Chapter 23

ARTISTS' CAREERS AND THEIR LABOR MARKETS*

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Abstract

This chapter is a continuation of ongoing work by economists and others on artists' labor markets and careers. It highlights the use of quasi-panel data obtained from census data to examine the employment and earnings of artists while comparing them to all the other professional and technical workers. It also provides a glimpse into what can be learned about artists' careers from true panel data.

Quasi-panels from the seven most recent US censuses (1940–2000) provide a reasonably consistent set of findings in each census year. Artists are found to work fewer hours, suffer higher unemployment and earn less than members of the reference group. Over the sixty year period, disparities in unemployment and annual hours worked are found to shrink somewhat, but disparities in earnings do not. Artists earned less across all years even when only members working full-time year-round of each group are compared. The earnings of artists are found to display greater variability than those of other professional and technical workers.

The National Longitudinal Survey of Youth 1979 is used to examine almost twenty years in the artists' lives and provides some insights into their careers. It suggests that many people participate in the artistic labor market, but that few succeed to the point that enables them to develop a career in the arts. In part due to their relatively high educational levels, artists are found to be able to transition from forays into arts occupations to jobs in professional and managerial occupations, not into service occupations as artist 'mythology' might suggest. We find that when the artists are young and struggling to make it they do work in various service occupations that tend to provide greater work schedule flexibility.

Keywords

artists, artists' earnings, artists' labor markets, artists' careers, National Longitudinal Survey of Youth 1979

JEL classification: Z11, J44

> "It was time. It got to the point where you're just tired of being poor." Bassoonist Chad Alexander ten years after graduating from Juilliard who recently sold his bassoon to cover credit card bills and now works as an assistant insurance underwriter.
>
> (Wakin, New York Times, December 12, 2004)

1. Introduction

Economists' research into the economics of art and culture has a relatively short history. Baumol and Bowen's (1966) book, written forty years ago, is seen by many as the starting point of the economists' foray into this sub-discipline. Research on the artists' labor markets and their careers has even a shorter history. Its empirical roots lie in studies of single artistic occupations that are, for the most part, barely 30 years old.

As might be expected, these early studies were cross-sectional and provided important, but limited information on careers and labor market behavior. Economists learned a great deal from these studies, but they also raised a number of unanswered questions. Table 1 provides a list of some of the landmarks among the empirical studies of artists many of which are discussed in more detail below. The passage of time has allowed economists to enhance their knowledge through the use of increasingly available panel data of various types.

This chapter starts with a description of a framework for categorizing and reviewing existing studies (Section 2). This is followed by a review of some of the major studies in these categories (Section 3) and concludes with two studies of our own. One will provide an overview of many major themes learned from the cross-sectional analysis by examining a quasi-panel for the US (Section 4) based on the US Census Bureau's Public Use Microdata Samples (PUMS) drawn from the US decennial censuses for 1940 through 2000. The other (Section 5) addresses some themes regarding the artists' careers and labor market experiences that cannot be answered by cross-sectional data through the use of the 1979 National Longitudinal Survey of Youth (NLSY79). The last part (Section 6) provides a summary, conclusions and suggestions for further research.

2. A classification scheme for studies of artists' careers

For the most part current research examining the careers' of artists can be placed into four categories. The one to receive the least attention in this chapter develops theoretical models of artistic career processes. MacDonald (1988), for example, developed a two-period model of performers' behavior that predicts young performers will earn incomes that are less than what they could earn outside the arts. The three additional categories of current research relate to empirical research.

The second category utilizes existing information on a group of artists obtained from a variety of sources to develop an understanding of an aspect of artists' careers. Sometimes the data for this research is anecdotal, as in Richardson's (1980) study of opera

Table 1
Some landmarks in empirical research into artist labor markets

Empirical Finding	Authors	Artist Group/Database
Artists as risk-takers	Santos (1976)	US Census
Determinants of artists' earnings using statistical earnings function	Filer (1986)	US Census
Artists' dependence on non-arts jobs for income	Throsby (1986) Jeffri (1988) Wassall, Alper and Davison (1983)	Australian artists Artists in several US cities New England artist survey
Issues in identifying and defining artists	Filer (1986) Wassall and Alper (1985) Karttunen (1993, 1998a)	US Census New England artist survey Finnish artists
Artist moonlighting patterns	Alper and Wassall (2000)	Current Population Survey
Longitudinal analyses of artists' careers	Rengers (2002)	Dutch artists
Career transitions of artists	Alper and Wassall (1998) Smith (2000) Montgomery and Robinson (2003)	Nat'l. Survey of College Graduates US Census College graduates
Examination of artists' entire careers	Galenson (2000a, 2000b)	Painters

singers. Other times it is much more quantitative as in Galenson's (2000a, 2000b, 2001, 2002) studies of painters' careers. Galenson uses auction transactions in order to identify at what point over their lifetimes artists produce their best work.

The third category is based on surveying artists and asking them to recreate their careers by responding to written questionnaires or personal interviews. There are two types of retrospective studies, one utilizing special surveys of artists and the other using surveys of a broader group, including the general population. Examples of the former include Montgomery and Robinson's (2003) study of dance majors and Stohs' (1989, 1990, 1991a, 1991b, 1992a, 1992b) study of graduates of the School of the Art Institute of Chicago. The research by Smith (2000) using the 1970 census for the US and Alper and Wassall (1998) are examples of the latter.

The last category is based on panel data. There are very few examples of research on artists' careers based on true panel data. There are a number of studies that are what might be called "quasi-panels". They follow groups of artists, many of whom are likely to be the same from survey to survey over time rather than following the same group of people/artists from the start to the end of a multiyear period. Two examples of quasi-panel research are the studies of Bielby and Bielby (1987, 1989, 1993b, 1998) based on the administrative records of the Writers Guild of America, west, the union for writers

in the US television and film industries, and the work of Throsby and his colleagues (1986, 1989, 1994, 1995, 2003) utilizing the four surveys of Australian artists for 1983, 1988, 1993 and 2002. The research on US artists from 1940 to 2000 to be discussed later in this paper would also fit into this category.[1]

There appear to be only a few true panel studies. One, by Rengers (1998a, 2002), specifically targeted artists by following a group of 540 artists who graduated from several art schools in the Netherlands. The artists were surveyed twice over a six-year post-graduation period. The first interview was approximately one and one-half years post-graduation and the other was six years post-graduation. The other by Alper and Wassall (2002), which will be presented in detail below, is a study of artists who were part of a panel survey of the US population. It has followed essentially the same group of people for more than twenty years. The former study is limited by the small number of years of information making it difficult to observe and examine the artists' career paths. The latter, while covering a significantly longer time period and thus potentially providing greater insights into artists' careers, was not specifically designed to examine issues that are unique to artists. It also suffers from being a survey designed to represent the general population and therefore includes relatively few artists.

There are a number of advantages to using panel data rather than cross-sectional data [Federal Committee (1985)] when studying artists. Perhaps most important is the reduced variability in the estimates of change when compared to the results from unrelated or pooled cross-sections taken over time. There is no need to control for as many factors related to the change that might impact the reasons for the observed patterns, because in each time period it is the same people being examined. For example there is generally no change in the composition of the sample related to gender, race or ethnicity, all of which can influence the phenomena being measured.

The reliability and accuracy of the information obtained is also another advantage of a panel survey. A panel survey is repeated on a regular basis, so the reference period is generally shorter resulting in less recall bias than a single retrospective survey. Trying to remember what one did over the last twelve months when asked about work activities is much easier than trying to recreate an entire working career that may extend 10, 15 or 20 or more years. Information on income, expenses, and the like, can be recalled for the last year or so, but certainly most people would find it difficult to recall much beyond that. In retrospective surveys, participants tend to selectively telescope, suppress or embellish events that happened to them in the more distant past.

A panel enables data to be collected in a clearly identified time sequence so the direction and causation of change can be more easily and reliably identified. For example, when examining the determinants of who becomes a successful artist it might be interesting to study how a young person's goals and attitudes towards work and his/her

[1] Except for the works discussed in this paper or listed among the references, the authors were able to find little evidence of empirical research on artists in other countries. Most of the research not directly discussed in the paper is either simply cross-sectional or quasi-panel.

chosen profession influences his/her future success. Retrospective information on these issues may be influenced by events that have occurred while information collected at the time these goals and attitudes are being developed is unaffected by subsequent outcomes. Also, it might be useful to examine how attitudes toward the profession are developed over time and the relationship individual experiences have in this process.

The repeated nature of a panel, with a short time period between surveys, tends to lessen the burden on the respondents and therefore is likely to increase their willingness to participate and to provide accurate information. The amount of information that needs to be collected at each interview is less than for a single retrospective survey so the time commitment for each interviewee is reduced. Many questions would not need to be repeated and may simply be updated when necessary, so that new information can be obtained without increasing the respondents' burden. The total amount of information collected through a panel is generally greater than what could be collected in a single retrospective survey.

This is not to say that panel studies do not have disadvantages and problems as well. Perhaps the most problematic is that the full set of benefits to be gained from panel surveys generally cannot be obtained for a number of years. While information from each cross-section can be very useful, the benefits from being able to measure change and long-term outcomes will take time. Participant attrition can lead to serious biases above the typical refusals of any cross-section survey. The cost of a panel survey is generally higher than a retrospective cross-section. For there to be significant value from a panel survey the original budget commitment must be for more than one survey.

Using a panel to study artists has an additional problem if it is not designed specifically for a sample of artists. In the US artists comprise less than two percent of the US labor force so that unless it is a large survey, the number of artists who are likely to be part of the sample is small making it difficult, if not impossible, to obtain reliable estimates. This is an especially difficult problem if there is an interest in exploring the differences among the various genres of artists.

3. Empirical studies of artists' careers

3.1. Careers but not panel

First is an examination of research on artists' careers based on data that are neither panel in nature nor based on surveys of artists. Examples that fit into this category are studies done by Galenson (2000a, 2000b, 2001, 2002), Galenson and Weinberg (2001) and Richardson (1980).

Galenson is interested in determining at what point in the artist's career he/she is most productive. In particular he attempts to identify when artists, i.e., painters, produce their most valuable work and their best work. He is also interested in seeing whether this point in an artist's career has remained constant over time. He uses two sources of information. To determine value he uses data from art auctions. To determine quality he

uses surveys of art history, texts and published monographs, and the paintings that are selected for retrospective exhibitions of the artists' works. He characterizes the authors of the surveys and the curators of the exhibitions as art experts who can provide quality assessments of the artists' works.

Galenson examined the careers of French artists born between 1796 and 1900 and American artists born 1870 to 1940. He found that both the artists' most valued works and their best works tended to occur at particular points in their careers and that these changed over time. For both the French and American artists he determined that the artists born at the beginning of each period produced their most valued and their best work at significantly later points in their careers than those born at the end of each period. His explanation for this result is that the two artist groups introduced innovations into their art in very different ways. The younger artists were "conceptual innovators" who were quick to introduce new ideas into their paintings. As in many other fields requiring considerable amounts of intellect, e.g., physics and mathematics, the best years for what Galenson calls "radical conceptual innovation" tend to be early in a person's career and it is this innovation that makes the artist's product the most valued and his/her best work. The older artists, those born earlier in the periods, were "experimental innovators" who spent many years working to solve a single problem and thus produced a body of work that illustrated the evolution of the problem's solution they wanted to solve rather than a single, revolutionary work. Thus their most valued and best paintings tended to occur much later in their careers.

Richardson's (1980) work was primarily case studies of various American opera singers' careers. He noted that unlike other performers, opera singers cannot really start to train their voices until their late teens or early twenties and that it takes at least five years to develop the voice; the stamina needed to sing an entire opera; to learn to sing the repertoire and how to act it on stage. Opera singers continue to train throughout their careers. Even with constant training few opera singers continue to perform past their early fifties. For many years American opera singers, especially black Americans, had to go to Europe for experience and to develop a reputation and then they would be able to return to a successful career in the US.

3.2. Surveys via retrospection

Montgomery and Robinson (2003) studied the graduates of the Five College Dance Program.[2] The graduates were asked to recreate, through a retrospective survey, their post-graduation behavior. Those surveyed completed their undergraduate degrees over the 1970 to 1998 period. The vast majority (84 percent) worked in dance at some time during the post-graduation period but that proportion decreases quite rapidly over time. Of those who graduated post-1990, 78 percent were still involved in dance in 1998

[2] The five colleges involved are: University of Massachusetts Amherst, Amherst College, Mt. Holyoke College, Hampshire College and Smith College.

with 41 percent dancing and an equal number teaching dance. Of those who graduated pre-1990, only 40 percent were still in dance with fewer than 20 percent indicating that they were dancers and about one-third identified themselves as dance teachers. The average number of years spent dancing, teaching dance or as a choreographer ranged from three to six years. One ramification of the career transition out of dance into other occupations Montgomery and Robinson found was that the program's graduates became more geographically mobile as they moved out of the dance occupations.

Stohs' (1989, 1990, 1991a, 1991b, 1992a, 1992b) studies of graduates of the School of the Art Institute of Chicago were more sociological and psychological than economic, but did identify some aspects of their careers that are of interest to economists. In 1981 she surveyed a group of students who had graduated in 1963. She categorized these artists as either fine artists, those who produce art products, or applied artists, those who produce art for commercial purposes. Stohs found that most of the fine arts majors left the fine arts for advertising, teaching or a non-arts occupation. Only six percent of the fine arts majors were still supporting themselves in the fine arts 18 years after graduation, what she identifies as 'midlife', while almost half were doing so as young adults shortly after graduation.

Stohs characterized artistic careers based on the number of related job changes the artists made over their careers. Her characterization of a continuous career was one with three or fewer related job changes. An interrupted career was one with four or more job changes. Perhaps not surprisingly, she found that men were much more likely to experience careers that were steady with steady promotions than women. Two-thirds of the men and only one-quarter of the women had steady careers with promotions from young adulthood to midlife. Reflective of this difference, Stohs found that for almost three-quarters of the men and just over half the women their artistic work was proving to be their primary source of support. At midlife the female continuous career artists were found to have greater personal income, a higher occupational prestige and significantly fewer children than those with interrupted careers. In a study of a subset of male artists, Stohs found that fine artists were more likely to identify intrinsic motives to explain why they were artists than were the applied artists.

Smith (2000) used the question in the 1970 US Census on the occupation held five years earlier and the respondent's occupation in 1970 to examine the movement of people into and out of artistic occupations. He found that slightly more than 70 percent of the artists in 1965 persisted as artists in 1970. Approximately one-third of those who were no longer artists were working in other professional occupations[3] in 1970 with the others distributed among the non-professional occupations. There were also new entrants into the arts over the five year period. They made up approximately 0.3 percent of those in non-arts occupations in 1965. Almost 55 percent of those who were artists in 1970 had also been artists five years earlier. Almost one-quarter of the artists in 1970 had not been working at any job five years earlier.

[3] The US Census Bureau classifies the artist occupations among the professional occupation category. This category includes other professional workers such as doctors, lawyers and professors of economics.

Smith's primary focus was the determinants of artists' earnings over their careers. He found that having been an artist in 1965 leads to significantly lower earnings (approximately 15 percent less) for people who were no longer artists in 1970. Overall work experience has the inverted 'U' shape effect on earnings for those former artists working in non-arts jobs suggesting that the skills learned while working as an artist may not be readily transferable to non-arts jobs. He found that experience in the arts and the apparent development of arts specific human capital had a positive and significant effect on arts earnings.

In a similar study, Alper and Wassall (1998) utilized the first round of the National Science Foundation's National Survey of College Graduates (NSCG) to examine the determinants of persistence in arts occupations. Like the census data used by Smith, the information in the NSCG was collected in the first interview round as part of a retrospective survey. Information was obtained for 1988 and 1993. Data from the 1990 Census was also part of the NSCG data so that there were three observations on these individuals over this five year period. Those who had worked as artists in any of the three years were included in Alper and Wassall's study.

Over the five year period artists' careers were found to be not that much less stable, at least in terms of occupational changes, than many other occupations. Approximately three-quarters of the artists in 1988 were still artists five years later. This is slightly larger than what Smith found and may reflect that these were artists with at least bachelor's degrees. In the majority of the non-arts occupations examined by Alper and Wassall, between 70 and 85 percent persisted in their occupations over the five year period.

When these artists did change occupations more than one-quarter entered managerial and executive occupations and fewer than two percent were working in food service occupations. An equal amount, approximately ten percent, worked in sales and clerical occupations. They also found a larger percentage of artists left for better pay/promotion or for a career change than did other professionals who left their jobs over the same time period.

There was a considerable inflow of people into the arts occupations over the five year period as well. Fully one-third of the artists in 1993 were not artists in 1988. Approximately one-third of the new entrants came from the stereotypical artists' non-arts occupations, e.g., sales, clerical and food service. People were considerably more likely to indicate that they entered an arts occupation to change their career than were those who entered other professional occupations. There was a smaller, but still considerable, difference in the proportion of people entering arts occupations who indicated they did so to change their working conditions than among those who entered other professional occupations.

Alper and Wassall, using a probit model, examined the determinants of occupational persistence for artists over the 1988 to 1993 period. Several demographic characteristics, the artist's age and gender, were found to significantly impact persistence as an artist over the five year period. Male artists were more likely to persist than female artists. The likelihood of persisting tends to increase with age, but at a decreasing rate with artists older than 50 having an increasing likelihood of leaving the profession, perhaps into re-

tirement. Neither the artist's race, ethnicity nor change in marital status had any impact on persisting as an artist. The only measure of human capital investments that significantly impacted persistence was experience. Whether the experience was full-time or part-time did not matter, the more experience the greater the likelihood of persisting as an artist. There was no significant impact due to differences in the highest degree received or in being an art major. Even with only a limited number of identifiable artistic occupations in the NSCG data available for analysis, Alper and Wassall did find that being a post-secondary school teacher of art significantly decreased the likelihood of remaining an artist over this five year period. Other factors that had significant effects were having a spouse who works part-time, which has a positive impact on persistence, and having a disability, which has a negative impact.

3.3. Quasi-panels

Bielby and Bielby's (1987, 1989, 1993b, 1998) analysis of the Writers Guild of America, west (WGA) membership initially focused on issues related to gender, age and minority status. They started with data from 1982[4] and continue to study these authors today. Over time their focus shifted from analyzing earnings and employment conditions at a point in time to changes over time and the writers' careers.

The membership of the WGA, west, is inclusive of most authors who write for television and film.[5] The WGA's data on these writers is limited to a few basic demographic characteristics (age, gender and ethnicity) and to the earnings received in activities covered by the union's agreements with television and film producers. This limits the conclusions. Without a broader set of information, especially on their other income generating activities, the Bielbys only have a partial picture of what these writers are doing at any point in time and, therefore, over time as well. Since less than half the union's membership works in the industry in any given year, the absence of information on what they are doing when not employed in television or film is difficult to overcome. Therefore, the Bielbys pool the information on the annual panels of WGA members rather than follow the behavior of individual members over time.

In their earliest reports the Bielbys found that women and minorities were disadvantaged relative to the white male members of the WGA. This was true from both the perspective of earnings and employment. While this has changed over time, differences still exist. Throughout the 1980s they estimated that the earnings gap between all female and white male writers ranged between 25 and 40 percent. In the 1990s, through 1997, the gap narrowed to between 10 and 15 percent. The gaps were larger in film than in television. Minority earnings in the 1980s were approximately one-half the earnings of white males, but in the 1990s they were approximately the same. In recent work they

[4] The first year the WGA, west computerized its data.

[5] Television writers do not include those who write for news, sports, other non-fiction shows, game shows and daytime dramas. Film writers do not include those who own the copyrights to their material.

found a much smaller gender gap in earnings between white male and female writers who are recent entrants into the occupation. The employment situation for female writers, as a percentage of total employment, has not changed much over the time period, especially in film and in television since the early 1990s. Minority employment in the industry increased by 66 percent during the 1990s, bringing it to seven percent of total employment.

Recently the Bielbys identified significant changes in the relationship between the writer's age and his/her likelihood of being employed as well as in the writers' age-earnings profiles. The biggest changes in the likelihood of employment occurred from the late 1980s through 1997. The biggest change was the decreased likelihood of older writers finding employment. Between 1987 and 1997, the proportion of writers 51 to 60 years old employed decreased by one-third. For writers in the two older cohorts (61 to 70 and 71 to 80 years old) the proportion employed decreased by 50 percent. The writers in the 30 years old and under cohort were the only ones to see the likelihood of being employed increase.

The change in age-earnings profiles over the 1982 to 1997 period was most profound among writers employed in television and much more modest for those employed in film. For the television writers the transition was from the traditional inverted 'U' shape in 1982 with a peak for writers 51 to 60 years old, to an 'M' shape in 1987 with dual peaks for writers 31 to 40 and 51 to 60 years old, to a relatively flat inverted 'U' in 1991 with little difference in median earnings for writers in the three cohorts between 31 and 60 years old, and ended in 1997 with another highly peaked inverted 'U' shape, as in 1982, but with the peak earnings for writers who were 31 to 40. For writers in film the pattern of change was similar but did not reflect as much change in the age of the peak earners. In 1982 the inverted 'U' shape identified the film writers 41 to 50 years old as having the peak earnings while in 1997 it was those 31 to 40, with the writers in the 41 to 60 cohorts earning only slightly less.

The Bielbys examined various career related issues through the estimation of pooled earnings functions that followed the basic form:

$$\ln Y_{ict} = \alpha + \beta_1 X_i + \beta_2 W_{it} + \gamma_c + \delta_t + \varepsilon_{ict},$$

where Y_{ict} is the WGA earnings for the ith artist who in the cth cohort[6] in year t, X_i are time invariant characteristics of the artist (e.g., gender), W_{it} are traits that vary for the ith artist over time (e.g., experience), γ_c captures the effects that are unique to a specific cohort, δ_t captures year specific effects (i.e., a vector of dummy variables for the year) and ε_{ict} is a vector of random errors [Bielby and Bielby (1993a, p. 14)]. They found that, regardless of the writer's age, experience in the industry has a positive impact on earnings, but that having been recently employed in the industry (i.e., within the past three years) overwhelms the importance of overall experience in determining writers' earnings.

[6] Was admitted as a member of the WGA in year c.

Third parties represent many writers, and other artists.[7] The Bielbys found that representation had a significant impact on both earnings and employment (through the estimation of a logit model for the probability of employment) and that the type of representation was also important. They separated "core" agencies[8] from all other agencies that represent writers and found that writers with "core" agency representation had an increased likelihood of being employed and significantly higher earnings than all other writers. When examining earnings data from 1982 to 1990 they also determined that the disadvantage faced by female writers was continuous over their careers at a constant differential and not cumulative.

Throsby and his colleagues (1986, 1989, 1994, 1995, 2003) have been studying Australia's artists through direct surveys since the early 1980s. The first survey was undertaken in 1983, was repeated in 1987, 1993 and 2002, but does not represent a true panel as each survey involved a different group of artists. Its advantage over the Bielbys' research is that Throsby et al. utilized a data collection instrument designed for artists. A considerably wider range of information tailored to the artists' activities, their earnings and work experiences was therefore obtained.

The findings from the surveys suggest some significant changes in Australia's artists and the career paths they have apparently taken. First and foremost there has been a considerable change in gender composition. In 1983 a bit more than one-third were female while in 2002 they were evenly split. Over the same twenty year period, the artists were getting older (mean age of about 46 years compared to 41.5) while the Australian labor force was staying about the same (37.5 years old in 2002 compared to 38.2 in 1983). They were also more likely to be native born Australians in 2002 than in 1983 (74 percent compared to 67 percent). In examining artists' training, an important aspect of the development of artists' careers, they found that the average time spent training went from about five years to slightly more than four (4.3) in 2002. While the time spent training showed a slight decline, the average age at which the artists start working as professional artists increased from 23 in 1983 and 27 in 1993 to 30 years old in 2002.

It appears that Australia's artists spent considerably more time working at their art in 1993 than they did in 1983. This includes working in their primary artistic occupation, in another arts field and in arts related work, a circumstance that is not unusual for many artists. The increase in hours was approximately 25 percent over the ten year period. This increase in hours working in the arts led to a change in the proportion of time working in the arts, as well, from just over 71 percent to slightly more than 82 percent in 1993. Over the 1993 to 2002 period the time spent in the arts declined by almost eight percent and the proportion of their total time spent working in the arts decreased slightly to 81 percent.

