

5-1-2009

# Drawing Conclusions from Non-Random Samples: A Comment on “Race and Art: Prices for African American Painters

Melissa Boyle

*College of the Holy Cross*, [mboyle@holycross.edu](mailto:mboyle@holycross.edu)

Victor Matheson

*College of the Holy Cross*, [vmatheso@holycross.edu](mailto:vmatheso@holycross.edu)

Follow this and additional works at: [http://crossworks.holycross.edu/econ\\_working\\_papers](http://crossworks.holycross.edu/econ_working_papers)



Part of the [Economics Commons](#)

---

## Recommended Citation

Boyle, Melissa and Matheson, Victor, "Drawing Conclusions from Non-Random Samples: A Comment on “Race and Art: Prices for African American Painters” (2009). *Economics Department Working Papers*. Paper 37.

[http://crossworks.holycross.edu/econ\\_working\\_papers/37](http://crossworks.holycross.edu/econ_working_papers/37)

This Working Paper is brought to you for free and open access by the Economics Department at CrossWorks. It has been accepted for inclusion in Economics Department Working Papers by an authorized administrator of CrossWorks.

**Drawing Conclusions from Non-Random Samples: A Comment on  
“Race and Art: Prices for African American Painters and their  
Contemporaries” by Richard Agnello**

Melissa A. Boyle

and

Victor A. Matheson

May 2009

COLLEGE OF THE HOLY CROSS, DEPARTMENT OF ECONOMICS  
FACULTY RESEARCH SERIES, PAPER NO. 09-06\*



Department of Economics  
College of the Holy Cross  
Box 45A  
Worcester, Massachusetts 01610  
(508) 793-3362 (phone)  
(508) 793-3708 (fax)

<http://www.holycross.edu/departments/economics/website>

\* All papers in the Holy Cross Working Paper Series should be considered draft versions subject to future revision. Comments and suggestions are welcome.

# **Drawing Conclusions from Non-Random Samples: A Comment on Race and Art: Prices for African American Painters and their Contemporaries by Richard Agnello**

Melissa A. Boyle<sup>1</sup>  
College of the Holy Cross

and

Victor A. Matheson<sup>2</sup>  
College of the Holy Cross

May 2009

## **Abstract**

In a recent paper in the Journal of Black Studies, “Race and Art: Prices for African American Painters and Their Contemporaries,” economist Richard Agnello examines price differentials between paintings sold at auction from 1972 to 2004 for a set of 16 African American artists, and a group of white artists identified as similar contemporaries. In this short paper we examine Agnello’s control group of white artists and confirm that this is a non-randomly selected sample of artists that are, on average, quantifiably more famous than the black artists in Agnello’s treatment group. In light of this selection bias, we discuss the difficulty of disentangling the effects of race and fame on auction prices.

JEL Classification Codes: Z11, J15, J70

*Keywords:* African American painters, economics of art, sample bias

---

<sup>1</sup>Melissa A. Boyle, Department of Economics, Box 191A, College of the Holy Cross, Worcester, MA 01610-2395, 508-793-2334 (phone), 508-793-3708 (fax), mboyle@holycross.edu

<sup>2</sup>Victor A. Matheson, Department of Economics, Box 157A, College of the Holy Cross, Worcester, MA 01610-2395, 508-793-2649 (phone), 508-793-3708 (fax), vmatheso@holycross.edu

## **Introduction**

In a recent paper in the *Journal of Black Studies*, “Race and Art: Prices for African American Painters and Their Contemporaries,” economist Richard Agnello examines the price of paintings sold at auction from 1972 to 2004 for a set of 16 African American artists. By comparing the prices of works by these artists to a comparison group of works by similar white artists, Agnello concludes that works by African American artists fetch significantly lower prices than those of their white counterparts but that the gap has been narrowing over the time frame examined. In addition, he notes that prices for works by black artists “may continue [to rise] since painting prices for African Americans have not completely caught up to those of contemporaries.” (Agnello, 1) Agnello’s paper is the first to address the topic of race differentials in art prices, and his results are both interesting and worthy of further examination. This short paper, however, notes a problem with the way the comparison group of white artists was identified and examines the issues associated with the use of non-random samples in statistical analysis. Furthermore, this paper explores which conclusions of the initial study remain valid.

