

Original Article

**EVOLUTIONARY PERSPECTIVES ON WHAT WOMEN  
PAINT**

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**Abstract**

The overarching premise of this paper is that the tenets of Darwinian literary criticism (e.g., Carroll, 1995) can be applied to other human artifacts, enabling us to better understand human's evolved motives, emotions and behaviors in the realms of popular music, cinema, and art. Here we focus on Western paintings created between 1700 and 1940. Unlike past researchers who have examined the evolutionary foundations of art, we specifically concentrate on paintings by women in order to explore whether their works reflect issues that are specific to women's evolutionary history. Our analysis reveals that women tend to paint portraits of self and others, create work with themes of motherhood and family, and paint still life and landscapes. These themes are consistent with the evolved motivations of women, namely the establishment and maintenance of alliances and family relations using depictions of motherhood, family life, and portraits, or more generally, the display of private over public life through the use of still life more commonly than landscape.

**Keywords:** Western paintings, sex differences, origins of art, women artists

**Introduction**

*Human beings are born image-makers and image-enjoyers.* – Denis Dutton

Art is a feast for the imagination and senses. From the architecture of the building in which it is displayed, such as Frank Lloyd Wright's Guggenheim in New York City, to modern contemporary installation pieces where the viewer becomes an active participant in the work, art can have a deep and lasting impact on our lives. Larger-than-life sculptures such as Michelangelo's David can cause us to examine minute details, while

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fragments of 10,000 year-old Jomon pottery can challenge our concepts of time and permanence. As suggested by Aristotle, sight can be considered our primary sense, consequently, art with a strong visual component is likely to have a deep, significant, and enduring influence on our perspectives and behaviors.

Although many galleries strive to have a collection that includes a variety of work and disciplines, the focal point of almost any non-specialized gallery (e.g., not the Musée Rodin which is dedicated solely to the sculpture of Auguste Rodin) is the paintings. From an evolutionary perspective, paintings are an interesting component of art collections because of the endurance of the medium and techniques. Artists throughout evolutionary history have represented the three-dimensional world in two dimensions using pigments. Indeed, some of the oldest known art can be found on the walls of the Chauvet cave in France (roughly 32,000 years old; Valladas et al., 2001) and the cave paintings from the Arnhem plateau in Australia (potentially 40,000 years old; see reference “Arnhem Rock Art Might be Oldest”). More than sculpture, which is also a part of human’s evolutionary past (e.g., the 36,000 year old ivory sculpture from the Hohle Fels cave of Germany; Conrad, 2009), paintings tend to express emotion and represent an abstract, inner perception. Indeed, it is likely due to painting’s relative expressiveness that the New Getty Gallery has gone so far as to state that “Museum visitors like paintings more than sculpture” (see reference “New Getty Galleries for Medieval, Renaissance Art”).

We contend that humans have an intimate bond with paintings. We propose that one way this bond can be understood is by exploring the topics of paintings, and see how they reflect issues that have special meaning or importance. We go one step further and suggest that these topics are those that have an evolutionary basis that transcends any specific era and thus would have meant something significant to our human ancestors as well as to modern viewers. We are specifically interested in the topics that have been of interest to women, who have been subject to different evolutionary pressures than have men and for whom their works are much less likely to be displayed in galleries or examined in art history. To make our task easier, as we will shortly explain, we limit our analysis to a partial review of Western paintings from 1700 to 1940. Before we do so, however, we start with a review of how art, in general, is tied to our evolutionary history.