[7] In the US unionization is relatively common among the performing artists, such as actors and musicians, and very uncommon among most other artists.

[8] "They negotiate unique arrangements with the talent guilds and cultivate long-term relationships with those who finance, produce, and distribute new projects."

The artists' increased time and effort working apparently did not pay off in terms of earnings. Throsby (1986) reported that in 1983 artists' earnings from their art was approximately 60 percent of the earnings for all workers in Australia (full-time employees in their main jobs). In both 1993 and 2002[9] the artists' artistic earnings were only 40 percent of the earnings of all workers. If arts related earnings are included the difference was not quite as large, 70 percent in 1983, 60 percent in 1993 and 57 percent of the average earnings for all workers in 2002, but it still shows a decline in the relative earnings of Australia's artists. A comparison of total earnings from all sources shows that in 1983 artists earned approximately six percent more than the average Australian worker; in 1993 they earned only 80 percent of the average Australian's mean earnings. The period from 1993 through 2002 saw a slight improvement in overall earnings to the point where artists' mean earnings were 87 percent of the average full-time Australian employees' earnings.

In Australia, as in much of the rest of the world, artists tend to hold more than one job during the year in order to earn the income needed to survive. The proportion of artists who were multiple jobholders, decreased from almost three-quarters (72 percent) of the artists in 1988 to under two-thirds (63 percent) in 2002.

As far as career development, Throsby et al. find that artists are starting their professional careers increasingly later in life. In 1983 the mean age for the start of their professional careers was 23. A decade later it was 27. In 2002 it is 30. The increase was not uniform across all arts occupations. The 'community artists/community cultural development workers' had the largest relative increase in the average age at which they started their careers. The 'crafts practitioners' had the smallest increase. Perhaps this reflects differences in the relative importance of the formal schooling and training needed to enter these professions. Throughout this 20 year period it was the dancers who started their professional careers at the youngest age (19 in 1983 and 24 in 2002) and the writers who started at the oldest age (28 in 1983 and 37 in 2002).

3.4. True panel data

Rengers (2002) was interested in determining the best model to explain artistic careers. He compared the traditional human capital model, in which the artists' careers are affected by their intrinsic and learned qualities, to the winner-take-all model, in which the relative differences among artists are the most significant factor in explaining the differences in careers. He utilized data from several panels. One panel was comprised of 540 art college graduates in the Netherlands who entered the labor market between 1993 and 1995. Rengers had two observations on their activities. The first observation was approximately one and a half years after graduation and the second was six years

[9] In general, financial information from surveys and censuses are for the year prior to the survey year. For Throsby's 2002 survey the financial year extended from July 1, 2000 to June 30, 2001. In general the survey or census year will be used to identify all the data collected at that time.

later. Another panel represented all the visual artists in the Netherlands who had been surveyed annually starting in 1993. He used the results from four surveys of approximately 500 visual artists for the years 1993 through 1996. A third panel was comprised of 575 visual artists and covered the period 1980 to 1991. While Rengers' analysis was based on a panel, his ability to generalize and fully explore artists' careers was limited because some panels only covered a short period of time while others were limited to one group of artists.

The models estimated were for labor supply, as measured by hours of work, wages and gross earnings as well as for two non-monetary measures of artistic achievement. Rengers' results provided mixed support for both models. He found that inequality in hours, wages and earnings diminished over time, which would be consistent with the human capital model not the winner-take-all model. He did not find any evidence that the art school graduates who left the arts for non-artistic occupations were penalized in terms of their earnings, as one might have suspected in the winner-take-all model. He did find that differences in school location and field of study, measures of signals apparently used by the market, were important in explaining the variation in wages and he believes this provides support for the winner-take-all model. Additionally, Rengers finds that the winner-take-all model better explains the variation in the non-monetary measures he explores, one being the artist's assessment of his/her own reputation and the other a measure of whether the artist received the attention of the media.

Rengers also provides evidence from the Dutch artist samples for some overarching themes found in the literature on artists' careers. Dutch artists started their education and training at young ages, often outside formal schooling, and the vast majority received arts degrees (90 percent), but begin their arts careers relatively late in life because of the amount of education they receive. Their earnings early in their careers tend to be less than that of non-artists with the same amount of education because artists work fewer hours, not because they receive a lower wage. Characteristics of the artist's education were found to have little or no impact on the artist's career. Self-educated artists have the same earnings and the same supply behavior as those with formal arts education and the prestige of the arts college attended does not have long-lasting effects. Female artists' earnings are about one-third less than their male colleagues, a difference that is comparable to the non-arts labor market in the Netherlands. Six years after graduation approximately two-thirds of the artists work exclusively as artists and about an equal proportion work both in and outside the arts (approximately 13 percent). Both age and experience have positive impacts on a variety of measures of success including participation, wages, sales of art works, prices of art works and the frequency of exhibiting in art galleries. Receiving government grants has a positive impact on artists' earnings late in their careers.

Perhaps unique to the Dutch experience, Rengers identifies two distinct career paths for artists. One is the government market and the other is the private market. He finds that the majority of visual artists (approximately 60 percent) participate in both markets with the smallest proportion (approximately 15 percent) with earnings only from the public market and that getting established in a career in the private market takes longer

than getting established in one in the public market but that in both markets success breeds greater success.

4. An empirical investigation of artists in the US: 1940–2000

This section analyzes the employment and earnings of American artists using decennial US Census data from 1940 to 2000. Since it is based on seven unique cross-sections of US artists it is most comparable to Throsby's work and can be categorized among those studies that are quasi-panels via separate cross-sections.

The information from the Census public use samples[10] will be used to examine various aspects of artists' employment patterns, earnings and earnings variability including the estimation of earnings functions for artists for census years between 1950 and 2000. The use of Census data over a 60 year time span provides a clearer perspective of three related issues that have been debated in the economics literature on artists: (1) As working professionals, to what extent have artists fared less well than comparably educated persons in other disciplines? (2) Has the oft-reported disparity in earnings between artists and comparably educated groups grown or shrunk over time? (3) Is this apparent "earnings penalty" due to the characteristics inherent in the nature of the artistic labor market? For example, are artists unusual risk-takers? Or are they unable to properly assess their likely outcomes in a job market increasingly dominated by "winner-take-all" characteristics? This section will not address a fourth important issue: the decision processes of those artists who routinely moonlight, both inside and outside the artistic profession.[11]

This section starts with (A) a discussion of the use of US census data to study artists. It is followed by (B) an analysis of growth in the artist profession between 1940 and 2000, and (C) a summary of the labor market for artists over the same period. The last two sections examine (D) the level variability in artists' earnings, compared to other professionals, and (E) the determinants of their earnings, and the existence of an artistic earnings penalty.

[10] The US Census Bureau as part of its decennial census collects detailed socioeconomic information from a sample of the population using the 'long-form questionnaire'. This information is made available to researchers through data sets that represent either 1 percent or 5 percent of the US population. They are known as the Public Use Microdata Sample or PUMS. The Census Bureau first created PUMS data from the 1960 Census, a single one percent sample was generated. In 1970, six independent one percent samples were generated; three were based on a long-form that went to five percent of the population, and three were based on a long-form that went to fifteen percent. This study uses data from four of these one percent samples to calculate descriptive statistics. In the regression analysis, all three one percent samples from the five percent survey are used. In 1980, three samples were generated: a five percent sample, used in this study, and two one percent samples. In 1990 and 2000, two samples were generated: a five percent sample, used in this study, and a one percent sample.Researchers at the Center for Demography and Ecology at the University of Wisconsin, in collaboration with the Census Bureau, reconstructed the one percent PUMS for 1940 and 1950.

[11] A detailed discussion of the multiple jobholding, moonlighting behavior of artists can be found in Alper and Wassall (2000).

4.1. Using census data

A major constraint facing social scientists who study artists is the paucity of labor market data bases containing sufficiently large numbers of them. The artist labor force in the US is small having grown from 0.7 percent of the entire civilian labor force in 1940 to over 1.4 percent in 2000 (Table 2). Of the cross-sectional and quasi-panel data bases available to researchers in the United States, only the decennial Census Public Use Microdata Samples (PUMS) are large enough to permit meaningful statistical analyses. As a consequence, the information on artists presented herein utilizes public use samples from the 1940 through 2000 censuses. The actual number of artists contained in these data ranges from 3863 in 1940 to 109,469 in 2000, but they represent the entire population of artists in each census year.

Extensive information on housing and personal characteristics of household members is contained in the samples. The information collected in each decade has changed somewhat; a few questions have been dropped or added, and the definitions of terms used in some continuing questions have been altered. Nevertheless, there remains a substantial core information base across all six decades that can be utilized for comparative analyses.

Defining who is an artist can be problematic. Until recently, the National Endowment for the Arts (NEA) used the following eleven Census occupations: (1) actors and directors, (2) announcers, (3) architects, (4) post-secondary art, drama and music teachers, (5) authors, (6) dancers, (7) designers, (8) musicians and composers, (9) painters, sculptors, craft artists and printmakers, (10) photographers, and (11) artists not elsewhere classified (nec). They were originally located within the category called "professional and technical workers". Since the 2000 Census this category has been narrowed to "professional workers". Also, after the 2000 Census the NEA changed its artist definition.[12] The eleven occupations now defined as artistic are: (1) actors, (2) announcers, (3) architects, (4) artists and related workers, (5) authors, (6) dancers and choreographers, (7) designers, (8) entertainers and performers, sports and related workers, (9) musicians, singers and related workers, (10) photographers and (11) producers and directors [US Census Bureau (2003)]. Table A.1 in Appendix A provides a brief evolution of these categories, and reports on the sizes of the samples that were extracted for each artist category.[13]

[12] The Census no longer separately identified post-secondary art, drama and music teachers, and the actors and directors occupation was separated into two groups, one for the actors and the other for the producers and directors. The painters, sculptors, crafts artists and printmakers occupation was subsumed into the new artists and related workers occupation which also includes some artists who were previously in the artists not elsewhere classified occupation. The artists nec has been replaced by the narrower entertainers and performers, sports and related workers nec occupation.

[13] The definitions of many of the artist occupational categories used by the Census underwent changes. The major changes were as follows. The category "showmen" appeared in the 1940 Census only. Directors were not lumped with actors until 1980 (and were mainly classified as managers, and not artists, prior to 1980) and

The availability of Census public use samples to study the labor market behavior of artists is, however, a mixed blessing. Three principal issues arise from the Census data gathering methodology that affect the information published and its interpretation.[14]

One is that the Census artistic occupational categories used by the NEA and most researchers appear to be very inclusive. The Census dancer category incorporates ballet dancers, Las Vegas showgirls and barroom strippers, and the author category includes magazine feature writers as well as poets. The NEA definition of artists includes entire occupational categories that some would argue lie outside the fine arts, such as architects, designers, and radio and television announcers. However, in one respect, it might not be as inclusive as perhaps it should be. Prior to 2000, college and university teachers of artistic subjects were included among the artists, but not their counterparts at the elementary and secondary school levels; currently both groups are excluded from the definition. The eleven Census categories used by the National Endowment for the Arts define the artist profession in what follows.

The second and more critical issue is that the Census Bureau's methodology obscures important aspects of artists' occupational choices. The artistic occupation is unusual in that many of those in it also hold non-artistic jobs, i.e., they are multiple job holders. It has been frequently documented, using direct economic surveys of artists, that most artists report working in non-artistic jobs in a given year [e.g., Alper and Wassall (2000); Kingston et al. (1981, 1986); Throsby and Hollister (2003); Wassall and Alper (1984, 1985, 1990, 1992); Wassall, Alper and Davison (1983)]. Those who report working in non-artistic jobs also report that a significant percentage of their time is devoted to working in these other occupations, and that a significant percentage of their total earnings, typically well over half, derives from this non-artistic work.[15] However, the Census requires that a person filling out its long form choose a single occupation. This choice

in 2000 they were removed and placed in a separate category with producers, but the combined category was retained among the artist categories. Announcers was not a separate category until 1970; prior to that, they were not enumerated as artists at all. The category of art, drama and music teachers did not exist prior to 1970; before 1970, these artist/teachers were classified with their artist counterparts (e.g., "musicians and music teachers"). In 2000 the post-secondary school teachers of art category was no longer separately identified and therefore could not be included in the artist definition. Prior to 1980 window dressers were a category separate from designers; in 1980 both were lumped into the designer category. Other artist occupations experienced small changes over this period. The sole exception is authors, whose definition remained unchanged over the period. Citro and Gaquin (1987) have estimated the total artist population for the census years of 1950 through 1980 using reconstructed artist occupational categories based on the 1980 definitions cited above. Their estimates of total artists in these years are slightly different from ours, which are directly projected from Census Public Use Microdata Samples.

[14] For a more exhaustive discussion of the strengths and weaknesses of census data on artists see McNertney and Waits (1989) and Wassall and Alper (1992).

[15] Kingston, Cole and Merton (1981), in their survey of 2241 American authors, report that while the median 1979 income from the writings of these authors was $4800, their median personal income from all sources was $27,000. In a survey of 494 American composers, Felton (1978) reports a median family income of $20,000 in 1974, but a median income of only $168 from composing. Wassall, Alper and Davison (1983) asked 3027 New England artists to classify their 1981 work time and earnings into artistic, arts-related, and non-arts-related. With a definition of artistic occupations that was more narrowly defined than in the Census it was found that

is based on time spent at work during a single reference week. Once this occupational choice is made, all time spent working and all earnings in the year prior to the Census become attributed to that occupation.[16]

Nevertheless, the Census method of defining an occupation based on one's principal activity in a reference week is appealing to economists. As Filer (1988) notes, "a worker who spent 20 hours every week producing paintings and 30 hours a week teaching would be classified as a teacher. Conversely, a worker who spent 20 hours every week in the classroom and 30 at her easel would always be a painter … Census definitions result in a bias towards including only those who achieve the most success in their art form as artists."

The use of a market test to define who is an artist troubles some observers. Regardless of one's position on this issue, one must be aware that, when working with aggregated Census data on artists, unlike most other professions, an unknown but significant percentage of the reported work effort and earnings will be from other, non-artistic occupations. The dynamic choices members of this unique profession make in dividing their work time among diverse occupations cannot be observed using Census data.

The third issue is the Census policy of top-coding certain variables for reasons of confidentiality, including the individual's age and the individual's income and earnings. Most importantly, in the 2000 Census an individual's reported wage and salary earnings is capped (top-coded) at a maximum level of $175,000.[17] All those individuals earning above this level are assigned the state's mean earnings for those earning above the top-code. For example, all Massachusetts residents who had wage and salary earnings in 1999[18] above $175,000 would have their earnings reported as $322,000. Thus the

only 24 percent of the survey respondents held artistic jobs alone during the year. Of the artists who held other types of jobs as well, 52 percent held artistic and arts related jobs, 29 percent held artistic and non-arts related jobs and 19 percent held all three types of jobs. Of the artists' average labor earnings of $14,079 in 1981, 46 percent was derived from artistic work, 34 percent from arts-related work and 20 percent from work which was neither artistic nor arts-related in nature. In this study teaching and coaching were defined as arts-related work. Direct surveys of artists typically employ a more narrow definition of "artist" than the Census. While they contain a higher percentage of "traditional" artists, they incorporate some persons who spend little time and earn little money at their art, but who define themselves as artists. By defining artists' occupations more narrowly, these studies may also attribute a smaller percentage of their total earnings to their art work. Also, the low percentages of earnings from artistic work cited in the studies above are due in part to their not counting earnings from teaching in one's profession as part of artistic income.

[16] An intriguing question is: What choice do artists make when confronted with the reference week work question? In direct surveys of artists, it is common that they signify being an artist is their principal profession despite little evidence of work time or of financial success. Their artistic occupation often is more prestigious than any other stated occupation(s). Do artists behave similarly when filling out the Census form, or do they answer the reference week work question literally?

[17] Earnings in each category are top-coded in every year: at $5000 for 1939, at $10,000 for 1949, at $25,000 for 1959, at $50,000 for 1969, at $75,000 for 1979, and at $90,000 in 1989. In 1999 there were top-codes for each type of income with wage or salary income top-coded at $175,000, self-employment income top-coded at $126,000 and total earnings top-coded at $310,000. Summing the categories to determine total earnings reduces the compression somewhat, but it is still true that actual means and standard deviations will be underestimated.

[18] US Census data on earnings and time spent working are for the calendar year prior to the census year.

earnings of the highest paid members of any occupation may be underestimated. These earnings caps have risen from decade to decade. To a small but unknown extent, the stated mean earnings and degree of earnings inequality in the artistic (and any other) profession will be underestimated using Census data.

4.2. Size and growth of the artist profession: 1940–2000

The growth in the artist labor force during the period 1940–2000 has been dramatic. In 1940, there were 386,000 artists in the US labor force, or 0.7 percent of all its members. By 2000, the number of artists had increased fivefold to 1,931,000, or 1.4 percent of the labor force.[19]

During the post-World War II period, the growth of the civilian labor force was fueled by rapid growth of the service sector. Most professional workers, and most artists, work in service industries. A second trend abetting the post-war growth in the civilian labor force has been increasing labor force participation rates of women. The growth in both male and female professional and technical workers (and artists as well) substantially exceeded the growth in the labor force as a whole; part of this rapid growth reflects a higher proportion of women who work in these professions. Even though women have been disproportionately represented in the professions, professions other than artists have typically contained a higher proportion of women.

These trends are reflected in the relative growth rates of the three labor force categories in Table 2. Between 1940 and 2000, the civilian labor force grew by 166 percent. The professional labor force, however, grew at a rate of 542 percent over this period. The artist labor force increased by 400 percent, somewhat less than the professionals overall but considerably greater than the labor force. In recent years, the growth in artists has been more pronounced. Between 1980 and 2000, for example, the professional labor force increased at 103 percent while the rate of increase of the artistic labor force was 77 percent.

The growth in artists is drawn from Census information published after each Census; thus they incorporate the differences in the definition of artists noted above and in Table 2. In the sections which follow, the implications of changing occupational definitions of artists over time are minimized primarily by analyzing all artists as one broad occupation. There still exist less important definitional changes which over time have added to or subtracted from the artistic labor force. These, noted above, primarily affect the number of directors and announcers enumerated as artists from 1960 to 1980. The exclusion of the post-secondary school teachers of art from the 2000 Census is likely to have an impact, but the extent is not clear.

[19] Authors' calculations and Ellis and Beresford (1994, p. 6).

Table 2
Growth in artists vs. growth in the civilian labor force and all professional workers: 1940–2000 (numbers in thousands)

Category	1940	1950	1960	1970	1980	1990	2000	Change (%) 1940–2000
Civilian labor force	51,742	58,999	67,378	79,802	104,058	122,473	137,669	166.1
Professionals	3879	5081	5543	8800	12,275	16,648	24,905	542.0
Artists	386	441	492	737	1086	1671	1931	400.3

Source: US Bureau of the Census (1975, Series D 182–232, p. 139 and Series D 232–682, p. 140) for 1940–1950; Citro and Gaquin (1987, Table II.1), for 1960. Ellis and Beresford (1994) for 1970–1990. 1997 Statistical Abstract, Table 645, for 1996; authors' calculations.

4.3. Labor supply and labor market characteristics

In examining the labor market outcomes of artists, some perspective can be gained by comparing them to an appropriate reference group of workers. Most Census-based studies have compared artists' labor market outcomes to a reference population. The choice of reference population has not been consistent, ranging from specific occupations with comparable educational attainment [Santos (1976)] to specific professional occupations [Waits and McNertney (1980)], to all workers [Filer (1986)], and to all managerial, professional, and technical workers [Filer (1988, 1989)].

This research lies in a similar vein. The conclusions drawn about artists are compared to those for all professional workers, excluding artists. All other professional workers were chosen as a reference group because (a) they possess similar demographic and socioeconomic characteristics, (b) they comprise the category in which artists were initially classified by the Census and (c) by choosing all other professional workers, one is unlikely to bias comparisons to artists as might occur by selecting specific occupations.

Some basic comparisons are shown in Table 3. In this table, labor force and socioeconomic characteristics of both artists and professional workers, excluding artists, are reported and compared.

In many respects artists closely resemble members of other professions. Some distinctions, however, are apparent. Perhaps most important is the additional years of schooling that other professional workers have achieved relative to artists. This difference has narrowed from 2.5 years in 1940 to less than one year in 2000.[20] Another less obvious (and perhaps less expected) difference is that the artist labor force has, for

[20] The comparison of educational levels for 1990 and 2000 to prior census years is weakened because since 1990 the Census has reported on highest degree or level of schooling completed and not years of schooling. Using data on both years of schooling completed and highest grade/degree completed for 1990 collected by the US Census Bureau [Kominski and Siegel (1993)] the authors developed a method to convert highest grade/degree completed to years of schooling based on the average number of years it took to complete the grade/degree.

Table 3
Labor market characteristics of artists and other professionals in the experienced civilian labor force: 1940–2000 (median in parentheses)

	Age	Years of school	Women (%)	White (%)	Black (%)	Unemp. (%)	Worked in 1999 (%)	Self-emp. (%)	Full-time* (%)	Hours worked*	Weeks worked*
1940											
Artists	37.9	11.7	33.0	95.4	4.2	11.0	92.1	33.4	39.2	30.1 (40.0)	38.3 (50.0)
Profs.	38.3	14.2	43.7	95.9	3.9	3.0	96.0	16.3	49.4	39.4 (40.0)	42.6 (52.0)
1950											
Artists	37.8	12.8	34.7	95.6	4.0	4.9	91.8	26.5	25.5	33.9 (40.0)	40.1 (51.0)
Profs.	38.9	14.4	35.2	95.5	4.2	1.4	94.5	12.8	41.6	40.9 (40.0)	42.7 (52.0)
1960											
Artists	40.2	13.7	38.6	96.1	3.0	4.0	98.4	28.2	42.9	33.2 (40.0)	41.8 (51.0)
Profs.	40.0	15.0	38.2	95.0	4.1	1.2	98.5	10.4	57.6	39.8 (40.0)	44.1 (51.0)
1970											
Artists	38.6	13.8	29.7	94.7	3.5	4.4	98.1	22.4	50.1	33.9 (40.0)	42.9 (51.0)
Profs.	39.0	15.2	41.1	93.0	5.5	1.7	98.2	8.1	52.9	37.3 (40.0)	43.9 (51.0)
1980											
Artists	36.8	14.5	38.2	92.1	4.3	5.5	95.8	30.1	49.6	35.5 (40.0)	42.1 (52.0)
Profs.	38.0	15.7	47.4	88.7	7.3	2.0	98.1	7.6	58.8	38.5 (40.0)	44.9 (52.0)
1990											
Artists	38.3	14.4	44.3	89.9	4.5	4.8	96.6	31.3	53.1	37.0 (40.0)	43.3 (52.0)
Profs.	39.2	15.3	52.7	86.2	8.0	2.1	98.3	7.5	61.9	39.6 (40.0)	45.9 (52.0)
2000											
Artists	40.2	14.7	45.7	86.2	4.7	4.5	96.8	31.5	56.0	37.9 (40.0)	44.2 (52.0)
Profs.	40.9	15.5	56.6	81.5	8.5	2.2	98.3	6.6	59.8	39.4 (40.0)	45.7 (52.0)

Source: Authors' tabulations from the 1940–2000 Census PUMS.
*In year prior to census year.

almost all the period, been composed of a higher percentage of men and whites than the other professions.

However, the most striking findings are related to the consistently poorer labor market outcomes of artists. Although the disparities between artists and other professional workers narrowed over the 1940–2000 period, they by no means disappeared. Across all seven census years, artists were more likely to be unemployed. Up to 1960, artist unemployment rates were at least three times that of other professional and technical workers; after 1960 artist unemployment rates were between two and three times greater. Artists also have consistently worked fewer weeks per year and fewer hours per week over this period. In each census year the proportion of artists working full-time, year-round (defined as working at least 50 weeks per year and 35 hours per week) was less than the proportion of professional workers. However, the gap between annual hours worked by artists and professional–technical workers fell over this period, with a difference of approximately 125 hours in 1999 down from 520 hours in 1939 and less than 200 hours in 1969. Similarly, the gap in percentage working full-time was lower between 1969 and 1999 than in earlier Census years.

Given that these labor market disparities persist across seven census years, any type of disequilibrium is unlikely to be the cause. Over a sixty year period, one would certainly expect any disequilibrium to have adjusted. This leads to a search for alternative explanations.