In the original paper, the group of African American artists is well-established by simply including all oil painters with sufficient auction transactions to make meaningful comparisons. In any research experiment, if all available data is included, one will generally not be concerned about selection bias in the data. On the other hand, the comparison group is a non-random sample of white artists chosen subjectively by Amalia Amaki, “curator of the Paul R. Jones Collection of African American Art at the University of Delaware.” (Agnello, 4) For each African American artist in the sample, at least one white artist is assigned “by considering similar style, life span, and reputation.” (Agnello, 4) Since the group of white artists is simply selected using the

subjective judgments of an art historian, there exists a clear potential for selection bias. Whether done consciously or not, there is an obvious tendency when asked to identify a contemporary to provide the name of a well-known person with similar attributes. For example, if one were asked to name a contemporary of Henri Matisse, it would be natural to reply Pablo Picasso, not one of the hundreds of other lesser-known artists who lived at the same time and worked in the same style as these two famous artists.

Of course, if the comparison group of white artists is more famous than the sample of black artists, it should come as no surprise that the white artists' paintings are, on average, more valuable. Indeed, rare art constitutes a clear example of what is known in economics as a "positional good." Positional goods are those items that derive value primarily as a function of their desirability compared to close substitutes (Hirsch, 1977). In part, collectors value original works by famous artists because of the social status derived from having a prestigious item that is denied to others. The more famous the artist, the higher rank or position the work has in terms of prestige compared to other close substitutes and the more highly the work will be valued. If Agnello, in fact, is comparing African American artists to a similar, but more famous, set of white artists, it is difficult to draw any meaningful conclusions about the price of works by African American painters in comparison to their contemporaries as it may be impossible to disentangle the effects of race from the effects of fame. The next section of the paper attempts to discern whether the observed differences in art prices described by Agnello are the result of fame or race.

### **Race or Fame?**

While art historian Amalia Amaki claims to have selected contemporaries of similar reputation, it is not clear that this is objectively true. At first blush, the list of white artists seems more famous than the list of black artists, and Agnello recognizes this fact, stating, “the African American artists, although well-known by art historians, are typically less known in the general art community.” (Agnello, 5) Of course, it is difficult to measure fame, but this paper uses two methods in an attempt to objectively quantify reputation or fame: whether or not the artist is mentioned in a selected sample of art history survey books and the number of page hits received by the artist’s entry on Wikipedia.

First, we use three general interest art history books by different authors and publishers that are in wide use in collegiate courses or have a large popular following. These books all cover, at least in part, the time period and styles of the artists examined. The books were judged to be unbiased and representative of typical art history books by Virginia C. Raguin, Ph.D., holder of the Rev. John E. Brooks, S.J., Chair in the Humanities, and a member of the art history department at College of the Holy Cross. The books used are Phaidon’s “The American Art Book,” “History of Art, 5<sup>th</sup> ed.,” by Anthony F. Janson, and “History of Modern Art, 3<sup>rd</sup> ed.,” by H.H. Arnason. Table 1 indicates whether each artist in Agnello’s sample appears in the aforementioned sources. As shown in the table, 7, 3, and 2 of the 16 African American artists appeared in the three books, respectively, while 20, 10, and 19 of the 25 white artists appeared in the books, respectively. Overall, the white artists were generally more than twice as likely to appear in these references as the black artists. Of course, while the choice of these books by Professor Raguin and the inclusion of artists within these books by each author or editor are themselves subjective decisions, this evidence does suggest that white artists on the list are more

renowned than the list of black artists, and therefore their paintings are likely to be more valuable.

Table 1 also shows the number of page views for each artist's English Wikipedia page for the first three months of 2009. The presumption is that a more famous artist will receive more page views than one who is lesser known. For example, Pablo Picasso and Andy Warhol, arguably the most famous artists of the 20<sup>th</sup> century, are the top ranked modern artists in terms of page downloads on Wikipedia. For the artists in Agnello's study, the white artists had a higher number of page views in 15 out of the 25 comparisons and on average the white artists had over twice as many page hits as the African American artists. Again, these data suggest that white artists on the list are more famous than the list of black artists, potentially explaining any differences in painting prices.