### *Art as Human Behavior*

Scholars have differing opinions on the relationship between art and our evolved human history. There are two distinct views; one is that art is itself an adaptation that promoted fitness, and the other is that art is a byproduct (De Smedt & De Cruz, 2010). Ellen Dissanayake (1982) was one of the first to argue art is an adaptation, and that examinations of art must include an evolutionary view. She points out that art has been a part of humanity for thousands of generations and exists in all human societies; therefore it must serve a vital function to human societies. Specifically, Dissanayake (2008) argues that beauty and perception are not the adaptive elements that art exploits; rather that there is an element of taking everyday aspects and “making them special” into which art taps. For example, there are typical ways in which humans move their bodies that are exaggerated in dance movements, and it is this exaggeration that holds value to humans. Further, many of these exaggerated elements likely originate in the relationship between mother and infant, a relationship that has multiple exaggerated elements in speech, movement, and touch.

While this view seems reasonable, recent theorists De Smedt and De Cruz (2010, p. 706) state that it remains very “unclear [as to] what selective pressures may have promoted the emergence of art in the Late Pleistocene.” Thus, it could be that art does not increase biological fitness, but instead somehow uses preferences that are adaptive in other contexts. That is, what we find aesthetically pleasing is piggybacking on an adaptation that has a more direct relationship with our biological fitness. Or, to extend Pinker’s (1997) claim regarding music, art is the “cheesecake” that comes from other advanced cognitive abilities.

We prefer how Denis Dutton (2009) responded to this debate when he wrote, “... Darwinian aesthetics will achieve explanatory power neither by proving that art forms are adaptations nor by dismissing them as by-products but by showing how their existence and character are connected to Pleistocene interests, preferences, and capacities” (p. 96). Recently, Dutton theorized that humans have an “instinct” for art whereby people are biologically driven to create beautiful objects. What we find aesthetically pleasing are elements of the environment that were integral to human survival during our evolutionary history. For example, people in all cultures prefer landscape paintings that reflect the African Savannah, regardless of whether they come from a snow-covered terrain, desert, or the mountains of New Hampshire.

A third adaptive model for the origins of art focuses on art as sexual display for mate attraction. Proponents of this view (see Miller, 2000) espouse that art and literature have been sexually selected much like the peacock’s train. Fedigan (1986) refers to this approach as the “coat-tails” theory of human evolution. Females have selected artistic ability and creativity in males, traits that come to characterize females (in part) only after the selection in males takes place (see also Darwin, 1872). Yet, contra to the stunning sex differences in pea fowl appearance, women display artistic ability and creativity as well as men when given the chance to do so. In the case of the arts, many of the sex differences can be interpreted as a lack of exposure rather than a lack of aptitude (an example being female painters, see Nochlin, 1971/1988).

In our current study, we seek to position and examine female painters in a field (that of evolutionary psychology) in which the focus has more often been on male artists. Similar to how Dissanayake (1982, 2003) has challenged evolutionists to expand their notion of art beyond the West, we seek to establish the themes that are important to female painters.

### *Women as Painters*

Our investigation here was motivated by a few recent contributions to evolutionary psychology. In part, we were inspired by Ingalls’ (2010) research on the sex differences that authors display when creating heroes. Ingalls found that among books written for the young adult audience, female authors were more likely to create heroes that have important family members while male authors were more likely to create heroes with troubled parents who displayed rebellion, reflecting aspects more important to women and men respectively.

Another important contribution that informed our analysis was Hinshaw’s (2011) study highlighting the ways in which fathers have been historically depicted in artwork. Without distinguishing whether the artists were male or female, Hinshaw examined art from prehistory through to the Renaissance that depicted fathers. Fathers were rarely the subject of art, but when they were, they were far more likely than mothers to be presented

in troubling ways, such as eating their children or facing danger with their sons. His focus on a neglected topic encouraged our own initial look into a similarly neglected topic, the content of paintings by female artists.

We have observed a lack of focus on women artists in evolutionary accounts of art. As some approaches have focused quite heavily on Western art (see Dissanayake, 1982, 2003), this neglect of one sex reflects much of art history proper. Women had not been encouraged to engage in professional art in Western history, and when they had painted, sometimes their work was attributed to other artists (Nochlin, 1971/1988. For example, a small number of Jacques-Louis David's paintings have since been discovered as works of his female students.)