Several hypotheses have been advanced as to what characteristics make the artist labor market unique. First, it seems difficult to accept any explanation based on informational asymmetries; surely over sixty years artists and those training to become artists would recognize these disparities and alter their career choices.[21] It is possible that artists value leisure more highly than do members of other professional occupations. However, it seems unlikely that any single occupation would attract only those with a higher value for leisure. This "leisure theory" can be contrasted to Throsby's "work preference" model of artist behavior [Throsby (1994a)], which postulates that the artist is driven to create, and will maximize time spent working as an artist subject to constraints of earning sufficient income, from either inside or outside the arts, to finance an acceptable level of consumption. On the one hand, this theory would imply that artists spend more time working than other workers who receive (greater) disutility from their work. This does not show up in the annual hours worked data. On the other hand, the theory also predicts that, for artists who supplement their arts earnings with jobs outside the arts, as wage rates for non-arts jobs rise, more time will be freed to create art. As the premium to a college or higher level education (which most artists possess) has risen over the last two to three decades, so has the gap in hours worked narrowed between artists and other professionals. This is consistent with artists being able to finance more creative time from higher non-artistic wage rates. Unfortunately,

[21] Compare this perspective to that of Towse (1992a), who argues that artists tend to enter the artistic labor market too frequently because they overestimate the likelihood of future success.

with all income attributed to the reported profession, it is impossible to test these relationships using Census data.

Another set of theories lies in the roles of risk-taking among artists and the rewards to those who rise to the top of their profession. Although these theories were mainly used to explain income distributions among artists, they also have implications for labor supply. This line of reasoning was initially raised by Santos (1976), who asserted that performing artists belong to a class of risk-taking workers who, unlike other workers, are willing to trade off a small chance at substantial financial rewards for a much larger chance of low earnings. Finding that artists' investments in training do not yield financial returns consistent with those in the labor market as a whole, he noted that "risk-preference and psychic income apparently prevail over financial considerations when considering the pursuit of a career in the performing arts" (p. 257). In a nutshell, too many persons pursue careers in the arts because of these two factors. Santos does not explain why artistic careers would disproportionately attract occupational risk-takers, however.

A related theory is found in the literature on the earnings of superstars [Rosen (1981); Adler (1985)]. The predicted effects of this theory on labor supply are more prominent in Frank and Cook (1995); they refer to superstar labor markets as "winner-take-all markets". They note that "market incentives lure too many contestants into winner-take-all markets, and too few into other careers" (p. 103). They attribute this outcome in part to contestants' overestimates of their talent. However, they add that as long as market entrants base their decision on expected earnings rather than marginal earnings, the number of entrants will be greater than that what is socially optimal.

In somewhat different ways, both approaches imply that the nature of artistic labor markets will induce too many entrants. These arguments are consistent with the observed data on employment found in the Census.

Benhamou (2000) has an additional set of hypotheses that do not focus on the artist. One focuses on the behavior of the arts institutions and organizations that employ artists rather than the artists' choices. The other focuses on the public policies that support artists, especially those who choose to be self-employed.

Finally, it is worth noting that ease of entry into artistic occupations combined with greater loss of work time due to more frequent transitions from one job to another (both inside and outside their occupation) have also contributed to the consistently lower labor market participation experiences of artists. Thus artists would likely experience greater friction in moving among jobs and, even in a world of perfect information, would spend more time unemployed than members of other occupations. Given the unique extent of multiple job-holding among artists, these phenomena can be viewed as occupational hazards of working in the arts, which must be tolerated even if known in advance. As noted, this conclusion could not be drawn from an examination of Census data alone.[22]

[22] Corroborating evidence may be found in Wassall, Alper and Davison (1983), who report that New England artists were unemployed more times in a year but for shorter durations than members of the labor force in gen-

4.4. Earnings, calculated wage rates, and earnings variability

As noted above, two principal issues have been raised in the literature on artists' earnings. One is the existence and extent of an earnings penalty facing artists, compared to other workers of comparable education and skills. The other is the existence of unusual earnings patterns in the artistic labor market, such as greater earnings uncertainty and variability, relative to other occupations. The availability of Census earnings data over a 60-year period enables an extended comparison of earnings, and thus of these two issues. In this section, we examine earnings variability. In the following section, the existence of an earnings penalty is investigated.

In Table 4 the current and real earnings (in 2004 dollars) and estimated hourly wages of artists and other professional workers are contrasted. Means as well as medians are reported since several categories have medians of zero.[23] We report wage and salary, self-employment, and total earnings separately.[24] The definition of labor earnings has remained consistent since the 1950 Census. In 1940, only wage and salary earnings were reported.

The information in Table 4 shows that artists have earned less than other professional workers throughout this period. Both mean and median annual earnings of other professional workers have been higher in every Census year. Unlike disparities in time worked, differences in earnings have not narrowed over time. The difference in median earnings was 33 percent in 1949, and 30 percent in 1999. It has ranged from a low of 14 percent in 1969 to a high of 45 percent in 1979. Although there is no clear cut trend, the largest percentage earnings differences occurred in 1979 and 1989. The differences in mean earnings over the same period are similar, though slightly less. They range from 12 percent in 1969 to 30 percent in both 1979 and 1989.

A major part of the earnings differentials is attributable to artists working fewer hours per year. This is reflected in the generally smaller differentials in median wages between the two groups, and in the virtually equivalent mean wages. These figures suggest that a comparison of only full-time workers in the two groups would reduce earnings differences; in fact, it does.[25] This approach of limiting comparisons only to full-time workers

eral. It can also be found in Menger and Gurgand's (1996) study of performing arts in France. They document the role played by the French unemployment insurance system in the pattern of performers' employment over their careers.

[23] A median of zero exists for self-employment earnings because the majority of artists and professional and technical workers are employees and not self-employed.

[24] In the Public Use Microdata Samples, labor earnings are composed of (1) wage or salary income, (2) nonfarm self-employment income, and (3) farm self-employment income. From 1970 to 1990 earnings are reported separately in each of the above categories. From 1950 to 1960 and again in 2000 earnings from (2) and (3) were collapsed into one category. In 1940 only wage and salary earnings were reported.

[25] For example, the median earnings of full-time year-round professional and technical workers were the same as those of artists in 1969, but exceeded artists' earnings by 15.2 percent in 1979, by 16.5 percent in 1989 and by 15.4 percent in 1999. The pattern of differences in mean earnings between the two groups was similar over the same time period.

Table 4
Mean earnings of artists vs. other professional and technical workers in the experienced civilian labor force: 1940–2000* (in current and real (2004) dollars; medians in parentheses)

	Artists					Professional and technical				
	Wage & salary	Self-emp.	Total earnings	Wage	Below poverty (%)	Wage & salary	Self-emp.	Total earnings	Wage	Below poverty (%)
1940										
Current	905	NA	NA	0.78	NA	1271	NA	NA	0.77	NA
	(588)			(0.26)		(1000)			(0.56)	
Real	12,436			10.72		17,465			10.58	
	(8080)			(3.57)		(13,741)			(7.69)	
1950										
Current	1913	746	2658	1.57	NA	2510	659	3170	1.52	NA
	(1200)	(0)	(2100)	(0.96)		(2400)	(0)	(2800)	(1.35)	
Real	15,352	5987	21,331	12.60		20,143	5289	25,440	12.20	
	(9630)	(0)	(16,853)	(7.70)		(19,261)	(0)	(22,471)	(10.83)	
1960										
Current	3619	1238	4857	3.63	NA	4759	1158	5917	3.25	NA
	(2800)	(0)	(4000)	(2.49)		(4500)	(0)	(5000)	(2.70)	
Real	23,754	8126	31,879	23.83		31,236	7601	38,837	21.33	
	(18,378)	(0)	(26,254)	(16.34)		(29,536)	(0)	(32,818)	(17.72)	
1970										
Current	6612	1688	8305	5.65	4.9	8019	1309	9342	5.34	3.3
	(5400)	(0)	(7000)	(3.98)		(7500)	(0)	(8000)	(4.36)	
Real	34,411	8785	43,222	29.40		41,734	6813	48,619	27.79	
	(28,104)	(0)	(36,431)	(20.71)		(39,033)	(0)	(41,635)	(22.69)	
1980										
Current	9942	2696	12,657	9.13	7.6	14,882	1562	16,476	9.48	3.5
	(6505)	(0)	(9605)	(5.97)		(13,205)	(0)	(14,005)	(7.60)	
Real	26,156	7093	33,299	24.02		39,152	4109	43,346	24.94	
	(17,114)	(0)	(25,269)	(15.71)		(34,740)	(0)	(36,845)	(19.99)	
1990										
Current	18,985	4966	23,992	16.76	7.2	28,465	2616	31,117	17.31	3.3
	(12,000)	(0)	(18,000)	(10.38)		(25,000)	(0)	(26,000)	(13.46)	
Real	29,243	7649	36,955	25.82		43,845	4029	47,930	26.66	
	(18,484)	(0)	(27,726)	(15.99)		(38,501)	(0)	(40,048)	(20.73)	
2000										
Current	29,353	7238	36,590	23.81	6.9	41,235	3385	44,620	25.10	4.2
	(20,000)	(0)	(27,000)	(15.38)		(34,000)	(0)	(35,000)	(18.75)	
Real	33,652	8298	41,949	27.30		47,274	3881	51,155	28.78	
	(22,929)	(0)	(30,954)	(17.63)		(38,980)	(0)	(40,126)	(21.50)	

Source: Authors' tabulations from the 1940–2000 Census PUMS.
*Year of data is for calendar year prior to census year.

is not pursued here, since a defining characteristic of artists' careers is that they work fewer hours per year than members of virtually all other professions.

Real earnings of artists and other professional workers increased from 1939 through 1969. The decade of the 1970s was a period of high inflation so by 1979 the real earnings of the artists and other professionals had decreased considerably. Unlike the other professions whose real 1999 wage and salary earnings were thirteen percent higher and whose real total earnings were five percent higher, the real earnings of artists, regardless of source, had still not reached their 1969 levels thirty years later. In fact their 1999 wage and salary earnings were two percent lower than in 1969 and their total earnings were three percent lower.

The other issue raised above addresses the question of a possible relationship between the poorer labor market outcomes that artists experience and greater earnings variability among artists than other professions. In the previous section, we reviewed two explanations of such a relationship. Santos' (1976) theory of artists as risk-takers suggests that artistic careers should be characterized by earnings with lower means and greater variability than those in comparable occupations inhabited by risk-averse workers. In fact, he presents evidence from the 1960 Census that the earnings of dancers and singers had higher coefficients of variation than other workers with the same amount of education.

Rosen's (1981) superstar theory also implies greater variability in earnings. However, it further implies that the distribution of income will become more skewed as (1) improvements in technology make it increasingly possible for the top superstars in each field to reap relatively greater rewards, due to the joint consumption characteristics of their product (book publishing and recordings, e.g.), and (2) the number of consumers or the intensity of their demands increases. Both these conditions appear to hold across artistic professions.[26] The superstar model does not predict that mean earnings will necessarily be lower than in comparable occupations without superstar characteristics, however.

Surprisingly few attempts have been made to test these hypotheses. Filer (1989) tested extensively for the presence of greater earnings inequality among artists in the 1980 Census. Using several measures of inequality, he found that "there is greater dispersion of incomes among artists than among the entire work force, or among managers, professionals, and technicians", but that "this difference does not appear to be large" [Filer (1989, p. 72)]. This difference in inequality seems attributable to two factors. One is the greater variability in annual hours worked by artists compared to the above reference groups. Differences in inequality were less when only full-time, year-round workers were compared. They were also less when artists were compared to selected, narrowly-defined occupations. Looking at three-digit occupations, he found that measures of earnings inequality "for occupations where individual talent and performance are important determinants of earnings tend to be similar to those for artists" (p. 74).

[26] Frank and Cook put it like this (p. 121): "The growing importance of winner-take-all markets thus implies a change in the pattern of incomes observed in the economy. More specifically, it implies that even if we control for age, education, experience, ability, and other individual characteristics thought to influence productivity and hence income, we should see greater income variability now than in the past."

To address this issue more comprehensively, in Table 5 we compare various measures of earnings variability by comparing artists to other professionals from 1940 to 2000. In Table 6, we make similar comparisons among selected occupations at the three-digit

Table 5
Measures of low and high incomes and income variability, artists and professionals in the experienced civilian labor force: 1940–2000*

		Percent with zero or less income from				Percent with income at maximum from				Variability in total earnings	
		Wage & salary	Self[1]	Total[2]	All[3]	Wage & salary	Self[1]	Total[2]	All[3]	CV[4]	Mean/median
1940	Artists	32.7	NA	NA	NA	2.0	NA	NA	NA	1.231	1.540
	Profs.	22.6	NA	NA	NA	2.6	NA	NA	NA	0.944	1.271
1950	Artists	33.7	73.8	12.1	9.9	1.4	2.1	3.5	3.8	0.940	1.266
	Profs.	20.5	84.5	8.5	6.9	1.3	2.7	4.1	4.7	0.766	1.132
1960	Artists	28.0	67.5	7.2	4.1	0.5	0.7	1.4	1.6	0.988	1.214
	Profs.	13.4	84.8	4.4	3.6	0.4	1.0	1.7	2.0	0.849	1.198
1970	Artists	19.4	77.9	3.9	2.9	0.3	0.3	0.7	0.9	0.951	1.186
	Profs.	8.4	90.3	2.4	1.8	0.2	0.5	0.6	1.0	0.845	1.168
1980	Artists	24.6	73.9	5.4	3.4	0.7	0.5	1.3	1.5	1.036	1.318
	Profs.	6.7	91.8	2.2	1.3	0.8	0.4	0.9	1.5	0.827	1.176
1990	Artists	23.5	69.9	5.0	3.3	1.7	0.6	2.6	3.1	1.132	1.333
	Profs.	5.9	90.5	1.9	1.2	2.6	0.9	3.6	4.2	0.924	1.197
2000	Artists	23.3	72.4	4.5	3.0	1.1	0.6	1.0	0.0	1.239	1.355
	Profs.	5.3	92.2	1.8	1.2	1.5	0.7	1.4	0.0	1.090	1.275

Notes: Reporting of self-employment earnings, total earnings and total income allows for negative amounts. Prior to the 1970 Census, self-employment earnings included earnings from farm sources; from 1970 on, they are from non-farm sources only. Total earnings include all wage and salary and self-employment earnings. All income sources were capped at a maximum amount by the Census. The maximum reportable amounts in each income category for each Census year were: in 1940, $5000; in 1950, $10,000; in 1960, $25,000; in 1970, $50,000; in 1980, $75,000; and in 1990, $90,000. In 2000 maximum reportable earnings/income varied by type of income and were: $175,000 for wage and salary earnings; $126,000 for self-employment earnings; and $310,000 for total earnings. Total earnings were not directly reported in the 1950–1980 Censuses but were calculated by the authors. Income from all sources was also calculated by the authors. For 1940, earnings variability measures refer to wage and salary earnings only. See the text for more detail.

Source: Authors' tabulations and calculations from the 1940–2000 Census PUMS.

[1] Self-employment earnings.

[2] Total earnings.

[3] All income. Labor earnings and non-labor income.

[4] Coefficient of variation.

* Year of data is the calendar year prior to the census year.

Table 6
Professional occupations with greatest earnings variability: 2000[1]

Occupation	Mean earnings ($)	Earnings of $0 or less (%)	Earnings greater than $175,000 (%)	Earnings greater than $310,000 (%)	Coefficient of variation		Mean/Median	
					Rank	Value	Rank	Value
Actor	35,545	4.9	3.9	3.1	1	1.774	1	2.031
Announcer	31,739	3.5	1.9	1.7	4	1.580	8	1.580
Artist and rel.	30,427	8.2	1.2	0.5	8	1.305	14	1.415
Athlete	26,160	5.9	1.6	1.3	2	1.727	2	1.869
Author	40,093	6.5	2.9	1.6	6	1.381	12	1.463
Chiropractor	80,646	3.6	12.6	4.5	15	1.123	6	1.613
Dancer	19,709	7.5	0.2	0.1	14	1.141	*	1.314
Entertainer, nec	25,463	6.1	1.2	0.8	5	1.526	7	1.591
Health diag.	32,483	7.6	1.4	0.3	10	1.282	9	1.547
Library tech.	10,731	4.4	0.0	0.0	*	1.076	3	1.788
Misc. health tech.	34,642	2.0	1.6	0.9	11	1.214	13	1.443
Musician	25,323	5.4	1.2	0.6	3	1.596	4	1.783
Other teacher	18,930	5.2	0.2	0.1	9	1.285	5	1.661
Photographer	30,404	4.8	1.4	0.7	7	1.351	10	1.498
Podiatrist	110,813	1.5	20.7	7.1	*	0.906	11	1.478
Producer/Director	53,916	2.5	3.6	3.2	13	1.145	*	1.390
TV, movie camera operator and editor	41,914	4.0	1.7	1.2	12	1.152	*	1.397
Veterinarian	77,158	1.7	8.6	3.7	*	0.967	15	1.403

Source: Authors' tabulations from 2000 Census PUMS.
*Occupation not in the top 15.
[1]Year of data is for calendar year prior to Census year.

level using 2000 Census data. Any comparisons using Census data are subject to some degree of bias because of the Census practice of top-coding all income categories. In both tables, earnings at the high and low ends of the distribution are examined, and two measures of earnings inequality are provided, the coefficient of variation and the ratio of median to mean. The initial comparison is limited to all artists and all professional workers.

The data in Table 5 show that earnings inequality among artists was greater than among other professional workers in all seven census years. Excluding 1939, the year in which self-employment earnings were not reported, both the coefficient of variation and mean/median measures show increases in inequality over time for both artists (as predicted by Rosen) and other professional workers. Earnings inequality among artists has grown at a faster rate than for other professional workers. In terms of the size of the tails of the earnings distribution, artists were more likely in every year to have total earnings (net of expenses) of zero or less than the other professional workers. The

likelihood of having total earnings at the maximum or top-coded level in each year was roughly equal for the artists and the other professionals.

To account for the possibility that non-earnings sources, such as royalty income, further contributed to inequality, the pattern of income from all sources was examined. This made little difference in the results. The same tests were further performed on full-time year round workers (not shown). Not surprisingly, the difference in inequality between artists and professional and technical workers narrows but does not disappear when only full-time, year-round workers are compared.

A detailed examination of the fifteen professional occupations with the greatest earnings inequality in 1999 is shown in Table 6. The occupations were ranked using the mean/median and the coefficient of variation.

Although there are 123 professional occupations, nine of the eleven artist occupations show up in the top fifteen when ranked by coefficient of variation, and seven show up when ranked by mean/median. Regardless of the measure, actors have the greatest variation in total earnings. The three artist occupations with lowest earnings inequality, regardless of measure, are dancers, designers and architects. It is also true that within this group of high variance occupations the arts occupations generally have the largest percentage of members with earnings of $0 or less in 1999 and the largest percentage with earnings above the Census established top-code ($310,000).

It is also interesting to note the nature of the non-artistic occupations found in Table 6. They do not generally correspond to ones expected to be listed among those in superstar or winner-take-all markets. Perhaps the sole exception is athletes, which ranked second using either variability measure.

4.5. Earnings functions

To gain a deeper understanding of whether, how and why artists are different from other workers, and to more accurately determine any earnings penalty from being an artist, earnings functions for artists and for other professional and technical workers are estimated.

This is by no means the first use of earnings functions to explore possible differences in the rewards to education, training and other labor market attributes between artists and a reference group. Using 1980 US Census data Filer (1986) compared the earnings of artists to those of the general work force. Filer (1990), using the same data source, focused on the return to years of education among artists. Also, Withers (1985) compared the earnings of artists (collected from a special survey of artists) to the earnings of the general work force (using Australian Census data). In addition, this approach has been used to examine artists' earnings recorded in special surveys, as in Snooks (1983), Wassall and Alper (1984), Montgomery and Robinson (1993) and Throsby (1992, 1996).

In the earnings studies comparing artists to a reference group, some consistent findings emerge. Artists do not seem to fit the standard earnings model as well as other workers, and earnings functions for them have poorer goodness-of-fit [Filer (1986)].

The return to education for artists is lower [Filer (1986); Withers (1985)], or even negative [Withers (1985); Throsby (1992)].

As discussed in previous sections, what makes this research unique is the estimation of earnings functions from a consistent data source over a period of sixty years. Earnings functions for artists and other professional workers are compared using samples from the 1950 through 2000 Census years.[27] Selected results from these sets of earnings functions are presented in Table 7 and the definitions for the variables in the model are presented in Table 8. In each census year, identical functions for artists and for professional and technical workers are constructed. Across census years, the variables in these functions are essentially the same; however, some variables were not available in all six census years.[28]

In general, the earnings function coefficients are consistent both across census years and between the two occupational groups. Conventional wisdom and prior research suggests that the determinants of success for artists should be harder to quantify, and this is confirmed here. In four of the six census years the goodness-of-fit for the estimated equation (as measured by adjusted R^2) of the professional and technical workers earnings function is greater than that of the artist earnings function, but not that different.

Consistent with results from other studies, the return to an extra year of education is found to be greater for professional and technical workers in all years except for 1949. The interpretation of this result, based on Wassall and Alper (1984), Towse (1992a) and Rengers and Madden (2000), is that since Census data mixes artistic and non-artistic earnings in reported total earnings of artists, the resulting coefficient of years of education in the earnings function reflects no or negative correlation of education with artistic earnings and a positive correlation with non-artistic earnings.[29] This was also observed by Montgomery and Robinson (1993) using data from a different survey. The relative difference in 1999 is among the largest it has been.[30]

[27] Earnings functions for 1940 are not presented. The failure of the Census to collect information on self-employment income in 1940 biases results for those professions with substantial income from this source; prominent among such professions are most artistic disciplines.

[28] Other independent variables not reported in Tables 7 and 8 include whether the artist was: a member of another ethnic group (not for 2000); in school at the time of the census; a veteran; a federal, state or local government employee. It also included regional and occupational dummy variables.

[29] Using the New England artist data, it was found that years of schooling was significantly and negatively correlated with artistic earnings, but significantly and positively correlated with arts-related earnings and with non-arts related earnings [Wassall and Alper (1984)]. The finding of a significant negative relationship between years of schooling and artistic earnings may overstate the adversity of this relationship. Presumably artists are maximizing earnings at the margin among all jobs; those who are better educated receive a higher return per extra hour worked in non-artistic jobs, so they reduce their artistic labor supply and thus their artistic incomes. Little or no correlation between education and artistic earnings is consistent with the notion that artistic talent is innate and cannot be enhanced by general education.

[30] US Census data does not provide information that allows the researcher to control for an individual's mental abilities, though there are controls for physical abilities in the data and model. This is likely lead to an upward bias in the estimated coefficients and therefore on the estimated returns to formal schooling [Angrist and Krueger (2001); Griliches and Mason (1972)]. It also is not possible to control for artistic ability, but the impact of this is unknown.

