Making Special: A Review of the Literature on the Evolution of Art

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ABSTRACT

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Erin Griffin

Art making is central to the practice of art therapy. Unfortunately an understanding of art and its use in art therapy is often unclear and divided along theoretical lines. A dependable, more precise understanding of what art is within the context of art therapy may prove to greatly increase credibility in the field. I propose that one of the best ways to build a solid theoretical understanding of art is to examine it from an evolutionary perspective. Within this framework, art is understood as the behavioural tendency to make special, a concept developed by Ellen Dissanayake. Current literature on the biological, developmental, cognitive and environmental factors involved in the evolution of a capacity to make special are examined. Two theories regarding the adaptive function of making special- Kathryn Coe's ancestress hypothesis and Denis Dutton and Geoffrey Miller's sexual selection hypotheses- are also explored. Art making is demonstrated to have evolved from making special and is established as a biologically complex, universal and evolutionary beneficial behaviour. From this perspective, an understanding of making special may help to inform, fortify and unify the theoretical basis of the function of art making in art therapy.

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For if we do not experience the fact that the people we study, as well as our own methods and our very selves, are products of several thousand years of art, language, exploration, reflection and other aspects of the emerging human consciousness, we shall have cut ourselves off from our very roots. To cut off history is to sever our arterial link with humanity. -Rollo May, *Psychology and the Human Dilemma* (1979, p.55)

Research Question

For the purpose of my research inquiry, my primary research question was: *Why and how did art-making begin?*

A subsidiary question in my inquiry, which links my literature review to the field of art therapy, was: *How might an evolutionary perspective of art and art making inform the theory and practice of art therapy?*

Impetus For Inquiry

Understanding my own motivation behind this paper has been an ongoing and revealing process for me as an individual as well as an imminent art therapist. I believe that sharing the motivation behind my inquiry is a fundamental part of the reader's journey through this paper. I wish to increase research transparency by exposing my motivations and biases, as I believe it is a key piece in the whole of the narrative of my research pursuit. Why have I chosen this particular direction for research and how did it emerge out of my experience as an art therapy student? First, it is important to state that although I studied fine art all the way through my Bachelor's degree, I do not consider myself an artist. The term artist essentially means one who creates art. Visual art in its traditional and most popular sense means the application of skill and talent to produce aesthetically pleasing works of painting, drawing, or sculpture. And it is regretfully in

this exact sense that I cannot call myself an artist. There are many in the field of art therapy who might therefore suggest that I am unqualified to become an art therapist. I believe, however, that being a good art therapist has little to do with being a skilled artist. I believe that to be a competent art therapist, one must have a strong understanding of why we ask our clients to create art. In my search to understand what art is, and ultimately what art therapy is, I have looked to its origins so that I may better understand why art came to be in the first place. I believe the why and the what of art have the same answer. Perhaps by understanding why art exists, we may achieve a greater appreciation for and understanding of the process of creating art within the therapeutic setting.

Focus

In a preliminary review of the literature in art therapy, it is clear that research has included knowledge gained from such fields such as sociology, anthropology and ethology (Hogan &Pink, 2010; McNiff, 1979, 1988; Moreno, 1988). The study of Shamanism was particularly popular in the creative arts therapies during the 1970's and 1980's. The art therapy based publication *The Arts in Psychotherapy* dedicated a whole issue to the topic in 1988, titled *Creative arts therapists as contemporary shamans: Reality or romance?* (Johnson). Art therapist Shaun McNiff and music therapist, Joseph Moreno were the most prominent researchers drawing parallels between shamanism and the practice of the creative arts therapies. McNiff studied the beliefs and practices of shamanic cultures as a basis for an orientation of arts-based psychology. This work provided the art therapist with an understanding of the origins of their role in the healing/helping profession. Art therapy research most relevant to my interest includes the work of Edith Kramer and David Henley. Kramer focused on sublimation in art therapy,

which is the use of creative process to convert possibly destructive drives or urges into more productive or socially acceptable actions. It is based on a combination Freudian psychoanalysis and the findings of prominent ethologist, Konrad Lorenz (2001). Henley's doctoral thesis (1999) used ethology as a framework for understanding the origins of creative expression and emphasized developmental art therapy research with both children and animals. He concluded that the restorative effects of art therapy are not limited to the human species nor limited by cultural differences. Anthropologist Ellen Dissanayake had previously made connections between her findings regarding the origins of art making and the practice of music therapy (2001).

Citing insights from evolutionary theory that has lead to advancements in fields such as anthropology, economics, social psychology and linguistics, Donald Dutton asks "why should the arts shut itself off from a perspective that has already enriched and revitalized so many other fields of inquiry?" (2009, p. 2). In light of this, why should art therapy be shut off from evolutionary perspectives of the origin of art? As we will explore, the evolutionary and ethological perspective not only links together much analytic and developmental theory but it grounds it in science and observation and it does so very humanely. The aim of my research is to provide a deeper understanding of the context of the art making aspect in art therapy. My research is a theoretical exploration that attempts to review some of the theories regarding the beginnings of art making, weave them together and relate this information to the practice of art therapy. It is a bottom-up research approach that is centered on identifying the basic biological and behavioural elements related to art. This exploration is well suited to a theoretical research methodology, which is used to develop an understanding of the background of a

phenomenon as well as to explore the interrelationships between various fields (Junge & Linesch, 1993). I intend to expound upon what has already been established and applied to the field of art therapy by researching and synthesizing preexisting historical and theoretical data from a variety of sources.

First is the ontogeny section, which presents some of the literature regarding how humans developed the capacity to make art, and the circumstances that coalesced these capacities into an adaptive behaviour. In doing so art making is illustrated to be an adaptive and universal trait that is deeply rooted in our human biology. The phylogeny section is aimed at discussing how the capacity to make art evolved to become part of a strategy for survival. I have chosen two theories to compare and contrast with a discussion of some of the strengths and weakness of both theories. Additionally, I take some liberties to hypothesize how these seemingly contrasting theories might be woven together to form a cohesive narrative, which emphasizes the efficiency of the object to communicate vital signals and values in order to bring individuals and groups together to increase their chances of survival. Next I attempt to address some of the issues and concerns regarding an evolutionary approach to understanding art. There is much resistance to a more scientific view of art, as science is often perceived as reductionist. I propose, however, that through an evolutionary understanding of art behaviour, we are reacquainted with the humanity and possibilities inherent in art making. I feel strongly that by studying the evolution of art, we may discover the root of art's therapeutic potential and apply this to our practice as art therapists. In the final section, I tie the previous sections together in a discussion of some of the possible theoretical implications of an evolutionary view of art for the field of art therapy. I enter briefly into a discussion

on theories regarding mental illness before making some concluding thoughts.

This paper is intended to increase awareness of the importance of art making by discussing its relationship to human evolution. The results of this inquiry will be geared toward expanding art therapy theory on the basis of an understanding of the origins of art. It is my hope that this theoretical exploration will introduce another avenue of dialogue with other health practitioners that underlines the biological, cognitive and social relevance of making art. Awareness of the original functions of art may serve to support and broaden theoretical and practical considerations in clinical practice. This research is intended to be the beginning of a discussion and an invitation for further research possibilities. The answers are not written in this paper, but there is a brief discussion on several theories regarding the origin of art. The most I can ask for from this paper and from the reader is the formation of ideas, of possibilities and new avenues for exploration. I hope it will excite interest, create discussion and open the reader to new theoretical and research possibilities.

Delimitations

I must emphasize that this study is exploratory and is not intended to be an in-depth analysis of a particular time period, discipline, or theory. The time frame under review is ranges significantly from approximately 2 million to 30 thousand years ago (McHenry, 2009). The theories explored in this literature review seek to explain the existence of art in evolutionary terms. My understanding of the theory and mechanisms of evolution is average at best, thus my critique of many of the theories involved in this literature review is limited. Multiple journals and books written by a variety of authors in a wide array of

academic fields have been consulted, however, the central ideas I have researched stem from the theoretical work of six scholars: Kathryn Coe, Ellen Dissanayake, Donald Merlin, Geoffrey Miller, Denis Dutton, and Nancy Aiken.

