects	yes
Year of sale dummy	yes
Age polynominals	yes
Hedonic parameters	yes
Observations	28,871
R^2	0.70

Notes: * Significant at 10 %; ** significant at 5 %; *** significant at 1 % level. Robust standard errors are in parantheses

short-term stays at art academies or with masters of the subject pay off eventually, however, they come at an initial cost to the artist. This is in line with the role of formal training for wage growth found by Frazis and Loewenstein (2005). They point out that it is important to also consider past training in order to assess the overall impact of training on wage growth.

In summary, this section finds that most types of travel are beneficial to the quality of art works produced. Politically motivated journeys have the largest immediate effect, while investments in artistic education have a negative contemporaneous effect but are likely to provide benefits in the years following the journey.

3.4 Travel destinations

As shown in the previous sections, travel has a positive impact on the quality of works an artist produces. In this section, we assess how the destination of a journey influences the productivity of the trip. The seven most important destinations in terms of frequency of visits and paintings produced are considered in the analysis, both overall (Table 5) and over time (Table 6).

Table 5 Travel destinations

Log (price)	(1)
World War I	0.066
	[0.038]*
Interwar	0.140
	[0.035]***
World War II	0.329
	[0.049]***
Postwar I	0.366
	[0.056]***
Postwar II	0.243
	[0.072]***
France	0.068
	[0.031]**
United States	0.102
	[0.059]*
Germany	0.210
	[0.078]***
Middle East and Northern Africa	0.041
	[0.058]
Italy	−0.167
	[0.068]**
Spain	0.160
	[0.066]**
United Kingdom	0.135
	[0.078]*
Artists fixed effects	yes
Year of sale dummy	yes
Age polynominals	yes
Hedonic parameters	yes
Observations	29,243
R^2	0.70

Notes: * Significant at 10 %; ** significant at 5 %; *** significant at 1 % level. Robust standard errors are in parantheses

Travel to France has a significant positive effect of 6.8 % on the price of art works. When analysing the decomposition over time (in Table 6), we find a highly significant, positive coefficient in the years from 1870 to 1913 of 41.1 %. However, negative coefficients for France in the postwar era suggest that in later periods, a visit to France was even a drain on productivity. During the period prior to the First World War, landscapes and naturalistic motifs were still very fashionable in the arts, which might explain the popularity of travel to France, in particular to Brittany, Normandy and Southern France. This is also likely due to the fact that many artists were either born in France or worked there, most notably in Paris and thus travelling to these destinations was easy.

Table 6 Travel destinations over time

	France	USA	Germany	MENA	Italy	Spain	United Kingdom
Prewar	0.411	0.015	0.197	−0.295	−0.363	0.698	0.115
	[0.079]***	[0.470]	[0.123]	[0.191]	[0.149]**	[0.149]***	[0.174]
World War I	0.171	0.486	0.611	1.176	0.199	−0.009	−0.294
	[0.095]*	[0.466]	[0.322]*	[0.470]**	[0.176]	[0.310]	[0.332]
Interwar	0.050	0.176	0.855	−0.174	−0.060	0.070	0.178
	[0.070]	[0.099]*	[0.179]***	[0.061]***	[0.102]	[0.093]	[0.090]**
World War II	−0.141	−0.047	−0.093	0.000	0.000	−0.147	0.728
	[0.159]	[0.177]	[0.136]	[0.000]	[0.000]	[0.212]	[0.258]***
Postwar I	−0.073	0.033	0.040	0.573	−0.396	−0.126	−0.180
	[0.038]*	[0.074]	[0.136]	[0.157]***	[0.140]***	[0.126]	[0.181]
Postwar II	−0.195	0.400	0.000	0.437	0.000	0.000	0.000
	[0.061]***	[0.292]	[0.000]	[0.406]	[0.000]	[0.000]	[0.000]

Notes: * Significant at 10 %; ** significant at 5 %; *** significant at 1 % level. Robust standard errors are in parantheses. The estimates above respresent interaction terms of the time periods (row) and the destination region (column). These are based on regressions equivalent to those presented in Table 5 including the same set of control variables (coefficients not reported)

In addition, travel to Paris might have been particularly worthwhile due to the strong agglomeration of artistic capital in Paris (Hellmanzik 2010). Out of total journeys to France, a striking 25 % were to Paris. However, it is not clear that a short-term stay in Paris allows artists to benefit from local tacit knowledge. Nevertheless, Jaffe et al. (1993) stress the importance of local proximity in their analysis of the geographic location of knowledge spillovers as measured by patent citations.