Others have similarly noticed the lack of attention given to women artists. In 1985, the protest group "The Guerrilla Girls" was formed in response to a Metropolitan Museum of Modern art exhibition in which only 17 of 169 artists were women (Richards, 2007). Their subsequent activities and statistics support our observation that there is a persistent under-representation and lack of exposure to women artists within the art community in general and, correspondingly, within evolutionary psychology in particular.

#### *On Examining the Topics of Women's Paintings from 1700-1940*

In spite of the popularity of modern and abstract art, the focus of this article is on paintings for which we can objectively determine themes. Thus, we chose to explore the paintings of women who worked between 1700 and 1940 for this project. The 1700s denotes the transition from Baroque to neo-Classicism, and 1940 is the onset of abstract expressionism. Further, 1700 approximately marks the beginning of a time when women were more encouraged to paint; for example Vigée Le Brun and Labille-Guiard were both admitted to the Académie Royale de Peinture et de Sculpture, Paris, in 1783. As we are taking a face-value approach to identifying themes in women's paintings, we left out post-modern works that are more open to interpretation. We further narrow our focus to Western art, simply because of the availability of resources. Western paintings on display in museums often have accurate record of who created the painting and when, which allows for a more exhaustive view of female painters.

One might question how people in the year 2012 can examine work from approximately 300 years previous and arrive at a meaningful interpretation. Obviously, viewers from different eras will interact with the same painting in distinct ways, but there are presumably some enduring aspects that cut across time. To increase the likelihood that we interpret the surface level content of paintings the same as a viewer living centuries ago, we focus on paintings that encompass realism (and hence, paintings from 1700 to 1940). Ideally this limitation leads to consistent interpretations across viewers because we all generally view the "real world" similarly. One could also take the view that culture is built upon evolutionary foundations (Gangestad, 2010) and thus the evolutionary interpretations that we are suggesting will underlie the cultural and temporal perspectives of the viewers.

Our goal here is to explore the topics of paintings that have maintained temporal relevance. Specifically, we are interested in the themes that were relevant to female painters during 1700-1940. We predict that while socio-political landscapes varied during this timeframe, we will still see consistent themes in what Western women painted during these two-and-a-half centuries. We hypothesize that we will find certain themes. Drawing

upon the finding that when stressed, women “tend and befriend” (Taylor et al., 2000), we expect one of the most frequent themes to include paintings of women together, and mothers with children with other women present. As a reflection of the maintenance of alliances, we predict another common theme to be self-portraits that include another close woman, and more portraits of female friends than male, and more personally known women than well-known women of the time. Finally, we predict that themes in the paintings will more often be of private life objects (e.g. still life) than public scenes (e.g. battle or landscapes).

## **Method**

### *Selection procedure and approach*

We performed an ArtStor search of paintings from 1700 to 1940, and isolated those paintings attributed to women (N = 27, ~3%). In addition, we examined the paintings from the recent exhibit “Royalists to Romantics” at the National Museum of Women in the Arts, Washington, DC (N = 64). While we attempted to search popular online databases (e.g., Google Images), the indexing techniques used to associate search terms with specific images tended to flood the result sets with large numbers of irrelevant results, such as images from the websites of women house painters or images of women in the act of painting. Other complexities (e.g., the same painting with many different URIs) and the large number of results (e.g., about 92,400,000 for “paintings by female painters”) made any kind of meaningful analysis prohibitively time-consuming. Given our small sampling, we present frequencies but avoid statistical comparisons such as Chi-square tests.

After locating a body of works, we performed a face-value analysis noting the common themes in the paintings. We wanted to keep the number of themes manageable (and thus general), but meaningful. For example, we identified landscape as a theme, but did not break it down by the type of setting (e.g., rural, urban, wilderness, seascape). As we have performed a similar analysis of paintings without consideration of the creator’s sex (Fisher & Meredith, 2012), we were partly guided by the themes we had previously discovered: people, landscapes, major events, daily life, and still life. Once the themes were established, we supplemented these findings with various catalogues and books on art history to provide further examples for this study.

