

July 2016

Primate Aesthetics

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PRIMATE AESTHETICS

A Thesis Presented by

CHELSEA LYNN SAMS

Submitted to the Graduate School of the University of Massachusetts in partial fulfillment
of the requirements for the degree of

MASTER OF FINE ARTS

May 2016

Department of Art

PRIMATE AESTHETICS

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DEDICATION

For Christopher.

ACKNOWLEDGMENTS

I am truly indebted to my committee: Robin Mandel, for his patient guidance and for lending me his Tacita Dean book; to Melinda Novak for taking a chance on an artist, and fostering my embedded practice; and to Jenny Vogel for introducing me to the medium of performance lecture.

To the long-suffering technicians Mikaël Petracia, Dan Wessman, and Bob Woo for giving me excellent advice, and tolerating question after question. And department chair Alexis Kuhr, for her thoughtful studio visits and gracious support.

Many thanks to the UMass Arts Council for supporting the exhibition, and to the College of Natural Sciences for their generous fellowship.

To my beautiful wife Amanda, but also Mark, Bailey, Coby, Ernie, Emmitt, Fozzy, Friday, Ivan, Kayla, Lil G, Lily, Linus, Nigel, Peanut, Smiley, Taz, Violet, Zoey.

Thank you to my family, both Sams and Steplers. And of course, to Christopher for taking care of me.

ABSTRACT

PRIMATE AESTHETICS

MAY 2016

CHELSEA LYNN SAMS B.F.A., MONTSERRAT COLLEGE OF ART

M.F.A., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Assistant Professor Robin Mandel

A cultural, historical, and scientific survey of the phenomena of primate pictorial behavior, presented in a series of interconnected vignettes. What do primates find visually appealing? What is their motivation when creating images? What are the implications for art and for science? By drawing explicit and implicit connections between science, art, case studies, research, and personal narrative, I attempt to weave together what we know, and what we may never be able to know about this complex field.

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CHAPTER I

INTRODUCTION

*Sailors fighting in the dance hall
Oh man! Look at those cavemen go
It's the freakiest show
Take a look at the Lawman
Beating up the wrong guy
Oh man! Wonder if he'll ever know
He's in the best selling show
Is there life on Mars?*

---David Bowie¹

Sitting as still as I could, carefully avoiding eye contact, I was sketching. They were clearly aware of me, and occasionally grunted and paced back and forth, watching. But, the longer I sat, the less attention they paid me. Maybe it's the repetitive motion of the sketching, I thought. It was sort of like grooming.

They were intimidating, and they seemed to be so in control. They communicated with each other, owning the space, and at that moment, sweating with anxiety in my lab coat and face shield, I felt very much out of place. When the Paul Frank™ iPod player in the corner switched from Beethoven to the single note piano intro, I felt the hairs on my arms begin to stand up.

I used to play mellophone in a marching band, and on occasion, the peculiar effect of acoustics and space in a stadium would cause one half of the band to separate

¹ David Bowie. "Life on Mars?" *Hunky Dory*. RCA Records, 1971. MP3.

temporally from the other; each half playing the same tempo, at a slightly different place in the score.

As I sat there, listening to *Life on Mars?*, the most uncanny feeling washed over me. The same phasing seemed to be happening. I finished my sketch and left the room.

Outside, the techs asked me how it went. My legs felt like rubber as I pulled off my second set of booties. I showed them my sketches and they seemed to like them.

“Who has the boyish face?” I asked, pointing to a sketch.

“Oh,” laughed the tech, “That’s Kayla, I guess she does look a bit like a boy. It’s really cool that you are drawing them. Hey! You should teach *them* to draw!”

At the time it seemed like a silly suggestion. Sure, I had seen videos with painting chimpanzees and even elephants. But it was a novelty, meant for human entertainment, and not for the benefit of the animal. Back in art school, I embarrassed myself on Day One trying to define art as a semi-religious experience that extended to those television stars of the animal kingdom.

“You just talked yourself out of a job,” the professor had said. “Why do you want to go to school for something a monkey can do?”

It took over a year for me to revisit the tech’s suggestion to teach the monkeys to draw. In some ways, it seems like a natural exploration for an artist—so natural that it was proposed to me again and again. But that sensational image, the monkey artist, was so out of keeping with my goals that I dismissed it. It wasn’t until I began working with a different set of tools that the notion of primate aesthetics really started to make sense.

What do primates find visually appealing? What is their motivation when creating images? What are the implications for art and for science? In this thesis, I intend to bring together what information we do have on primate aesthetics, as well as my own research into the matter. I have prepared a series of vignettes which I hope will provide an overall impression of the cultural, historical, and scientific implications of this complex field.

CHAPTER II

SCIENCE

On Cheesecake, Sex, and Byproducts

The origins of human pictorial behavior are obscure, but a few hypotheses exist to explain our seemingly unique impulse toward representation and aesthetic behavior. A convenient outline of the evidence for a biological basis for art,² as well as its proposed explanations, has been assembled by David P. Barash.³

Quoting Brian Boyd,⁴ Barash defends an evolutionary role for art:

(1) it is universal in human societies; (2) it has persisted over several thousand generations; (3) despite a vast number of actual and possible combinations of behavior in all known human societies, art has the same major forms...in all; (4) it often involves high costs in time, energy and resources; (5) it stirs strong emotions, which are evolved indicators that something matters to an organism; (6) it develops reliably in all normal humans without special training, unlike purely cultural products such as reading, writing, or science.⁵

The “art-drive,” omnipresent in human society, must therefore play an important biological role.

Or does it? At least one origin theory disparages art as at best, frivolous, and, at worst, dangerous. According to the “cheesecake” theory, humans have developed pleasure technologies to specifically trigger our gratifying adaptive responses to certain stimuli: humans designed cheesecake to be sweet and creamy, just like the highly valuable ripe fruits and fats we evolved to favor. Unfortunately, due to our unprecedented access to

² Broadly defined by Barash as encompassing music, dance, and visual art.

³ Barash, David P. *Homo Mysterious: Evolutionary Puzzles of Human Nature*. New York: Oxford University Press, 2012. Print.

⁴ Boyd, Brian. “On the Origin of Stories: Evolution, Cognition, and Fiction.” Cambridge, MA: Harvard University Press, 2009. Print.