Table 7
Selected results from earnings functions of artists and professional and technical workers in the experienced civilian labor force: 1950–2000* (dependent variable is natural log of earnings; *t*-statistics in parentheses)

Variables	1950		1960		1970		1980		1990		2000	
	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.
Education	0.079	0.060	0.030	0.053	0.059	0.081	0.051	0.080	0.104	0.116	0.080	0.116
	(3.42)	(8.43)	(2.93)	(17.83)	(10.97)	(65.53)	(13.03)	(109.30)	(26.83)	(101.02)	(46.05)	(264.00)
Experience	0.166	0.157	0.140	0.129	0.165	0.112	0.077	0.117	0.174	−0.049	0.127	0.114
	(2.84)	(8.97)	(5.76)	(20.61)	(17.17)	(51.64)	(9.44)	(76.75)	(15.51)	(−16.78)	(35.84)	(133.60)
Experience^2	−0.008	−0.008	−0.007	−0.006	−0.007	−0.004	−0.003	−0.005	−0.007	−0.010	−0.005	−0.004
	(−2.29)	(−6.73)	(−4.23)	(−14.34)	(−11.55)	(−27.82)	(−5.01)	(−46.36)	(−11.15)	(−58.40)	(−21.05)	(−65.93)
Experience^3	0.0002	0.0001	0.0001	0.0001	0.0001	4.5E−5	3.6E−5	8.8E−5	0.0001	−0.0003	5.5E−5	4.2E−5
	(1.95)	(5.58)	(3.10)	(11.01)	(8.16)	(13.80)	(2.53)	(32.00)	(7.97)	(−89.97)	(10.53)	(29.98)
Experience^4	−1.0E−6	−1.3E−6	−7.6E−7	−8.4E−7	−7.1E−7	−2.0E−7	−2.4E−7	−6.7E−7	−7.6E−7	2.8E−6	−2.2E−7	−2.0E−7
	(−1.77)	(−5.33)	(−2.46)	(−9.91)	(−6.69)	(−8.30)	(−2.03)	(−29.37)	(−6.64)	(101.01)	(−5.39)	(−17.49)
Head of household	1.124	0.858	0.894	0.873	0.943	0.602	0.769	0.489	0.692	0.664	0.391	0.281
	(6.53)	(16.96)	(12.92)	(45.95)	(26.75)	(78.35)	(34.35)	(111.99)	(36.20)	(122.74)	(48.33)	(149.59)
Female	−0.589	−0.537	−0.781	−0.332	−0.767	−0.416	−0.622	−0.288	−0.457	−0.310	−0.419	−0.226
	(−3.13)	(−8.74)	(−10.2)	(−14.48)	(−22.53)	(−51.37)	(−26.92)	(−60.70)	(−22.16)	(−50.46)	(−51.58)	(−113.24)
Black	−0.745	−0.267	−0.483	−0.168	−0.168	−0.058	−0.408	−0.166	−0.303	−0.013	0.000	0.050
	(−2.10)	(−2.76)	(−3.27)	(−5.13)	(−2.50)	(−5.10)	(−8.83)	(−25.48)	(−7.10)	(−1.44)	(−0.01)	(17.44)
Asian	1.085	−0.900	0.387	0.111	−0.015	−0.004	0.094	0.116	−0.026	0.028	−0.025	0.032
	(0.97)	(−1.76)	(1.25)	(−1.44)	(−0.14)	(−0.16)	(1.38)	(9.63)	(−0.50)	(2.02)	(−1.24)	(7.51)
Hispanic	−0.401	−0.491	0.200	−0.130	−0.239	−0.105	−0.063	0.018	−0.052	0.007	−0.007	0.047
	(−0.58)	(−1.93)	(0.78)	(−1.78)	(−3.18)	(−5.52)	(−1.09)	(1.57)	(−0.95)	(0.39)	(−0.39)	(11.95)

(*continued on next page*)

Table 7
(*continued*)

Variables	1950		1960		1970		1980		1990		2000	
	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.	Artist	Prof.
Married	0.072 (0.46)	0.310 (6.80)	0.195 (3.09)	0.447 (26.48)	0.137 (4.45)	0.211 (31.55)	0.147 (6.74)	0.197 (48.08)	0.095 (5.18)	0.107 (20.35)	0.027 (3.28)	0.068 (36.02)
Children under 6	−0.089 (−0.57)	−0.074 (−1.74)	−0.379 (−5.63)	−0.160 (−9.27)	−0.102 (−3.07)	−0.171 (−24.34)	−0.259 (−7.00)	−0.181 (−30.38)	−0.384 (−8.87)	−0.922 (−93.19)	−0.088 (−8.15)	−0.043 (−19.11)
Disability	–	–	–	–	−0.393 (−8.18)	−0.349 (−29.31)	−0.845 (−19.10)	−0.640 (−70.72)	−1.071 (−27.07)	−1.674 (−161.17)	−0.094 (−7.27)	−0.050 (−16.45)
Non-citizen	−0.623 (−1.13)	−0.204 (−2.45)	–	−0.037 (−0.73)	−0.322 (−3.67)	−0.046 (−3.22)	−0.484 (−7.13)	0.019 (1.88)	−0.351 (−6.92)	0.058 (5.11)	−0.112 (−5.44)	0.158 (34.97)
Immigrant	−0.006 (−0.02)	−0.891 (−4.33)	−0.048 (−0.26)	–	0.162 (2.91)	−0.291 (−12.93)	0.157 (3.10)	−0.360 (−26.90)	0.098 (2.39)	−0.617 (−41.02)	0.127 (7.49)	0.053 (14.32)
English spoken	–	–	0.033 (0.16)	0.191 (3.19)	–	–	0.055 (1.44)	0.146 (19.65)	0.088 (2.76)	0.087 (9.63)	0.034 (2.49)	0.037 (12.05)
Self-employed	−0.782 (−4.88)	0.005 (0.07)	−0.467 (−7.75)	0.122 (4.48)	−0.448 (−14.56)	−0.177 (15.54)	−0.933 (−42.00)	−0.487 (61.49)	−0.717 (−38.65)	−0.101 (11.08)	–	–
Self-incorporated	–	–	–	–	–	–	–	–	–	–	0.220 (17.98)	0.124 (22.33)
Self-unincorporated	–	–	–	–	–	–	–	–	–	–	−0.491 (−53.91)	−0.402 (−96.83)
R^2	0.148	0.197	0.253	0.242	0.265	0.225	0.163	0.171	0.139	0.196	0.294	0.366
F	8.87	91.68	60.98	552.61	212.76	2375.62	297.47	4231.35	363.54	7807.47	993.73	18,083.03
n	1447	14,010	5681	67,502	19,938	319,695	53,479	841,699	78,610	1,314,705	97,594	1,284,105

*Year of labor market data is the calendar year prior to the census year.

Table 8
Variables in the estimated earnings functions

Variable	Values	Explanation
Education	Years of schooling	Assigned from Census variable measuring highest level of education attained. See footnote 12.
Experience, Experience^2, Experience^3 and Experience^4	Years of experience and years of experience up to the 4th power	Calculated as: age − education − 5
Head of household	1–household head, 0–not household head	
Female	1–female, 0–male	
Black	1–race black, 0–not black	
Asian	1–race Asian, 0–not Asian	
White and other	Racial category excluded	
Hispanic	1–ethnicity is Hispanic, 0–ethnicity not Hispanic	
Married	1–married, 0–not married	Not married includes: separated, divorced, widowed and never married
Children under 6	1–children under six years old present in household, 0–otherwise	
Disability	1–employment related disability, 0–otherwise	
Immigrant	1–born outside the US, 0–born in the US	
Non-citizen	1–citizen of the US, 0–not a citizen of the US	
English spoken	1–speaks English (well or very well), 0–otherwise	
Self-employed	1–self-employed, 0–employee	
Self-incorporated	1–self-employed in an incorporated business, 0–otherwise	
Self-unincorporated	1–self-employed in an unincorporated business, 0–otherwise	

Until 1999 both estimated earnings functions for the artists and the reference group of professionals showed the usual adverse effects on earnings of being a woman or a member of most minority groups. In 1999 the difference in earnings associated with the artists' race and ethnicity seems to have disappeared, not so for their professional peers. The difference between male and female artists' earnings is still significant, as it

Table 9
Statistical rewards and penalties of being and artists

Reward/penalty	Year*					
	1950	1960	1970	1980	1990	2000
Percent return to extra year of education: artists	7.9	3.0	6.0	5.1	10.4	8.0
Percent return to extra year of education: professional & technical workers	6.0	5.3	8.1	8.0	11.6	11.6
Percent earnings difference between artists and other professional & technical occupations: actual	58.2	56.3	43.6	90.3	12.1	21.9
Percent earnings penalty to artists for not working in other professional & technical occupations: calculated using regression coefficients	19.3	25.3	33.2	50.7	5.9	8.4

Notes: Returns to education and earnings penalties calculated from regression equations with selected coefficients shown in Tables 6 and 7. In calculating penalty to artists for not entering other professional and technical occupations, it was assumed that they would distribute among these occupation in the same percentages as the then existing occupational distributions.

*Year of data is the calendar year prior to the census year.

is for the other professionals. This difference has shown little change since 1989 and is still considerable. In 1989 black professionals' earnings were not significantly different from their white peers' earnings, and in 1999 they were actually earning significantly more than white professionals.

Being a head of household affects artists' earnings with a larger positive affect than it does for professional and technical workers in general. Being married has a larger positive affect on professional and technical workers' earnings than on the artists' earnings for the entire period.

Using these earnings functions, the return to an extra year of education can be observed (at mean values) for both groups. This is shown in Table 9. As noted, in all years but 1949, the return to an extra year of education is greater for professional and technical workers.[31]

[31] Though not reported because of possible bias due to missing self-employment income, the calculated return to an extra year of education for artists in 1939 was also (2.3 percent versus 4.2 percent) less than that for other professional and technical workers.

The earnings functions can also be used to estimate a more sophisticated version of the earnings penalty associated with being an artist, referred to earlier. This is accomplished by comparing the predicted earnings of an artist possessing average levels of all characteristics used as explanatory variables in the earnings function to what that artist would earn, with the same average levels of all characteristics, as a professional or technical worker (i.e., using the estimated coefficients from the professional and technical worker earnings function).

Using this technique, the earnings penalty to artists is estimated to be less than that revealed by the direct comparisons of earnings in the previous section. In 1959, an artist with average characteristics is estimated to have earned 25 percent more as a professional or technical worker. In 1969, an artist with average characteristics would have earned 33 percent more as a professional or technical worker. In 1979, an artist with average characteristics would have earned 51 percent more as a professional or technical worker. In 1989 the calculated difference was only six percent. Most recently, in 1999, the calculated difference in the predicted earnings of the average artist in a professional or technical job is eight percent more than they would have earned as a professional or technical worker.

In comparison, Filer (1986, p. 72) calculated, using the same method, the earnings penalty to artists relative to members of the general work force. He finds that an artist with average characteristics would have earned 10.3 percent more as a member of the general work force. He was subsequently criticized by several authors for comparing artists to the general work force. Clearly one would expect a larger earnings penalty to be calculated if artists were simulated as members of occupations where more education is required and returns to additional education are greater. This is consistent with these findings.

Filer (1986) dismisses the notion that artists have a lifetime earnings penalty because the penalty, calculated at the mean, is offset over one's work years by the steeper age-earnings profile of artists than those for the general work force.[32] In this paper a larger earnings penalty is found to exist in each census year when artists are compared to professional and technical workers. Further, since artists' returns from extra years of experience are comparable to that for the overall professional and technical work force, this argument becomes moot when a more appropriate reference group is used.

5. US artists' careers: 1979–1998

In the United States several nationally representative panel surveys have been in existence for some time. Perhaps the best known is the US Department of Labor's National Longitudinal Survey of Youth. Initiated in 1979, it was designed to follow a sample of young people from high school throughout their working careers. Alper and Wassall

[32] Filer (1988) does not calculate an earnings penalty in his paper.

(2002) utilized these surveys to examine issues of longevity and career change among artists in the US.

The survey participants were 14 to 22 years of age when first interviewed in 1979. Two additional panels were added over the years to make the sample more representative of the population. One panel was a military sample that was later dropped. The other was a group of economically disadvantaged youth, some of whom were later dropped as well. In total 12,686 individuals were part of the survey at some point during the more than 20 years it has been in existence. The participants were interviewed annually from 1979 through 1994 and every other year thereafter. The number of artists in the survey is not large enough to provide detailed information by type of artist. Therefore, the artists are grouped into four artistic occupations: performers, architects and designers, visual artists and 'other' artists.

What follows presents a sampling of what can be learned about artists' careers through the use of panel data. It starts by examining the stock and flow of people into and through arts occupations (Section 5.1). Then there is a brief discussion of who they are at the start of their artistic careers (Section 5.2). The next section examines the transitions that occur during artistic careers with respect to the artistic and non-artistic jobs they held (Section 5.3). The last two sections describe who permanently leaves the arts (Section 5.4) and what they do afterwards (Section 5.5).

5.1. Flow and tenure

Clearly evident from this panel survey is the fact that many people explore the arts as an occupation but very few remain as artists for significant periods of time. When comparing the number of people who indicated that they were artists in any given year, i.e., the stock of artists, to the total number of people who moved into and out of artistic occupations over the survey's 19 years, i.e., the flow of artists, a significant difference in these numbers is found. Throughout the period 766 of the 12,686 people indicated that they had worked as artists at some point in time. This is more than five times the number of people who were artists in any given year (Table 10).

Of those who were part of the artist population at some point over this period, almost fifty-seven percent were male. This is slightly greater than the overall male representation in the survey of just under fifty-one percent, suggesting that over their careers men are more likely to explore the arts as a means of earning income than women.

The average time spent working as an artist was only 2.2 of the survey years. In comparison, people who had been artists at some time during the survey period also worked at non-arts jobs in approximately 10.2 of the 16 survey years. The number of survey years working as an artist was slightly, but not significantly, higher for men than women (2.3 years versus 2.1 years). Almost 60 percent of those who worked as artists worked as artists in only one of the survey years. In comparison, more than 98 percent of those who were artists at some point during the period also spent time in more than one year employed in non-arts jobs. Just slightly more than two percent of those who were artists at some point were artists in 10 or more years while more than 60 percent

Table 10
Number of artists by year: NLSY79

	Architect or designer	Performer	Visual artist	Other artist	Total
1979	2	15	10	8	35
1980	3	25	10	14	52
1981	8	23	16	17	64
1982	11	35	13	21	80
1983	13	38	20	23	94
1984	21	41	22	29	113
1985	25	32	19	25	101
1986	33	53	21	24	131
1987	36	39	24	43	142
1988	33	40	29	26	128
1989	20	39	45	5	109
1990	32	43	29	28	132
1991	24	38	28	25	115
1992	32	45	28	26	131
1993	22	42	33	30	127
1998	56	37	29	22	144

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

worked in 10 or more years at non-arts jobs. The female artists' behavior was not that different from the male artists. Only 1.5 percent of the female artists worked as artists in 10 or more survey years, while 2.5 percent of the male artists did the same.

5.2. The start

Artists started working as artists, on average, at just about 25 years of age (Table 11). The difference between starting ages for men and women (approximately a half year) was not statistically significant.[33] Only for the visual artists was the difference in starting age significant (marginally), with women starting to work as painters and sculptors two years later than men.

Overall there is a significant difference in the ages at which the artists started working in their arts occupations when comparing across their first arts occupations. The average age for the architects and designers was significantly greater than any other artist group. This probably reflects the additional years of formal schooling required to become an architect.

[33] It is likely that the true average age at which these artists started working as artists is somewhat lower. Some of the artists were 14 years of age at the first interview and were not likely to have worked at all prior to their participation in the survey, while others were as old as 22 at the first interview. Those who were older may well have already been working as artists by the time they were first interviewed.

Table 11
Average age started being an artist by gender and first arts occupation (years)

	Total	Male	Female
Architect or Designer	27.2	27.4	26.8
Performer	24.2	24.1	24.3
Visual artist	25.4	24.4	26.4
Other	24.9	24.6	25.1

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

5.3. The transition

An examination of those employed in the arts at some time during any given year reveals that the proportion that had an arts occupation as their primary occupation tended to diminish over time. This was determined by looking at the employed artists' current occupations at the time of the interview.[34] While the decline in the proportion with their primary occupations being arts occupations is not constant as artists mature, the trend is clearly in the downward direction. It was at the time of the fourth round of interviews (1982), when the artists were 18 to 26 years old, that the largest proportion of people employed as artists reported having an arts occupation as their primary occupation. Almost 85 percent were working as artists (Table 12). By 1998, the proportion had decreased to approximately 70 percent.

A transition that occurred over the period is the change in variety of artists' non-arts primary work activities.[35] In 1979, the year in which the artists were the youngest, approximately 17 percent of those artists whose primary occupations were not in the arts were working in some other professional or managerial occupation and about one-half were working in sales and clerical occupations. By 1998 more than two-thirds of the artists with primary occupations not in the arts were working in other professional and managerial jobs while fewer than ten percent were working in sales and clerical jobs. Additionally, 17 percent were working in service occupations at the beginning of the survey period, all in food service, but by 1998 only five percent were doing so, none in food service.

There were transitions among the arts activities the artists participated in as their current or primary occupation. They may reflect factors including changes in the artists'

[34] When the artist indicated that s/he was working at more than one occupation, then the one in which s/he worked the most hours was determined to be his/her primary occupation.

[35] This was determined by looking at the primary work activities at the time of the interview for those who indicated that they had worked as artists within the last 12 months but did not indicate that they were working as artists at the time of the interview.

Table 12
Occupation in the years working as an artist (percent)

	Prof. & mang.[1]	Sales & clerical	Craft, operative, laborer or farmer	Service	Total non-art	Arch. or design[2]	Perf.[3]	Visual artist	Other	Total art
1979	4.2	12.5	4.2	4.2	25.1	8.3	25.0	25.0	16.7	75.0
1980	2.6	5.2	5.2	7.9	20.9	16.3	47.4	7.9	21.1	79.0
1981	14.3	6.1	2.0	2.0	24.4	16.3	30.6	16.3	12.2	75.4
1982	6.7	3.3	3.4	3.4	16.8	11.7	38.4	13.3	20.0	83.4
1983	4.5	10.6	4.5	3.0	22.6	10.6	33.2	18.2	15.2	77.2
1984	10.3	4.6	4.5	8.0	27.4	17.2	20.6	18.4	16.1	72.3
1985	3.6	6.0	4.8	3.6	18.0	21.7	22.9	16.8	20.5	81.9
1986	13.3	3.6	12.4	8.8	38.1	19.4	20.3	11.5	10.6	61.8
1987	15.5	4.3	7.8	5.2	32.8	20.7	17.2	12.9	16.4	67.2
1988	8.3	11.9	10.1	6.4	36.7	23.9	12.8	16.5	10.1	63.3
1989	8.0	13.7	10.3	5.7	37.7	18.4	18.4	18.3	6.9	62.0
1990	14.1	6.2	5.4	2.7	28.4	23.0	21.3	15.0	12.4	71.7
1991	16.2	6.5	6.5	3.3	32.5	14.0	21.6	17.3	15.1	68.0
1992	11.2	10.3	0.0	4.7	26.2	23.4	16.8	18.7	14.9	73.8
1993	16.0	7.5	3.8	1.8	29.1	15.1	20.6	17.0	17.9	70.6
1998	20.8	2.5	5.8	1.7	30.8	34.1	9.1	15.0	10.9	69.1

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

[1] Professional and managerial.

[2] Architect and designer.

[3] Performer.

labor markets, changes in the markets for their art, the end result of a search process for the "right" arts occupation or the completion of the requisite education and training. For example, in 1979 approximately 22 percent of the employed artists had occupations among the "not elsewhere classified" group. By 1998 the proportion had dropped to fewer than 15 percent. The performer occupations were the most popular for most of the early part of the period. They were replaced by people transitioning into the architect and designer occupations during the latter part of the period probably reflecting the time required to become trained as an architect.

An examination of the non-arts occupations held by the artists in the years they did not work as artists provides some insights into what the artists were doing to survive and what they do as they stop exploring the possibility of an artistic career. In part reflective of the ages and educational backgrounds of those surveyed in 1979, almost 30 percent of those people who did not work as artists were working at sales or clerical jobs with another 30 percent working in service jobs (Table 13). The proportion working at sales or clerical jobs peaked in 1982, when they were between 18 and 26 years old, and declined throughout the remainder of the period. There was an even greater decline

Table 13
Occupation in the years not working as an artist (percent)

	Professional & managerial	Sales & clerical	Craft, operative, laborer or farmer	Service
1979	12.5	27.6	29.5	30.4
1980	12.6	33.5	30.7	23.2
1981	18.2	30.7	27.9	23.3
1982	22.3	33.6	23.4	20.5
1983	27.8	31.8	20.9	19.4
1984	30.3	30.1	24.2	15.4
1985	33.9	26.9	25.3	14.1
1986	32.0	27.1	28.9	12.0
1987	36.4	27.2	22.6	13.7
1988	40.3	24.2	24.7	10.8
1989	44.8	20.7	22.5	12.0
1990	43.4	20.2	23.0	13.4
1991	49.8	19.5	23.6	7.2
1992	45.3	24.0	22.8	9.9
1993	46.0	19.6	22.6	11.6
1998	57.2	18.3	17.7	6.6

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

in the proportion working in the service occupations. By 1998 only seven percent held service jobs. The greatest growth in employment was found in the other professional and the managerial occupations with the proportion increasing fourfold over the period. This change is reflective not only of the artists aging, but in the investments they made in education and training.

5.4. The leavers

Push and pull factors are both important in the decision to leave the arts as it is for any occupation. By 1998 only 42 percent of those who indicated that they had worked as artists at some time during the period were still working, to some degree, as artists.[36] This means that either the person's current job was among the arts occupations or one of the five other jobs they could have possibly held during the time since the previous

[36] Those who had been artists but who were no longer working as artists were anyone who did not report that s/he worked as an artist for at least three consecutive years. This definition was used to examine the former artists' post-artist careers and to assist in developing a better understanding of the factors that may have enticed them to leave the arts.

Table 14
Artists' current status by first arts occupation (percent)

	Still artist	No longer artist	Status unknown
Architect or designer	53.1	39.6	7.3
Performer	39.8	50.3	9.9
Visual artist	38.7	51.4	9.9
Other	36.3	53.9	9.8
All	41.6	48.1	9.3

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

Table 15
First arts occupation by last arts occupation (percent)

First arts occupation	Last arts occupation			
	Arch./des.	Performer	Visual	Other
Architect or designer	100.0	0.0	0.0	0.0
Performer	1.8	89.0	0.09	8.3
Visual artist	0.0	0.0	95.3	4.7
Other	2.7	2.7	3.6	90.9
All	19.9	26.6	23.4	30.0

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

interview was in the arts. Almost half were no longer working at all as artists. The status of the remaining 10 percent was not known.[37]

Based on their first-arts occupation, the architects and designers were the most likely to still be working as artists in 1998. Approximately 53 percent were still working in the arts (Table 14). Fewer than forty percent of those in the performing arts occupations (actor, dancer, musician, composer and announcer) were still artists. The proportion is basically the same for visual artists. The artists who started out in the 'other' arts occupations were somewhat less likely to still be artists than performers and visual artists.

For the most part artists who stopped working as artists did so from the same arts occupation that they had started in. By comparing the first-arts occupation to the last-arts occupation for those who were no longer working as artists, it was found that the vast majority were participating in the same occupation at both points in time (Table 15).

[37] After the 1990 survey a portion of the people who had been in the supplemental samples was dropped. Included among them were the economically disadvantaged non-black, non-Hispanic males and females who were part of the supplemental sample. They also included those who were lost due to natural attrition.

Architects and designers were the most likely to have persisted in the same occupation. Visual artists were second while the performers and 'other' artists were the least likely to persist in their starting occupations indicating that these artists have experimented the most in the arts.

5.5. *The post-artist period*

On average, the age at which artists stopped working in the arts was 24 (Table 16). This estimate, like the age at which artists started working, is not likely to be representative of all artists. In fact it is likely to be an underestimate of the actual age since the oldest members of the sample were only 41 years old at the time of the last survey, and the youngest were 33. Without observing the artists over their entire lifetimes, the estimate is smaller than the true value. The variation in the age at which artists stopped working as artists related to gender was not significant.

For the most part, those people who had been working as artists but who stopped working in the arts continued to work (Table 17). Almost three-quarters were still employed. Another ten percent were still part of the civilian labor force but were un-

Table 16
Average age stopped being an artist by gender and last arts occupation (years)

	Male	Female	Total
Architect or designer	24.7	25.3	24.9
Performer	23.9	23.3	23.7
Visual artist	23.5	23.5	23.5
Other	23.4	23.2	23.3
All	23.8	23.7	23.8

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

Table 17
Post-arts employment status (percent)

	Male	Female	Total
Employed	74.6	70.8	73.1
Unemployed	8.0	12.6	9.9
Keeping house	0.9	7.3	3.6
In school	7.5	5.3	6.6
Other	5.6	4.0	4.9
Armed forces	3.3	0.0	1.9

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

employed in the year immediately following the year in which they last worked as an artist. The remainder dropped out of the civilian labor force with almost seven percent attending school, nearly four percent "keeping house" and almost two percent joining the armed forces. The remaining five percent were doing something else or were unable to work for some unspecified reason. Some differences were found in what the male and female former artists were doing after leaving the arts.

Post-artist employment status did vary with the last-arts occupation. Architects and designers were the most likely to still be employed in the year after they stopped working as artists. The artists who comprised the 'other' category were the least likely to continue working in the year after they stopped working as artists. Those former artists in the 'other' group of arts occupations were the most likely to be unemployed. Unemployment rates for the former performers and visual artists were essentially the same. The visual former artists were the most likely to be "keeping house" in the year post-art work. Those who were most likely to stop working as artists to attend school were the artists in the 'other' arts group.