## **Results**

The themes of the paintings we examined are: portraits (including self-portraits), motherhood and domestic life, still life, and, landscapes. One should note also that these categories are not mutually exclusive; for example, a portrait might include a scene of motherhood. While we present frequencies for each category, we caution that the percentages reflect a total number out of a final N = 91. As a consequence, this list is intended to provide a sense of what women paint to inform future research. Also note that the list of themes is not exhaustive and that, with some effort, one could find examples of works that don’t fit clearly into any theme.

1a. *Portraits* were the most likely commission for the majority of painters of the selected time period for both women and men. Of the 54 portraits in this sample (59.3%),

28 were of public figures (30.7%; 12 male and 16 female; see Table 1). Among the female painters we reviewed, some portraits were of soldiers or royalty; for example, “The Young Soldier” (1870) by Eva Gonzales, or “Portrait of Prince Alexander Kurakin” (1797) by Elisabeth Marie Vigée Le Brun, who was hired as a court portraitist by Marie Antoinette. Many portraits by women during this period show the subject engaged in an activity such as sitting near a piano (e.g., Marguerite Girard’s “The Piano Lesson,” about 1780), or playing a violin (e.g., Berthe Morisot’s “Julie Playing a Violin,” 1893).

**Table 1.** Frequencies of Paintings within Themes. One painting might fit more than one category; percentages are out of total sample.

Theme	Percent (N = 91)
Portrait	59.3%
Public figure (male)	24.2%
Public figure (female)	6.6%
Non-Public woman	8.7%
Non-Public man	1%
Women socializing (no children)	7.6%
Mothers, (female) helpers, and children	13.2%
Self-portrait	12.1%
Motherhood and domestic life*	17.6%
Still-life	13.2%
Landscapes/Public Scenes	9.9%

\*Includes paintings that feature fathers or other males, as well as mother and children.

*1b. Self-portraits* were another popular theme (12.1%; see Table 1), perhaps because of the convenience of having a readily available model. As with portraits, women often painted themselves engaged in an activity. Three themes to the self-portraits include painting the self with other women, such as their pupils (e.g., Adélaïde Labille-Guiard “Self-portrait with 2 pupils,” 1785); documenting emotional responses to current life events of the artist, such as Frida Khalo’s “The Two Fridas” (1939); and painting the self as another, such as Bouliar’s “Aspasia” (1794).

*2. Themes of motherhood and domestic life* exist in considerable number and variety (17.6% of total sample; see Table 1). There are many paintings of a mother and child, and those that include other caregivers such as nannies or other family members. At times, more egalitarian themes emerge, e.g. Benoist’s, “Reading from the Bible” (1810) in which the mother holds the Bible while the father holds the child. Some deal specifically with birthing, e.g., Khalo’s *Birth* (1932).

*3. Still-life* was a common approach taken by female painters during this time. These include flowers, food items, and even animals prepared for eating (e.g., Vallayer-Coster’s *A Rooster and a White Chicken on a Stone Ledge*, 1787). Of the 91 paintings, 12 (13.2%) were still-life.

4. *Landscapes* including pastoral scenes, such as some of the work by Emily Carr or Georgia O'Keefe, and *public scenes* were less popular in our sample (9.9%, see Table 1). Some larger historic pieces include Haudebourt-Lescot's *The Kissing of the Feet in St. Peter's, Rome* (1832). In general, public scenes (e.g., urban locations) are far fewer in number than pictorial rural landscapes. Rosa Bonheur was an exception; to paint her incredible public animal scenes, such as *The Horse Fair* (1853-1855), she had to get permission to dress as a man at the horse market in order to appear less conspicuous. Although there exist some cityscapes, they are generally used as settings for social interactions and do not focus on the buildings themselves.