⁵ Barash, p. 148.

the dessert and the extra calories it affords, our preference for it has become maladaptive. Proponents of this theory argue that art functions in the same way. We developed it to serve as a super-stimuli to trigger pleasurable sensations, but ultimately it does not fulfill any specific biological function, and may, like cheesecake, actually reduce fitness.⁶

Luckily for those of us who have devoted much of our lives to artistic endeavors, there are other origin theories that ascribe an adaptive role to the arts. One that figures prominently in not only human developmental theory, but any discussion of non-human primate pictorial behavior, is “art as play.” Again summarizing Boyd, Barash notes that

art...inspires cognitive processing of complex information patterns and is therefore good for us; moreover, it does so in a context that—for all its seriousness—is nonetheless one step removed from the real world, thereby allowing a greater margin for error while giving free reign to imagination and experimentation.⁷

In this way, art and play are indistinguishable from one another; they are both decoupled from the real world, each involves cognitive and physical engagement, and they both aid the development of skills.

Complementing the “art as play” hypothesis, the “byproduct” theory is a commonsensical supposition: our big brains are so efficient at getting us the things we need, we can afford to spend more time on seemingly trivial matters. Our art, according to this hypothesis, is a byproduct of the extra time and excess capacity. Interestingly, although it may not have originated as an adaptive trait, it may have quickly been co-opted into an important adaptive role: protecting us from the dangerous side effect of a too-efficient brain, boredom.⁸

⁶ Barash, p. 149-152.

⁷ Barash, p. 169-170.

⁸ Barash, p. 155-156.

Worth mentioning here is yet another complementary theory, this one by Desmond Morris, famed zoologist: “Art is making the extraordinary out of the ordinary – to entertain the brain.”⁹ Morris contends that art is an elaboration on the merely practical, and was built upon necessary activities, such as the construction of shelter, weapons, or clothing. And more than that, the activity itself seems to be intrinsically rewarding.

The next art-as-adaptation hypothesis is beholden to that creator of excesses, sexual selection. While natural selection tends to prune away superfluous or energy intensive characteristics, sexual selection can explain traits that seem immoderate or even imprudent: the train of a peacock, or the twelve foot wide, eighty-eight pound antlers of the Irish elk.¹⁰ Much like the peacock’s tail, it is thought, the brain and its products are expensive for a human to grow and maintain, and therefore excellent indicators of reproductive fitness.

These origin stories of art are not without their pitfalls, as you might expect when respected experts in one field attempt to define another. One recurrent theme is the belittling of artists and art scholars. Barash undermines the import of what is considered to be art, and the people who study it, by introducing a case study: “Most famous, or infamous, is Duchamp’s ‘Fountain,’ a urinal that he called art and that art lovers and art scholars have wrestled with, unsuccessfully, for nearly a century.”¹¹ The suggestion seems to be that art historians and theorists have been unable to assimilate this

⁹ Morris, Desmond. *The Artistic Ape*. London: Red Lemon Press, 2013. Print. p. 12.

¹⁰ Perhaps unsurprisingly, extinct. A beautiful articulated specimen is held by Amherst College’s Beneski Museum of Natural History.

¹¹ Barash, p. 150.

particular artwork into the canon, bringing the whole enterprise to a standstill. A strange assertion, given that art and art theory have continued unabated, even after 1917.¹²

The Uncanny

In 2009, five cynomolgus macaques looked at a 17 inch computer screen, and looked away.¹³ Cynomolgus macaques, known by several aliases, including crab-eating, or long-tailed macaques, are perhaps best identified by their scientific name, *Macaca fascicularis*. These Old World monkeys have long, elegant tails, as their common names suggest, and they enjoy the water, often foraging for food there.

The five macaques in front of the computer screen were looking at, and away from, three distinct categories of images. One category consisted of photographs of their conspecifics¹⁴, cooing or barking or doing nothing at all. The other images were either realistic computer generated monkey models, or poorly rendered, unrealistic monkey models, demonstrating the same range of behaviors.

By analyzing the amount of time the monkeys looked at the different categories of images, researchers at Princeton University determined that the monkeys, much like humans, experienced a phenomena known as the “uncanny valley.” Originally posited by

¹² Perhaps more worrisome than a disregard for art theory is one of the proofs Barash offers for the sexual selection theory of art's origin, sexual asymmetry:

On the one hand, the fact that there are so many more 'great masters' than 'great mistresses' in every major artistic discipline is consistent with the sexual selection hypothesis, since males—sperm makers, and therefore capable of inseminating many females—would be more strongly selected to be sexual/artistic/creative show-offs than would females, who are egg makers and thus less able to transfer sociosexual success into a large Darwinian reproductive payoff.
(p.189)

While he later goes on to qualify this statement, (p.190) the implication is not that historically there have been more great male artists than female, it is that even now that “the cultural prohibitions against women's artistic creativity have fallen”(p.190) there are still fewer women of consequence.

¹³ Steckenfinger, Shawn A. and Asif A. Ghazanfar. "Monkey visual behavior falls into the uncanny valley." *Proceedings of the National Academy of Science* 106 (43) Oct. 27, 2009: 18362-18366. Web. 5 Aug. 2015.

¹⁴ *Conspecific*: a member of the same species.

Japanese roboticist Masahiro Mori¹⁵ in 1970, the “uncanny valley” refers to the negative feelings humans associate with anthropomorphic visual stimuli; as an object approaches human likeness, there is a sudden dip in our comfort level with it.¹⁶ It is commonly represented with the following graph:

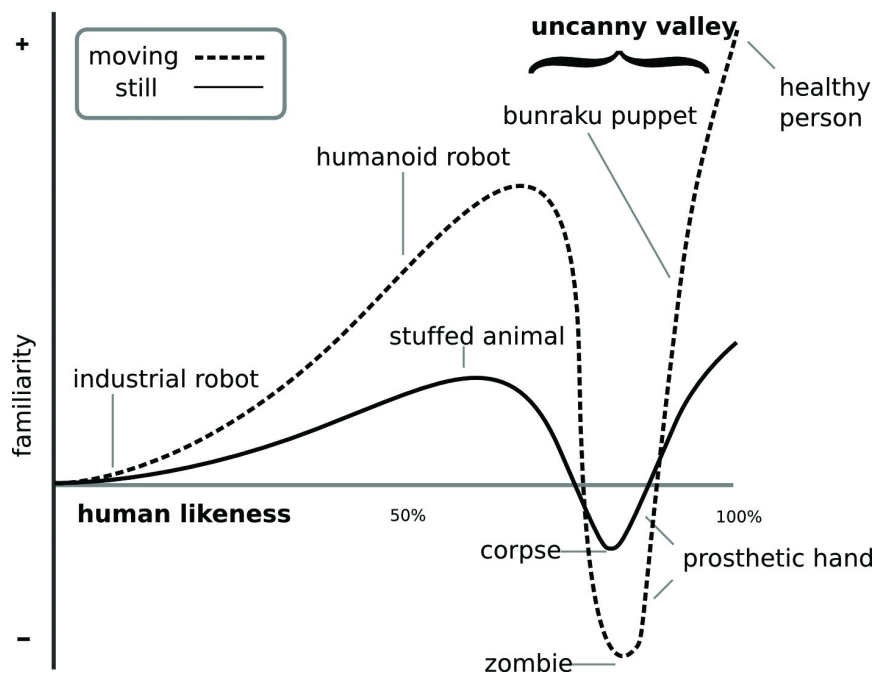


FIGURE 1: Uncanny Valley graph, after Mori.