There were also differences in the post-arts jobs associated with the former artists' gender (Table 18). There was little difference between the proportion male and female former artists whose post-arts employment was in a non-arts professional or managerial occupation. A major difference in post-arts employment was the proportion of female artists working in sales or clerical occupations. The female former artists were almost twice as likely as their male peers to be working in these occupations. Females were also 50 percent more likely to be working in service occupations than males. Males were considerably more likely to have post-arts jobs in the craft, operative and laborer occupations than their female colleagues.

Reflective of many factors, including their education, training, and prior work experience, the former artists' post-arts occupations varied by their last-arts occupation. Those who had been architects and designers were by far the most likely to be working in non-arts professional and managerial occupations. Those who had been visual artists were the least likely to be working in professional and managerial occupations. The "other" artists, who include college art-teachers and authors, and performers were between the other two groups in the proportion working in professional and manager-

Table 18
Post-arts occupation (percent)

Occupation	Male	Female	Total
Professional + managerial	38.3	34.5	36.9
Sales + clerical	19.5	35.4	25.9
Craft, operative, laborer + farmer	30.1	11.2	22.5
Service	12.0	18.6	14.7

Source: Authors' tabulations and calculations from NLSY79, 1979–1998, Release 10.0.

ial occupations. Overall, almost 25 percent of the former artists were working in either sales or clerical occupations with the former visual artists most likely to be dosing so. Overall, almost 15 percent were working in service occupations with the visual former artists most likely to be doing so. Relatively few former artists worked in the crafts, operatives (including transportation) and laborer occupations.

6. Summary, conclusions and future research

The survey and research presented here is a continuation of the ongoing work of economists, and others, on artists' labor markets and their careers. It highlights the use of a quasi-panel obtained from census data to examine the employment and earnings of artists and compares them to those of all other professional and technical workers. It also provides a glimpse of what can be learned about artists' careers from a study of artists based on true panel data that follows the same individuals over a period of time.

The quasi-panel of data from the seven US censuses, along with research from other countries such as Throsby's work in Australia, provides a reasonably consistent set of findings in each census year. Artists work fewer hours, suffer higher unemployment and earn less than members of the reference group. Over the sixty year period, disparities in unemployment and annual hours worked shrink somewhat, but disparities in earnings do not. Artists earn less across all years even when only members working full-time year-round of each group are compared. The earnings of artists display greater variability than those of other professional and technical workers. The greater earnings inequality of artists is reduced when only full-time year-round workers from each group are compared.

Evidence on earnings and earnings distributions give credence to theories of artists as risk-takers and as participants in winner-take-all markets. Earnings inequality measures for artists (as well as for the general work force) increased over the 1949–1999 period. However, the consistently lower mean and median earnings of artists compared to their reference group over the 1939–1999 period is more in line with a risk-taking theory of artist behavior than one of superstardom, which does not predict that mean earnings should suffer.

Earnings functions for artists and for professional and technical workers are estimated for six of the seven census years. It is shown that the return to years of schooling is lower for artists in all but one year. This is consistent with findings by several authors that education does not significantly increase artistic earnings but does increase their non-artistic earnings.

Earnings penalties that artists face because of their career choices are found to be quite large, varying from 6 to 51 percent of annual artistic earnings across the six census years. In all but one year, the estimated earnings penalty is as great as or greater than the actual observed earnings difference.

The panel data that cover almost twenty years in the artists' lives provides a limited set of insights into their behavior. It does suggest that many people participate in the

artistic labor market, but that few succeed to the point that enables them to develop a career in the arts. In part due to their relatively high educational levels, artists are able to transition from their forays into arts occupations to jobs in other professional and managerial occupations, not into service occupations as the 'mythology' of the arts might suggest. It is true that when they are young and struggling to make it as artists they do work in various service occupations that tend to provide greater work schedule flexibility.

There are a number of questions which are not addressed in this paper. Does the greater amount of multiple job-holding by artists, both inside and outside their artistic occupation, explain some or all the observed differences in annual hours worked and unemployment rates? To what extent does holding jobs outside the artistic profession reduce risk and thus earnings inequality as well as supplement earnings? What triggers the artists' decision to leave the arts for good? How does the allocation of an artist's time to various income generating activities change over his/her career?

These and other questions raised in this paper can best be answered using more detailed data on the careers of artists. There is clearly a need for additional survey-based panel data on artists. The existing national panel surveys in the US, like the NLSY79, are too small. The sample of artists from these data sources are not large enough to provide reliable empirical models of their behavior without aggregating to a level where disparate types of artists are grouped together. Additionally, the information collected, while quite extensive in most cases, is not tailored to unearth information about the unique labor market activities of many artists, especially their multiple jobholding behavior, sources of earnings, allocation of time and costs of producing their art. While a great deal has been learned, there is a great deal more to learn.

Appendix A

Table A.1
Census public use sample artistic occupations and unweighted sample sizes

Occupations (with original titles)	Census year						
	1940	1950	1960	1970	1980	1990	2000
Actors[a]	209	153	179	898	3946	5694	2,568
Architects	201	252	313	2448	5842	7953	10,063
Artists & art teachers[b]	627	781	1289	5095	8905	11,995	14,352
Authors	156	132	322	1253	2720	5920	9327
Dancers & dance teachers[c]	492	144	331	460	875	1235	1566
Designers	246	919	1528	5204	19,945	34,205	42,235
Musicians & music teachers[d]	1480	1619	2293	4913	8251	8653	9770
Photographers	376	570	598	3095	5595	8022	7164
Showmen	76	–	–	–	–	–	–
Entertainers N.E.C.[e]	–	180	157	3161	3098	5717	2289
College art, drama & music teachers	–	–	–	1382	1630	1172	–
Radio and TV announcers[f]	–	–	–	960	2506	3157	3023
Producers and directors	–	–	–	–	–	–	7112
Total	3863	4750	7010	32,913	63,313	93,723	109,469

[a]Called Actors and Directors in 1980 and 1990. Excludes producers and directors in 2000.

[b]Called Painters and Sculptors in 1970; Painters, Sculptors, Craft-Artists, and Artist Printmakers in 1980 and 1990; and Artists and Related Workers in 2000, excludes art teachers.

[c]Called Dancers from 1970 to 1990; and Dancers and Choreographers in 2000, excludes dance teachers.

[d]Called Musicians and Composers from 1970 to 1990; and Musicians, Singers and Related Workers in 2000, excludes music teachers.

[e]Called Writers, Artists and Entertainers, N.E.C. in 1970; Artists, Performers and Related Workers, N.E.C. in 1980 and 1990; Entertainers and Performers, Sports and Related Workers, All Other in 2000.

[f]Called Announcers starting in 1980.

References

Adler, M. (1985). "Stardom and talent". American Economic Review 75, 208–212.

Alper, N., Wassall, G. (1998). "Artists' labor market experiences: A preliminary analysis using longitudinal data". In: Heikkinen, M., Koskinen, T. (Eds.), Economics of Artists and Arts Policy. Arts Council of Finland, Helsinki.

Alper, N., Wassall, G. (2000). More Than Once in a Blue Moon: Multiple Jobholdings by American Artists. National Endowment for the Arts, Washington, DC.

Alper, N., Wassall, G. (2002). "Artists' careers-preliminary analysis from longitudinal data for the US". Rotterdam: 12th International Conference on Cultural Economics.

Angrist, J., Krueger, A. (2001). "Instrumental variables and the search for identification: From supply and demand to natural experiments". Journal of Economic Perspectives 15 (4), 69–86.

Baumol, W., Bowen, W. (1966). Performing Arts: The Economic Dilemma. Twentieth Century Fund, New York.
Benhamou, F. (2000). "The opposition between two models of labour market adjustment: The case of audiovisual and performing arts activities in France and Great Britain over a ten year period". Journal of Cultural Economics 24, 301–319.
Bielby, W., Bielby, D. (1987). The 1987 Hollywood Writers' Report: A Survey of Ethnic, Gender and Age Employment Practices. Writers Guild of America, west, Los Angeles.
Bielby, W., Bielby, D. (1989). The 1989 Hollywood Writers' Report: Unequal Access, Unequal Pay. Writers Guild of America, west, West Hollywood.
Bielby, D., Bielby, W. (1993a). "The Hollywood 'graylist'? Audience, demographics and age stratification among television writers". In: Cantor, M., Zollars, C. (Eds.), Current Research on Occupations and Professions (Creators of Culture), vol. 8. Jai Press, Greenwich.
Bielby, W., Bielby, D. (1993b). The 1993 Hollywood Writers' Report: A Survey of the Employment of Writers in the Film, Broadcast, and Cable Industries for the Period 1987–1991. Writers Guild of America, west, West Hollywood.
Bielby, W., Bielby, D. (1998). The 1998 Hollywood Writers' Report: Telling All Our Stories. Writers Guild of America, west, Los Angeles.
Citro, C., Gaquin, D. (1987). Artists in the Workforce, 1950 to 1965. National Endowment for the Arts, Research Division, Washington, DC.
Ellis, D., Beresford, J. (1994). Trends in Artist Occupations, 1970–1990. National Endowment for the Arts, Research Division, Washington, DC.
Federal Committee on Statistical Methodology (1985). Statistical Policy Working Paper 13 – Federal Longitudinal Surveys. Washington, DC.
Felton, M.V. (1978). "The economics of the creative arts: The case of the composer". Journal of Cultural Economics 2, 41–61.
Filer, R.K. (1986). "The 'starving artist' – Myth or reality? Earnings of artists in the United States". Journal of Political Economy 94, 56–75.
Filer, R.K. (1988). Labor Market Earnings of American Artists in 1980. National Endowment for the Arts, Washington, DC.
Filer, R.K. (1989). "The economic condition of artists in America". In: Shaw, D.V., et al. (Eds.), Cultural Economics 88: An American Perspective. Association for Cultural Economics, Akron.
Filer, R.K. (1990). "Arts and academe: The effect of education on earnings of artists". Journal of Cultural Economics 14, 15–38.
Frank, R.H., Cook, P.J. (1995). The Winner-Take-All Society. The Free Press, New York.
Galenson, D. (2000a). "Age and the quality of work: The case of modern American painters". Journal of Political Economy 108, 761–777.
Galenson, D. (2000b). "The careers of modern artists: Evidence from auctions of contemporary art". Journal of Cultural Economics 24, 87–112.
Galenson, D. (2001). Painting Outside the Lines. Harvard University Press, Cambridge, MA.
Galenson, D. (2002). "Quantifying artistic success: Ranking French painters-and paintings-from impressionism to cubism". Historical Methods 35 (1), 5–19.
Galenson, D., Weinberg, B. (2001). "Creating modern art: The changing careers of painters in France from impressionism to cubism". American Economic Review 91, 1063–1071.
Griliches, Z., Mason, W. (1972). "Education, income and ability". Journal of Political Economy 80 (3), S74–S103.
Jeffri, J. (1988). Information on Artists. Columbia University, Research Center for Arts and Culture, New York.
Karttunen, S. (1993). "How to identify an artist". Conference on Social Theory, Politics and the Arts.
Karttunen, S. (1998a). "How to identify artists? Defining the population for 'Status-of-the-Artist' studies". Poetics 26, 1–19.
Kingston, P., Cole, J.R. (1986). The Wages of Writing: Per Word, Per Piece, or Perhaps. Columbia University Press, New York.

Kingston, P., Cole, J.R., Merton, R.K. (1981). "The Columbia economic survey of American authors: A summary of the findings". Columbia University Center for Social Science, New York.

Kominski, R., Siegel, P. (1993). "Measuring education in the Current Population Survey". Monthly Labor Review, September.

MacDonald, G. (1988). "The economics of rising stars". American Economic Review 78, 155–166.

McNertney, E., Waits, C.R. (1989). "The incomes of cultural providers: A review of current research". In: Shaw, D.V., et al. (Eds.), Cultural Economics 88: An American Perspective. Association for Cultural Economics, Akron.

Menger, P., Gurgand, M. (1996). "Work and compensated unemployment in the performing arts. Exogenous and endogenous uncertainty in artistic labour markets". In: Ginsburgh, V., Menger, P. (Eds.), Economics of the Arts: Selected Essays. Elsevier/North-Holland, Amsterdam, pp. 347–381.

Montgomery, S., Robinson, M. (1993). "Visual artists in New York: What's special about person and place?" Journal of Cultural Economics 17, 17–39.

Montgomery, S., Robinson, M. (2003). "What becomes of undergraduate dance majors?" Journal of Cultural Economics 27, 57–71.

Rengers, M. (1998a). "The careers of visual artists: A longitudinal analysis". 10th International Conference on Cultural Economics.

Rengers, M. (2002). Economic Lives of Artists: Studies into Careers and the Labour Market in the Cultural Sector. Utrecht University, Interuniversity Center for Social Science Theory and Methodology, Utrecht.

Rengers, M., Madden, C. (2000). "Living art: Artist between making art and making a living". Australian Bulletin of Labour 26, 325–354.

Richardson, J. (1980). "Career patterns of American opera singers". In: Hendon, W., et al. (Eds.), Economic Policy for the Arts. Abt Books, Cambridge, MA, pp. 176–183.

Rosen, S. (1981). "The economics of superstars". American Economic Review 71, 845–858.

Santos, F.P. (1976). "Risk, uncertainty and the performing artist". In: Blaug, M. (Ed.), The Economics of the Arts. Westview Press, Boulder, CO.

Smith, T. (2000). "Longitudinal analysis of the earnings of artists". 11th International Conference of Cultural Economics.

Snooks, G. (1983). "Determinants of earnings inequality amongst Australian artists". Australian Economic Papers 22, 322–332.

Stohs, J. (1989). "Factors affecting the career patterns of male fine and applied artists". Journal of Social Behavior and Personality 4, 327–346.

Stohs, J. (1990). "Young adult predictors and midlife outcomes of male fine art careers". The Career Development Quarterly 38, 213–229.

Stohs, J. (1991a). "Young adult predictors and midlife outcomes of 'Starving Artists' careers: A longitudinal study of male fine artists". Journal of Creative Behavior 25, 92–105.

Stohs, J. (1991b). "Moving beyond women's career choices: Factors associated with career continuity among female former art students". Journal of Career Development 18, 123–138.

Stohs, J. (1992a). "Intrinsic motivation and sustained art activity among male fine and applied artists". Creativity Research Journal 5, 245–252.

Stohs, J. (1992b). "Career patterns and family status of women and men artists". Career Development Quarterly 40, 223–233.

Throsby, D. (1986). Occupational and Employment Characteristics of Artists. Australia Council, Sydney.

Throsby, D. (1992). "Artists as workers". In: Towse, R., Kahkee, A. (Eds.), Cultural Economics. Springer-Verlag, Berlin/Heidelberg.

Throsby, D. (1994a). "A work-preference model of artist behaviour". In: Peacock, A., Rizzo, I. (Eds.), Cultural Economics and Cultural Policies. Kluwer Academic, Boston, MA, pp. 69–80.

Throsby, D. (1996). "Disaggregated earnings functions for artists". In: Ginsburgh, V., Menger, P.-M. (Eds.), Economics of the Arts: Selected Essays. Elsevier/North-Holland, Amsterdam, pp. 331–346.

Throsby, D., Hollister, V. (2003). Don't Give Up Your Day Job: An Economic Study of Professional Artists in Australia. Australia Council, Sydney.

Throsby, D., Mills, D. (1989). When Are You Going to Get a Real Job? Australia Council, Sydney.
Throsby, D., Thompson, B. (1994). But What Do You Do For a Living? Australia Council, Sydney.
Throsby, D., Thompson, B. (1995). The Artist At Work. Australia Council, Sydney.
Towse, R. (1992a). "The earnings of singers: An economic analysis". In: Towse, R., Kahkee, A. (Eds.), Cultural Economics. Springer-Verlag, Berlin/Heidelberg.
US Bureau of the Census (1975). Historical Statistics of the United States, Colonial Times to 1970, Bicentennial Edition. Washington, DC.
US Census Bureau (2003). Public Use Microdata Sample-2000 Census of Population and Housing: Technical Documentation. Washington, DC.
Waits, C.R., McNertney, E.M. (1980). "Uncertainty and investment in human capital in the arts". In: Hendon, W.S., et al. (Eds.), Economic Policy for the Arts. Abt Associates, Cambridge, MA.
Wakin, D. (2004). "The Juilliard effect: Ten years later". The New York Times, December 12.
Wassall, G.H., Alper, N.O. (1984). "Determinants of artists' earnings". In: Hendon, W.S., et al. (Eds.), The Economics of Cultural Industries. Association for Cultural Economics, Akron, OH.
Wassall, G.H., Alper, N.O. (1985). "Occupational characteristics of artists: A statistical analysis". Journal of Cultural Economics 9, 13–34.
Wassall, G.H., Alper, N.O. (1990). "When is an artist an artist?" Journal of Arts Management and Law 19, 37–50.
Wassall, G.H., Alper, N.O. (1992). "Toward a unified theory of the determinants of the earnings of artists". In: Towse, R., Khakee, A. (Eds.), Cultural Economics. Springer-Verlag, Berlin/Heidelberg.
Wassall, G.H., Alper, N.O., Davison, R. (1983). Art Work: Artists in the New England Labor Market. New England Foundation for the Arts, Cambridge, MA.
Withers, G. (1985). "Artists' subsidy of the arts". Australian Economic Papers 24, 290–295.

Further reading

These references were used for background. For the most part, they are not explicitly included in the paper because they are primarily based on cross-sectional data.
Abbing, H. (2002). Why Are Artists Poor? The Exceptional Economy of the Arts. Amsterdam University Press, Amsterdam.
Alper, N., Galligan, A. (1999). "Recession to renaissance: A comparison of Rhode Island artists 1981 and 1997". Journal of Arts Management Law and Society 29, 178–204.
Alper, N., Wassall, G. (1984). "Performing artists and their unions". Tenth Annual Convention of the Eastern Economic Association.
Alper, N., et al. (1996). Artists in the Work Force: Employment and Earnings, 1970 to 1990. National Endowment for the Arts, Research Division, Washington, DC.
Bardez, C., Throsby, D. (1997). Similarity and Difference: Craftspeople and Visual Artists in Australia. Australia Council, Sydney.
Bielby, W., Bielby, D. (1996). "Women and men in film: Gender inequality among writers in a culture industry". Gender and Society 10, 248–270.
Bielby, W., Bielby, D. (1999). "Organizational mediation of project-based labor markets: Talent agencies and the careers of screenwriters". American Sociological Review 64, 64–85.
Bielby, W., Bielby, D. (2001). "Audience segmentation and age stratification among television writers". Journal of Broadcasting and Electronic Media 45, 391–412.
Bradshaw, T. (1984). "An examination of the comparability of the 1970 and 1980 census statistics on artists". In: Hendon, W.S., et al. (Eds.), The Economics of Cultural Decisions. Association of Cultural Economics, Akron, OH.
Burke, A. (1994–1995). "Employment prospects in the Irish popular music industry". Journal of the Statistical and Social Inquiry Society of Ireland 27, 93–114.
Cerf, J.G. (1982). Craft Artists in the United States. Mathematica Policy Research, Princeton, NJ.

Chartrand, H. (1994). Architecture & Design Arts Occupations, 1940–1990. National Endowment for the Arts, Research Division, Washington, DC.
Chung, K., Cox, R. (1994). "A stochastic model of superstardom: An application of the Yule distribution". The Review of Economics and Statistics 76, 771–775.
Cowen, T. (1996). "Why women succeed, and fail, in the arts". Journal of Cultural Economics 20, 93–113.
Cowen, T., Grier, R. (1997). "Do artists suffer from cost-disease?" In: Towse, R. (Ed.), The Arts, the Heritage and the Media Industries. Elgar, Cheltenham, pp. 371–390.
Cowen, T., Tabarrok, A. (2000). "An economic theory of avant-garde and popular art, or high and low culture". Southern Economic Journal 67, 232–253.
Dowd, T., Blyler, M. (2002). "Charting race: The success of black performers in the mainstream recording market, 1940 to 1990". Poetics 30, 87–110.
Ekelund, R. (2000). "The 'Death-Effect' in art prices: A demand-side exploration". Journal of Cultural Economics 24, 283–300.
Faine, H.R. (1972). "Unions and the arts". American Economic Review 62 (2), 70–77.
Galligan, A., Alper, N. (1998). "Characteristics of performing artists: A baseline profile of sectoral crossovers". Journal of Arts Management, Law and Society 28, 155–177.
Galligan, A., Alper, N. (2000). "The career matrix: The pipeline for artists in the United States". In: Cherbo, J., Wyszomirski, M. (Eds.), The Public Life of the Arts in America. Rutgers University Press, New Brunswick, NJ.
Galloway, S., Lindley, R., Davies, R., Scheibl, F. (2002). "A balancing act: Artists' labour markets and the tax and benefit systems". Arts Council of England, Research Report 29, London.
Goldin, C., Rouse, C. (2000). "Orchestrating impartiality: The impact of 'Blind' auditions on female musicians". American Economic Review 90, 715–741.
Grant, D. (1990). "Artists' consensus is they don't count". Boston Herald, March 27, 46.
Gray, C.M. (1984). "Nonpecuniary rewards in the performing arts labor market: A case study of dancers and choreographers". In: Hendon, W.S., et al. (Eds.), The Economics of Cultural Industries. Association for Cultural Economics, Akron, OH.
Gray, L., Seeber, R. (Eds.) (1985). Under the Stars: Essays on Labor Relations in Arts and Entertainment. Cornell University Press, Ithaca, NY.
Greffe, X. (2002). Arts and Artists from an Economic Perspective. UNESCO Publishing, Paris.
Hansmann, H., Santilli, M. (2001). "Royalties for artists versus royalties for authors and composers". Journal of Cultural Economics 25, 259–281.
Heckathorn, D., Jeffri, J. (2001). "Finding the beat: Using respondent-driven sampling to study jazz musicians". Poetics 28, 307–329.
Heikkinen, M. (1995a). "Evaluating the effects of direct support on the economic situation of artists". Journal of Cultural Economics 19, 261–271.
Heikkinen, M. (1995b). "The Nordic model for supporting artists: Public support for artists in Denmark, Finland, Norway and Sweden". The Arts Council of Finland, Research Report 26, Helsinki.
Heikkinen, M., Karhunen, P. (1993). "The focus and functions of public support for artists in Finland". Conference on Social Theory, Politics and the Arts.
Heikkinen, M., Karhunen, P. (2000). "The importance of public support for creative and performing artists: A case study of authors and actors". 11th International Conference on Cultural Economics.
Heilbrun, J., Gray, C.M. (2001). The Economics of Art and Culture, second ed. Cambridge University Press, Cambridge.
Hill Strategies (2004). "A statistical profile of artists in Canada, statistical insights on the arts". Vol. 3, No. 1. Hamilton, Canada.
Horowitz, H. (1983). "Work and earnings of artists in the media fields". Journal of Cultural Economics 7, 69–89.
Horowitz, H. (1993). "The status of artists in the USA". Journal of Cultural Economics 17, 29–48.
Jeffri, J. (1999). "The playwright's the thing!" Conference on Social Theory, Politics and the Arts.
Jeffri, J. (2003). Changing the Beat: A Study of the Work Life of Jazz Musicians. National Endowment for the Arts, Washington, DC.