Furthermore, a closer examination of the data lends even more credence to the hypothesis that price differences across the two samples are primarily driven by fame rather than skin color. Table 2 reproduces from Agnello's paper the average prices and the t-values for the hypotheses that the average price of each black artist's paintings is different than that of the primary corresponding white artist. Additional columns of Table 2 show the number of books each artist appeared in and the number of Wikipedia page views. In 13 of the 16 comparisons, one of the pair was mentioned in at least one more source than the other, and in 12 of these 13 cases, the artist with more book mentions had painting values statistically significantly higher than the author with the lower number of mentions. In the 13<sup>th</sup> case (White v. Soyer), the black artist was not mentioned in any of the three sources but actually had painting values higher than the white artist mentioned in one source, although the difference in painting prices was not statistically

significant. Similarly, in two out of the three cases where the artists were mentioned in the same number of sources, the difference in prices was statistically insignificant (the exception is Stuart Davis and Jacob Lawrence who were each mentioned by two sources with Davis having significantly higher prices.) Similarly, for the Wikipedia data in 10 out of 13 cases where one artist's paintings sold for a statistically significantly higher price than his contemporary, that artist's Wikipedia page also had more page views. Again, fame, not race, seems to be the more important factor in determining prices, and considering that the white artists appear to be considerably better known than their African American counterparts, it again seems reasonable that their paintings are likely to be more valuable.

Agnello does attempt to account for fame in his hedonic modeling of painting prices by including dummy variables for whether "the painting is illustrated in the auction catalog" and whether "the auction takes place at either Sotheby's or Christie's, the largest and most well-known auction houses in the world." (Agnello, 9) While Agnello notes that "since only the highest quality paintings generally get chosen by the major auction houses and illustrated in catalogs, these variables also proxy the quality of the painting and fame of the artist," (Agnello, 9) these proxies are imperfect, at best. Indeed, while the measures identified in this paper suggest that the comparison group of white artists is substantially more famous than the corresponding African American artists, the African American artists in Agnello's sample are only "slightly less likely to be illustrated in catalogs (82% vs. 84%) than [their white] contemporaries." (Agnello, 11) It should be noted, however, that African American paintings were much less likely to be sold at the major houses (47% vs. 68%) than those of white painters in the sample.

## **Discussion and Conclusion**

Of course, the ultimate question is what, if anything, can we draw from Agnello's analysis? Since the comparison group of white artists is not a random sample, and since fame was at best imperfectly controlled for in the analysis of art prices, it is not reasonable to conclude that white artists' works generally sell for more than those of comparable black artists due to the difficulties in precisely defining what one means by "comparable." One can only claim that there is at least one non-random sample of white artists whose paintings sell at higher prices than the average often-auctioned African American artist. Of course, it would be possible to write a similar paper that comes to the completely opposite conclusion simply by choosing a different set of white contemporaries.

On the other hand, Agnello's conclusion that the gap between the art prices of white and black artists has narrowed over the time-frame of the study appears to be a valid and interesting result. African American artists could have received increasing recognition in the art world leading to higher prices, or any pre-existing discrimination in the art markets against black artists could have diminished. Either way, since Agnello is comparing the same artists over the entire time-frame, any concerns about selection bias are largely alleviated with respect to comparisons over time. Thus, the narrowing of the price differential does seem to imply a fundamental change on the part of art collectors.

Whether this narrowing will continue, as suggested by Agnello, remains an unanswered question, and it will be important for future researchers to continue to monitor these markets. As noted previously, however, since the comparison group of white artists is not a random sample, there is no reason to believe that the prices of the works by the black artists and white artists will

eventually equalize. Prices for works by the most famous American artists of the past 150 years, such as Winslow Homer or Edward Hopper, are likely to remain well above those of lesser known African American artists for the foreseeable future for reasons unrelated to race.

None of this implies that African American artists have not experienced significant discrimination. Indeed, the very fact that Agnello could identify a mere 16 African American artists with sufficient auction transactions to make meaningful comparisons is clear evidence in itself that it has been very difficult for African American artists to establish themselves in the art world. Clearly black artists have historically had less access to formal training, networks, and economic resources, and these factors are reflected in the number of black artists, their renown, and the price of their works. Even controlling for these unequal pre-labor market opportunities it is likely that black artists' works did face discrimination in the auction market during the time period Agnello examines, although his methodology cannot accurately quantify the extent of this discrimination. Of course, this is not the final word on the subject and there is room for significant additional research on this interesting topic.

## References

Agnello, R. (2009). Race and Art: Prices for African American Painters and Their Contemporaries. *Journal of Black Studies*, forthcoming.

Arnason, H. (1990). History of Modern Art: Painting, Sculpture, Architecture, Photography (3<sup>rd</sup> edition). Upper Saddle River, NJ: Prentice Hall.