### Discussion

Our analysis reflects our predictions about what women historically painted. Women painters during 1700-1940 reflected themes of their tendency to “tend and befriend,” with 20.8% of the paintings highlighting female-only relationships, combining those including children and those without. Three of the 9 self-portraits included a close female friend, while the sample featured 8.7% portraits of female friends and family, and only one portrait of an artist's father (who was also a public figure). However, the most common painting was of male public figures (24.2%), likely reflecting the commission of paintings. We did find more paintings that represented intimate still-life scenes than public scenes and landscapes.

In a related study that focused on paintings from 1400-1892, Fisher and Meredith (2012) did a qualitative analysis of the five most commonly occurring topics of Western paintings. We can presume these paintings were created mostly by male painters, given our results from the ArtStor search, revealing a little more than 3% of the paintings were by women; the predominance of male painters represented in art history texts (see Nochlin, 1971/1988); and tongue-in-cheek protests on art, such as a poster by the Guerrilla Girls noting that while fewer than 3% of the Metropolitan Museum of Art paintings in 1989 were by women, 83% of the nude paintings featured female models (<http://www.guerrillagirls.com/posters/venicewallf.shtml>).

The most common themes noted by Fisher and Meredith (2012) include people (especially young, attractive women, people of nobility, self-portraits, religious and fictitious characters), landscapes, major events (such as war scenes, hunting scenes, coronations, and executions), daily life events (i.e., an event that would normally happen, like a woman looking out a window while holding a water jug, as seen in Jan Vermeer van Delft's *Young Woman with a Water Jug* (1660–1662), and still life.

Comparing our sample to male painters, then, it is interesting to note that Fisher and Meredith (2012) did not document that one of the major themes was of family, especially of parents with their children. Furthermore, when we compare their results (as representing primarily male painters) to our results for just female painters, we find the latter group is much more likely to include persons other than mother and father in their works on motherhood, perhaps trying to capture social and familial relationships. In fact, fathers were rarer in the paintings than were other women.

It is also intriguing that unlike paintings by men (see Fisher & Meredith, 2012), there are very few paintings of war, hunt scenes, or historic events such as coronations. Women have historically been forbidden to view war at the front lines, which surely accounts for part of this distinction. However, women have painted wartime scenes, such as Clare Atwood's *Christmas Day in the London Bridge YMCA Canteen* (1920). A quick

look at the member's galleries for contemporary societies of female artists similarly show a lack of conflict themes (e.g., National Association of Women Artists). A difference in the motivations and experiences of men and women (Meredith, 2013) appears reflected in their artwork.

Like men, women in our sample also paint still life, and less frequently, landscapes. Dutton (2009) argues that we enjoy paintings of landscapes because they reflect our evolutionary heritage and thus are aesthetically pleasing. For evidence of this view, one can turn to the humorous but intriguing work of Vitaly Komar and Alex Melamid (also reviewed by Dutton) who polled people in 14 countries about their preferences for brushstrokes, colors, contents, and style of painting (among other features). Their work shows a high degree of cross-cultural homogeneity, in that people from many countries have the same overall aesthetic preference, and that the most wanted paintings are those with landscapes.

Still life was likely appealing to female painters because of the access to materials; whereas female painters were banned from painting nude models – even if the model was a woman – they could access materials such as flowers and fruits (see Nochlin, 1971/1988). Although generally not permitted to paint nudes of either sex, there exist a few later examples containing female nudes, such as Alice Barber Stephen's *The Female Life Class* (1879) depicting an all-women's class at the Pennsylvania Academy of Fine Arts.

As we predicted, many of the paintings are of women. These sex differences may be related, again, to what and who female painters had access. Just as likely, they reflect evolved differences in the importance of alliances, and the distinct way the sexes may value status and nobility. While these female painters produced portraits of men upon commission (see, for example, Césarine Henriette Flore Davin's *Portrait of Askar-Khan, Ambassador from Persia in 1808*), when painting without commission they often focused on female relationships in their self-portraits and depictions of motherhood.