The researchers believed that the macaques would spend more time looking at an image they preferred, and in this case, the five monkeys spent more time looking at the images of the real monkey and the unrealistic model than the realistic model. Because the responses of the macaques were consistent with the uncanny valley phenomenon, the researchers concluded that there may be an evolutionary basis for our reactions to

¹⁵ Mori, M. “The Uncanny Valley.” Trans. K. F. MacDorman & N. Kageki. *IEEE Robotics & Automation Magazine* 19(2) (2012): n. page. Web. 7 Jan. 2016.

¹⁶ To experience the effect for yourself, search “lifelike robot” in YouTube.

certain visual stimuli. Therefore, there is some indication that humans and non-human primates as far removed evolutionarily as macaques share a common aesthetic.

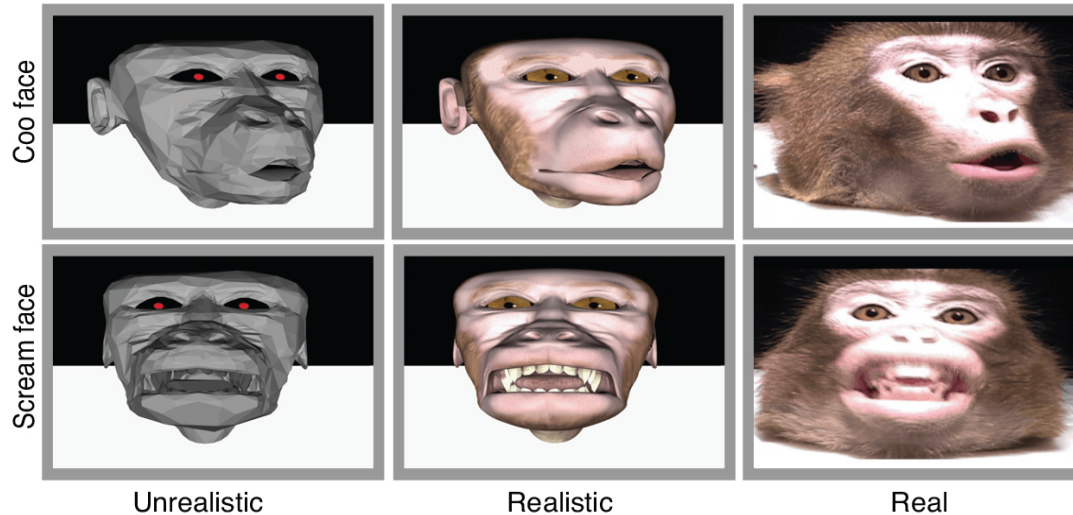


FIGURE 2: Examples of the stimuli used in the experiment.

The Biology of Art

“During the first few months its only functions appeared to be biting, eating, screaming and urinating...” Desmond Morris writes of Congo.¹⁷ Yet over time, a highly productive collaboration would develop between the zoologist and the young chimpanzee.

After being exposed to the work of Paul Schiller and the female chimpanzee, Alpha, Morris had come to believe that, embedded in the primate brain, there might be a set of universal aesthetic principles.¹⁸ Schiller had presented Alpha with a series of experimental cards, which were pre-marked with geometric figures. These cards seemed to suggest an awareness of design and pattern, and Morris resolved to attempt to replicate those findings.

¹⁷ Morris, Desmond. *The Biology of Art*. New York: Knopf, 1962. Print. p. 22.

¹⁸ Morris, p. 21.

In November of 1956, Morris wrapped his hand gently around Congo's curled pink fingers, pinning a pencil between them, and rested the graphite end on a scrap of paper. Morris released Congo's hand, and the chimpanzee made his first drawing. It was immediately evident to Morris that Schiller's work was valid. As he watched, Congo ran the pencil again and again over a splotch of ink near the center of the paper.

Avant Garde Science

In the June 22 Issue of *Science*, a glowing review of *The Biology of Art* appears:

The most striking artistic productions are the multistage colored paintings achieved by giving Congo one brush after another, each loaded with a particular color of paint. This technique made possible the entrancing colored pictures, some with radiating fan patterns and bold circular loops, illustrated in the remarkable color plates.

HARRY F. HARLOW¹⁹

Systems Network Analysis

It was at the Primate Behavioral Management Conference that I had the opportunity to hear Brenda McCowen speak. Her presentation, "Using systems network analysis for understanding complexity in primate behavior management," outlined a way of thinking about the world that instantly resonated with me. McCowen studies complex systems through network analysis—a method she contends is crucial to understanding the natural world.

¹⁹ Harlow, Harry. "The Biology of Art." *Science* 136. June 22 (1962): 1047-48. Print.

The idea is that, essentially, we can only accurately study intricate systems when all of their components are in place. Many systems consist of not only direct connections or chains of events, but indirect connections that are lost if components are removed from their places in a system. To make an overly simple analogy, take a landline telephone. To understand how a telephone works, you can unplug it and take it apart. You will notice many things about the structure of the telephone, and be able to deduce many of its capabilities, but by removing it from the telephone line, you separate it from perhaps the most important aspect of its function: the network of other telephones it is connected to.

It is easy to see the value of studying biological processes in this way. By leaving the components of systems in situ, you can collect much more data: rather than focusing on the properties of a series of isolated individuals, you can take stock of all of the individuals along with the direct and indirect pathways between. This type of analysis is useful for studying ecosystems, which have many direct and indirect links between organisms, and for social groups for the same reason.

An additional benefit of this kind of analysis is that new information can emerge.

Centrality, for instance. Centrality measures the amount that an individual component or node connects others. This kind of information can be critical for primate behavioral management.

Say you need to remove one female rhesus macaque from a social group. Common sense would indicate that you not remove the highest ranking female, because by rank she is most important to the dominance hierarchy, nor the lowest ranking female, because she might be more stressed than other monkeys in the social group, and therefore less resilient to change. So you might choose a middle ranking female: not too

important, not too stressed. But shortly thereafter, you find that there has been a huge fight, resulting in a complete restructuring of the previously stable social group. What happened? It could be that you removed a node of high betweenness. She was important not for her rank, but for her role: her centrality connected two subgroups within the larger group. Without her, the larger group lacks cohesion, and splinters.