A similar explanation could hold for the United Kingdom and the United States that offer an overall positive effect to short-term visits of 13.5 and 10.2 %, respectively. This effect is largely driven by the interwar years when New York (41 % of all journeys to the US) and to a lesser extent London (40 % of all journeys to the UK) were also well known international hubs for modern art.

Travel to Germany has the biggest overall effect on auction prices of 21.0 %, driven by two sequential strong subperiods from 1914 to 1938. Interestingly, this period coincides with the Bauhaus era from 1919 to 1933, when Germany was a strong hub for artists due to collective innovative forces.[2]

Spain, though it lacked a comparable art movement with such a strong local basis, offers the second highest returns to travel of 16.0 %. This could be explained by the fact that Spain was mostly travelled to for recreational purposes, which can be shown to offer relatively long-lasting returns to the quality of paintings. This is driven by the time from 1870 to 1913 with a 69.8 % mark-up, confirming the notion that inspirational trips were most productive when the modern arts were still dominated by concrete motifs.

[2] The Bauhaus was active in Weimar from 1919 to 1925, in Dessau from 1925 to 1932 and in Berlin from 1932 to 1933, see Grove Dictionary of Art: Online (2010).

Italy never offers positive returns to travel despite being frequently visited. This could suggest that Italy was visited for its rich culture, particularly the classics; however, it might be the case that exposure to the classics could not be converted into higher quality paintings. Travel to the Middle East and Northern Africa, though visited frequently, does not offer returns to travel for artists. However, the analysis of subperiods shows that there is a negative effect in the interwar period and a high mark-up on paintings produced in the year of visiting a MENA country during World War I and the first postwar period.

In summary, we observe changing patterns over time of the benefits to the quality of paintings offered by travel destinations. Three distinct patterns are observable: first, countries that have a very strong agglomeration of artists are mostly visited for work purposes, possibly to benefit from knowledge spillovers. This is the case for France (positive returns on journeys around the turn of the twentieth century), Germany (the Bauhaus period), and the US and UK with New York and London being important clusters of modern art. For this set of countries, we find a very high correlation with phases of artistic innovations in the respective destinations, for example, as reflected by the Bauhaus period in Germany or the (Post-)Impressionist, Fauves, Nabis and Cubists in France.

Second, countries which offer nice scenery as inspiration for landscape paintings but do not have a strong base in terms of artists and artistic knowledge yield benefits only before modern art became abstract. This is the case for Spain and to some extent France. Despite the fact that Paris remains an attractive destination, it seems that its loss of inspirational, innovative powers is reflected in the decreasing benefits associated with visiting there.

Third, countries which are visited frequently for recreational purposes do not offer consistent returns to travel despite their history and rich culture. This is the case for Italy and the MENA countries.

4 Conclusion

This paper studies the impact of travel on the quality of modern paintings. The empirical analysis suggests that there is a positive contemporaneous effect from short-term journeys which also lasts over subsequent years. Second, we find evidence that the impact of travel declines over time as modern art becomes more abstract. Third, a test if journeys made for particular purposes have different effects on artists' productivity suggests that trips which served as an investment in the artist's education have a negative contemporaneous impact, while journeys made for other purposes are beneficial in the year of travel. In addition, we estimate which travel destinations provide the highest returns. Travel destinations that either have an inspiring 'en vogue' landscape such as Southern France or that provide access to new art movements and ideas such as France and Germany (Bauhaus), tend to offer positive returns.

The overall positive effect of short-term travel on artistic output adds to the most recent general literature on the impact of short-term mobility. Journeys increase aggregate productivity through the diffusion of ideas (Andersen and Dalgaard 2011; Tani and Dowrick 2011) and business travel leads to higher patenting rates (Hovhannisyan

and Keller 2011) and has a positive effect on a country's extensive export margin (Poole 2010).

The motivations for travel and the benefits of short-term movements for artists seem analogous to those of international business travellers or scientists. For example, business trips can be viewed as investments to gain access to the most recent technologies, while participation of scientists in conferences or visitor programmes helps them to share ideas and knowledge. This is in line with Hammermesh (2006) who finds a significant impact of short-term academic visits on the visitor's subsequent research. More generally, short-term movements can be seen as a means of investing in one's human capital.

Hence, our findings suggest that the impact of travel for the 'superstars' of modern arts—a highly skilled professional group—might also hold for other professions, given the relative ease and affordability of travel today. In particular, the benefit of short-term mobility to certain innovative areas and institutions would be an interesting field of study. Such a line of research could further enhance our understanding of how ideas and innovation are diffused internationally.