Methodology

Qualitative Framework

I chose to conduct my research within the qualitative framework as it acknowledges the complexities of human nature, allows space for the existence of multiple realities and recognizes that the researcher's beliefs, culture and personal background have an effect on the outcomes of their work (Creswell, 2007). A qualitative method of inquiry was best suited for my research as it is a framework for inductive methods, which generally aims to generate theory (Cherry, 2000). The purpose of my inquiry was to develop research that will contribute to deeper understanding of the field of art therapy. My chosen methodology is a theory driven, historical methodology using an integrated narrative style. The historical method functions to develop an understanding of the background of a phenomenon as well as to explore the interrelationships between various fields (Junge & Linesch, 1993). My particular narrative combines a synthesis of evolutionary theories of art behaviour and an analysis of the relevance of these theories to the practices and uses of art in art therapy.

Data Collection

The research-before-theory model is based on the idea that research plays an active role in the development of theory by initiating, reformulating, deflecting and clarifying theories (Merton, as cited in Berg, 2004). It is a non-linear process wherein the impetus

for the paper and the research itself continually evolve and influence one another throughout the analytic and synthetic process. Essentially my process began with a rough idea, followed by the beginning of a literature review, which helped my idea to evolve, which in turn clarified the focus on my literature review. Consistent with the historical/theoretical method, the literature review- defined as the formal survey of professional literature- serves as my main method of data collection (Concordia University Research handbook, 2008). The next steps involved continuing to add to the breadth of the literature review while continually analyzing the data until I was able to arrive at a cohesive narrative. My research is comprised solely of secondary sources, in the form of peer-reviewed journals and work published by well-known publishers and academic presses (Denzin & Lincoln 2003).

Author Bias

My research is based on the assumption that learning about the origins of a phenomenon is essential for a deeper and more holistic understanding of said phenomenon. I refer the reader to the quote by Rollo May at the beginning of this chapter as it speaks eloquently to the importance of looking at our origins to understand our present. I understand that as a researcher, subjectivity has guided my choice of topic, selection of methodology, data and ultimately my interpretation of that data. I intend to use personal pronouns throughout my writing thereby claiming and reminding the reader of the subjective voice in my research.

Terminology and Framework

I am convinced, from the light gained during even the last few years, that many structures which now appear to us useless will hereafter be proved to be useful, and will therefore

come within the range of natural selection. -Charles Darwin, *The Origin of Species*, (2008, p. 61)

Evolution and Ethology

The evolution of a species is the accumulation of biological, cognitive and behavioural changes which take place over many generations (Futuyma, D, 2005). Selective retention, more commonly referred to as natural selection or survival of the fittest, is the cornerstone of Charles Darwin's theory of evolution. It is one of two processes that contribute to the evolutionary changes of a species (the other being genetic drift, a random process whose effects are not discussed in this review). Natural selection is defined as the preservation of physical, biological or behavioural traits, known as adaptations, which possess survival value (Darwin, 1884). In other words, natural selection is the evolution of adaptations. An adaptation is an "inherited physiological, affective or behavioural characteristic that reliably develops in an organism, increasing its chances of survival or reproduction" (Dutton, 2009, p.91). Ethology is a branch of science that subscribes to the principles of evolution wherein behaviours are viewed in the same way as biological features; that is, that behaviours are shaped by the adaptive value they have. It is defined as the biology of human behaviour, including the humanities (Eibl-Eibesfeldt, 1997). Ethology seeks to understand behaviour in terms of the theory of natural selection (Jolly, 1972). Much of the biological basis for art *as an evolutionary behaviour* is grounded in ethological theory (Dissanayake, 1995). The purpose of this literature review is to synthesize the evidence that supports the notion that art making is an adaptive behaviour that was shaped by the selective forces of evolution and therefore necessary to the survival or reproduction of our species. As we will see, art

is both a biological and a behavioural phenomenon. In seeking to understand why art behaviour has persisted, or in other words, why it was naturally selected, we must first establish what is meant by art behaviour.

Defining Art (as a behaviour)

Defining art is notoriously difficult, though I believe we all have some concept of what art is. When formulating their idea of art, the general public in the Western world may go as far back as to reference the famous cave paintings of Lascaux, France or Altamira, Spain. These paintings are approximately 30,000 years old and were created during a time known as the Upper Paleolithic era, (Pfeiffer, 1982; Young, 1971). However, this time frame of 30,000 years is still only a fraction of the real history of art. This literature review is meant to expose the reader to a time frame of art history that reaches back hundreds of thousands of years. It includes research and theories that support the notion that art is not merely superfluous, but rather an adaptive act based on fundamental behavioural tendencies, or strategies, which contributed to our survival. Dissanayake (1995) and Dutton (2009) highlight the need to carefully define the terms when discussing art within an evolutionary framework. In evolutionary terms, we want to isolate the core behaviour of art making, precisely the exact adaptation, upon which natural selection could act (Dissanayake, 1995). Part of the difficulty in defining the function of the behaviour of art is uncovering the common denominator, or universal element, in the making of art that links this act not just throughout our species but also throughout time. In *Homo Aestheticus: Where Art Comes From and Why,* Dissanayake (1995) labels the common denominator of art as *making special* which she defines as "the evaluation of something as distinctive or exceptional, and any care taken to elaborate

those qualities" (p.44). Making special was an instinctual behaviour or impulse to make use of special materials, forms, decoration, size, colour or style in order to imbue or bring about distinction or specialness of an object or an individual. In our earliest history, making special sowed the seeds of proto-art, which can be visualized as being at the beginning of an art continuum. For the purposes of this paper, art in the common sense of the word refers to folk aesthetics, which Geoffrey Miller (2000) describes as an aesthetic that concerns what ordinary (versus elitist) people find beautiful. Folk aesthetics would be at the end of the proto-art-to-art continuum.

In order to build the argument that art has an adaptive function for which it was naturally selected and thus necessary to survival, we must define the fundamental behavioural tendency on which art is based. Making special, which for the purpose of this literature review is synonymous with art making, is this fundamental behavioural tendency. The theories to be discussed are based on the notion that art is an adaptive behaviour, which is strongly suggested by its universality and functional complexity.

The Basis for the Evolution of Art Behaviour

Art is the expressive culmination of the most ancient domain of the human mind. -Merlin Donald, *Art and Cognitive Evolution*, (2006, p.19*)*

This section of the literature review is intended to present some of the evidence that firmly grounds art behaviour in an evolutionary framework. Understanding the biological, physiological, and cognitive basis for art means going back in time, approximately 2 million years ago and following the evolutionary path to our most modern ancestors of approximately 30,000 years ago (McHenry, 2009). There are three

main criteria for determining whether behaviour is evolutionary (Jolly, 1972; Wright, 2009). First, the behaviour must be intrinsically rewarding and follow a developmental path. Second, it must be biologically ingrained and mediated by ancient neural pathways. Third, it must be appear early in the history of the species, in this case Homo Sapiens. Art making is shown to meet this criteria when grounded in the concept of the behavioural tendency to make special.