A Sense of Order

Over the course of the two years Morris worked with Congo, he became increasingly convinced that the young chimpanzee was creating compositions that demonstrated advanced aesthetic principles. He began comparing the drawings of the chimpanzee that Schiller had worked with, Alpha, to Congo's experimental results, and he found that they shared certain characteristics: 1) drawings were mostly restricted to the sheet of paper; 2) there was a tendency to mark within figures; and, 3) there was a tendency to "balance" an offset figure.²⁰



FIGURE 3: Experimental drawing by Alpha demonstrating markings spread over blank page.

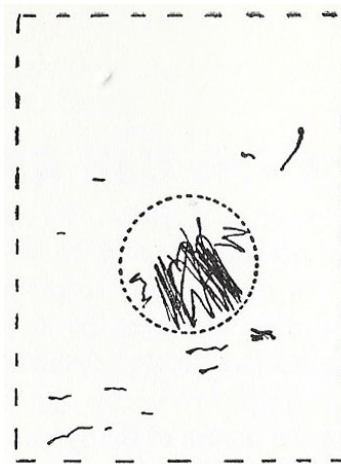


FIGURE 4: Experimental drawing by Alpha demonstrating markings confined to central figure.

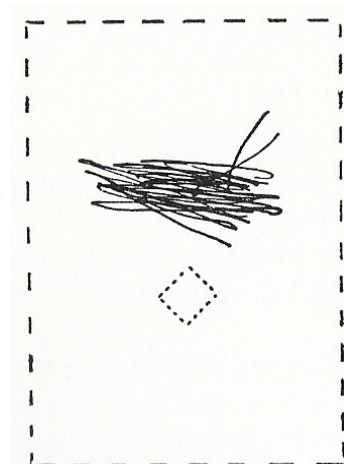


FIGURE 5: Experimental drawing by Alpha demonstrating markings balancing an offset figure.

²⁰ Morris, p. 102.

Morris concluded from these observations that the apes were demonstrating an innate sense of order and pattern.

Aping

From September 17 to 21, 1957, the London Institute of Contemporary Arts held the exhibition *Paintings by Chimpanzees*.²¹ Sir Julian Huxley, famed evolutionary biologist, eugenicist, and good friend of Desmond Morris, gave a speech at the opening of the exhibition. He later wrote about a curious incident between Congo and Desmond Morris. "Once when Dr. Morris happened to hold out his hand, Congo took it and painted the nails almost as a manicurist might have done."²² I have found no other reference to this incident.

²¹ Institute of Contemporary Arts London. *Complete Exhibitions List 1948-Present*. d. unknown. PDF file.

²² Huxley, Julian. "Aping." *New York Times Magazine* 6 Oct. 1957: 270. Print.

CHAPTER III

ART

The Bishop's Ape

Artists have had access to monkeys, whether in their own menageries, or those of their patrons, for centuries. And those monkeys, as a matter of course, had access to art materials. Yet no paintings or drawings executed by non-human primates prior to the twentieth century survive today. However, I came across a tantalizing anecdote²³ that seems to suggest that monkeys had been known to use paint as early as the fourteenth century.

In the tale, Italian painter Buonamico Buffalmacco was hired by the bishop of Arezzo to paint a fresco. However, the bishop's ape,²⁴ having observed Buffalmacco in the act of painting, climbs the scaffolding at night and imitates the painter, obliterating the fresco. The next morning, seeing the ruined painting, the artist approaches the bishop, furious at what he regards to be sabotage by a local artist. A trap is set, and that night, the ape is apprehended as he "corrects" the artist's work.²⁵ As punishment, the ape is placed in a cage on the scaffold, able to watch Buffalmacco paint, but not free to create his own version of the fresco.

²³ Sacchetti, Franco. *Tales from Sacchetti*. Trans. M. G. Steegmann. London: J. M. Dent & Co., 1908. Print.

²⁴ Probably a Barbary macaque, *Macaca sylvanus*, although the word "baboon" is also used to describe it.

²⁵ Sacchetti, p. 167.

This story is likely an allegorical reference to the popular trope of the artist as an apish imitator of the Creator, *ars simia naturae*.²⁶ Indeed, the artist and the ape eventually trade places when Buffalmacco asks for a covered chamber to be constructed around a new fresco requested by the bishop. The artist then uses the cage to disguise his trickery. He paints the exact opposite of the bishop's commission,²⁷ locks the door behind him, and escapes.²⁸ In this way, the artist mocks the religious authority, and completes the parable.

So, although primates had access to art implements, and were, in this instance at least, represented as artists, it does not seem that any drawing or painting they produced was perceived to be an art object. This makes sense if you consider that the classical aesthetic was fully representational. Thus, the carefully rendered products of artists were denigrated as the clumsy fumbings of monkeys, *ars simia naturae*, and the pictorial interventions of monkeys were never recognized by artists.

It was only after the rise of both non-objective painting and the science of ethology²⁹ that paintings and drawings created by non-human primates would be considered to have artistic or scientific value.

Disruptive Play

In 1997, Thierry Lenain, a senior lecturer in Aesthetics and the Philosophy of Art at the Universite Libre de Bruxelles, Belgium, published the book *Monkey Painting*. Lenain was

²⁶ Jason, H.W. *Apes and Ape Lore in the Renaissance and Middle Ages*. London: The Warburg Institute, University of London, 1952. p. 291.

²⁷ The Bishop asked Buffalmacco to paint an eagle (the symbol of Arezzo) standing on a vanquished lion (the symbol of Florence). The artist instead painted a lion mauling an eagle; turns out he was from Florence.

²⁸ Sacchetti, p. 168-169.

²⁹ *Ethology*: the study of animal behavior.

familiar with Desmond Morris' work with Congo in *The Biology of Art*, but after conducting his own research into the field of primate visual behavior, he had developed an alternate theory as to the motivation of the infrahuman artists. According to Lenain, the ape paintings are aesthetic objects, but not in the way Morris had thought.