Appendix table: Artists included in this study

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
Albers, Josef	Germany	1888	0.5	296	0
Alechinsky, Pierre	Belgium	1927	0.22	326	2
Annigoni, Pietro	Italy	1910	0.4	41	0
Appel, Karel	Netherlands	1921	0.32	848	25
Arp, Jean (Hans)	France	1886	0.55	88	12
Atlan, Jean-Michel	France	1913	0.22	241	0
Bacon, Francis	Ireland	1909	1	79	3
Balla, Giacomo	Italy	1871	0.4	102	2
Balthus	France	1908	0.22	78	4
Baumeister, Willi	Germany	1889	0.42	174	12
Bayer, Herbert	Austria	1900	0.22	20	6
Baziotes, William	America	1912	0.22	28	0
Beckmann, Max	Germany	1884	0.6	57	8
Bellows, George Wesley	America	1882	0.42	31	0
Bernard, Emile	France	1868	0.3	180	8
Bill, Max	Switzerland	1908	0.47	135	0
Bissiere, Roger	France	1888	0.4	104	0
Blake, Peter	Britain	1932	0.55	25	1
Blanche, Jacques-Emile	France	1861	0.22	72	11
Boccioni, Umberto	Italy	1882	0.5	20	4
Bombois, Camille	France	1883	0.22	51	0

Appendix continued

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
Bonnard, Pierre	France	1867	0.55	385	7
Boyd, Arthur	Australia	1920	0.3	107	6
Brangwyn, Sir Frank	Belgium	1867	0.27	45	11
Braque, Georges	France	1882	1.2	247	9
Burri, Alberto	Italy	1915	0.25	128	1
Bush, Jack Hamilton	Canada	1909	0.3	45	0
Calder, Alexander	America	1898	1.05	63	0
Carr, Emily	Canada	1871	0.3	48	3
Carra, Carlo	Italy	1881	0.3	140	5
Cavalcanti, Emiliano di	Brazil	1897	0.27	52	7
Chagall, Marc	Belorussia	1887	0.65	466	28
Chirico, Giorgio de	Greece	1888	0.8	468	13
Christo, Javacheff	Bulgaria	1935	0.5	139	0
Corinth, Lovis	Germany	1858	0.3	79	12
Cruz-Diez, Carlos	Venezuela	1923	0.22	31	4
Dali, Salvador	Spain	1904	1.15	152	3
Davie, Alan	Britain	1920	0.25	105	7
Davis, Stuart	America	1894	0.6	16	8
Delaunay-Terk, Sonia	Russia	1885	0.25	25	1
Delaunay, Robert	France	1885	0.45	56	17
Delvaux, Paul	Belgium	1897	0.3	73	3
Denis, Maurice	France	1870	0.25	210	11
Derain, Andre	France	1880	0.3	260	4
Diebenkorn, Richard	America	1922	0.25	58	3
Dine, Jim	America	1935	0.25	82	0
Dix, Otto	Germany	1891	0.45	60	19
Dobell, Sir William	Australia	1899	0.4	40	5
Dongen, Kees van	Netherlands	1877	0.22	256	4
Dubuffet, Jean	France	1901	0.22	461	17
Dufy, Raoul	France	1877	0.35	418	11
Dunoyer de Segonzac, Andre	France	1884	0.22	29	13
Ensor, James	Belgium	1860	0.45	93	4
Ernst, Max	Germany	1891	0.7	307	6
Fautrier, Jean	France	1898	0.25	191	6
Feininger, Lyonel	America	1871	0.45	78	2
Fontana, Lucio	Argentina	1899	0.3	529	7
Forain, Jean-Louis	France	1852	0.25	36	0
Foujita, Tsuguharu	Japan	1886	0.25	179	12
Francis, Sam	America	1923	0.35	581	3
Frankenthaler, Helen	America	1928	0.3	117	0