Developmental progression

Darwin believed that when an activity was pleasurable, it indicated biological significance (2008). The human compulsion to engage in art behaviour begins spontaneously and unfolds in a routinely predictable process, regardless of cultural background. Professor and art educator, Viktor Lowenfeld illustrated the stages of human artistic development in his seminal book, *Creative and Mental Growth,* first published in 1947. Lowenfeld identified the first stage of development as the scribble stage, which is characterized by purely kinesthetic activity. Chimpanzees, apes and some other primates also engage in scribbling when given art materials. To explain scribbling as a self-rewarding behaviour, ethologist Desmond Morris (1962) described the enjoyment of making scribbles as being based on "physical, motoric outbursts lacking ulterior motives"(p. 144). He stated this "may inadvertently keep the animal mentally and physically healthy and thus indirectly assist in its struggle for survival, but the actual driving force behind these self-rewarding activities appears to be simply the unleashing of surplus nervous energy" (p.144). Thus it can be said that the primary impulse for art behaviour is a self-rewarding, exertion of nervous energy as evidenced by the research

done in the picture making of apes. In other words, the similarities between primate picture making and human picture making suggests art behaviour evolved from the inherently pleasurable and self-rewarding tendency to make scribbles. As humans continue to develop between the ages of 3-4, they reach the pre-schematic stage where the first representational images begin to emerge and advance rapidly as the child continually works to develop new representational symbols. A study by Kohut (cited in Morris, 1962), noted that although chimpanzee's scribbles demonstrated progression over time as well as increased visual control, they never reach the stage of image formation. From approximately 6 to 12 years old, children develop from the schematic stage, where order and a definite way of portraying objects begins to emerge, towards increased realism. This striving for realistic representation is based on a new interest in understanding how things actually appear and a desire for the technical skill to translate this in two-dimensions (Lowenfeld, 1947). As the child becomes increasingly critical of his or her ability to render objects realistically, and ever more self-conscious of his or her skill level, he or she reachs a phase where improvement in his or her drawing skills becomes a conscious decision. It is at this point, between 14-16 years of age that most children abandon art in pursuit of other interests.

The scribbles of chimpanzees and apes show no planning, no intent, imbue no specialness and are of no interest to them once they are done, but their behaviour demonstrates that scribbling is primal and pleasurable urge. This "faint aesthetic spark" (Pfieffer, 1982) strongly indicates that self-rewarding mechanisms are biologically the most ancient characteristic of art. This spark ignites a developmental course of artistic development that is uniquely human.

Physiognomy of art

In his book *The Art Instinct: Beauty, pleasure and Evolution* (2009), Denis Dutton outlined a survey conducted by two artists, Vitaly Komar and Alexander Melamid, aimed at studying the landscape preferences of people in 10 countries. What Komar and Melamid discovered is that regardless of age, ethnicity, or education, there was a universal preference for certain landscape features and orientations. This indicated a universal environmental aesthetic preference. Ethologist Irenäus Eibel-Eibesfeldt, stated that the evolutionary approaches to environmental aesthetics "hypothesize that humans prefer places where exploration is easy and which indicate the availability of resources necessary for survival" (1997, p.18). This universal preference is indicative of an adaptive emotional-aesthetic mechanism that includes innate aesthetic templates or archetypes. Such a mechanism was adapted to guide foraging, nomadic species to find appropriate food and shelter (Aiken, 1998; Eibel-Eibesfeldt, 1997;). This physiological aesthetic connection was the basis for Nancy Aiken's thesis on the origin of art, titled *The Biological Origins of Art* (1998). In essence, she believed that the aesthetic response is an emotional response that stemmed from basic reflexive reactions deeply rooted in our biological makeup. Lindauer refers to this phenomenon as the physiognomy of art, which is defined as the "property of the stimulus that initiates our response to art" (Lindauer, cited in Aiken, 1998). All animals have what are referred to in the field of behaviourism as unconditioned and conditioned responses. Unconditioned responses are automatic reflexes that are innate to a species. In contrast, conditioned responses are reactions that are learned through association (Hernnstein, 1986). There are many studies that demonstrate how animals, including humans, have automatic, unconditioned responses to an array of visual stimuli (Aiken, 1998; Coe, 2003; Komar & Melamid cited in Dutton,

2009; Morris, 1962; Pfeiffer, 1982). For example, predators in search for prey have a natural tendency to focus intently on their target in order to accurately assess the likelihood of a successful attack. For the target, the eyes of the predator focused on them signals the possibility of extreme danger. The response to this signal is instinctual, automatic and almost instantaneous- the prey's nervous system instantly primes itself for a fight or flight response. The intense gaze is registered as a predatory behaviour and thus biologically perceived and reacted to as a direct threat. In experiments, this biological reaction can be produced by pairing two circular shapes closely together to mimic a predatory stare, called eyespots (Aiken, 1998; Coe, 2003). Aiken used cardiovascular measures to test adults' responses to eyespots versus other random configuration of circles. What she found was a consistent and significant change in heart rate and fingerpulse volume among all her subjects, regardless of ethnicity, when confronted with images of eyespots. These physiological reactions are similar to fight or flight response, although less intense. It is not just eyespots alone, but other configurations of line, shape, and colour, which can evoke an emotional effect. The search for food is another example of how visual cues are deeply connected to emotional and physical reactions. Before our primate ancestors developed the physical and cognitive capacity to become an organized hunting society, their main source of food came from the trees and bushes among which they lived. The drive for survival meant finding nourishment, and finding sufficient, nutritious food was an extremely rewarding biological experience (Grinde, 1996). Colours attributed to healthful, ripe fruit such as yellow and red, held strong, positive associations. When scanning the forest floor and canopies, these colours signified the presence of food, and were thus associated with positive arousal. These colours were

highly valued and held rich significance. Red in particular is one of the most significant colours in our history of art and making special, most likely because it is the colour of blood and thus a very potent symbol of life and death. The theory that red was a powerful and primal symbol is supported by archaeological evidence of the increasing use of red orche by early hominids (Aiken, 1998). Line quality is also a powerful visual cue, and studies have shown that curved and angular lines elicit predictable emotional responses among research participants.

The physiological reaction to what we perceive visually is the result of biological adaptations to environmental preferences and survival pressures and is a cross-cultural phenomenon. The power of art to elicit emotional reactions and to contain calming and arousing stimuli has long been a force employed by our ancestors. Coss (cited in Aiken, 1998) stated, "the evolutionary development of human sensitivity to specific visual releasers may have influenced primitive and prehistoric cultures to select specific patterns for incorporation as decorative elements" (p. 112). These visual releasers are contained in the formal elements of the image and evoke emotional and physical responses in the viewer. The aesthetic response is partially a reflexive reaction made up of personal associations (which explains cultural variation) as well as biological templates (which gives art its universal characteristics).

The Visual Brain

Visual perception has evolved over hundreds of millions of years while language is a comparatively recent development (Zeki, 1999). Vision is the primary and most efficient means by which primates interact with and understand their environment. The

brain's visual process, from perception to understanding, is what Zeki (1999) refers to as the "quest for essentials". In order to make any meaning of our environment, the brain is on a constant search for the essential elements of experience, which means differentiating a world that is in a continual state of flux. In order to make sense of what is perceived visually, the brain goes through a three-step process. First, it selects the constant, defining properties of an object or environment. Secondly, all information that does not support the defining properties are considered non-essential and ignored. Lastly, the selected information is compared to existent schematic structures or associations and categorized. Zeki points out that this neurological process of gaining knowledge and making meaning is remarkably similar to the creative process. In fact, Zeki argues that the creative process *is* the expression of the neurological tendencies of information processing. He reminds us of the fundamental point that "all art is expressed through the brain and therefore must obey its laws" (p. 6). Our neurological circuitry is the basis for our psychological mechanisms. Our deeply rooted visual circuitry suggests that the visual arts are profoundly interconnected with our brain function, both in the way we understand the world and in how we react to it. In the search for understanding and meaning making, art behaviour can be viewed as the creative expression of the natural function of the visual brain.