Where Morris saw a balanced offset figure, Lenain saw an interrupted space; a marked figure represented an annihilation of form; the covering of a sheet of paper became the systematic disruption of the pictorial field.³⁰

There was some anecdotal support for this position. Morris himself had noted Congo's tendency to create forms then fill them in, and later in Congo's "career" a tendency to completely obliterate all imagery within a composition.³¹

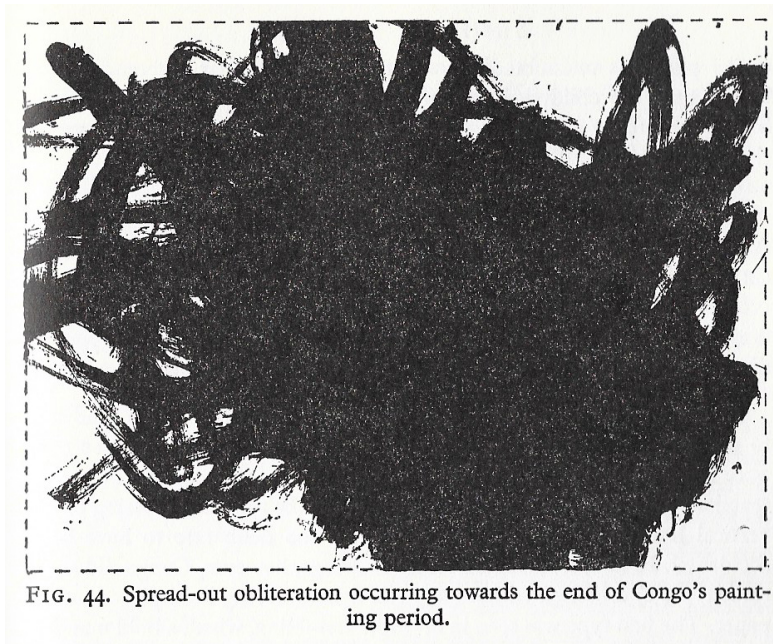


FIG. 44. Spread-out obliteration occurring towards the end of Congo's painting period.

FIGURE 6: Experimental drawing by Congo demonstrating spread out obliteration.

³⁰ Lenain, p. 146.

³¹ Morris, p. 133.

Congo was not alone in this behavior. Alpha, too, would mark the page, each cluster over the last, until the page was filled. Then, as a *coup de grâce*, she would tear the page to shreds.³²

To Lenain, the destructive actions of these animals are natural in the broader context of their behavior. In the wild, Lenain contends, much of the play that primates engage in is disruptive: play fighting with conspecifics helps young primates to assess their strength relative to others, and to learn their position in the social hierarchy with much less danger of serious bodily harm; breaking sticks and vines helps them to test the limits of the materials in their environment, as well as their balance and perception; tactile and oral handling of small objects establishes whether those things are good to eat, or could be used to make a tool. Perhaps their interventions in the pictorial field are natural outgrowths of these play behaviors: “art as play.”

This theory does not negate all of Morris’ findings. Disruption of the composition necessarily constitutes a formal awareness of its aesthetic properties. To disrupt, they must first analyze what forms and patterns are present in the pictorial field: thus, the apes are demonstrating a sense of order and pattern.

Unfortunately, these theories represent two hypotheses with the same prediction, and scientifically, it is impossible to come to a conclusion without more data.

The Private Painter

At the age of eighteen, Desmond Morris was idly wandering the stacks of the library when a book caught his eye. When he unshelved it and scanned its pages, Morris

³² Lenain, p.147.

stumbled across a host of macabre etchings; dismembered bodies, demonic creatures, violence, and death were suspended in time on each page. Goya's *The Disasters of War* forever changed the way that Morris thought of art. At the time, Morris says in his monograph *The Secret Surrealist*, he thought of art as "effete nonsense akin to flower-arranging and embroidery,"³³ but suddenly he had access to a new way of describing the world. He immediately began drawing, painting, and composing films.

Just four years later, Morris was showing in London with Joan Miró. But it was to be the zenith of his career. The exhibit was a commercial failure, and, embittered, Morris resolved to "go underground," renouncing the art establishment.³⁴ His experiences as an artist are mentioned in neither *The Biology of Art*, nor *The Naked Ape*, but as it turns out, his experience in filmmaking is what got him the job on the London Zoo and Granada Television show "Zootime,"³⁵ which eventually allowed him to propose the addition of a program mascot: Congo.

Embedded Practice

I was first introduced to the concept of an embedded art practice by the work of Frances Whitehead. Over the years she has applied her skills as an artist to many fields outside of the art world: public works, land and water remediation, architecture, and city planning. And in her role as an embedded artist, she began to keep a list, mostly collected from the observations of non-artists she was in contact with.³⁶

³³ Morris, Desmond. *The Secret Surrealist*. Oxford: Phaidon, 1987. Print. p.13

³⁴ Morris, p.14.

³⁵ Lenain, Thierry. *Monkey Painting*. London: Reaktion Books, 1997. Print.

³⁶ Isé, Claudine. "Frances Whitehead, Embedded Artist." *Art21 magazine*. n.p., 24 Aug. 2010. Web. 7 April 2016.

“Artists compose *and* perform, initiate *and* carry-thru, design *and* execute,” bullet number four of “What do artists know?” explains. “Synthesizing diverse facts, goals, and references... Artists are very ‘lateral’ in their research and operations and have great intellectual and operational agility,” reads another.³⁷ It’s a document that validates a radical notion that artists (and those who love them) have been arguing for years: art and artists are good for something.

My work in science can be situated as an embedded art practice. Working within a non-art setting rather than without gives me a more nuanced understanding of the needs of that setting, and has fostered a rich discourse that has proven beneficial to all parties. Further, it has led me to the current line of inquiry: primate aesthetics.

The Art Market

In 2005, three paintings by Congo went up for auction. The works sold for \$25,620—outselling works by Renoir and Warhol at the same event. Indeed, the lot outsold Morris’ own artwork, the highest price realized at auction being \$17,656.³⁸

I wonder how Morris feels about Congo’s artistic success. I think he must be proud, because in every instance where art is touched upon in Morris’ writings, Congo is mentioned or alluded to. But never Morris’ own artwork.

³⁷ Whitehead, Frances. "What do artists know?" *The Embedded Artist Project*. ARTetal Studio, n.d. Web. 7 April 2016.

³⁸ “Desmond Morris: Auction prices, signatures and monograms.” *FindArtInfo*. FindArtInfo, n.d. Web. 23 March 2016.

It was in a news brief for this auction that I learned what became of Congo. In 1964, two years after *The Biology of Art* was published, Congo succumbed to tuberculosis.³⁹

³⁹ Vries, Lloyd. "Dead Chimp's Art Sells Big." *CBSNews*. CBS Interactive Inc., 20 June 2008. Web. 23 March 2016.

CHAPTER IV

CASE STUDIES

Painting Gorilla Prank

A man in a gorilla suit sits at an easel. As zoo visitors look on, he swivels his painting around. It's not very good. The visitors look away, then look back. The painting is a new one, a blank page scrawled with the word "help" in red paint.⁴⁰



FIGURE 7: Video still from Painting Gorilla Prank showing faux ape painting.

⁴⁰ Just For Laughs Gags. "Painting Gorilla Prank." Online video clip. *YouTube*. YouTube, 23 May. 2011. Web. 9 Jan. 2016.



FIGURE 8: Video still from Painting Gorilla Prank showing "HELP" painting.