Appendix continued

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
Freud, Lucian	Germany	1922	0.35	56	0
Gallen-Kallela, Akseli	Finland	1865	0.4	29	9
Giacometti, Alberto	Switzerland	1901	0.65	40	7
Gilman, Harold	Britain	1876	0.22	15	2
Glackens, William James	America	1870	0.35	26	1
Gleizes, Albert	France	1881	0.25	129	5
Gogh, Vincent van	Netherlands	1853	2.2	61	3
Goncharova, Natalia	Russia	1881	0.35	47	4
Gorky, Arshile	Turkey	1904	0.6	32	0
Gottlieb, Adolph	America	1903	0.35	109	0
Gris, Juan	Spain	1887	0.6	81	2
Grosz, George	Germany	1893	0.7	42	0
Gruber,Francis	France	1912	0.22	59	0
Guston, Philip	America	1913	0.45	66	3
Guttoso, Renato	Italy	1912	0.3	295	4
Harris, Lawren Stewart	Canada	1885	0.25	60	3
Hartung, Hans	Germany	1904	0.25	517	9
Hayter, S.W.	Britain	1901	0.3	67	1
Heckel, Erich	Germany	1883	0.4	43	16
Held, Al	America	1928	0.25	40	0
Henri, Robert	America	1865	0.7	68	4
Hockney, David	Britain	1937	0.75	92	0
Hodler, Ferdinand	Switzerland	1853	0.35	167	6
Hofer, Carl	Germany	1878	0.3	237	19
Hofmann, Hans	Germany	1880	0.45	155	3
Hundertwasser, Fritz	Austria	1928	0.45	50	0
Jackson, Alexander Young	Canada	1882	0.25	178	3
Jawlensky, Alexei von	Russia	1864	0.6	312	11
John, Jaspers	America	1930	0.3	36	0
Jones, Allen	Britain	1937	0.3	34	2
Josephson, Ernst	Sweden	1851	0.22	17	1
Kandinsky, Wassily	Russia	1866	1.15	97	11
Kirchner, Ernst Ludwig	Germany	1880	1.1	79	14
Kitaj, Ron B.	America	1932	0.4	41	0
Klee, Paul	Switzerland	1879	1.3	83	4
Klein, Yves	France	1928	0.22	113	5
Klimt, Gustav	Austria	1862	0.7	22	3
Kline, Franz	America	1910	0.3	102	0
Kokoschka, Oskar	Austria	1886	0.5	25	49
Kupka, Frantisek	Czech Republic	1871	0.55	32	9

Appendix continued

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
La Fresnaye, Roger de	France	1885	0.22	24	1
Lam, Wifredo	Cuba	1902	0.4	294	15
Lamb, Henry	Australia	1883	0.35	45	5
Larionov, Mikhail	Russia	1881	0.45	28	6
Lavery, Sir John	Britain	1856	0.22	205	4
Le Corbusier	Switzerland	1887	0.4	69	11
Le Fauconnier, Henri	France	1881	0.25	17	7
Le Parc, Julio	Argentina	1928	0.25	30	0
Leck, Bart van der	Netherlands	1876	0.32	21	11
Leger, Fernand	France	1881	1.1	334	21
Lempicka, Tamara de	Poland	1898	0.45	87	0
Lhote, Andre	France	1885	0.3	358	11
Lichtenstein, Roy	America	1923	0.4	173	7
Louis, Morris	America	1912	0.7	80	0
Lurcat, Jean	France	1892	0.35	118	10
Macdonald-Wright, Stanton	America	1890	0.35	13	13
Macke, August	Germany	1887	0.35	30	9
Magritte, Rene	Belgium	1898	0.7	178	0
Marin, John	America	1870	0.3	16	19
Marini, Marino	Italy	1901	0.3	93	37
Marquet, Albert	France	1875	0.25	416	7
Marsh, Reginald	France	1898	0.25	46	0
Masson, Andre	France	1896	0.4	294	28
Matisse, Henri	France	1869	1.5	140	23
Matta Echaurren, Roberto Sebastin	Chile	1911	0.3	448	5
Merida, Carlos	Guatemala	1891	0.22	75	1
Milne, David Brown	Canada	1882	0.22	34	3
Miro, Joan	Spain	1893	1.1	235	10
Modersohn-Becker, Paula	Germany	1876	0.5	36	5
Modigliana, Amedeo	Italy	1884	0.65	81	0
Moholy-Nagy, Laszlo	Hungary	1895	0.7	23	3
Mondrian, Piet	Netherlands	1872	1.05	72	17
Morandi, Giorgio	Italy	1890	0.25	217	1
Moses, Anna Mary Robertson	America	1860	0.35	56	0
Motherwell, Robert	America	1915	0.45	182	0
Mucha, Alphonse	Czech Republic	1860	0.35	19	1
Munch, Edvard	Norway	1863	1.4	77	21
Nash, Paul	Britain	1889	0.6	22	9
Nevelson, Louise	Russia	1899	0.4	16	0
Nicholson, Ben	Britain	1894	0.5	183	11