The Theatre of the Mind

Much like how the sensory mechanism of the eye and perception mechanisms of the brain were strongly connected early on in neurological pathways, so too was the primary mode of cognition. Mimesis is the term for the basic mode of cognition from which all future cognitive developments evolved (Donald, 2006). It is thought to have

originated approximately 2 million years ago at about the time our evolutionary path diverted from that of our hominid ancestor, Australopithucus (Donald, 2006; McHenry, 2009). Mimetic abilities stem from a cluster of capacities made possible by a single neural adaptation and include gestures, pantomime, imitation, and rehearsal of skill (Donald). At its roots, mimetic cognition is the beginning of a capacity to observe, capture and reproduce aspects of reality. Overtime this evolved, as associations between neurons became reinforced, to an "expanded and differentiated working memory, in which hominids could observe themselves" also referred to as the theatre of the mind (p. 16). This signifies both the capacity for a cognitive process and the ability to *reflect* on this process. Aiken (1998) points out that although chimpanzees and others animals are known to have applied drawing or painting materials, not one has demonstrated an interest in or response to their work other than humans. Though we may share much of the same biology that makes art behaviour possible, only humans developed an interest in the consequences of that behaviour. This awareness, or self-consciousness, can be visualized as an inner space, an inner theatre, in which hominids could observe, alter and shape their actions towards a conscious purpose. The development of this ability can be deduced from archeological signs, such as improved tools and tool making technology, increasingly common ceremonial rituals and the increase in many meticulously carved artifacts of figures and faces (Young, 1971). These objects were the symbol of a dawning consciousness of the ability of man to not only to reflect but also to make purposeful action based on this reflection. This theatre of the mind set the stage for conscious control to be extended into the domain of action (Donald, 2006). The capacity for imagination was also a fundamental development to come out of this cognitive

awareness. Imagination is defined in neurological terms as "the ability of the brain to provide information where, perceptually, none exists" (Oppenheim, 2005, p.25). Imagination is the fundamental ability to visualize events that may or may not ever occur in the future. It means the ability to plan by visualizing the future and conceiving of alternative scenarios. Our imaginative lives were not only essential to our humanity, but to our survival. Described as "specialized intellectual machinery" (Dutton, 2009, p.105), the imagination, which is arguably the content of creativity, is a natural function of our cognitive and neurological design (Dutton, 2009; Zeki, 1999; Oppenheim, 2005). Cognitive evolution- from observing and mimicking the environment to eventual internal observation and awareness, and the advent of imagination- was fundamental for the development of art behaviour (Donald, 2006).

Art in the Upper Paleolithic Era

Though the caves of Spain and France may be the most popular examples of prehistoric art, they are by no means the first evidence of art-like activity. Anthropologist Randall White (1992) stated that "three-dimensional, animal and human sculptures, engraved and painted blocks and simple 'non-figurative' motifs appeared at least 15,000 years before the first cave was painted" (p.538). At a site in the French Riviera, archeologists uncovered 60 pencil-like pieces of ochre in a variety of colours, which scientists believe were applied as ornamentation to the body or objects. The ochre samples were estimated to be 300,000 years old (Pfeiffer, 1982). Evolutionary psychologist Geoffrey Miller (2000) cited other examples outside of Europe that also predated the Upper Paleolithic. These include evidence of painted rocks approximately 50,000 years old discovered in Australia, and red ochre found in Africa, again possibly

used for body ornamentation, dating back 100,000 years. It is thought that body ornamentation is the oldest and most pervasive form of art (White, 1992). In fact, White wrote that "personal ornaments, perhaps more than any other aspect of the archaeological record, are a point of access for archaeologists into the social world of the past" (p.539). During this long period of time, our progress was very slow with little change over hundreds of thousands of years, that is until we entered the era known as the Upper Paleolithic, approximately 35,000 years. The Upper Paleolithic era is referred to as a revolution because it comprised a creative explosion of radical new technologies, hunting techniques, ritual and artistic creations that were unparalleled in the 150,000 approximate years since the first modern anatomical humans appeared (Pfeiffer, 1982). It is from this period that we find the prehistoric art with which most North Americans and Europeans are familiar. This was the era of advanced flint tool manufacturing, rope, oil lamps, decorative beading, the Venus figures, cave paintings and ceremonial burial (Bar-Yosef, 2002; Herva &Ikäheimo, 2002; Pfeiffer, 1982; White, 1992). It was also considered the beginning of behavioural modernity, meaning that the technological and social advances of the era are still recognizable and comparable to modern human society. Archeologist Ofer Bar-Yosef (2002) summarized some of the predominate theories to explain the precipitating factors of this period of radical change which include climate change, genetic shifts, and increased population. The general consensus would seem to be that the revolution was framed by a complex interaction of environmental and biological factors that lead to a significant increase in population, which demanded significantly increased cognitive capacity. The demands of an expanding social group had a dramatic effect on the course of our evolution as well as the evolution of art. The changes that were taking

place required a significantly increased cognitive capacity with which to facilitate complex communication strategies to manage the increasing complexity of life (Pfeiffer, 1982). To cope with the demands for more advanced modes of communication that such a revolution demanded, our ancestors turned to one of their greatest tools- the power of symbolically recorded information in the form of images (Pfeiffer, 1982; White, 1992). This was such a powerful tool because visual representation was an extremely effective mode of "chunking"- the strategy by which the recording of information organized items into manageable and efficient units of meaning (Pfeiffer, 1982). During a time of unprecedented change and advancement, images could facilitate advanced communication and information processing. Having evolved over millions of years, the visual brain and cognitive functions were primed for such an ability (Donald, 2006; Zeki, 1999). Images also succinctly captured emotional information via biological reflexes (Aiken, 1998). They not only had the ability to chunk information effectively, but could also contain different levels of information, both utilitarian and symbolic, within the same image unit (Pfeiffer, 1982). Images acted as signals that communicated on multiple levels, which was their most unique and powerful property. Eventually, it appears that under the selective pressures of the Upper Paleolithic revolution, image-making behaviour became interwoven into increasingly complex social situations and took on new meanings and applications. The behaviour behind the formation of these images, naturally followed the same pattern as all nonverbal communicative behaviour (Jolly, 1972). Like any established behaviour such as parenting, the behaviour of art is rooted in biological and cognitive instincts, which became increasingly ritualized as the need grew for more effective communication in an increasingly complex social structure.

Discussion

Before art could develop as a behaviour, there needed to be precipitating factors that would coalesce the various biological, cognitive and neurological capacities in response to environmental pressures. These underlying capacities evolved more than two million years ago. The evolution of art as a behavioural adaptation was a slow process, but was fundamentally established by the Upper Paleolithic era, more than 30,000 years ago (Young, 1971). The challenges of the Upper Paleolithic revolution, coupled with established visual-neurological pathways, biological constraints and introspective cognitive capacities resulted in the adaptation of art behaviour. There are of course many gaps and many unknown factors when attempting to trace the origins of art behaviour, but what we have established thus far is that art is inherently self-rewarding (Morris, 1962), develops in a stereotyped fashion (Lowenfeld, 1947), is based on ancient biological, cognitive and neurological pathways (Aiken, 1998; Donald, 2006; Zeki, 2009) and appears early in our history (Pfeiffer, 1982; Young, 1971). This establishes art behaviour firmly within an evolutionary framework according to the evolutionary behavioural criteria of ethologists (Jolly, 1972). Having briefly discussed the context of the emergence of this behavioural adaptation, we shall now review the predominant theories regarding how this behaviour was adapted for survival.

In the next section we will review the literature that theorizes the adaptive function of art and what the possible survival advantages of engaging in making special behaviour may have been.