Hirsch, F. (1977). Social Limits to Growth. London: Taylor and Francis (Kindle edition, 2008).

Janson, A. (1995). History of Art (5<sup>th</sup> edition). Upper Saddle River, NJ: Prentice Hall.

Phaidon editors. (1999). The American Art Book. London: Phaidon Press.

Table 1

<u>African American Artist</u>	<u>Phaidon</u>	<u>Janson</u>	<u>Arnason</u>	<u>Wikipedia</u>	<u>White Artist</u>	<u>Phaidon</u>	<u>Janson</u>	<u>Arnason</u>	<u>Wikipedia</u>
Robert Scott Duncanson	x			4,008	George Inness	x	x		6,286
					Thomas Cole	x	x	x	30,355
Edward M. Bannister				2,852	Frederic E. Church	x			17,553
Charles Porter				470	John F. Francis	x			173
Henry Ossawa Tanner	x	x		14,579	Thomas Eakins	x	x	x	28,965
William Edouard Scott				0	Everett Shinn	x		x	2,832
					Robert Henri	x	x	x	9,866
					Winslow Homer	x	x	x	44,913
Horace Pippen	x		x	5,543	Earl Cunningham				622
Alma W. Thomas				1,017	Barnett Newman	x	x	x	21,642
					James Rosenquist	x		x	16,448
Beauford Delaney	x			4,861	Philip Guston	x		x	11,287
					John Marin	x		x	3,496
Allan Rohan Crite				751	Charles Woodbury				221
Romare Bearden	x	x		26,574	George Grosz	x	x	x	22,533
					Stuart Davis	x		x	9,279
Hughie Lee-Smith				0	Joseph Hirsch				0
					Edward Hopper	x	x	x	106,744
Jacob Lawrence	x	x		51,995	Stuart Davis	x		x	9,279
					Arthur Dove	x	x	x	4,728
Charles White				1,284	Moses Soyer			x	0
					Joe Jones				0
Benny Andrews				932	Ben Shahn	x		x	12,177
Sam Gilliam			x	2,589	Robert Rauschenberg	x	x	x	90,368
Bob Thompson	x			611	Lyonel Feininger	x		x	10,695
					Jan Muller				679
<b>Average/Totals</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>7,379</b>	<b>Average/Totals</b>	<b>20</b>	<b>10</b>	<b>19</b>	<b>18,418</b>

Table 2

<u>African American Artist</u>	<u>US\$</u>	<u>Books</u>	<u>Wikipedia</u>	<u>Primary White Artist</u>	<u>US\$</u>	<u>Books</u>	<u>Wikipedia</u>	<u>t-value</u>
Robert S. Duncanson	21,377	1	4,008	George Inness	27,247	2	6,286	-2.16*
Edward M. Bannister	6,531	0	2,852	Frederic E. Church	285,462	1	17,553	-10.02*
Charles Porter	3,804	0	470	John F. Francis	17,441	1	173	-4.47*
Henry Ossawa Tanner	20,380	2	14,579	Thomas Eakins	180,969	3	28,965	-5.50*
William Edouard Scott	6,055	0	0	Everett Shinn	37,412	2	2,832	-2.91*
Horace Pippen	62,404	2	5,543	Earl Cunningham	11,364	0	622	2.15*
Alma W. Thomas	17,895	0	1,017	Barnett Newman	639,384	3	21,642	-7.58*
Beauford Delaney	6,382	1	4,861	Philip Guston	114,573	2	11,287	-8.62*
Allan Rohan Crite	1,925	0	751	Charles Woodbury	2,659	0	221	-0.37
Romare Bearden	17,591	2	26,574	George Grosz	22,328	3	22,533	-3.13*
Hughie Lee-Smith	4,549	0	0	Joseph Hirsch	5,055	0	0	-1.17
Jacob Lawrence	22,966	2	51,995	Stuart Davis	119,172	2	9,279	-4.28*
Charles White	2,701	0	1,284	Moses Soyer	2,242	1	0	0.09
Benny Andrews	1,974	0	932	Ben Shahn	20,503	2	12,177	-4.57*
Sam Gilliam	2,309	1	2,589	Robert Rauschenberg	93,094	3	90,368	-10.85*
Bob Thompson	6,690	1	611	Lyonel Feininger	233,382	2	10,695	-17.91*