We must consider the influence of significant historic events during the time periods from which we examined paintings. Many of the French female painters experienced hardship during the French Revolution. Some artists had made their names with the help of the royal family and thus, when the Revolution began, artists such as Vigée Le Brun and Vallayer-Coster had to leave the country (Auricchio, 2004). Such disruptions marked the end of some women's careers as painters, as well as the destruction of some of their previous works.

Finally, when viewing works of art created by women or men, we must consider the possibility that there is a functional distinction in creating and perceiving art. In Western art there is an apparent emphasis on the perception of art, for example, consider the amount of effort devoted to the presentation of art in museums. Yet, the artists themselves are almost brushed off as having an innate "genius," with little regard to the amount of training required to become a skilled artist, and the impact of being raised in an environment conducive to such training (see, for example, Nochlin, 1971/1988). In some cultures, art serves a function for creating social bonds, and is rarely done in isolation (Dissanayake, 2008). A broadened view of an evolutionary analysis of female artists to other mediums and cultures would increase the ability to focus on the creation, and perhaps more objectively, the underlying motives and functions of art specific to women. Such a view too would overcome the potential to misconstrue art portrayed in the modern context as being portrayed as the artist intended.

### *Limitations*

While some of our categories for female artists are similar to those for male artists (Fisher & Meredith, 2012), we can perhaps consider that some of the differences are due to external evolutionary factors and are not a product of the artist's internal motivations and desires. Women are often restricted by the demands of motherhood, wifely duties, and societal obligations and consequently may be limited by constraints resulting from child care or emplaced by husbands and fathers who are considered as being responsible for their lives. Thus, women may have been restricted in their access to models (male or nude), their ability to travel (e.g., to paint landscapes or events), or to attend and record religious or political ceremonies as a result of external demands and constraints. An examination of women painters that includes more detailed biographical considerations is warranted.

Further, we recognize that a wider breath of cultures and time periods is needed to consider universal themes in women's paintings. Documenting female versus male created art can be trickier; often paintings by women prior to the 1800s are included in the collection of their male teachers, or the artist of a piece is unknown. Less public record exists on female painters, and fewer female painters were likely to gain acclaim and encouragement to continue their trade than male counterparts. Branching our examination into modern painters worldwide would be a step towards documenting sex differences in painting.

A final limitation that we recognize here is that all researchers were aware of the purpose of the study. Future research should include coders blind to the purpose of the study to minimize potential bias.

### *Conclusion*

Having established some themes that are common in paintings by women, we foresee future studies in which the paintings of men and women can be more thoroughly examined. A more systematic look at paintings that occur during war times (e.g., the French Revolution, World War I) is warranted, as well as a contrast with modern conflicts in which women soldiers are engaged. Given well-noted sex differences in risk taking, we would predict that these sex differences are also apparent in the themes focused on by painters. A contrast between the depiction of mothers as painted by women and men, with an eye towards who is present in the scene, is certainly warranted given our investigation here. As women are more likely to "tend and befriend" than men, we predict that more women will be present in scenes of motherhoods painted by women than painted by men.

The topics of interest to us as humans and within artwork such as paintings are likely influenced by our innate evolutionary heritage. As women and men are subject to different evolutionary pressures and consequently exhibit sex differences in behavior, it is not surprising that female and male artists exhibit differences in the topics of their works. In the case of women, social and familial relationships, particularly involving other women and motherhood, are frequent and evolutionary relevant topics within their paintings.