The Original Function of Art

> By expanding our notion from 'art' or even 'art as making special' to 'the faculty for making and expressing specialness', we can understand in a humanly grounded and relevant way how 'the arts' originally arose and why they not only enhance our individual lives as Homo Aestheticus, but have been essential for our evolution as a species. –Ellen Dissanayake, *Homo Aestheticus: Where Art Comes From and Why,* (1995, p.56)

There are many scholars from a wide range of disciplines who have written on the subject of the origin of art from an evolutionary standpoint (Coe, 2003; Dissanayake, 1995; Donald, 2006; Dutton, 2009; Pfeiffer, 1982; Miller, 2000; Morris, 1962; White, 1992). Anthropologist Ellen Dissanayake summarizes these theories and states that there are six social functions of art: displaying individual or group resources, controlling or channeling aggression, facilitating courtship, acknowledging and relieving anxiety, establishing and maintaining social identity, maintaining cooperation and prosperity (Dissanayake, 2001). At a fundamental level, in spite of the variety of arguments, some of which are contradictory to each other, what all these authors can agree upon is that art originated as a form of communication. The traditional ethological view of communication defines it as the transfer of information (Quiatt & Reynolds, 1993). More recently, however, that view has shifted to view communication as a form of manipulation. The central concept is that art is a form of emotional and cognitive engineering, whose deliberate construction is meant to exert influence on its audience (Dissanayake, 1995; Donald, 2006). All theorists generally share this concept, though the emphasis on the functions of this influence differs greatly. Dissanayake's central thesis is, roughly, that by using emotion as the basis to make special, art was the fundamental factor in unifying groups by elaborating socially shared meaning and values through symbolic images used in a ceremonious or sacred frame. In essence, art reinforced the

idea of the group working together for the advancement and wellbeing of all. She cites examples as to how life was improved by the making of aesthetically pleasing tools, primarily because they reinforced the importance of the tools to the group which in turn promoted the amelioration of skills and advancement in cognitive ability on which tool making was based. Making special was a behaviour which set social norms and modified the audiences' experience of life in order to form a cohesive group with shared goals and meaning. The point of making something special was to draw attention to a particular feature of societal life by making it distinct and compelling. Social strategies, which kept the group unified and pacified, were of utmost importance for survival. The general consensus is that art originated for the purpose of group survival.

In the following section, I have elected to discuss in more depth two equally interesting but distinct theories regarding the origin and purpose of art. The first is the ancestress hypothesis proposed by Kathryn Coe (2003), which echoes many of the social and group survival functions of art briefly mentioned above. The second is a sexual selection theory, hypothesized first by Geoffrey Miller then expanded upon by art theorist and philosopher Denis Dutton. I frame these theories in three ways: First, I give a brief overview of how each author's personal experiences and observations influenced their theory. Second, I discuss each theory within the economic model of evolution, which frames behaviour in terms of the investment of resources required. The economic model views behaviour in terms of costs and benefits. Primatologists Quiatt & Reynolds (1993) state that the economic model "has proved rewarding in making it possible to tie up observed behavioural outcomes with expectations derived from sociobiological and socioecological principles"(p.3). We must acknowledge that art behaviour has persisted

in spite of the considerable amount of resources required to engage in it. The process of evolution is not a wasteful one and if art behaviour has persisted as it has for thousands or even hundreds of thousands of years, we must conclude that the benefits of producing art outweighed the costs. The cost/benefit analysis of art differs greatly between the ancestress hypothesis and the sexual selection hypothesis. It is yet another way to enter into a dialogue that questions why and how the visual arts originated though the lens of Darwinian evolution. The third frame used in discussing the preceding theories is that of making special. I will review briefly how making special operates within both the ancestress theory and the sexual selection theory. Finally, I shall attempt to discuss some of the main differences between the theories, but more importantly, I will discuss what these theories have in common.

The Ancestress Hypothesis

In her book, *The Ancestress Hypothesis: Visual Art as Adaptation* (2003), anthropologist Kathryn Coe seeks to shift the focus of evolutionary theory from what she believes is the sexually competitive, selfish, male dominated theories to the role of ancestral mothers and their competing strategies. Having lived in various small, isolated tradition-based cultures for more than 30 years, Coe became interested in the effect that tradition and the visual arts had on these communities. She noted, "Not only were crucial resources being used to produce arts that might be soon discarded, but when art objects were treated as if they were sacred, it was because of their association with the ancestors" (p. xii). She observed how the visual arts had the effect of not only unifying the group but of preserving and transmitting knowledge to successive generations. Coe was also interested in exploring the paradox of selfish genes and maternal investment in offspring.

Selfish gene theory, made popular by evolutionary biologist Richard Dawkins, stated that genes are the primary drivers of evolution, *not* individuals or groups. Genes are characterized as ruthlessly selfish molecules whose sole purpose is their own replication in future generations. Coe believes that our focus on the selfishness of genes is misguided and reminds the reader that selfish genes do not necessarily translate into selfish behaviour. The aim of behaviour is to transmit our genes into future generations, arguably a method best accomplished by cooperating with other individuals. She believes that the focus on selfish genes has lead to a failure to appreciate the maternal strategies that lead to increased investment in offspring. This maternal strategy is about the investment in quality versus quantity of offspring, otherwise known as a K-strategy. Coe pointed out that "mothers did not get their genes into future generations by focusing on their own interests" (p.xiii). This is the "good mother"-the one whose interests are those of her offspring. The good mother is, in Coe's view, the foundation of our moral and social system. The good mother models and maintains social values that enable her and her kin to put forth the resources required to raise their offspring. One of Coe's main hypotheses focuses on how significantly increased maternal investment was a catalyst for the evolution of modern human culture. Increased investment, which came at very high cost in resources, was only possible by building strong social relationships among kin, which was an ever-expanding group. Coe believed that it was the social effect of art that was central to its persistence. The visual arts were central to tribal identification and to promoting "the replication of strategies related to maternal concerns" (p.111) otherwise known as tradition. When used in a traditional manner, visual art was a "good mother" who emphasized the concept that the benefits of group cooperation far outweighed the

costs to the individual. Art was a maternal mechanism used to encourage selflessness and altruism. The good mother used art to promote cooperation and limit competition while protecting the group against non-kin.

The K-Strategy

Coe (2003) stated that the good mother had to manage the obligations inherent in being at the top of the social hierarchy. She required cooperative breeding strategies that promoted the involvement and commitment of a long term-mate, of male and female kin, and of surrogates, in order to help raise her offspring. For the welfare of her offspring, the good mother orchestrated a social group in which enduring social relationships, reciprocity, generosity and shared interests were highly valued and expected. This kind of society was required for the very costly investment in raising offspring. Coe believed that the driving force behind human biological and cultural evolution was the increasingly large investment in raising offspring. The original "good mother" was the first to adapt a reproductive strategy that meant investing more in offspring at an increased parental cost. This is known as a K-strategy. In choosing reproductive strategies there are two basic models. One focuses on producing a quantity of offspring, while the other focuses on producing quality of offspring. Humans adopted a quality-oriented K-strategy, which came with a greatly increased expenditure of resources for the purpose of reproduction. The only way this strategy was of evolutionary benefit, however, would have been to secure an increasing number of co-operating kin who would share the costly burden of raising, protecting and teaching offspring. As the investment increased, such as time, food, energy, so too did the value of each offspring. This required the group to foster a sense of belonging and reciprocal obligation, so that the protection of vulnerable

offspring was in the interest of all members of the group. Strong alliances meant survival of successive generations. Teaching, protecting and nurturing healthy offspring required the collective resources of the entire group. In turn, group management strategies were required to keep ever expanding numbers of kin as a cohesive unit. Not only was the immediate group expanding, but alliances between groups were important as well. In order to keep this group cohesive, they needed to feel connected to one another and to the social order.