Appendix continued

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
Nolan, Sir Sydney	Australia	1917	0.55	151	20
Noland, Kenneth	America	1924	0.25	165	0
Nolde, Emil	Germany	1867	0.55	78	2
O'Keeffe, Georgia	America	1887	0.25	43	1
Olitski, Jules	Russia	1922	0.3	85	0
Orozco, Jose Clemente	Mexico	1883	0.65	17	9
Orpen, Sir William	Ireland	1878	0.45	41	1
Pascin, Jules	Bulgaria	1885	0.3	137	6
Pasmore, Victor	Britain	1908	0.55	44	0
Pearlstein, Philip	America	1924	0.25	25	0
Pechstein, Max	Germany	1881	0.4	156	2
Permeke, Constant	Belgium	1886	0.22	39	8
Picabia, Francis	France	1879	0.65	284	5
Picasso, Pablo	Spain	1881	3	694	27
Piper, John	Britain	1903	0.5	62	1
Pissarro, Lucien	France	1863	0.25	82	10
Poliakoff, Serge	Russia	1906	0.22	375	0
Pollock, Jackson	America	1912	1.35	24	0
Prendergast, Maurice	Canada	1859	0.3	19	6
Preston, Margaret	Australia	1893	0.22	19	10
Rabin, Oskar	Russia	1928	0.22	42	0
Rauschenberg, Robert	America	1925	0.5	170	0
Reinhardt, Ad	America	1913	0.4	56	0
Riley, Bridget	Britain	1931	0.45	42	2
Riopelle, Jean-Paul	Canada	1923	0.22	352	0
Rivera, Diego	Mexico	1886	1.05	81	16
Roerich, Nikolai	Russia	1874	0.35	30	13
Ronald, William	Canada	1926	0.25	20	0
Rothko, Mark	Russia	1903	0.7	101	3
Rouault, Georges	France	1871	0.4	193	1
Russell, Morgan	America	1886	0.25	17	0
Sargent, John Singer	Italy	1856	1.1	45	7
Schiele, Egon	Austria	1890	0.3	33	1
Schlemmer, Oskar	Germany	1888	0.4	34	14
Schmidt-Rottluff, Karl	Germany	1884	0.5	54	4
Schwitters, Kurt	Germany	1887	0.55	157	7
Serusier, Paul	France	1863	0.22	114	3
Severini, Gino	Italy	1883	0.3	103	12
Sickert, Walter Richard	Germany	1860	1.35	138	9
Signac, Paul	France	1863	0.25	116	1

Appendix continued

Artist name	Country of birth	Year of birth	Column-inches	Nr. paintings	Nr. of journeys
Siqueiros, David Alfaro	Mexico	1896	1.1	108	18
Slevogt, Max	Germany	1868	0.35	74	7
Sloan, John	America	1871	0.35	30	6
Soutine, Chaim	Belorussia	1893	0.5	163	1
Spencer, Sir Stanley	Britain	1891	1.3	55	6
Stael, Nicolas de	Russia	1914	0.45	131	13
Steer, Philip Wilson	Britain	1860	0.35	53	18
Stella, Frank	America	1936	0.4	196	4
Stella, Joseph	Italy	1877	0.35	19	1
Sutherland, Graham	Britain	1903	0.6	85	21
Tamayo, Rufino	Mexico	1899	0.3	179	7
Tanguy, Yves	France	1900	0.22	69	1
Tapies, Antoni	Spain	1923	0.25	381	0
Tchelitchew, Pavel	Russia	1898	0.22	34	2
Thomson, Tom	Canada	1877	0.22	20	0
Tinguely, Jean	Switzerland	1925	0.22	104	1
Tobey, Mark	America	1890	0.35	62	3
Toorop, Jan	Indonesia	1858	0.3	28	3
Torres-Garcia, Joaquin	Uruguay	1874	0.25	161	2
Tworkov, Jack	Poland	1900	0.22	30	0
Utrillo, Maurice	France	1883	0.22	585	1
Valadon, Suzanne	France	1865	0.45	105	0
Vallotton, Felix	Switzerland	1865	0.3	195	0
Vasarely, Victor	Hungary	1908	0.22	700	3
Villon, Jacques	France	1875	0.45	142	9
Vlaminck, Maurice de	France	1876	0.3	315	2
Vuillard, Edouard	France	1868	0.35	284	8
Warhol, Andy	America	1928	0.22	1279	1
Weber, Max	Russia	1881	1.45	32	0
Wesselmann, Tom	America	1931	0.35	334	0
Williams, Frederick	Australia	1904	0.3	49	12
Zorn, Anders	Sweden	1860	0.6	98	36
de Kooning, Willem	Netherlands	1904	0.6	208	1

Source: All information on artists were obtained from Grove Dictionary of Art: Online (2010)

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