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## References

- Arnhem rock art might be oldest*. (2010, May). Retrieved from [http://www.netnews.com.au/article/2010/05/31/151955\\_ntnews.html](http://www.netnews.com.au/article/2010/05/31/151955_ntnews.html)
- Auricchio, L. (October, 2004). Eighteenth-century women painters in France. In Heilbrunn timeline of art history. New York: The Metropolitan Museum of Art, 2000-. [http://www.metmuseum.org/toah/hd/18wa/hd\\_18wa.htm](http://www.metmuseum.org/toah/hd/18wa/hd_18wa.htm)
- Carroll, J. (1995). *Evolution and literary theory*. Columbia, MO: University of Missouri Press.
- Conrad, N. J. (2009). A female figurine from the Basal Aurignacian of Hohle Fels Cave in Southwestern Germany. *Nature*, 459, 248-252.
- Darwin, C. (1872). *The descent of man, and selection in relation to sex* (vol 2). New York: D. Appleton and Company.
- Dissanayake, E. (1982). Aesthetic experience and human evolution. *Journal of Aesthetics and Art Criticism*, 41, 145-155.
- Dissanayake, E. (2003). Retrospective on *Homo Aestheticus*. *Journal of the Canadian Association for Curriculum Studies*, 1, 7-11.
- Dissanayake, E. (2008). The arts after Darwin: Does art have an origin and adaptive function? In K. Zijlmans & W. van Damme (Eds.), *World art studies: Exploring concepts and approaches* (pp. 241-263). Amsterdam: Valiz.
- Dutton, D. (2009). *The art instinct: Beauty, pleasure and human evolution*. New York: Bloomsbury Press.
- Fedigan, L. M. (1986). The changing role of women in models of human evolution. *Annual Review of Anthropology*, 15, 25-66.
- Fisher, M., & Meredith, T. (2012). Five frequent topics of Western painting. *The Evolutionary Review*, 3, 116-124.
- Gangestad, S. (2010). Exploring the evolutionary foundations of culture: An adaptationist approach. In M. Schaller, A. Norenzayan, S. Heine, T Yamagishi, & T. Kameda (Eds.), *Evolution, Culture, and the Human Mind* (pp. 83-98). New York: Taylor and Francis.
- Ingalls, V. (2010). The hero's relationship to family: A preliminary sociobiological analysis of sex differences in hero characteristics using children's fantasy literature. *Journal of Social, Evolutionary, and Cultural Psychology*, 4(4), 332-352.
- Hinshaw, J. H. (2011, April). *Fathers in art history*. Paper presented at the Fifth Annual Meeting of the NorthEastern Evolutionary Psychology Society, Binghamton, NY.
- Meredith, T. M. (2013). A new view of evolutionary psychology Using women's priorities and motivations. *Evolution's empress: Darwinian perspectives on the nature of women*. New York: Oxford University Press.
- Miller, G. (2000). *The mating mind: How sexual choice shaped the evolution of human nature*. New York: Anchor Books.
- New Getty Galleries for Medieval, Renaissance Art*. (2010, May) Retrieved from <http://lacmaonfire.blogspot.com/2010/05/new-getty-galleries-for-medieval-and.html>
- Nochlin, L. (1971/1988). Why have there been no great women artists? *Women, art and power and other essays* (147-158). Boulder, CO: Westview Press.
- Pinker, S. (1997). *How the mind works*. New York: Norton.

- Richards, J. (Interviewer) Carriera, R., & Guerrilla Girl 1 (Interviewees). (2007). Oral history interview (Interview transcript). Retrieved from Archives of American American Art, Smithsonian Institution Web site: <http://www.aaa.si.edu/collections/interviews/oral-history-interview-guerrilla-girls-rosalba-carriera-and-guerrilla-girl-1-15843>
- Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenewald, T.L., Gurung, R.A.R., & Updegraff, J.A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*, 107, 411–429.
- Valladas, H., Clottes, J., Geneste, M., Garcia, M.A. Arnold, E. C., & Tisnerat-Laborde, N. (2001). “Palaeolithic Paintings: Evolution of Prehistoric Cave Art. *Nature*, 413, 479.