Making Special and Tradition

Coe refers to visual art as maternal because much of visual art was centered on the maternal domain of kinship and descent. According to her theory, art was employed in a maternal strategy designed to identify individuals as belonging to a particular group and to continue the generational cycle of investment in offspring. Identifying with and belonging to a group encouraged cooperation, and was an essential part of a dynastic reproduction strategy. Coe (2003) stated that "the effect that promoted [the persistence of visual arts] through time, was an environment in which large numbers of individuals who share common ancestry, codescendents, identified themselves and co-operated as close kin and thus were not threats to costly, vulnerable human offspring but were their protectors, providers and teachers." (p.4). Physical ornamentation is thought to be the earliest example of art making (White, 1992). Ornamentation identified ones social group and linked that social group to its ancestors. Physical adornment meant making certain physical aspects of the individual special and included permanent features such as scarification, cranial and dental deformation and non-permanent features such as jewelry, body painting and hair modification. The effect of physical adornment not only identified

the group and group alliances, but it also served to identify those outside the social group, who posed a very real threat. Outsiders were dangerous because they had not invested any resources in the group nor developed the enduring relationships of reciprocity and generosity that sublimated selfish urges. Specialized adornment and art objects also guided individuals and groups through important transitions and marked special occasions, for example from childhood to adulthood, marriage and death. The lasting nature of many of these objects often meant they endured beyond a single human life and thus linked the individual wearer to their ancestors. This notion of the past expressed and constructed the group's sense of purpose, deepest values and cosmological beliefs (Weiner in White, 1992). That the displays and objects used in marking psychological transitions and tribal identification were either the property of ancestors or made in the tradition of the ancestors again emphasized that the individual was part of a group and that the group was deeply connected to their past. Tradition in the visual arts was central to the survival of the group because it encouraged restraint (Coe, 2003). Restraint meant containing one's selfish, aggressive and competitive impulses for the benefit of the group. The restraint that the visual arts encouraged was essential to increasingly complex ways of life. Coe states, "the production of traditional arts required cooperation, and the themes encouraged generosity and emphasized the obligations and duties one has to the elders, to the vulnerable and to one's kin" (2003, p.15). Groups whose members had this tendency to make special and thereby make themselves, their group and their connection to the ancestors special, would have become more strongly unified towards shared goals. The act of body decorating and elaboration was an art behaviour designed to indentify one's kin and attract attention to appropriate behaviour amongst them, including reciprocity and

altruism (Coe, 2003; White, 1992). Traditional body art was a conscious means of imbuing specialness by transforming the ordinary features of the body. It was the fundamental means by which kin could recognize each other while at the same time, it separated them from outsiders and potential enemies. Making special in a traditional manner was a maternally orchestrated strategy, which effectively identified, unified, protected and strengthened group co-operation in order for extensive investment in offspring to be of evolutionary benefit.

The Sexual Selection Hypothesis

While Kathryn Coe's theory points to making special as a means to draw attention to group interests, Denis Dutton's theory of making special relates to the interest of the individual. In *The Art Insinct: Beauty, Pleasure and Human Evolution* (2009) Dutton explains that he was bothered by the trend in aesthetic philosophy that denied the universality of art, and of aesthetic sensibilities, which he states was a reaction against the "ethnocentric and imperialistic" anthropological studies being conducted in the first half of the 20th century. Dutton himself had once accepted the "myth of the general incomparability of cultures" (p.11) until he was sent to rural India as a volunteer in the Peace Corps. It was there he realized that although the language and customs were radically different, at a fundamental level the emotions and motivations of the villagers as well as their appreciation of music and visual art were easily recognizable. Later, his research took him to New Guinea where he sought to discover if the local, indigenous criteria for beauty in art were comparable to those of Westerners who collected indigenous art works. Again, the answer he received was a resounding yes; both groups had similar opinions and criteria regarding the evaluation of beauty in art objects. Thus,

Dutton sought a "re-examination from the widest possible perspective of aesthetic pleasure and achievement" (p.4) in an effort to explain why art and the quest for beauty were so universally valued. He began with the basic understanding that the universality of art indicated it was a biological adaptation (Dutton, 2009; Miller, 2000). The real task was to understand what the function was for which art was adapted. Dutton wondered, how can one explain art -with its great cost and apparent flamboyance- as a biological adaptation within the framework of natural selection when natural selection is conservative, favouring practicality and efficiency? After all, beauty and pragmatism have traditionally been viewed as exclusive of one another. The idea that beauty itself serves a functional purpose is at odds with the classic Romantic notion of "art for arts sake". The peacock's tail is a classic example of sexual selection theory at work. The issue of the peacock's tail was of great concern to Darwin because it could not be explained by his theory of natural selection. In fact, through the mechanisms of natural selection, as Dutton puts it, the peacock's tail should have never developed in the first place. Clearly, there was another process at work, and twelve years after *The Origin of Species* Darwin was able to give a complete theory of evolution when he published *The Desecent of Man, and Selection in Relation to Sex* (1871). In it Darwin explains his theory of sexual selection and how it accounts for many of the excesses in nature, including the beautiful plumage of the peacock's tail. Where natural selection, described by Dutton as the "severe accountant", explains the evolutionary function of practicality and efficiency, sexual selection explains the evolutionary function of flare and inefficiency. The answer to the origin and purpose of art was to be found in the theory of sexual selection. Geoffrey Miller (2000) was one of the first to hypothesize that art

behaviour was the result of an evolved biological adaptation shaped by the forces of sexual selection. Furthermore, he stated that sexual selection theory was the simplest and therefore most likely hypothesis for the existence of art.

Sexual Selection Strategy

Although it is an evolutionary selective process, sexual selection is a separate process from natural selection, which has radically different results. There are two major forms of sexual selection: In intersexual selection individuals of the same sex, typically males, fight each other for access to mates. In intrasexual selection individuals compete to be *chosen* by a mate, and the courting animal's fitness is determined by its "capacity to generate interest in the opposite sex" and not it's ability to win a fight (Dutton, 2009, p.5). It is in the latter category where Dutton and Miller (2000) theorize that art developed as a biological adaptation. They explain how mate choice in sexual selection explains a multitude of seemingly costly and useless behaviours. According to Darwinian theory, the manifest beauty, high cost and "uselessness" of a trait or behaviour is a strong indicator of its courtship function (Miller, 2000). The logic behind this evolutionary paradox is this: Resources including time, mental and physical energy were highly valued in the struggle for survival. An animal showed its fitness by squandering resources that a less fit animal could not afford to waste (Dutton, 2009). In evolutionary terms, having enough resources to risk "wasting" them signaled a high level of fitness, which was the deciding factor in mate selection. When survival meant avoiding predators, flamboyant ornamentation was a liability that seemed to contradict the efficiency model of natural selection. The fact that this liability existed was because it was of great benefit to the propagation of genetic material: Flamboyant or "beautiful" displays attracted attention,

which was of utmost importance if one was to be selected as a mate. Furthermore, the fact that the male is able to survive in spite of what would seem to be a maladaptive trait is yet another signal of his overall fitness (Miller, 2000). Due to the high cost associated with female reproduction, the female mating strategy involved choosing to mate with the "fittest" males- those whose displays demonstrated fitness by attracting the most attention. Choosing the fittest mate was the best investment for the female as it resulted in offspring who carried optimal genes. In turn, offspring that result from this union would carry the genes that support this preference. The preference trait gets passed down through generations and becomes part of the genetic makeup of the species. Sexual selection theory suggests that art, as the epitome of wastefulness, was the height of courtship behaviour.

Making Special and Fitness

The ability to spend one's resources is just one part of the art adaptation theory of sexual selection. While spending one's resources to make special was a waste in the terms of natural selection, it was a very good investment in terms of sexual selection- that is, if one had the skill required to make something truly special. Dutton and Miller are fond of the term virtuosity, and it is this trait above all that connects making special to sexual selection and explains the origin of the arts and the state of the arts today. Dutton theorizes that sexual selection through mate choice explains most creative, self-expressive aspects of human behaviour. Virtuosity, or skill, is theorized by Dutton to be the most deeply moving and pleasurable aspect of art, and it explains our preferences for regular form, symmetry, perfectly repeated decorative motifs and other "displays of skill that play upon our perceptual biases" (Miller, 2000, p.285). The making of beautiful