Kayla

When the iPad was clamped to Kayla's foraging board, she threatened with an open mouth and a series of outraged grunts. She reached out and touched the screen, painting her first stroke. Her indignation was soon replaced with intense focus, and she painted more and more, until the surface of the composition was covered with a network of strokes: short, staccato ticks; long, decisive swoops; parallel marks; many crossing at right angles. With the screen covered, she disengaged. When the iPad was removed, she attempted to wrestle it back into her possession.



FIGURE 9: Kayla's first iPad painting.

Anonymous Chimpanzee

In Bastrop, Texas, there is an adult male chimpanzee who enjoys painting. Unlike Congo, this particular chimp does not mix all available colors to produce a uniform brown,⁴¹ so he is given access to a full palette to use at will. He works carefully on a composition until satisfied; then to “finish” it, he loads his brush with white and covers the entire painting.⁴²

Congo

He began the session as he had many times before. He produced several paintings with his favored movement: starting at a point on the page far from himself, he drew the paintbrush toward himself, repeating the process until he had created a fan shaped

⁴¹ Morris, *The Biology of Art*. p.54.

⁴² Lambeth, Susan P. Personal Interview. 4 March 2016.

bundle of brushstrokes. Over the course of two years, he had created many variations of this “fan,” some split in the center, some with stippled bases, some with a central blob.

But this day, something was different. When the next page was presented to him, he began to grunt softly, and he hunched over as if with exertion. He started at a point close to his body, and ran the paintbrush away from himself. With great intensity, he performed the action again and again, until he achieved a “reverse fan.”⁴³

⁴³ Morris, p.97-99.

CHAPTER V

PRIMATE AESTHETICS: ART AS INTERACTIVE ENRICHMENT IN CAPTIVE RHESUS MACAQUES (MACACA MULATTA)

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Introduction

Studies of pictorial behavior in chimpanzees suggest that drawing and painting are self-motivated behaviors that can be used as a form of enrichment.⁴⁴ While previous studies have established credible links in visual preference between macaques and humans,⁴⁵ very few studies have engaged with the picture making behavior of macaques.

This is partially due to logistics. While chimpanzees are documented tool-users and can be trained to use a brush or pencil, macaques do not tend to use tools in the wild and have difficulty mastering this skill.⁴⁶ As a result, rhesus macaques have been limited in the past to finger painting, a technique that some experts have rejected as inadequate for analysis due to the difficulty of interpreting any individual markings.⁴⁷ Using the iPad we can circumvent these challenges. No tool-use is required, and the multiple contacts of a macaques' fingers are translated into a single stroke, aiding clarity of analysis.

⁴⁴ Morris, p. 158.

⁴⁵ Steckenfinger, p. 18362-18366.

⁴⁶ With some notable exceptions: See Veino, C.M. and Melinda Novak. "Tool use in juvenile rhesus macaques (*Macaca mulatta*)" *The Twenty-sixth ASP Meeting Calgary, Alberta, Canada, July 30-August 2, 2003*. Calgary: American Society of Primatologists, 2003. Web.

⁴⁷ Morris, p.26.

At present there are two competing hypotheses to explain the motivation of primate pictorial behavior. The first, advanced by Desmond Morris, is that primates engage in drawing and painting to create a sense of order and balance in the pictorial field. An alternative, proposed by aesthetician Thierry Lenain, is that this picture-making behavior functions as a form of disruptive play.

We investigated whether the pictorial behavior of adult rhesus macaques (*Macaca mulatta*) could be characterized as disruptive or ordered. A series of patterns were introduced to the macaques, presented side by side on the iPad: on one side, a symmetrical pattern, on the other, asymmetrical. To control for left and right side preference, the side each pattern appeared on was alternated, and fully symmetrical control images were included. Additionally, the amount of black and white space present in each pattern was controlled for.

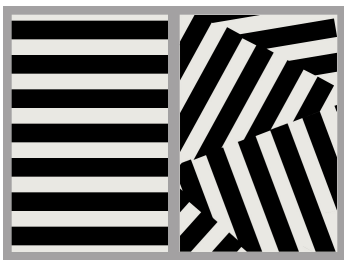


FIGURE 10: Experimental image with right side asymmetry.

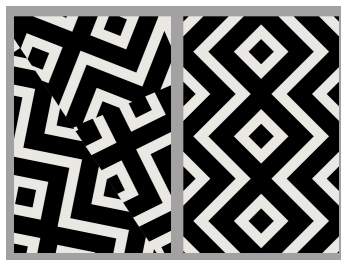


FIGURE 11: Experimental image with left side asymmetry.

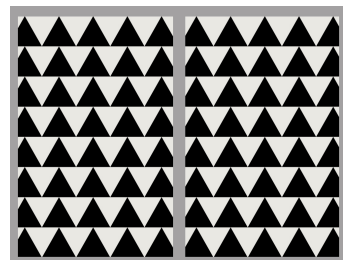


FIGURE 12: Experimental image with complete symmetry.

If primates are attempting to disrupt the pictorial plane, we can expect them to be more likely to draw on the asymmetrical side of the experimental image. On the other hand, if they are responding to order, they will be more likely to draw on the symmetrical portion of the composition to bring it in line with the symmetrical version.

Materials and Methods

Four adult rhesus macaques (two female), pair housed, were given access to the iPad across 10 sessions, during which multiple trials were run. During each trial, the macaques were presented with the iPad running the commercially available application Procreate™, and displaying one of the experimental pattern images. Each iPad was housed in a Lifeproof™ FRĒ waterproof case, which in turn was enclosed in a high density polyethylene case, and clamped to a cart or the foraging board on the home cage. The macaques were then allowed to interact with the image: any mark made on the image is visible as a red stroke. A trial was considered complete when the monkey stood and moved away, or demonstrated behaviors unrelated to the activity: self grooming, for instance. The experimenter then removed the iPad and either presented a new image or ended the session.

The resulting digital images were then transferred to a computer for analysis in Adobe Photoshop™. By selecting the red color range, and running that data through the program's Histogram, we determined the number of pixels present in the strokes on either side of the experimental image, which are then recorded as a percentage. The percent coverage of each half of the composition can then be compared to determine preference for drawing on the symmetrical or asymmetrical pattern.

Results and Discussion

Using a paired t-test, we determined there was no significant difference in percent image coverage of asymmetrical versus symmetrical patterns ($t(3) = -1.060$, $p > 0.1$).