Jeffri, J., Throsby, D. (1994). "Professionalism and the visual artist". European Journal of Cultural Policy 1, 99–108.
Karhunen, P. (1996). "The interaction between artists' professional training and employment in the field of Finnish theatre". Journal of Cultural Economics 20, 165–175.
Karhunen, P. (1998a). "Labour market situation of graduated artists". In: Heikkinen, M., Koskinen, T. (Eds.), Economics of Artists and Arts Policy. Arts Council of Finland, Helsinki.
Karhunen, P. (1998b). "A portrait of a woman as an artist." 10th International Conference on Cultural Economics.
Karhunen, P., Rensujeff, K. (2002). "Preliminary results for a survey on the economic and labour market situation of Finnish artists". 12th International Conference on Cultural Economics.
Karttunen, S. (1998b). "Profile of the artistic labour force in Finland based on the population censuses 1970–1995". 10th International Conference on Cultural Economics.
Karttunen, S. (2001a). "How to make use of census data in status-of-the-artist studies: Advantages and shortcomings of the Finnish register-based census". Poetics 28, 273–290.
Karttunen, S. (2001b). Cultural Employment in Finland 1970–1999. Statistics Finland, Helsinki. In Finnish with English summary.
Kaun, D. (1991). "Writers die young: The impact of work and leisure on longevity". Journal of Economic Psychology 12, 381–399.
Landes, W. (2001). "What has the visual Artist's Rights Act of 1990 accomplished?" Journal of Cultural Economics 25, 283–306.
Laplante, B., Hébert, B., Menger, P. (n.d.). "Collective and individual action on a labor market: The case of new French actors". University of Quebec, Montreal.
McLain, J.J. (1978). "The income of visual artists in New Orleans". Journal of Cultural Economics 2, 63–76.
Menger, P. (1999). "Artistic labor markets and careers". Annual Review of Sociology 25, 541–574.
Menger, P. (2001). "Artists as workers: Theoretical and methodological challenges". Poetics 28, 241–254.
Menger, P. (2006). "Contingent work, excess supply and occupational risk management". In: Ginsburgh, V., Throsby, D. (Eds.), Handbook of the Economics of Art and Culture, vol. 1. Elsevier, Amsterdam. Chapter 22 in this volume.
Nagel, J.J. (1987). "An examination of commitment to careers in the musical performing arts: Implications for alienation from vocational choice". In: Shaw, D., et al. (Eds.), Artists and Cultural Consumers. Association for Cultural Economics, Akron, OH, pp. 101–109.
Nagel, J.J. (1988). "Identity and career choice in music". Journal of Cultural Economics 12, 67–76.
National Endowment for the Arts (1981). Artists Compared by Age, Sex and Earnings in 1970 and 1976. Research Division Report No. 12. Publishing Center for Cultural Resources, New York.
Netzer, D., Parker, E. (1993). Dancemakers. National Endowment for the Arts, Washington, DC.
Nichols, B. (2004). "Artist labor force by state, 2000". National Endowment for the Arts, Research Note #85. Washington, DC.
Nixon, L., Robinson, M. (1992). "The earnings of male and female artists". Eastern Economics Association.
O'Brien, J. (1997). Professional Status as a Means of Improving Visual Artists' Incomes. Arts Council of England, London.
O'Brien, J., Feist, A. (1997). Employment in the Arts and Cultural Industries: An Analysis of the Labour Force Survey and Other Sources. The Arts Council of England, London.
Rengers, M. (1998b). "Visual artists in the Netherlands: Civil servants, self-employed or both?" In: Heikkinen, M., Koskinen, T. (Eds.), Economics of Artists and Arts Policy. Arts Council of Finland, Helsinki.
Rengers, M., Plug, E. (2001). "Private or public? How Dutch visual artists choose between working for the market and the government". Journal of Cultural Economics 25, 1–20.
Rensujeff, K. (2003). "The status of the artist in Finland – Report on employment and income formation in different fields of art". Arts Council of Finland, Research Report 27, Helsinki. In Finish with English summary.
Robinson, M., Montgomery, S. (1993). "The earnings and labor supply of artists: The 'Myth of the Starving Artist' revisited". Xerox.

Robinson, M., Montgomery, S. (2000). "The time allocation and earnings of artists". Industrial Relations 39, 525–534.

Rottenberg, S. (1997). "The remuneration of artists". In: Towse, R. (Ed.), The Arts, the Heritage and the Media Industries. Elgar, Cheltenham, pp. 590–594.

Rushton, M. (2001). "The law and economics of artists' inalienable rights". Journal of Cultural Economics 25, 243–257.

Ruttenberg, Kilgallen, Gutchess, Associates (1981). A Survey of Employment, Unemployment and Underemployment Among Performing Artists, 1980. Labor Institute for Human Enrichment, Washington, DC.

Singer, L. (1981). "Supply decisions of professional artists". American Economic Review 71, 341–346.

Stoyle, J. (1970). Economic and Demographic Characteristics of Actors' Equity Association Membership. Temple University, Philadelphia, PA.

Summerton, J. (1999). Artists at Work, 1999. Southern Arts Board, UK.

Throsby, D. (1994b). "The production and consumption of the arts: A view of cultural economics". Journal of Economic Literature 32, 1–29.

Throsby, D. (1997). "On the economic survival of actors and musicians". Revista Economica de Catalunya 31, 71–75.

Throsby, D. (2001). "Defining the artistic workforce: The Australian experience". Poetics 28, 255–271.

Throsby, D., Towse, R. (1994). "On labor markets in the arts: Some unresolved issues". American Economic Association.

Towse, R. (1992b). "The labour market for artists". Ricerche Economiche XLVI, 55–74.

Towse, R. (1992c). "Market value and artists' earnings". International Center for the Arts.

Towse, R. (1993). Singers in the Marketplace: The Economics of the Singing Profession. Oxford University Press, Oxford.

Towse, R. (1996a). The Economics of Artists' Labour Markets. The Arts Council of England, London.

Towse, R. (1996b). "Economics of training artists". In: Ginsburgh, V., Menger, P. (Eds.), Economics of the Arts: Selected Essays. Elsevier/North-Holland, Amsterdam, pp. 303–329.

Towse, R. (1999). "Copyright, risk and the artist: An economic approach to policy for artists". International Journal of Cultural Policy 6.

Towse, R. (2006). "Human capital and artists' labour markets". In: Ginsburgh, V., Throsby, D. (Eds.), Handbook of the Economics of Art and Culture, vol. 1. Elsevier, Amsterdam. Chapter 24 in this volume.

Towse, R. (n.d.). "Survey of artists in Wales: Econometric results". Xerox.

Waits, C.R., McNertney, E.M. (1984). "An economic model of artistic behavior". Journal of Cultural Economics 8, 49–60.

Waits, C.R., McNertney, E.M. (1989). "The incomes of cultural providers: A review of current research". In: Shaw, D.V., et al. (Eds.), Cultural Economics 88: An American Perspective. Association for Cultural Economics, Akron, OH.

Chapter 24

HUMAN CAPITAL AND ARTISTS' LABOUR MARKETS

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Abstract

It is argued that human capital theory applies only weakly to artists' decisions about investment in schooling and training and about occupational choice. However, the same can be said about the sorting model. What is lacking in cultural economics is an understanding of talent and creativity, what economic factors motivate artists and how creativity can be encouraged as part of government cultural policy. Bringing social and cultural capital into the equation do not seem to add much in the way of understanding artists' labour markets. A novel argument is made that the reproducibility of works of art in combination with copyright law alters the established view that human capital cannot be separated from labour, in this case that of the artist.

Keywords

human capital, labour markets, artists' training

JEL classification: Z1, J24, I21, K11, H4

Lady Bracknell. (to her daughter's suitor) ... Do you smoke?
Jack. Well, yes, I must admit I smoke.
Lady Bracknell. I am glad to hear it. A man should always have an occupation of some kind. There are far too many idle men in London as it is. How old are you?
Jack. Twenty-nine.
Lady Bracknell. A very good age to be married at. I have always been of the opinion that a man who desires to get married should know either everything or nothing. Which do you know?
Jack. I know nothing, Lady Bracknell.
Lady Bracknell. I am pleased to hear it. I do not approve of anything that tampers with natural ignorance. Ignorance is like a delicate exotic fruit; touch it and the bloom is gone. The whole theory of modern education is radically unsound. Fortunately in England, at any rate, education produces no effect whatsoever. If it did, it would prove a serious danger to the upper classes, and probably lead to acts of violence in Grosvenor Square. What is your income?
Jack. Between seven and eight thousand a year.

Oscar Wilde, *The Importance of Being Earnest* (Act I). First published in 1899.

1. Introduction

The role of human capital in labour economics has a long history, going back to Adam Smith. Smith recognised the effect of both training and talent in determining wages, the latter in his famous comment on the 'exorbitant' rewards of opera singers and dancers.[1] The influence of innate ability and knowledge acquisition on earnings has been much discussed in human capital theory and this discussion is particularly relevant to artists. The study of artists' labour markets is important in cultural economics because we need to understand what factors affect the supply of work by creative artists and performers since cultural policy, whatever its explicit aims, is ultimately designed to encourage creativity.

In this chapter, two basic questions are addressed: what contribution does human capital theory make to understanding creativity in the arts and culture and what contribution does cultural economics make to our understanding of human capital? Much of the analysis of human capital over the last 30 years has been about the econometric problems of identifying the specific contribution to earnings of innate ability rather than of ability acquired through 'schooling'. Because the role of innate ability or talent is far greater in the arts than it is in non-arts occupations, its influence is an area in which cultural economics can make a contribution to human capital theory. It also seems likely that on-the-job training and experience are more important in the arts than in other

[1] See Smith (1976, p. 124).

occupations. Another distinguishing feature of artists' supply behaviour is their concern with utility and reputation, which considerably modifies their desire for financial reward. Furthermore, the arts and cultural industries are areas in which there is dependence on copyright law for protecting artists' earnings, enabling them to obtain future as well as present income. There is, therefore, reason to believe that artists' labour markets differ from those of other workers and this raises the question whether human capital theory applies in them. However, while there has been a great deal of empirical work on the role of human capital in 'ordinary' labour markets, there have been relatively few econometric studies of artists' labour markets.

This chapter is organised as follows: an introduction to human capital theory precedes a brief summary of issues in the measurement of human capital using earnings functions, including those relating to artists. Then the role of talent and creativity in artists' labour markets is discussed, with particular reference to the superstar phenomenon. That is followed by a section on artists' training and occupational choice, after which we consider the analogy between human capital, social capital and cultural capital. We then turn to the relation in artists' labour markets between human capital, the ability to reproduce artists' work and copyright law, showing how that alters the 'inalienability' problem in human capital.

2. The theory of human capital

2.1. The basic theory

Sherwin Rosen has defined human capital as "... the stock of skills and productive knowledge embodied in people. The yield or return on human capital investment lies in enhancing a person's skills and earning power, and in increasing the efficiency of economic decision-making both within and without the market economy" [Rosen (1987, p. 682)]. This definition captures two essential features of the theory: that human capital cannot be separated from the person, and that human capital embodied in an individual may be increased by investment. What it does not recognise, however, is the ambiguity of the concept of human capital as a combination of inherited characteristics, tacit knowledge, innate ability and acquired skills; each plays some role in the individual's productivity and earning power but how much influence is exerted by one or the other has proved difficult to pin down.

A thumbnail sketch of the theory is as follows: though the concept of human capital had been recognised by Adam Smith and Alfred Marshall, it was only in the 1960s that Theodore Schultz (1961) set the stage for the present day interest in human capital theory. The fundamental conceptual framework of analysis for virtually all subsequent work in this area was developed by Gary Becker (1964) in his path-breaking book *Human Capital*. In it, he introduced the distinction between specific and general labour training, arguing that schooling (formal education) was in fact a leading example of human capital formation by general training. Jacob Mincer (1958) then specified the now

standard human capital earnings function that has given rise to a huge literature on the measurement of lifetime income and wealth [Willis (1986)].

Adam Smith had understood the essence of the notion of human capital investment: the formation of human capital through costly education, the necessity for higher earnings to compensate those who had made the investment in human capital, and the accrual of these earnings over a lifetime.

> A man educated at the expense of much labour and time to any of those employments which require extraordinary dexterity and skill, may be compared to [an expensive machine]. The work which he learns to perform, it must be expected, over and above the usual wages of common labour, will replace to him the whole expense of his education, with at least the ordinary profits of an equally valuable capital. It must do this too in a reasonable time, regard being had to the very uncertain duration of human life, in the same manner as to the more certain duration of the machine.
>
> The difference between the wages of skilled labour and those of common labour, is founded upon this principle [Smith (1976, pp. 118–119)].

Marshall also pursued the analogy between physical and human capital and between the wage rate and the rental rate of capital. He emphasised the difference between physical and human capital on the grounds that there is no market in human capital but rather a market in the hire of labour embodying the investment. This is what Rosen (1987, p. 682) refers to as "differences in the nature of property rights between them". Furthermore, Marshall made the case for subsidies to education based on the implications of social inequality of access to the capital market for the finance of education [Blaug (1970, pp. 3–6)].

Blaug (1970) raised the question whether the concept of human capital is perhaps no more than a metaphor, and moreover whether all education indeed has an investment motive or whether it is not to some extent a consumption good. Education and learning may yield utility directly to the individual rather than a deferred utility of potential higher earnings. Furthermore, occupational choice may not be determined solely by financial reward because people may choose an occupation for non-pecuniary motives such as a preferred lifestyle. Occupations that require a higher level of human capital investment and so pay more are also ones, contrary to Adam Smith, that may be more attractive on non-monetary grounds. The identification of consumption elements, utility and the pursuit of non-monetary rewards might therefore be difficult to disentangle. These observations are particularly relevant to artists' training and occupational choices. We return to a discussion of the usefulness of the capital metaphor in Section 6 below.

For Becker, however, the analogy between physical and human capital is central. According to Becker, individuals invest in human capital formation up to the point at which the discounted costs of formal education and on-the-job training equal the discounted future earnings over the individual's lifetime. The rate of return that equates these two streams must in equilibrium equal the rate of interest, that is, the cost of borrowing the outlay on the investment. The private rate of return, which accrues to the individual,

is calculated from the out-of-pocket (direct) costs of schooling and the indirect costs of earnings forgone during the investment period. The social rate of return takes into account the return to society via income taxes and the total cost of providing schooling. Empirical estimates of the two rates of return produce the result that the private rate typically exceeds the social rate, if only because the social cost of schooling exceeds its private cost.

Like Marshall, Becker recognised that all families do not have equal access to financial resources and that affects the human capital investment decision. Family background may exert other influences on the costs and returns to human capital investment; inherited characteristics and early advantages such as health, greater investment during childhood, above average ability and innate talent all mean that some individuals learn more easily than others and therefore achieve higher productivity from a given period of study or, pari passu, need to spend less to achieve the same learning outcome. These family background and interpersonal differences give rise to the so-called 'ability bias' in measuring the rate of return to investment in human capital. We shall see later that this is an important topic in artists' labour markets.

Becker also considered the question of who pays for post-compulsory education and training, the individual or the employer. The employer has no incentive to pay for general training that can be transferred between firms but does have the incentive to pay for firm-specific training.[2] Firms may well offer general training to employees but then 'charge' them for it by paying them lower wages (as in an apprenticeship training).

2.2. Sorting models

Human capital theory in its Chicago School version (Schultz, Becker, Mincer and Rosen) is not accepted by everyone in the economics of education or labour economics. The most fundamental criticism comes from those who support an alternative explanation of the observed positive relationship between investment in schooling and higher earnings – the screening hypothesis. Screening, which is always linked to signalling (the education system screens and students signal), is a form of sorting; indeed Weiss (1995) recommends using the generic term 'sorting' to include both aspects. According to sorting models, employers use educational choice to draw inferences about unobserved attributes that are correlated with schooling. Employers use formal qualifications (a university degree, for example) as an information signal about worker quality, but information is asymmetric – workers know their own productivity but employers cannot tell which workers are the most productive. Workers signal their superior productivity to employers by acquiring paper qualifications which high ability students acquire more easily. This 'self-selection bias' is exacerbated by the finding that many highly educated students come from higher socio-economic family backgrounds. The extreme version

[2] It has, however, proved difficult to find convincing examples of specific training other than the necessary learning period that marks the first few days or weeks of employment for any worker.

of the sorting model combines screening and signalling to conclude that higher earnings do not reflect higher marginal productivity at all, but only society's institutional commitment to 'credentialism'. Ability bias and signalling are difficult to separate and in general it has proved impossible to identify them empirically, at least so as to persuade the sceptic. All agree that more time spent in schooling yields higher earnings but sorting models dispute precisely what it is that leads to greater productivity.

Becker has argued that a refutation of sorting models lies in the fact that the education system is an inordinately expensive screening device; such inefficiency is unlikely to develop spontaneously in a competitive economy and is even more unlikely to be sustainable over long periods of time. This argument carries greater force in the USA where students pay for further and higher education, but in many European countries both are either free or available at very low fees. So the direct cost of post-compulsory education in Europe is small, leaving only the cost of forgone earnings to be borne by students and their parents. Indeed, many European countries even offer students grants and rewards for completing a course. In the arts, we see courses being oversubscribed as hopeful students who do not have to pay the full cost of training crowd into art, music and acting colleges [Towse (1996)]. We also observe that employers in the arts place little reliance on certification based on formal schooling and often use their own screening devices, a refutation of Becker [Towse (1993)]; we return below to these and other differences between artists' and other labour markets.

Before leaving the general theory of human capital, it is worthwhile anticipating a later discussion of the way copyright law (in combination with 'reproducibility' by means of copying technologies) alters property rights in human capital in the cultural sector. Many writers [for example, Blaug (1970)] have dwelt on the absence of a market for human capital separated from the labour of the individual and have claimed that only a slave economy would permit direct purchase of human capital analogous to the purchase of physical capital. However, human capital embodied in works protected by intellectual property rights can be 'alienated' by the assignment or transfer of the right to use them. For example, take the case of a sound recording: copyright law provides a number of rights for composers and performers, who use their skill and labour to create works that are recorded in a CD; but once these rights have been transferred to the record company, they become its assets, which it can exploit or sell as it sees fit. Copyright is therefore intimately tied up with the appropriation of artists' human capital. Nor is this only a feature of artists' labour markets; the growth of the 'Information Society' or the 'Knowledge Economy' and the spread of intellectual property law into ever more sectors of the economy have created similar conditions in other labour markets.

3. Earnings functions

3.1. Estimation

Earnings data are the single most important source of information about human capital as they represent both the returns to investment and the cost of the time taken to make the

investment. Lifetime earnings are typically represented in age-earnings profiles. Earning starts when compulsory education ceases – if the legal school leaving age is, say, 16 years of age, any schooling beyond 16 incurs the opportunity cost of the earnings of 16+ year olds. Thus the age-earnings profile begins at age 16 and continues to retirement age. Normal age-earnings profiles display a common pattern: from the age of entry into the labour force they rise, then flatten out at around mid-career and fall towards retirement age.

Investment in human capital does not cease with the start of work, however, since on-the-job training now begins. On-the-job training is a loose concept that includes experience or learning-by-doing, which increases with age. Mincer (1958) recognised that workers could also choose at each point to invest in formal on-the-job training as a substitute for years of schooling and that that would eventually be compensated by higher earnings. Workers may rationally choose different jobs that enable them to gain experience, accepting lower earnings while they are trained on the job. Mincer analysed these different choices by individuals as yielding a series of age-earnings profiles whose shape is determined by the different combination of direct and indirect costs of education and on-the-job training. Because they represent different combinations of earnings forgone and lifetime earnings, the age-earnings profiles must cross. Mincer called this the 'overtaking point', which he argued would depend on the reciprocal of the internal rate of return, the discount rate that equates the stream of lifetime earnings with the cost of the investment. This approach enables the researcher to take into account the effect of family background effects such as financial constraints, but it does not solve the problems of ability bias or self-selection bias.

The Mincer earnings function has become the standard model for statistical measurement of the supply of educated labour and for estimating the internal rate of return to education:

$$\log Y = \log Y_0 + rS + b_1 X + b_2 X^2 + u, \tag{1}$$

where Y is income, S is length of schooling, X is length of time in the workforce as a proxy for years of work experience and u is the error term; the constant term is the log of the equivalent annuitised income of initial human capital value (innate and family background effects), r is the rate of return to schooling, b_1 and b_2 capture the effects of experience [Rosen (1992, p. 162)]. Several econometric specifications of the earnings function have been tried out and innumerable empirical studies have been made; a survey of the early literature is to be found in Willis (1986).

The ideal data for measuring the effect of investment in human capital would consist of longitudinal information on individuals' lifetime earnings combined with individual tuition expenses. Such data are rarely available and in practice aggregate cross section or panel data are used; however, they abstract from individual decision-making and give rise to bias in estimation. Simplifying assumptions are therefore needed to enable researchers to use the data available. Briefly these are: that the only cost of education is earnings forgone; that individuals enter the labour force immediately on complet-

ing their studies; and that the individual's working life is independent of her years of education.

The problem of estimating the ability bias is aggravated by the use of aggregate cross-section data; individual data would avoid much of this problem by providing information on family background and possibly even on early IQ and other measures of innate ability. In the attempt to separate out the influence of innate ability and human capital investment on earnings differentials, studies of identical and non-identical twins have been used. Rosen (1987) reports that such studies have found that around one-third of the difference in earnings was due to differences in human capital investment, one-third was due to 'person effects' (unmeasured ability, health and other such factors) and one-third was due to random events, luck and suchlike. These findings are particularly relevant to artists, for whom variations in talent and luck may well be higher than for other professionals. This is discussed in more detail below.

3.2. Artists' earnings functions

We now turn to empirical studies that have been done of earnings functions in arts occupations. These studies have tested the human capital model outlined above, treating artists as workers like any others making rational choices about investment in education and on-the-job-training and occupation. There are considerable difficulties concerning the definition of the artist population and of obtaining data.[3] Suffice it to say here that in most countries in which these studies have been attempted, there are severe problems in obtaining artists' earnings data. Census data either cannot be disaggregated to appropriate artistic occupational levels or are subject to severe bias due to multiple job-holding. In the USA, Filer (1986) used Census data to estimate earnings functions for a range of artistic occupations but the validity of his results have been widely disputed by cultural economists because he used aggregate income data [Towse (2001a, Chapter 3)]. Consequently, cross-section survey data have been used in preference to Census data but response rates may be low and sample sizes may be relatively small and possibly unrepresentative. Interestingly, however, Filer found only a very weak effect of human capital variables on artists' earnings. In a later study in which he analysed earnings functions separately for different arts occupations, still using Census data, he found that longer schooling even had a negative effect in the case of performing artists [Filer (1990)]. Wassall and Alper (1985) did one of the first earnings-function studies of artists using data from their survey of 3000 artists in New England that allowed them to separate arts from non-arts income. They found that education was not positively correlated with income from arts work though it was from non-arts work, a finding that has been since replicated in other studies.

Large-scale national surveys of artists' earnings have been carried out in Australia and enabled two authors Withers (1985) and Throsby (1992, 1994, 1996) to estimate

[3] See Chapter 23 by Alper and Wassall in this volume; also McNertney and Waits (1997).

earnings functions.[4] Withers varied the standard Mincer specification by making a distinction between formal education and other qualifications (trade and technical certificates), using the imputed hourly wage rate and reported hours of work to measure earnings. He noted that the standard assumption of continuous employment from entry into the labour market to retirement age overstates work experience for females, a higher proportion of whom are in the arts compared to the non-arts workforce. This, however, would apply to all artists since many artists work irregularly and have frequent periods of unemployment during job searches. Withers' results showed that, compared to all Australian workers, artists earned 40 percent less, which he interpreted as the 'subsidy of artists to the arts'. The 40 percent penalty can also be viewed as a compensating differential, the 'psychic income' for the net advantages of a preferred occupation – the interpretation depends on whether or not you assume that changing occupations is frictionless. On the latter point, Filer (1987) found that the penalty for the choice of artistic occupation in the USA was not high and that 'failed' artists were able to move into other occupations without a high earnings penalty – a striking testimony to the power of general training. Withers also found that human capital variables had only a very weak effect on earnings and concluded that innate characteristics (talent and motivation) and luck, though not identified, must play a considerable role in determining earnings in the arts.

Using the same data set, Throsby (1994) estimated an important variation on the standard form of the earnings function. The Australian survey (which he had directed) collected data on earnings and hours of work in arts and non-arts work. This was done because it was known from qualitative research that artists typically divide their work time between their chosen artistic occupation (arts work) and jobs outside the arts (non-arts work), mainly because they are unable to earn a living wage from the former. This approach was a means of overcoming the bias introduced in census data, which defines artists on the basis of their occupation in census week and attributes earnings from all sources to their arts work, even if a substantial part is due to non-arts work; this was a criticism that had been made of Filer's 1986 study (which he had defended as a 'market test' of who is and who is not an artist). Throsby therefore was able to estimate earnings functions for arts and non-arts work and he was able to separate out the private rate of return to education, training and experience in both arts work and in non-arts work. That had the advantage that he was able to compare rates of return for the same sample, unlike Withers (and others) who had made comparisons between aggregations of different sets of individuals. Throsby found that human capital investment *was* an explanatory factor of income differentials in both sectors, though the human capital model performed less well for arts work than for non-arts work, again due to the unspecified effect of talent and other innate ability factors. It should be noted, however, that the studies by both Withers

[4] Withers' estimation was done in 1984 and Throsby's in 1992; the references cited are reprinted in Towse (1997). The McNertney and Waits survey was done in 1988 and is also reprinted in Towse (1997), the earlier version now being difficult to obtain.

and Throsby had low R^2 values, indicating that much about earnings differentials was left unexplained.