objects required skill, effort and time and our aesthetic preferences evolved to favour features of human-made objects that reliably indicate the artisan's fitness (Miller). One of the oldest and most enduring examples of making special is the hand axe. Hand axes in prehistory range from simple flakes of stone, to chiseled pieces of varying size, materials and shape. The traditional prevailing scientific view is that these tools were developed for cutting or chopping. However, the sheer number of hand axes and the fact that many of these axes showed no signs of wear, or were too big for practical use, or carved from rare materials point to another explanation. Miller and Dutton argue that many of the hand axes mistakenly assumed to be hunting tools were in fact instances of making special. Teardrop and circular shaped hand axes, with near perfect symmetry, demonstrated a meticulous workmanship above and beyond the level of design required of a tool used merely for butchery. Dutton describes hand axes as "practical tools transformed into captivating aesthetic objects contemplated for both their elegant shape and virtuoso craftsmanship" (Dutton, 2010). The characteristics required to make symmetrical hand axes included intelligence, fine motor control, planning ability, and conscientiousness- all extremely desirable traits in a mate. In this way, a well-crafted hand axe was the result of a conscious choice to make a once ordinary object special, which functioned as a fitness signal to attract the attention of mates. Miller states that the "Evolution of art is the evolution of the tendency to make material objects into advertisements of our fitness" (Miller, p. 285). Making special requires a degree of skill and of intellect. The most beautiful objects signal the work of the fittest individuals. Making special meant setting things apart from the ordinary. This explains why almost any object can be made aesthetically: even the most ordinary objects can be transformed through skill into

something captivating and special. From an evolutionary point of view, "the fundamental challenge is to demonstrate one's fitness by making something that lower-fitness competitors could not make, thus proving themselves more socially and sexually attractive" (Miller, 2000, p.282). Here we see the beginning of how art may have pushed our cognitive evolution. Fitness for humans became more and more about charm, about being compelling, and creative and demonstrating intellectual fitness at least as much as physical fitness. Making special was employed in sexual selection to orient individuals of a species to each other.

Discussion

There is a debate regarding whether social behaviour is motivated by group selection or individual selection. Group selection is the idea that groups compete with other groups, meaning individual behaviour is in the interest of all. "Groups exist and survive because it is in the survival and reproductive interest of the individuals in those groups to live together and make compromises rather than living alone"(Quiatt & Reynolds, p. 3). In this model, the best-adapted groups pass on their genes to successive generations. Individual selection means that individuals compete with each other for reproductive rights, regardless of kinship. When it comes to most species, research has shown that the individual model prevails, however when it comes to humans the motivation for social behaviour is still unclear. In Coe's theory (2003) of the ancestress hypothesis, art took on the role of defining and upholding the values held by group selection; reciprocity, generosity and individual restraint. Art was used as a maternal strategy for ensuring the rules necessary for group survival were respected and understood. Making special was framed by tradition, which imbued sacredness on the

unspoken sacrifice each individual made to be a part of the group. The specialness was in honoring the path set out by one's ancestors with whom all could identify. Dutton and Miller's theory on the other hand, emphasize almost the complete opposite. The values of individual selection were of competition, courtship, and virtuosity. Art was used as a particular kind of signaling device that made a statement regarding the fitness of the individual. It was a creative alternative to potentially destructive or fatal aggression displays. Making special meant applying costly resources to create something extraordinary out of the ordinary. The individual was motivated by the desire to attract a mate in a competitive environment where the mate doing the selecting had developed a keen eye for fitness indicators. On the surface, Dutton and Miller's theory of sexual selection seems to focus solely on the selfishness of the artist, but it is much more about courtship and aesthetic preference. Just as the peacock's tail developed out of the demanding and critical eye of the peahen, sexual selection was a two way street. Traits developed only because they were preferred. This is what Dutton refers to as human domestication. Creating art was not done in a vacuum, it was done to communicate to another one's level of fitness and worthiness as a mate. This demonstration of skill was ultimately meant to bring individuals together to raise offspring. The focus on a sexual selection theory is on courtship, not sex. Though sex is an aspect of courtship, it is not the focus. Courtship is about engaging with others and developing lasting, mutually beneficial relationships in which offspring have the best chance for survival.

On their own, neither the ancestress hypothesis nor sexual selection theory seem to give a satisfactory explanation for the function of the arts. Coe's biggest strength is that her theory explains the role of tradition, which was the prevailing, universal model of

artistic endeavor for thousands of years. It remains the artistic standard in many cultures untouched by or at least disinterested in being swept up by the rapid pace of cultural and technological change. Coe's argument focuses on the aspect of persistence, from the understanding that Darwin's theory of natural selection is a theory about persistence. Tradition is understood in this context as behavioural persistence. Rather than persistence and tradition, a sexual selection theory of art focuses on dynamic change, and how our need to attract and be attracted pushed us towards constant progress. Tradition, as described by Coe, might still exist within small communities of indigenous people, but it is a thing of the past for those in the modern world. Her theory does not account for this discrepancy. Part of Coe's argument against a theory of sexual selection is that male competition for mates cannot account for instances of art making by women, children and those who cannot reproduce. On the other hand, making special as it is in the modern world today -with its focus on creativity, intelligence, skill and uniqueness- is explained very well by Dutton and Miller's theory. The real strength in a sexual selection theory of the origin of art is that more than any other theory, it frames making special firmly and most genuinely as a biologically based behavioural adaptation. It grounds aesthetics firmly in the body, before conscious awareness took an increasingly important role in the development of the behaviour to the point where it became a voluntary behaviour. This is important because the biological adaptation marks the basic, *universal* adaptive origin of the behaviour. This does not mean that courtship and reproduction are the only uses for art- it is only a starting point.

The language of making special evolved well before our verbal language. It influenced, contained, expressed and unified our emotions, values, potential and our

social bonds. The common ground to be found in each of these theories, and what must be emphasized, is that making special evolved to function as a social signaling device. Making special was an evolved adaptation that functioned to draw attention to important messages about society and the individual. The name we give this device, or object, is "art". Art originated out of a need to communicate complex messages, which was best done in symbolic form. The object was a powerful symbol, which was used to influence, manage and control the self, others and the environment. Making special appears to have evolved quickly into a deliberate, conscious act that drew upon naturally evolved biological and cognitive predispositions. Making special brought movement out of inertia and order out of potential chaos. Making special evolved us as much as we evolved it to become what we call art. It unified individuals with a deep sense of a common understanding for the wellbeing of the individual living within the demanding world of the social group.

Issues and Criticisms

To say that religion or art or music is useful seems to me not in the least to devalue them but on the contrary it improves our estimation of their value. -J.Z Young as cited in Ellen Dissanayake, *Homo Aestheticus: Where Art Comes From and Why (1995, p.xi)*

This quote is taken from Ellen Dissanayake's introduction to *Homo Aestheticus: Where Art Comes from and Why* (1995). Its presence at the very beginning of her book indicates that she had anticipated and possibly experienced much resistance when she set out to study art from an evolutionary perspective. Denis Dutton also spoke about the resistance to his book *The Art Instinct: Beauty, Pleasure and Human Evolution* (2009) as

some critics were turned off by the fear of reducing the arts in any way, much less to biological origins. Dutton responded to the issue of reductionism with this statement:

> In a sense all explanation is reductive, that is to say, if I take Don Quixote or the Iliad or Beethoven's pastoral symphony and I say anything about it… that sheds light on it, *which is not It itself*, then I'm reducing. That is, I'm trying to concentrate on those elements which are the most salient, most relevant to experience, and in a sense, all criticism does that." (Dutton, Marketplace of Ideas radio interview, 6:22, 2009).

There is a particular resistance to understanding the arts- as representations of our highest, spiritual selves- from a scientific perspective. Dissanayake writes there is a prejudice "that distorts science into something pitilessly mechanic and reductionist" (1995, p.xiv). She believes that the resistance to an evolutionary perspective is due in particular to the long held belief in the separation of mind and body in the Western world. It is a belief that values that which arises from the mind and scorns that which arises from the body. The notion that the body influences the mind and our behaviours, and that the products of the mind could be influenced by the body, is fundamentally abhorrent. This is especially true perhaps when we apply this to our greatest artistic achievements, which we consider to exist on a higher plane and to be the product of our higher selves. Our poor relationship with our bodies creates a resistance to a more holistic understanding of our humanity. In addition, there is a tension between what is determined to be natural, and what is cultural or humanly constructed. An evolutionary perspective is necessarily focused on our innate, universal, biologically driven tendencies. The fact that we have such a thing as aesthetic preferences comes from our biology. What that taste is, how it is expressed and received is based on culture. Language is a very good analogy and it is used to illustrate the biological-cultural spectrum both by Dissanayake and Dutton. Dutton summarized the culture-biology connection when he stated, "We are biologically

determined to be cultural animals" (Dutton, 2009b). The difficulty is in knowing where biology ends and culture begins. This is especially true as one approaches the middle of the spectrum. A proper understanding of the arts ultimately combines both biological and cultural factors.