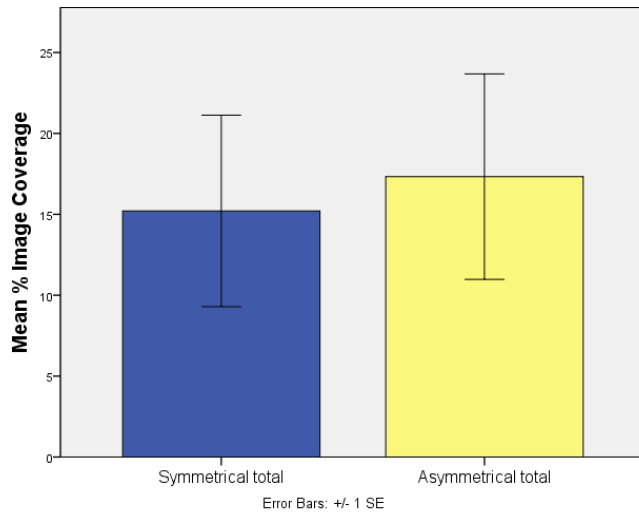


FIGURE 13: Percent image coverage does not vary significantly between symmetrical and asymmetrical images.

However, we did find a significant side bias in 3 of 4 subjects. To measure side bias, we created a side bias index (SBI) by modifying the handedness index (HI) established by Hopkins.⁴⁸ Using the formula $[SBI=(R - L) / (R + L)]$ with positive values reflecting right side bias and negative values reflecting left side bias, and values over .20/-.20 indicating significance, we found that 2 subjects had a significant left SBI, and 1 subject had a significant right SBI. The subject that did not demonstrate a significant side bias scored a marginal .19, trending toward right side bias.

⁴⁸ Hopkins, William D. "Independence of Data Points in the Measurement of Hand Preferences in Primates: Statistical Problem or Urban Myth?" *American Journal of Physical Anthropology* 151(1), 2013 May. 151-157. Web. 8 April 2016.

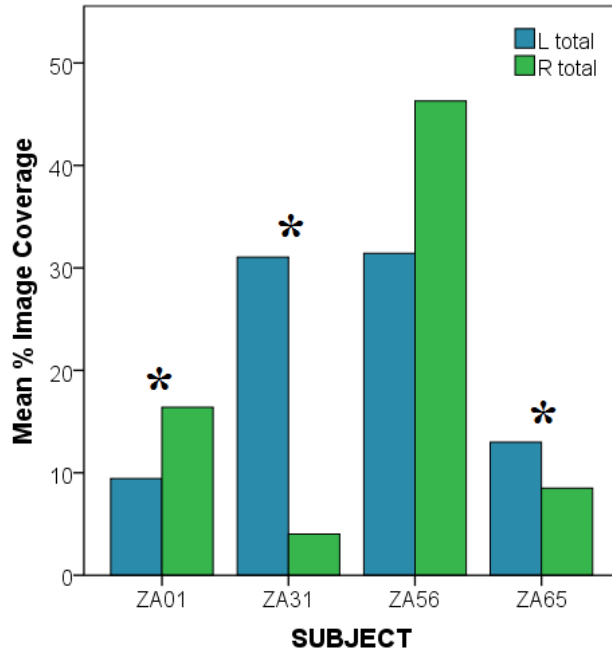


FIGURE 14: Significant side bias was observed in three subjects.

There are several possible explanations for these results. The patterns may not be perceived as a relevant stimulus by the macaques. Additionally, the side bias may be confounding any preference for symmetry or asymmetry that the subjects may have. However, there is some evidence that, regardless of the outcome of the experiment, interaction with iPad is an effective form of enrichment. The subjects voluntarily interacted with the iPad without reinforcement, indicating that the activity is intrinsically rewarding.

CHAPTER VI

PERSONAL NARRATIVE

A Chimpanzee in a Highchair and a Naked Ape

Last summer while browsing a used bookstore, my finger came to rest on the medium gray spine of a book entitled *Monkey Painting*.⁴⁹ Curiosity piqued, I pulled it. On the cover was a photograph of a chimpanzee in a high chair. The combination of this bizarre image and the apparent misnomer⁵⁰ of the title had me reshelving the book until my eyes came to rest on the italicized white text below the title, “*with an introduction by Desmond Morris.*” What I had almost dismissed out of hand had gained a sudden validity.

Oddly enough, I had first encountered the work of Desmond Morris in a similar circumstance during my freshman year of art school. A trade paperback copy of *The Naked Ape* caught my eye while I perused the small science section of the Montserrat College of Art library. It was dogeared and careworn. Standing in the stacks, I flipped through it, taken in by the novelty of human behavior described David-Attenborough-style, like a TV wildlife special.

Back in my dorm, I read the whole thing in an evening. I read and reread certain sections that I felt had practical applications: interpreting intention from aggressive displays before fights, the fascinating rituals of human attraction. It was like a veil had been pulled away, exposing the underlying biology of heretofore puzzling human actions. It changed my life. I thought Morris was a genius.

⁴⁹ Lenain, Thierry. *Monkey Painting*. London: Reaktion Books, 1997. Print.

⁵⁰ Chimpanzees are apes, not monkeys.

Seeing the name of my hero on the cover of *Monkey Painting*, I bought it without even opening it. It sat on my bedside table, unread, for months.

Casting about for a thesis project, I eventually recalled that odd book on my bedside table. I flipped through it, and was amazed to find vibrant color plates inhabited by dramatic calligraphic brushstrokes. The paintings were beautiful. Hooked, I turned back to the Introduction. In the first sentence, Desmond Morris mentioned the title of a book he had written that I had never heard of: *The Biology of Art*.⁵¹ I immediately placed an interlibrary loan request.

Behavioral Management

During one of my thesis meetings, my advisor, Dr. Melinda Novak, asked me what I wanted to do after I graduated.

“I want to teach. Art, probably,” I said, “but, I really like science. So I’m torn as to what to do next, frankly.”

She thought for a moment, and then she said, “There’s a conference you might consider applying to: The Primate Behavioral Management Conference in Bastrop, TX. If you are accepted, you get a certificate for participation. It might give you the credentials you need to continue to work in science.”

She gave me the information, and graciously offered to cover some of my costs if I got in. I went home right away and applied.

⁵¹ Morris, Desmond. Introduction. *Monkey Painting*. By Thierry Lenain. London: Reaktion Books, 1997. Print.

A Node of High Betweenness

At the closing banquet for the Primate Behavioral Management Conference, I was seated next to Brenda McCowen. I wanted to tell her how exciting her work was to me, but I was also nervous that I might not understand it fully, or that I might embarrass myself by oversimplifying. But my advisor was also there, and with her encouragement (and a few IPAs) I eventually worked up the courage.

“My thesis is sort of about the things you covered in your talk,” I said artlessly.

“Oh, really?” McCowen said graciously, “How is that?”

“Well, I’m doing a cultural and historical survey of primate aesthetics,” I said, “along with presenting some of my own research. And one of the things I want to say is how silly it is to take things out of their context. Like, scientifically. How, you know, disrupting something to understand it is short-sighted and, and... macho.” I said, raising my eyebrows. I was hoping that she would pick up on my implication.