Subsequently, Throsby (1996) estimated another earnings function for Australian artists using data from a later survey and testing two different specifications, one a linear model using two-stage least squares and a second using the Mincerean earnings function (Equation (1) above), again breaking down earnings and hours worked, this time identifying arts, arts-related (such as art teaching) and non-arts work. His hypothesis was that income from arts and arts-related work are influenced by the level of professional arts training, whereas non-arts income is more likely to be influenced by the level of general education, and that time spent on-the-job as an artist is the appropriate explanatory variable for arts and arts related work, with age (as a proxy for experience) being more relevant to non-arts earnings. Dummy variables for level of training, education and gender were used. The models were tested with a further division between creative artists (writers, composers, choreographers and so on) and performers (actors, musicians, dancers and the rest). Interestingly, this elaboration of his earlier study did not yield very different results. The linear model performed better than the standard Mincer model and the hypotheses of the standard model were confirmed. Even so, R-squares for arts income were low, indicating that factors other than human capital were at work. The experience of testing human capital models in the arts has led Throsby to develop a work-preference model of artist behaviour [Throsby (1994)] as an alternative to the human capital investment model. Cowen and Tabarrok (2000) also develop a utility-based model. It remains to be seen how these models stand up to empirical testing.

3.3. Methodological aspects

By way of conclusion to this section on estimating earnings functions, it is worth considering the methodological aspects of human capital theory (methodology being the logic of different methods, not merely a comparison of methods of econometric estimation). Blaug (1976) subjected the theory of human capital to methodological analysis based on Lakatos' concept of a scientific research programme and asked what empirical tests would refute it? Is it 'a theory' or a set of theories – in Lakatosian terms, is there a 'hard core' of theory or just a 'protective belt' of ad hoc empirical generalisations? Though sorting models appear to provide a rival theory, Blaug believed they would eventually become a complement to the human capital hypothesis; moreover, as noted earlier, no discriminating test has been found that could refute one hypothesis and confirm the other, despite a huge battery of empirical work.[5] In the absence of a rival theory, Blaug concluded that the human capital research programme had to be evaluated on its own terms: the predictions of the theory cannot unambiguously be tested because of the unsolved question of the separate influence of innate ability and the assumption

[5] Thirty years later Blaug's insights have been confirmed by Weiss (1995), who states that sorting models are a refinement and an extension of human capital theory rather than an alternative.

of individual rational behaviour regarding the schooling decision. The question therefore is not so much whether schooling explains earnings, a fact commonly accepted, but why it does so.

Despite these objections, Blaug acknowledged that there has been empirical progress in human capital theory in the sense of better data, more sophisticated modelling and econometric analysis. That could also be said of empirical testing of earnings functions in the arts, though there are far, far fewer examples. The absence of reliable data sets still inhibits research in artists' labour markets but what studies there are point to fundamental difficulties. Apart from the obvious question of what is talent – to be discussed below – other problems are present in relation to artists' earnings that are more pronounced than in 'ordinary' labour markets. The distribution of artists' earnings is far more skewed than is found in other occupations and therefore estimates of mean earnings lack conviction.[6] The associated greater variance of artists' earnings points to a far greater risk for artists but whether that suggests that artists are risk-averse and have to put up with greater risk, or are in fact risk-takers is open to debate; however, that is also a question of the validity of the assumptions rather than the accuracy of predictions. Artists' labour markets are dominated by self-employment, with frequent job search and other information problems. Artistic output almost by definition is heterogeneous and demand for it is radically uncertain; Caves (2000) has shown that these circumstances lead to contracting problems in the creative industries. Persistent excess supply of artists is widely inferred from the prevalence of unemployment among them [Towse (2001a)]. Moreover, there has been little empirical research on the demand for artists, though such studies have increasingly been done for other occupations [Acemoglu (2002)].[7] These observations suggest that artists' labour markets may be fundamentally different from other labour markets and that the human capital model is therefore less likely to apply to them.

4. Superstars, talent and creativity

In this section we discuss specific features of artists' labour markets that reinforce the view that they differ fundamentally from other labour markets. Chief among these features is the absence of a clear specification of talent and creativity and their role in artists' labour markets.

Sherwin Rosen (1981) in his seminal article 'The Economics of Superstars' focussed on talent as the cause of the skewed distribution of earnings in certain professions and the vastly higher earnings of the few superstars in them.[8] His explanation revolves

[6] See Seaman (2003) for recent analysis of variances in artists' earnings and for a comparison with sportspeople's earnings.

[7] Towse (1993) collected information on the demand for classically trained singers.

[8] See further Chapter 25 by Adler in this volume.

around two causes: on the supply side the development of media technologies, for example sound recording, which have considerably increased economies of scale, enabling artists to serve a far greater market; and on the demand side, consumer preferences for greater rather than for lesser talent when there is imperfect substitutability between suppliers such as artists and entertainers. Superstars, according to Rosen's definition, are people who 'earn enormous amounts of money and dominate the activities in which they engage'; they are highly talented and highly rewarded for their talents because, as Rosen shows, the net revenue earned from talent is a convex function, causing small differences in talent to be magnified into larger differences in earnings [Rosen (1981, p. 845)]. Rosen does not attempt to analyse talent other than by giving some examples – gifted surgeons, sportspeople, singers – but he does state that talent can be ranked; indeed, he specifically avoids the problem of measuring talent by saying 'a cardinal measure of quality or talent must rely on measurement of actual outcomes' [Rosen (1981, p. 848)].[9] Very Chicago!

We might try to analyse talent and creativity in the arts by analogy with the role of innate ability in human capital theory. In relation to education, innate ability reduces the cost of investment in schooling needed to achieve a given outcome, such as a university degree, as it is an argument in the educational production function; the greater the innate ability, the higher the productivity achieved by a given level of investment, or mutatis mutandis less investment is needed to achieve a given level of attainment. Innate ability therefore has similar effects to the fertility of land on cultivation. The analogy with the Ricardian theory of rent is a strong one. In that theory differential rents are explained in terms of differential natural fertility of land and the demand for corn; as the demand for corn shifts out (say, due to population growth), land of ever less fertility is brought into cultivation with lower yields of corn. But which is cause and which is effect in determining rents?

Talent can be thought of as akin to the fertility of land, assumed to be a free gift of Nature; it is an inborn asset, which often manifests itself early in life and it enables the 'owner' not only to acquire skills more easily but also to achieve a high level of 'artistic productivity' – great performances – that few competitors can supply. In the human capital model, rents to innate ability accrue on the supply side. By contrast, Rosen's model puts the explanation on the demand side in which the perception of small differences in talent between individual artists causes multiplicative effects to incomes. One might paraphrase the Ricardian argument as follows: 'is the price of opera high because singers' fees are high, or are singers' fees high because the price of opera is high?'

But there still remains the problem noted earlier of the inalienability of human capital. When the output is a personal service such as a surgical operation or a live performance, it can only be supplied in conjunction with labour. The performer must be present to supply her talent live to the audience and therefore limitations on the supply of her time

[9] See Towse (2001a, Chapter 3) for a more detailed discussion of this point.

lead to rewards like rent being determined by demand. Towse (1992) argued that this is the case for the fees of singers. The story changes, however, when the constraints of the performer's time are lifted by making her services available in a reproducible form like a sound recording; this is what Rosen analysed in his model. Recording technology has enabled performers and other artists to reach vastly greater markets, exacerbating the effect of small differences in talent and reducing the possibility of substitution between artists of lesser or greater talent.

It is time to consider what is meant by talent and creativity: 'You've either got it or you haven't' is something frequently said in conservatories of music and colleges of art. As with the inalienability problem in human capital theory, talent does not have a price because there is no direct market for it – you cannot buy yourself some genius to get through university or become a singer (except, perhaps, with a Faustian contract!).[10]

Talent and creativity are widely viewed as the sine qua non of art, so what has cultural economics to say about it? A quick answer is that it has been little discussed. Throsby (2001) has a short chapter on creativity, which he links to his concept of cultural value and to a utility model of artistic supply; Frey (2000) discusses the motivation and incentives to create and the role of public support for artists; Castaňer and Campos (2002) deal with innovation by arts organisations, adopting a Schumpeterian approach; Caves (2000) deals with what could be called the industrial organisation of creativity, without however explicitly discussing the concept; Towse (2001a) analyses the reward of creativity, again with only a token discussion of creativity, and like Throsby, associates it with artistic supply. All these authors skate around the central issue, which is the contribution of creativity and talent to artists' productivity and earnings.

Creativity is often regarded as an individual activity, though there are many joint creative activities such as theatrical rehearsals and teams of scriptwriters for soap operas.[11] When we speak of creative artists such as composers, authors or painters, they are essentially envisaged as working alone, experimenting with ideas. Another feature of creativity is originality, a spark of novelty that comes to the artist 'out of nowhere' or from reworking existing ideas in new ways. Creativity in these terms clearly parallels innovation and invention in science and technology. Following Schumpeter (1942), the reception of creativity must also be considered [Wijnberg (1995)]. Is it recognised? Can it be marketed? Can it be motivated by financial reward? These are questions that are relevant to the exploitation of talent and creativity by arts organisations and the cultural industries, as well as to cultural policies aimed at fostering the production of art. The economic value of creativity and talent is that they are necessary inputs to satisfy consumer demand for novelty and new experiences and to create lasting works of art.

Enough has been said to indicate that artistic creativity and talent are perceived differently in cultural economics than in human capital theory. Bearing this in mind, we

[10] Whether or not it can be produced through investment in schooling is discussed in the next section on the economics of training.

[11] Seaman (2003) contrasts research in the economics of sport on sportspeople working in teams with the far more limited work in cultural economics on teamwork in the arts.

now turn to the question of artistic training and consider the role of investment in human capital as a preparation for artistic occupations.

5. Artists' training and occupational choice

5.1. Expected income

According to human capital theory, occupational choice is made on the basis of expected lifetime income. As ability bias reduces the cost of acquiring skills and qualifications, students sort themselves into occupations in which they have a comparative advantage. Taken over a whole society, individual rational behaviour is thought to lead to an optimal allocation of human capital. Equilibrium is achieved in the usual way: excess supply in one occupation reduces earnings and thus the private rate of return, causing workers – at least to some extent – to switch jobs to other occupations. Skill shortages encourage on-the-job training; jobs/professions requiring a greater investment in higher education and professional training offer higher lifetime earnings to compensate for higher costs of study. Experience adds to human capital over the workers' career and is rewarded by higher earnings.

The question is: could this theory apply to artists' labour markets or are they really different from other labour markets? Artists may not be rational wealth maximisers, something that is widely believed and frequently stated by artists themselves [Abbing (2002)], but that is a behavioural assumption that cannot be tested directly. The key question is whether the choice of an arts occupation is based on the private rate of return to investment in human capital that is determined by the costs of schooling and artists' earnings. As reported earlier, Throsby (1992) found some limited support for human capital theory in the arts, so it is worthwhile taking it at face value and seeing what resonance the theory has for artistic training and occupational choice.

Surveys have shown that median earnings in the arts are always lower than those of other equally qualified workers, even though the artist population has a higher than average level of educational attainment. The lower expected lifetime earnings in the arts, combined with the higher indirect costs, ensure that discounted costs exceed discounted benefits in arts occupations [Towse (1996)]. What may modify these results in the arts is the longer working life of some artists; cross-section studies assume a normal age of retirement and that is misleading because retirement may be very late in some artistic professions. Some artists continue to work until they die, and with royalties from copyrights they can continue earning even beyond the grave. Even in the performing arts, where there is a premium on strength and (sometimes) youth, many performers teach and adjudicate long after they retire from performing. On the other hand, the direct cost of training (schooling[12]) performing artists in specialised institutions is higher than the

[12] At the risk of confusing formal training in the sense of schooling with on-the job-training, I have switched to the common way of speaking of the lessons and other forms of teaching that are provided in specialist

average cost of higher education in general [Towse (1993)]. However, as noted earlier, in many European countries higher education is provided free or at very low fees and even in the USA some students obtain scholarships that cover the cost of training; public finance therefore reduces the direct costs of training and, other things being equal, should increase the private rate of return to training.[13] But even if, following Mincer, we ignore the direct costs of training, the fact that courses in performing arts are longer than those for most other subjects raises the indirect cost of study and would therefore reduce the private rate of return.

Despite the unfavourable prospect of financial reward in arts occupations, higher education courses for artists are typically oversubscribed and that contributes to the oversupply of artists. The question of how many places should be offered in specialist colleges has been a hotly debated one for many years: should the number be restricted so as to ensure that only the most highly talented students receive artistic training, or should more be admitted in the hope that good quality training will enable them to reach a satisfactory standard of competence? It is widely accepted that all students who complete formal training in the creative and performing arts will not be able to make a living from their art. However, when it comes to the public finance of higher education, considerations of equity often override those of efficiency. Moreover it is not easy to define what efficiency would mean in the circumstances of artists' labour markets, given the uncertainty surrounding the chances of success.

5.2. The role of training

The question still remains whether it is possible to increase an artist's human capital by investment in formal schooling and whether training can add value in the case of less talented students. 'You can't make a silk purse out of a sow's ear' is a saying that resonates through specialist art, music and drama colleges. Even if they have strict entrance requirements, colleges cannot assess the quality of entrants with any certainty – heterogeneity and the absence of objective information about quality pervades all aspects of artists' labour markets. It is also difficult to assess colleges' success in preparing students for work in the arts; the demand for artists' services in the labour market is uncertain and difficult to define since there are few 'regular jobs', with most artists working in self employment on short term contracts [Gurgand and Menger (1996)]. These problems raise a number of points about artists' training that can be analysed

colleges as artists' 'training'. Not all arts training in that sense is confined to specialist art, music or drama colleges, even for performers: writers and composers often do academic courses in universities. There are different institutional arrangements in different countries. The point is that students receive formal education apparently dedicated to artistic occupations.

[13] The social rate of return in specific occupations is used to evaluate public policy decisions about the allocation of educational funding; Towse (1996) suggests the social rate of return to training artists is very low, even negative.

separately (though they may well interact in practice): the content of training; certification in artists' labour markets; and students' expectations about lifetime earnings, the nature of work opportunities and the duration of employment and career possibilities.

5.2.1. The content of training

Given the importance of talent and creativity in the arts, one might be tempted to conclude that the content of higher education courses in art and music colleges adds nothing to students' innate ability, the more so if only the most gifted students are able to gain entrance. In dance and music most students have already had years of specialist teaching, and in other art forms students are expected to show a portfolio or other such evidence of attainment as an entrance requirement. What therefore can colleges offer such students? Here it is useful to draw a distinction between the 'art' element and the 'craft' element of artistic training. Even very talented students need to learn how to present their work, study repertoire or the craft of drawing and writing, and so on. Colleges also provide facilities that are difficult or expensive for individuals to provide for themselves, such as studios, artists' models, participation in theatrical productions, orchestras and suchlike. Colleges also provide students with a forum for displaying their talents to the outside world in exhibitions, performances, etc., and enable them to develop networks, learn professional conduct and assess their own abilities. This last point is particularly important because information about one's own quality is needed in order to make career choices – whether to choose another occupation, whether to aim high or low, etc. MacDonald (1988) explains drop-out rates after the first few years of work in artistic occupations as the outcome of this search for information. Colleges may perform a preliminary sorting function by providing that information before entrance into the labour market takes place.

As a coda to this brief discussion of a complex subject, it is worth pointing out that surveys of artists' labour markets have revealed that a significant proportion of working artists did not receive specialist arts training.[14] There are two possible explanations: that they made the decision to be artists after having done another higher education course; and/or that they regarded the content of arts training courses as irrelevant, something that is frequently reported in surveys of working artists. Either way, the finding is hostile to the human capital model, as well as to the sorting model, as these artists were able to make their way without either formal training or a certificate and apparently with no earnings penalty [Towse (2001a)].

5.2.2. Certification in artists' labour markets

Although colleges training artists award degrees and diplomas, studies of artists' labour markets have found that certification apparently plays a less important role in the arts

[14] 30 percent is a not untypical figure; see Towse (2001a).

than in it does other labour markets. Certification is of course highly correlated with formal schooling, which tests students for their achievement in following the curriculum. However, that may not provide the kind of information wanted by employers or others hiring artistic labour for several reasons. Artists typically are self-employed and so need not signal to an employer. A reputation for professionalism and high quality talent/creativity are very important in artists' labour markets and certification by art colleges apparently does not provide adequate information about these characteristics. Employers may not trust colleges' certification because they produce too many graduates, not all of whom are sufficiently talented. Colleges have their own objective functions and they maximise their income from student numbers, and they may also be pressed by funding authorities to offer a mix of services to a mix of students; these factors combine to give higher education institutions training artists the incentive to 'oversupply' graduates. Indeed as stated earlier, many 'employers' who hire artists show no interest in their paper qualifications and set up expensive screening arrangements of potential employees for themselves [Towse (1993, 1996)].

5.2.3. Students' expectations

Students face problems in forming expectations about the probability of making an artistic career pay because there is little objective information available. Their subjective assessment of their own talent and creativity is likely to be overestimated due to 'the overwheening conceit of the young', as Adam Smith put it in the *Wealth of Nations*, and objective information about future earnings and the ease of obtaining work is difficult to obtain in a labour market in which there is a wide dispersion of earnings and frequent job change. Following criticism that young people are let out into the real world without adequate preparation, colleges have made considerable efforts to offer courses on business methods and how to manage a career in the arts but often to little avail; students apparently fail to attend such courses, though they later complain that they 'should have been warned' about the difficulty of making and managing a career [Towse (2001a)]. These problems might seem to support the view that young artists are irrational. However, when 'nobody knows' about quality and demand for artistic output [Caves (2000)], irrationality may be confused with radical uncertainty. Rationality is inevitably bounded in artists' labour markets.

Students also form expectations about non-pecuniary rewards such as the opinion of peers, the desire to work on one's own account and other 'psychic rewards'. These are particularly important to artists: and they accept earnings lower than those available in alternative occupations as a price worth paying for the chance to work in the arts and, as long as they can earn enough to live on from other work (arts-related or non-arts jobs), they do not change occupations. Throsby's evidence shows that once a 'satisficing' level of income has been reached from earnings from all sources, artists devote more time to arts work, eschewing the opportunity to earn more from doing more hours of non-arts work [Throsby (1992)]. Abbing (2002) has reinforced this view with ample anecdotal

evidence from the visual arts world.[15] Artists often report choosing work that offers new challenges rather than repeating a former piece of work even if that would raise their earnings [Jeffri and Throsby (1994)]. This behaviour could be superficially interpreted as opting for utility rather than money but it may also be efficient in improving the artist's reputation, which is the best investment in her future, particularly for self-employed workers [Benhamou (2000)]. It is difficult to know when artists absorb these values – whether they do so as students or after they have entered the labour market. There have been few longitudinal studies of artists' careers by cultural economists that match students' expectations to their labour market experience.[16]

5.3. Does the human capital model explain artists' training decisions?

Finally, we come to the question of how well the human capital model performs in explaining artists' decisions on training and career development. If we were to take the extreme view that talent alone determines an artist's career and earnings, investment in schooling would not be worthwhile; by definition it could not raise productivity. However, casual evidence from the biographies of artists goes contrary to that view, as many highly talented artists have trained at art, drama or music college. Of course that could be for institutional reasons and we may question whether an alternative organisation of training such as private lessons could have yielded the same results. Apprenticeships in the performing and visual arts – the only source of training before the nineteenth century – are alternatives that are still sometimes available today, for example, for potters and for opera singers.[17]

However, as noted above, part of the experience of attending college is socialisation and professionalisation. Blaug (1985) has pointed out that the three Ss – skilling, screening and socialisation – are as important in the labour market as the three Rs. All artists need to learn the ropes; networking – forming working partnerships, meeting with other artists and with agents who may in future be in a position to offer work, getting recommendations from well-known teachers – may be more important than the schooling function. Tacit knowledge, trust and reputation, are also important in artists' labour markets. These are all features of social capital; are they also part of human capital formation? An important question is whether they are amenable to investment decisions. Tacit knowledge acquired in childhood for example cannot be regarded as an

[15] Abbing is writing mostly about the position of artists in the Netherlands, where a government support scheme for visual artists was tried in the 1970s, resulting in a vast oversupply of very large works of art. It also led to a considerable oversupply of artists with the result that art prices are low, creating a vicious circle of dependence on state basic income payments [Abbing (2002); see also Rengers and Velthuis (2002)].

[16] See Chapter 23 by Alper and Wassall in this volume for a discussion of longitudinal studies.

[17] Until the mid-twentieth century in Italy, the standard training of singers consisted of the pupil going to live with the Maestro and having daily lessons. Tito Gobbi trained that way and so did Cecilia Bartoli, whose singer parents taught her at home. Conductors often started as repetiteurs in opera houses teaching singers their parts or even, as in the case of Georg Solti, as pianists working for a singing teacher. Opera houses have fairly recently reintroduced apprenticeship schemes for trained young singers to acquire work experience.

investment as it is not deliberately fostered, though early childhood education within the family may be, and often is in the case of children's dance and music lessons [Seaman (2003)]. Acquisition of tacit knowledge and early training certainly seem to play some role in occupational choice in the arts; there are many instances of children following in a parent's footsteps (and not only in the days when there was only on-the-job training). Early acquisition of knowledge is probably easily confused with innate talent in the arts. However, there have been no systematic studies of the influence of family background on occupational choice in the arts and it is all too easy to generalise from the Placido Domingos and Vanessa Redgraves of this world. This topic would be a very interesting research project and could shed light on the role played by social as compared to human capital investment; I return to this matter below.

These qualitative arguments may explain the weak effect cultural economists have found for the influence of human capital on artists' earnings. Schooling helps the artist get her first work assignment and that may be a critical step on the career ladder. Schooling also provides general training that can be used outside the arts and it teaches good networking and other 'social capital' skills. But if investment in human capital only marginally explains the observed high demand for arts training, does that suggest that sorting models perform better? It seems from the earlier discussion that certification also plays an ambiguous role in artists' labour markets. Besides formal schooling, there are other screening devices available such as prizes and competitions, awards from Arts Councils and other forms of informal certification that offer information.[18] However, employers do take note of the fact that artists have attended college because the college screened them on entrance; they also treat attendance as a signal that arts students will have acquired some basic professional skills, even if these are marginal to the innate talent necessary for undertaking work in the arts. It seems that in a situation with oversupply of new entrants and the presence of a sea of amateurs, the position of the potential 'employer' in the arts (as compared to other labour markets) is especially difficult because of information problems; on the other hand, making the right choice matters less in a situation in which frequent job change and working on short term contracts is normal. And, as reported earlier, having a higher education qualification pays off in arts related and non-arts work even if not for artistic work and that is an important consideration for the majority of artists who inevitably hold multiple jobs. Thus, there is some supporting evidence for the sorting model.

In short, the jury is still out on what is an appropriate model to explain artists' training and occupational decisions.

6. Human capital, social capital, cultural capital and their implications for training artists

We now return to the fundamental question of what purpose is served by the use of the term 'capital' in human capital theory. Originally raised by Blaug (1976), who asked

[18] See Wijnberg (2003) for a discussion of the role of awards in the arts.

whether human capital is in fact a useful metaphor, this question is being asked again in relation to social capital and it is also relevant to the notion of cultural capital that has appeared in the literature of cultural economics. Social capital is a concept that originated in social theory. It has provided an umbrella term under which a range of diverse topics has been investigated by economists. Bowles and Gintis (2002, p. F419) define it as follows: "Social capital generally refers to trust, concern for one's associates, a willingness to live by the norms of one's community and to punish those who do not". However, Putnam (2000, p. 19) defines it as "... connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them ...". Both aspects have been related to labour markets in general and specifically to human capital. In a recent review article, Sobel (2002) states: "economists find the social capital *metaphor* useful in studies of economic development, transition economies, common-resource property use, and education" (p. 143, my italics). The concept of cultural capital was introduced by Throsby, who defines it as "an asset that embodies, stores or provides cultural value in addition to whatever economic value it may possess", where cultural value is defined as a combination of aesthetic, spiritual, social, historical, symbolic and authenticity values, typically produced by artists [Throsby (2001, p. 46)].[19] Thus we have three somewhat related concepts carrying the label 'capital'. What do these concepts contribute to an understanding of artists' labour markets and indeed how appropriate is the capital metaphor in all these cases?