“And *male*, you mean?” She asked.

“Yes! *Male*.” I said, relieved. “And your talk, well, it’s the perfect foil for that way of thinking. It’s so much more progressive to think about how things fit together than how we can pull things apart.”

“Thank you,” she said.

CHAPTER VII

RESULTS AND CONCLUSIONS

Environmental Enrichment

In *Monkey Painting* Lenain argues that any results we gain from the pictures created by non-human primates are not useful, because we have placed the primates in an artificial scenario, and the pictures they make are dictated by the tools they are given and not by the animals themselves. In the wild, he argues, primates have enough outlets for disruptive play, and will never turn to art.

An interesting phenomena can inform our analysis of Lenain's argument. A few groups of Japanese macaques which are free-ranging, but artificially provisioned with food, have begun to exhibit a seemingly non-adaptive behavior. They handle stones. Both young and old monkeys do this, suggesting that it is not motivated only by play. Some monkeys carry the stones, some stack the stones, some throw them. There are a variety of behaviors, but they share one thing in common: the monkeys gain nothing from these behaviors. Stone-handling itself seems to be intrinsically rewarding.⁵²

Relating stone-handling behaviors to theories of art's origin, we can see some interesting parallels to both Desmond Morris' definition of art as rewarding in and of itself, and to the "byproduct" theory. Freed from the time constraints of foraging for food, these macaques begin to use their excess time and attention in a novel way. Some have posited that

⁵² Huffman, Michael A. "Acquisition of Innovative Cultural Behaviors in Nonhuman Primates: A Case Study of Stone Handling, a Socially Transmitted Behavior in Japanese Macaques." *Social Learning in Animals*. Ed. Cecilia M. Heyes and Bennett G. Galef, Jr. San Diego: Academic Press, Inc., 1996. 267-289. eBook.

stone-handling is a precursor to tool-use, but perhaps stone-handling is actually a precursor to art.

If primates in an otherwise natural environment turn to proto-art activities, then it does not seem strange that captive primates in artificial environments might be inclined toward these types of activities. Further, just as the “byproduct” theory postulates that art behaviors play an adaptive role in protecting the efficient brain from boredom, a captive primate with all its physical requirements provided for needs supplementary activities to protect its psychological well-being. Typically, this necessity is addressed in the form of environmental enrichment.

An excellent survey and evaluation of the common means of enrichment, “Environmental Enrichment for Nonhuman Primates: Theory and Application”, was published by Corrine Lutz and Melinda Novak.⁵³ One important consideration advanced by Lutz and Novak is that environmental enrichment should foster species-typical behaviors as this could be considered a normalization of their behavioral repertoire. Manipulation and destruction of objects are species typical behaviors for primates, and, according to the authors, “In general, the more destructible the object is, the more it is manipulated.”⁵⁴

So, returning to Lenain’s statement, it seems that in the wild, disruptive play actually has a relatively small role in the overall time budget of a primate. It is only when their needs are met that they have the ability to develop art-related activities. Maybe the results of these activities we gather have little value for analysis, but art is not a means to an end. It is intrinsically rewarding, active, manipulatable, and importantly, destructable—or

⁵³ Lutz, Corrine K., and Melinda Novak. “Environmental Enrichment for Nonhuman Primates: Theory and Application” *Enrichment Strategies for Laboratory Animals*. Spec. issue of *ILAR J* 46.2 (2005): 178-191. Web. 3 April. 2016.

⁵⁴ Lutz, p. 180.

capable of being obliterated. Therefore, it is not a frivolous endeavor to supply captive primates with art: we have a responsibility to these animals to supplement their environment and activities to facilitate their psychological well-being. It is not an add-on. It is a necessity.

The Motif Deficiency

By the end of Morris' work with Congo, he was certain that Congo had achieved the "diagram stage" of human pictorial development.⁵⁵ The few small circles that he was able to "snatch away" from Congo before they were obliterated and the strange phenomena of the "reverse fan" convinced him that Congo could form a mental image before executing it: a motif.⁵⁶

But is that what was actually happening? Certainly apes have the constituent skills to create paintings and drawings with motifs and symbols: communication, abstract understanding of symbols, access to drawing equipment. But the evidence that Congo was actually doing this is anecdotal at best. The fact that drawings needed to be removed from his possession seems to indicate that a symbolic representation was not the final intended form of the composition. And there is very little evidence that any other ape has created representational drawings. What accounts for this difference between humans and apes?

When humans begin to draw as children, their motor and communication skills are developing in tandem, so that just as they begin to master the fine motor command to create shapes, the "diagram stage," they are also learning that shapes can have a

⁵⁵ Morris, p.134.

⁵⁶ Morris, p. 98.

symbolic meaning. Apes, on the other hand, possess greater dexterity at a younger age, allowing them to create images without the necessity of imposing representative frameworks onto the compositions.

Perhaps, then, we should reconsider the comparison Morris was making. Apes have the ability to create and experience a purely aesthetic form, unencumbered by symbol and meaning. Humans lack this ability. In point of fact, the motif deficiency could be said to be ours.

Future Directions

Over the course of my research and experiences, many more threads and connections became apparent than I could possibly do justice to within the confines of this thesis. Indeed, any one vignette could be expanded into the basis for another entire exploration. And yet, this thesis is a small disconnected node in the field of primate aesthetics.

For instance, imitation could play a role in picture making behavior. While at the Primate Behavioral Management Conference, I met someone who showed me a few exciting images created by a chimpanzee. Presented with ruled paper and a pencil, this female creates pseudo lettering: situated between the lines, the delicate markings look for all the world like untidy cursive.

And to some extent, monkeys may be replicating figures in the pictorial field. In one session with the iPad, Kayla left her own drawing and navigated to a preloaded example painting within the application, a painting that features a robot and astronaut in a vaulted corridor. In a time lapse video of her interaction with the painting, she alters the color scheme to a saturated bubble gum pink, and incises lines into the painting using the

eraser tool. The size of the eraser is then reduced, and over the course of several marks she appears to trace the outline of several features of the astronaut, including the rim of his visor, his arm, and his belt. In addition, in one of Kayla's pattern trials, she seemingly follows the vertical lines of a grid pattern, and there are none of the diagonal markings that characterize her typical paintings. While it has often been observed that primates mark within figures, they have not, until now, been observed tracing them.



FIGURE 15: Image response by Kayla demonstrating possible tracing.



FIGURE 16: *Detail of possible tracing.*

These cases are small but tantalizing examples demonstrating the breadth of the unanswered questions of this topic. And it may never be possible to fully understand the motivations and intentions of these other beings. In some ways, we are closer to finding life on Mars.

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PHOTO OF THE ARTIST-AT-WORK