Since the World Bank's adoption of the concept of social capital, a number of objections have been levelled against it by economists, notably by Kenneth Arrow (2000) and Robert Solow (2000), who judge it according to the standard notion of capital in economics due to Irving Fisher. Arrow's definition of (physical) capital identifies three features: capital is deferred consumption; it can be deliberately accumulated by investment; and it is alienable. Solow added two further criteria: capital has a rate of return that can be used as a measure of its value; and capital depreciates, whether from use or from technological obsolescence. Both Arrow and Solow conclude that social capital does not have these characteristics. As Solow has said "social capital is an attempt to gain conviction from a bad analogy" [quoted in Sobel (2002)]. Many other economists have criticised the concept from various points of view [Fine (2001); Durlauf (2002)].

Be that as it may, it seems that several features bundled together as social capital are relevant to artists' labour markets. How do these features help us understand artists' incentives to invest in acquiring skills and competences? If, as is the strong implication, social capital is a 'public good' (in the technical sense of that term, that is, non-rivalrous and non-excludable), the inference is that individuals would not have the incentive to invest in themselves and therefore artists' training would have to be collectively financed. However, if artists can appropriate the benefits for themselves, as they can with the human capital model, then they would have the incentive to invest

[19] For a full discussion, see Throsby (2001, Chapter 2).

in their own training. Though much of the research on social capital has been on its communal benefits, Glaeser, Laibson and Sacerdote (2002) make the case that standard microeconomic analysis can indeed be applied to social capital formation. Their model of individual investment in social capital, in which individuals choose optimal levels depending upon the opportunity cost of their time and time preference rate, is almost identical to the human capital investment model. Clearly they assume that social capital is not a public good, although it may have some degree of publicness. More important for our present purposes is their assertion that: "(T)he connection between social capital and human capital is one of the most robust empirical regularities in the social capital literature. Better understanding of this connection should be a key goal for future research" [Glaeser, Laibson and Sacerdote (2002, p. F455)]. The clear implication of this is that investment in social capital is analogous to that in human capital – indeed, the two are 'joint products'. But if that is so, there is an identification problem of distinguishing the private rate of return to one from that to the other. That muddies the debate about the relevance of human capital theory in artists' labour markets. It is clearly important for policy purposes to understand their separate contributions to lifetime earnings in view of the public/private dichotomy.

The public/private division also arises in respect of cultural capital. Throsby defines cultural capital as the stock of goods and services that constitute society's cultural assets, which have been created by artists (past and present). He distinguishes tangible from intangible cultural capital: tangible assets may be privately or publicly owned but intangible cultural capital (which overlaps significantly with social capital) is always a public good. Both yield a return of cultural value that Throsby regards as a communal rather than an individual variable. However, the motive for the artist in creating these assets, according to the human capital view (which Throsby has tested more than any other cultural economist), is the desire for private gain, whether pecuniary or non-pecuniary. Thus, artists' human capital creates cultural capital – Adam Smith would have liked the implied doctrine of the unintended consequences of private action, the coincidence of private incentive with public benefit. As with social capital, there are strong externalities present in cultural capital (if not true public goods characteristics) that call for communal rather than individual investment.

One way of identifying the differences between these three obviously related capital concepts is to focus on their implications for cultural policy. A central concern of cultural policy is how society can best invest in the supply of artistic creativity. According to human capital theory, we should encourage artists to raise their productivity through subsidies to formal training courses in colleges and possibly also by giving artists basic income support or price subsidies in order to raise their earnings. Social capital instead suggests that developing social skills, joining professional networks, acquiring a reputation and the rest are what is needed to pursue a career; acquiring the right experience for building a reputation for reliable professional behaviour takes precedence over schooling. Some social skills may be acquired in specialised colleges but investment in social capital on-the-job through work experience is likely to be more effective. The policy implications of the social capital model are therefore that there should be subsidies to

colleges providing hands-on experience with teachers who are professionally active, agreements with professional associations and trade unions to accept young entrants, and so on. It possibly also implies a policy of restricting the number of training places in college so as to raise the 'exclusiveness' and reputation of being accepted on a course. However, apprenticeship schemes and artist-in-residence placements would seem to be more effective in building social capital. As noted, social capital and human capital are likely to be formed side by side and for both there is a private return to the individual that is an incentive to investment.

The implications of the notion of cultural capital for cultural policy are complex and reach to the heart of artistic creativity and the difficulty of applying economic analysis when motivation and outcomes are not easily understood in terms of economic rationality. To say that artists are motivated by the desire to supply cultural value (as I interpret Throsby to do) is simply to 'pass the buck' by changing the language. It does not tell us how that translates into economic terms such as productivity or earnings. We may accept that cultural heritage (or accumulated cultural capital), whether tangible or intangible, is a public good formed by artists in pursuit of their own motives but that does not tell us how it influences successive generations of artists. It could be argued that the greater the stock of cultural heritage, the more difficult it is for artists to be creative, and training that makes students aware of that heritage runs the risk of frightening them off. Conversely, making your mark may best be achieved by shock tactics rejecting that heritage. Therefore, investment in cultural capital by preserving heritages could be either an incentive or a disincentive to individual creativity and furthermore may similarly influence consumers' taste or distaste for new works. It is certainly difficult in some art forms, notably music and opera, to get audiences to attend performances of contemporary creators. The public good nature of cultural capital also implies that it is difficult for individual artists to appropriate the full economic value of their work [Wijnberg (1995)]. This is one of the rationales for copyright law (see below).

The above points raise the question how artistic motivation may be stimulated by government policy. Frey (1997) has developed a general theory of economic motivation based on human psychology that includes the response to pecuniary incentives – extrinsic reward – but extends the maximand to the satisfaction of an inner intrinsic motivation. While other cultural economists have recognised this distinction, Frey's insight is what he calls the 'Crowding Effect', the proposition that inappropriate rewards can displace incentives; for example, monetary payment, an extrinsic reward, may crowd out intrinsic motivation and become a disincentive rather than an incentive for acts which are intrinsically motivated. A better response may be achieved by offering intrinsic rewards to inner-motivated output; an optimal system combines appropriate incentives and rewards. In applying this analysis to the arts, Frey (2000) asks how government support for the arts affects creativity. He distinguishes what he calls 'institutional creativity' from 'personal creativity': institutional creativity is motivated by extrinsic rewards and personal creativity is motivated by intrinsic rewards. Extrinsic rewards are what the market and the state can offer – the market via prices for artists' work and the state through direct financial measures such as subsidy, and indirect measures such as copyright law

[Towse (2001b)]. Personal creativity is clearly more closely related to intrinsic motivation, which in its extreme form is the Romantic concept of the driven genius pursuing art for art's sake at all costs. Its reward is intrinsic, for example, via recognition by one's peers; this is not something the state can offer. But even personal creativity is subjected by Frey to an economic interpretation by applying the all-powerful doctrine of opportunity cost: younger artists can 'afford' to be more creative than older established artists because they have less to lose artistically and financially.

Frey's theory seems to get us somewhat closer to the crucial question about creativity and cultural policy: can we 'create' creativity by investment, private or public? That obviously has important implications for the present-day policy in many countries that emphasise the role of the creative industries. However, whether we espouse the concepts of human, social or cultural capital as our guide to cultural policy towards artists, it is difficult to get away from the role of innate talent. In fact, none of these theories comes to terms with this issue. Even distinguishing intrinsic and extrinsic motivation does not solve the matter. All told, we must accept the fact that the probability of backing the right horse and choosing only highly talented artists to nurture and support is very low. 'Many are called but few chosen' has to be the motto for art colleges and artists' labour markets. At best, they filter out the least able and create conditions in which the best can make their way. Throwing money at arts training by way of investing either in human, social or cultural capital does not really solve the problem of how to create or improve creativity. So how should we attempt to create and improve creativity? The answer is quite simply that we do not know.

7. Human capital theory, copyright law and reproducibility

I now turn to an old problem in human capital theory – its inalienability – and argue that the combination of the ability to reproduce works of art ('reproducibility') and copyright law overcome previous objections to the capital analogy, namely that human capital cannot be separated from labour. There is a close relationship between human capital and copyright since both spring from the human mind. Copyright law protects authors and performers by establishing statutory property rights that enable them to control the exploitation of their works, granting them the exclusive right to authorise their use.[20] The economic purpose of copyright is to encourage creativity and the dissemination inter alia of works of art.[21]

The evolution of copyright law is inextricably connected to the ability to make mechanical copies that began with the invention of the printing press. The development of

[20] Copyright law in the Anglo Saxon tradition applies both to authors, performers and 'publishers' – companies in the cultural industries, such as producers of sound recordings and film. In the European civil law tradition, authors' rights pertain to human creators and neighbouring rights to the other groups. Here I use the term copyright loosely to refer to both types of rights.

[21] See Landes (2003) and Chapter 7 in this volume.

recording technologies – sound recording, motion picture making, photocopiers, home recording equipment (VCRs, CD burners) and now the Internet – that duplicate a work from a master copy (a performance, a book, a photograph) has vastly extended reproducibility. These inventions have created markets for copyrighted works embedded in CDs, videos, computer games etc., that have been alienated from the person of the artist or creator. Creators mostly have their work marketed by 'publishers' (record, film, TV, publishing companies, art galleries and so on – firms in the creative or cultural industries) who act on the assignment or licence of the copyright by the creator. The typical contract is a royalty contract, which may or may not include an advance payment, sharing the sales revenue of the publisher for a fixed percentage, often 10 or 15 percent.[22] Once economic rights have been assigned, however, the artist has little residual control over exploitation (though moral rights may not be alienated). When firms decide to delete works from the catalogue, artists can rarely do anything to stop them. Copyright enables artists to earn from their investment human capital but it does not ensure they do so and how much they earn depends on market forces. It was noted earlier that superstar earnings are disproportionately higher than 'middle income' artists. That is also the case with copyright royalty income. Because superstars have greater bargaining power with firms in the cultural industries, they are able to strike a better bargain than 'ordinary' artists [Caves (2000)]. 'Average' artists' royalty earnings, by contrast, are typically low [Towse (2001a)].

One other feature of copyright that can be mentioned in this context is 'works-for-hire', according to which copyright is conferred on the employer in cases where the employee was directed to do the work; that is typically the situation for Hollywood script-writers and animators, for example. Therefore the control of copyright assets depends on the way the labour market for artists is organised – the less full-time employment there is, the more important copyright is for freelancers.

The exploitation of the author's work embodied in reproducible form has a double-sided effect: it 'alienates' the author's human capital input from her labour as the work can now reach the market without the necessity of her presence; and through copyright law the publisher acquires a durable asset, the master copy, which he can exploit independently of the author (who may even be dead since the copyright term is life plus 70 years).[23] Thus the joint effect of reproducibility and copyright law has been the creation of capital assets in the hands of the firms in the cultural industries that may be traded and transferred in mergers. The AOL/Time Warner merger, for example, involved the transfer of 1.5 m song titles. This effect is believed by writers on the cultural industries to be responsible for increased merger activity [Bettig (1996)].

Another effect of the combination of copyright law and reproducibility on artists' labour markets is that an artist can decide to allocate her time to earn a spot price or a

[22] Watt (2000) analyses royalty contracts in detail from the economic point of view.

[23] It is often forgotten that an author's work is protected for a longer period than the copyright term. If, for example, an author creates a work at the age of 25 and she lives to the age of 75, that work is protected for 120 years.

future return – for example, doing a sound recording in preference to a concert (since the concert pays a fee and the sound recording a royalty). Copyright therefore alters the duration of human capital and artists' supply decisions. In addition to dividing their time between arts and non-arts work [Throsby (1996)] or 'high art' and 'low art' [Cowen and Tabarrok (2000)], artists can optimise a portfolio of copyrights that form part of an inter-temporal decision about present and future earnings. Taking this into account, an artist's earnings at any point in time depend upon wages and fees for the hours of work done in that period *plus* copyright royalty payments (the royalty rate times the number of copyrights the artist holds). It is to be expected that the higher the royalty income, the fewer hours of work artists would do in any given period. A model along these lines could be tested using data from artists' surveys that asked for separate information on fees and wages and on royalties.[24]

The combination of copyright law and reproducibility therefore fundamentally alters two issues in human capital theory, the inalienability of human capital from labour and the period over which the worker can recoup the investment in human capital. As a result of these two features, human capital thus becomes conceptually far closer to physical capital. It is likely that these features are also present in other labour markets, especially those in the 'information' industries. Casualisation of labour, preferences for self-employment, the increased value of information and knowledge, and the increased value of protection through copyright and other intellectual property law are growing in the economy at large. Artists' labour markets may indeed be the forerunner of a more general trend in the evolution of labour markets.

It remains to consider whether a policy of 'strengthening' copyright law or 'increased copyright protection', both much touted by the cultural industries and their pressure groups as assisting artists (as well as themselves). That is a complex question that has been little researched. Strengthening copyright for artists, for example by lengthening its duration, is a two-edged sword: while increasing protection it also takes more work out of the public domain, thus also increasing the cost of creation [Landes and Posner (1989)]. It also benefits companies in the cultural industries more than individual artists since companies have better access to capital markets and a higher time preference rate, though it must be admitted that this is an assertion that remains unproven [Towse (1999)]. In Towse (2001b), however, I argued that copyright may well meet Frey's call for intrinsic motivation for artists by providing symbolic recognition of their status. This is something that could be investigated further.

8. Conclusion

In this chapter, I have argued that human capital theory applies only weakly to artists' decisions about investment in schooling and training and about occupational choice.

[24] For a preliminary attempt at such a model, see Towse and Watt (2005).

The same, however, can be said about the sorting model, though the case for it is possibly somewhat stronger. What is lacking in cultural economics is an understanding of talent and creativity, what economic factors motivate artists and how creativity can be encouraged as part of government cultural policy. Bringing social and cultural capital into the equation do not seem to add much in the way of understanding artists' labour markets. The case has been made in this chapter that reproducibility of works of art in combination with copyright law alters the view that human capital cannot be separated from the labour of the artist but that separation, while intellectually interesting, does not help artists to greater rewards in and of itself; indeed, it may well be a cause of increasing skewness of artists' earnings. The effect of copyright earnings on artists' supply decisions is something that must be tested empirically and I have sketched a model that could be used as a basis for further investigation. It could be linked to longitudinal studies of artists' careers, another piece of research that is badly needed.

By concentrating on the role of human capital in artists' labour markets, the focus has been on the supply side. So far there have been no systematic studies of the demand for artists or attempts to analyse skill-bias in the arts. This type of study has increasingly been done in labour economics in order to understand changes in rates of return to human capital over the last 30 years [Acemoglu (2002)]. Cultural economists who have studied artists' labour markets are certainly aware of the increasing demands that are made on artists' skills and competencies and also of the ever growing skills of certain kinds of artists – for example, singers and instrumentalists now routinely perform music that was considered unplayable 75 years ago and do so with little rehearsal. That is surely a sign of increased productivity.[25] This is another important topic for future research in artists' labour markets.

It is essential that cultural economics in general and the study of artists' labour markets in particular continue to apply standard economic ideas to the arts and to test them. The arts form part of the economy; they use resources and produce consumer goods. Artists are workers – they may be more like ministers of religion, inventors or creative engineers than accountants or travel agents but as a starting point it is right to look for similarities between artists and other workers using labour economics and human capital theory. That has been the approach of those who initiated research on artists' labour markets; however, experience so far suggests that the human capital model is not the way forward. The overall conclusion, then, is that there has been empirical progress in the analysis of artists' labour markets but there is much more to be done.

In closing, it is interesting to note that there are some strong parallels between aspects of artists' labour markets and those of sportspeople. In both fields the role of talent, innate ability and ability acquired early in life exert a strong influence on earnings and career success, and superstardom is probably even more marked in sport than in the

[25] One of the long run effects of the espousal of Baumol's Cost Disease in the performing arts has been the assumption that no technical progress is possible in the arts or on the part of artists. That is, however, a misunderstanding. See Cowen (1998) for a counter view; see also Chapter 11 by Baumol and Chapter 15 by Brooks in this volume.

arts. Seaman (2003) concludes that there is much to be gained by cultural economists from joint research between the two fields. Maybe artists are after all not so completely different!

References

Abbing, H. (2002). Why Are Artists Poor? The Exceptional Economy of the Arts. Amsterdam University Press, Amsterdam.

Acemoglu, D. (2002). "Technical change, inequality and the labour market". Journal of Economic Literature XL (1), 7–72.

Arrow, K. (2000). "Observations on social capital". In: Dasgupta, P., Serageldin, I. (Eds.), Social Capital: A Multifaceted Perspective. World Bank, Washington, DC, pp. 3–5.

Becker, G. (1964). Human Capital. Columbia University Press, New York.

Benhamou, F. (2000). "The opposition of two models of labour market adjustment. The case of the audiovisual and performing arts in France and in the United Kingdom". Journal of Cultural Economics 24, 301–319.

Bettig, R. (1996). Copyrighting Culture. Westview Press, Boulder.

Blaug, M. (1970). An Introduction to the Economics of Education. Allen Lane Penguin Press, London.

Blaug, M. (1976). "The empirical status of human capital theory: A slightly jaundiced survey". Journal of Economic Literature 14 (3), 827–856.

Blaug, M. (1985). "Where are we now in the economics of education?" Economics of Education Review 4 (1), 17–24.

Bowles, S., Gintis, H. (2002). "Social capital and community governance". Economic Journal 112, F419–F436.

Castañer, X., Campos, L. (2002). "The determinants of artistic innovation: Bringing in the role of organisations". Journal of Cultural Economics 26 (1), 29–52.

Caves, R. (2000). Creative Industries: Contracts between Art and Commerce. Harvard University Press, Cambridge, MA.

Cowen, T. (1998). In Praise of Commercial Culture. Harvard University Press, Cambridge, MA.

Cowen, T., Tabarrok, A. (2000). "An economic theory of avant-garde and popular art, or high and low culture". Southern Economic Journal 67 (2), 232–253.

Durlauf, S. (2002). "On the empirics of social capital". Economic Journal 112, F459–F479.

Filer, R. (1986). "The starving artist: Myth or reality? – Earnings of an artist in the United States". Journal of Political Economy 94 (1), 56–75.

Filer, R. (1987). "The price of failure: Earnings of former artists". In: Shaw, D., Hendon, W., Waits, C. (Eds.), Market for the Arts. Akron University Press, Akron.

Filer, R. (1990). "The arts and academe: The effect of education on earnings of artists". Journal of Cultural Economics 14 (1), 15–38.

Fine, B. (2001). Social Capital versus Social Theory. Routledge, London and New York.

Frey, B. (1997). Not Just for the Money. Edward Elgar, Cheltenham.

Frey, B. (2000). Art and Economics. Springer, Heidelberg.

Glaeser, E., Laibson, D., Sacerdote, B. (2002). "An economic approach to social capital". Economic Journal 112, F437–F458.

Gurgand, M., Menger, P.-M. (1996). "Work and compensated unemployment in the performing arts. Exogenous and endogenous uncertainty in artistic labour markets". In: Ginsburgh, V., Menger, P.-M. (Eds.), Economics of the Arts. Elsevier, Amsterdam, pp. 347–381.

Jeffri, J., Throsby, D. (1994). "Professionalism and the visual arts". European Journal of Cultural Policy 1 (1), 99–108.

Landes, W. (2003). "Copyright". In: Towse, R. (Ed.), A Handbook of Cultural Economics. Edward Elgar, Cheltenham, pp. 132–142.

Landes, W., Posner, R. (1989). "An economic analysis of copyright law". Journal of Legal Studies 18, 325–366.
MacDonald, G. (1988). "The economics of rising stars". American Economic Review 78, 155–166.
McNertney, M., Waits, C. (1997). "The incomes of cultural providers: A review of current research". In: Towse, R. (Ed.), Cultural Economics: The Arts, Heritage and the Media Industries. Edward Elgar, Cheltenham, pp. 275–283.
Mincer, J. (1958). "Investment in human capital and personal income distribution". Journal of Political Economy 66, 281–302.
Putnam, R. (2000). Bowling Alone. Simon and Schuster, New York.
Rengers, M., Velthuis, O. (2002). "Determinants of prices for contemporary art in Dutch galleries". Journal of Cultural Economics 26, 1–26.
Rosen, S. (1981). "The economics of superstars". American Economic Review 71, 845–858.
Rosen, S. (1987). "Human capital". In: Eatwell, J., Milgate, M., Norman, P. (Eds.), The New Palgrave: A Dictionary of Economics. Macmillan, London and Basingstoke, pp. 681–689.
Rosen, S. (1992). "Distinguished fellow: Mincering labor economics". Journal of Economic Perspectives 6 (2), 157–170.
Schultz, T. (1961). "Investment in human capital". American Economic Review 51, 1–17.
Schumpeter, J. (1942). Capitalism, Socialism and Democracy. Harper, New York.
Seaman, B. (2003). "Cultural and sports economics: Conceptual twins?" Journal of Cultural Economics 27 (2), 81–126.
Smith, A. ([1776] 1976). An Inquiry into the Nature and Causes of the Wealth of Nations. Campbell, R.H., Skinner, A.S., Todd, W.B. (Eds.). Clarendon Press, Oxford.
Sobel, J. (2002). "Can We Trust Social Capital?" Journal of Economic Literature XL (1), 139–154.
Solow, R. (2000). "Notes on social capital and economic performance". In: Dasgupta, P., Serageldin, I. (Eds.), Social Capital: A Multifaceted Perspective. World Bank, Washington, DC, pp. 6–10.
Throsby, D. (1992). "Artists as workers". In: Towse, R., Khakee, A. (Eds.), Cultural Economics. Springer, Berlin. Reprinted in Towse (1997, pp. 261–268).
Throsby, D. (1994). "A work preference model of artists' behaviour". In: Peacock, A., Rizzo, I. (Eds.), Cultural Economics and Cultural Policies. Kluwer Academic, Dordrecht, pp. 69–80.
Throsby, D. (1996). "Disaggregated earnings functions for artists". In: Ginsburgh, V., Menger, P.-M. (Eds.), Economics of the Arts: Selected Essays. Kluwer Academic, Dordrecht, pp. 331–346.
Throsby, D. (2001). Economics and Culture. Cambridge University Press, Cambridge.
Towse, R. (1992). "Earnings of singers: An economic analysis". In: Towse, R., Khakee, A. (Eds.), Cultural Economics. Springer, Berlin. Reprinted in Towse (1997, pp. 218–226).
Towse, R. (1993). Singers in the Marketplace: The Economics of the Singing Profession. Clarendon Press, Oxford.
Towse, R. (1996). "Economics of artists' training". In: Ginsburgh, V., Menger, P.-M. (Eds.), Economics of the Arts. North-Holland, Amsterdam, pp. 303–329.
Towse, R. (1997). Cultural Economics: The Arts, Heritage and the Media Industries. Edward Elgar, Cheltenham.
Towse, R. (1999). "Copyright and economic incentives: An application to performers' rights in the music industry". Kyklos 52 (3), 369–390.
Towse, R. (2001a). Creativity Incentive and Reward. Edward Elgar, Cheltenham.
Towse, R. (2001b). "Partly for the money: Rewards and incentives to artists". Kyklos 54 (2/3), 473–490.
Towse, R., Watt, R. (2005). "A model of author time allocation". Paper presented at SERCI conference 7–8 July Montreal, www.serci.org.
Wassall, G., Alper, N. (1985). "Occupational characteristics of artists: A statistical analysis". Journal of Cultural Economics 9 (1), 13–34.
Watt, R. (2000). Copyright and Economic Theory. Friends or Foes? Edward Elgar, Cheltenham.
Weiss, A. (1995). "Human capital vs. signalling explanations of wages". Journal of Economic Perspectives 9 (4), 133–154.

Wijnberg, N. (1995). "Selection processes and appropriability in art, science and technology". Journal of Cultural Economics 19 (3), 221–235.
Wijnberg, N. (2003). "Awards". In: Towse, R. (Ed.), A Handbook of Cultural Economics. Edward Elgar, Cheltenham, pp. 81–84.
Willis, R. (1986). "Wage determinants: A survey and reinterpretation of human capital earnings functions". In: Ashenfelter, O., Layard, R. (Eds.), Handbook of Labor Economics. Elsevier, Amsterdam, pp. 525–602.
Withers, G. (1985). "Artists' subsidy of the arts". Australian Economic Papers 24, 290–295. Reprinted in Towse (1997, pp. 269–274).