The problem with discussions about art is that they are often reduced to "predictable politics"- that is all the "isms" in which art historians, art dealers, critics and often artist themselves get so wrapped up. The arts are bogged down by politics, ethnocentrism and exclusivity. What is exciting about an evolutionary perspective is that it is an attempt to get underneath that. An ethological view of art moves us away from "western, Greco-roman, Judeo-Christian" centrism. It removes the obstacle of elitism and by enlightening us on the universal aspect of art, makes it understandable and accessible to all. It demonstrates how the arts are humanely relevant, and shifts the perception of art from life-enhancing to life-sustaining. An evolutionary/biological/ethological explanation does not reduce art but rather respects the tremendous complexity of it. It is truly where science and humanism meet. A better understanding of a phenomenon should naturally increase not only our awareness of it but also inspire awe. There will always remain space for the mystical, unexplainable aspects of art, but by understanding what is universal and essential, we are better equipped to understand and appreciate cultural and individual differences. This is especially relevant when it comes to working with individuals and groups in art therapy.

Theoretical Implications for Art Therapy

Beauty conveys truth, but not the way we thought. Aesthetic significance does not deliver truth about the human condition in general; it delivers truth about the condition of a

particular human, the artist. –Geoffrey Miller, *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature,* (2000, p. 282).

We moderns feel 'art' to be a private compulsion, a personal desire to mold or make something out of one's individual experience. But art actually originated and thrived for most of human history as a communal activity; in the smaller and more interdependent and like-minded societies in which humans evolved, the need to make sense of experience was satisfied in communally valued and validated activities. Ellen Dissanayake, *Homo Aestheticus: Where Art Comes From and Why (*1995, p.61)

Dissanayake writes that art therapists are among her primary audience and I believe this is because more and more, art therapists are seeking to verify with science, their two fundamental beliefs about art therapy: all humans have the capacity to be artistic and art has the power to heal (Rubin, 1999). I have tried to illustrate the facts that prove that the capacity or instinct for art is deeply ingrained in our biological and cognitive evolution and is thus accessible to all. I have also described and merged two different theories on the origin of the arts, both of which I believe have something valuable to say about the origins of art and art therapy. But what can we learn about the healing function(s) of art from understanding it origins? If we reflect on the complex forces that shaped us, the single greatest factor that seems to have pushed our evolution forward was the need to manage an ever-increasing social network (Pfeiffer, 1982). What I propose is that Miller and Dutton were correct in theorizing that making special first arose over a hundred thousand years ago for the purpose of social signaling in mate selection. However, around the time of the Upper Paleolithic revolution when complex communication strategies were required in the face of increasingly complex social dynamics, making special became central to social cohesion as discussed in Coe's theory of the "good mother" strategy. The survival strategy became more complex as the

survival of the self was bound to the survival of the group. As Miller put it, "Our genetically evolved adaptations emerge when they are needed to deal with particular stages of survival and reproduction" (2000, p.259). Art emerged from a purely biologically driven proto-art adaptation to be adapted as a tool employed to manage the divide between the needs of the primal self and the needs of the self-within-a-social-world. Edith Kramer, who also looked to ethology to broaden her understanding of art therapy, stated, "creating art was a means of balancing instinctual imperative for self-preservation with potential anxiety provoking urge to establish relationships and explore the world at large." (1992, p. 208). This is the process of sublimation and is central to Kramer's theory of art therapy. This appears to be the original healing function of art, and it came naturally because it evolved with us over millions of years, and thus tapped into the "dynamic mechanisms that underlie all emotional and inter subjective communication" (Dissanayake, 2001). Healing through sublimation was the job of the "good mother" who adapted making special into a therapeutic, group survival strategy.

Quality and Communication in Art Therapy

In the proto-art behaviour of making special, the "artist" and his or her audience were not making things beautiful for the sake of beauty. A peacock may have a beautiful tail, but he does not have a concept of beauty. There was a much deeper message to be found in the object: Beauty was the outward expression of inner resources also know as fitness. According to David Henley this social signal is "one of the most relevant behaviours in an ethological model of art therapy" (1999, p.68). So what of quality and beauty in the work of clients? Can the same relationship be inferred between the client and their product? What is beauty when it comes to the artwork of clients in art therapy

and how is it expressed or "signaled"? In many ways we can already infer physical and cognitive fitness from observing the clients and how they work with the materials. There is a popular mode of thinking among many art therapists that equates the quality of the product with the success of therapy. This position is strongly related to the sexual selection and fitness theory of art proposed by Dutton and Miller (2009; 2000), which also states that the quality of an object signaled the fitness level of the creator. Naturally there is more to be said about making inferences about psychological fitness from the quality of client's artwork. Though I admit to having had much resistance to the question of quality in a client's artwork and its implied correlation to the effectiveness of treatment, I realize I may have misunderstood this concept and now feel strongly that there is *biological* truth to it. Dutton and Miller's theory of how a behaviour of making special evolved into making art by the process of sexual selection shows a strong biological and physiological connection between quality, beauty and fitness. Though this idea may be uncomfortable for some, I believe it deserves more attention and discussion. The issue however, is not so "black and white" as the concepts of quality and beauty can be extremely subjective and poorly defined, almost as much as the concept of art itself.

To further explore this idea, I wish to turn to verbal language for an analogy. I believe it is fair to say that the extent of one's vocabulary and understanding of grammar enables one to be understood more or less. A basic level of language development enables a basic understanding. This is entirely useful when communicating certain basic needs or in acquiring basic information ("tummy hurts", "water", "what?"). Language ability makes life flow easier. When we can communicate our needs and understand the needs of others, we are able to connect with others and improve our quality of life.

Functioning autonomously in a social world requires a fairly high degree of language development. Expressive and analytical communication requires the highest degree of language development. At its highest, most refined and elevated level, words can be strung together with tremendous skill such that mere language is elevated to an elitist art. We do not need to write like Keats or Gibran, however, in order to be understood or even to communicate deep, complex issues, concerns, or experiences. Yet, at the opposite end of the spectrum, a basic level may be sufficient for survival but it does not lend well to a sense of thriving. I believe it is very similar in art therapy. A certain ability with the materials or achievement in composition is necessary, and should be of concern to the therapist just as any development is their concern. Technically, we may assist in helping a client to best use a material just like we may help a client to find the "right" words or to form a concept. But the aesthetic artistry of his work is much less important in the communicative triadic relationship of therapy than the quality of the integration he or she has been able to achieve. Of course, the individual's level of functioning (cognitive, developmental, physical) places limits on their ability to express themselves, yet art, more so than language, has the ability to come to fruition in spite of these limitations. Artistic ability should be understood on an individual basis. Talent or a proclivity in the visual arts should have no bearing on the therapeutic value of art therapy. In fact, artistic giftedness may be as much of an obstacle for a client in the therapeutic process as having had no experience with the arts at all. A client may employ their giftedness as a type of intellectual defense rather than genuinely engaging in the process. There is also the possibility that the therapist will be seduced by aesthetic quality of the work of an artistically gifted client. Edith Kramer, the "mother" of the art-as-therapy position, which

emphases the inherent therapeutic value of the *process* of art making, states herself that "The quality of the product can have the effect of speaking more efficiently and succinctly, but what is most important is the fruition of the urge and the bonding that it brings" (Kramer cited in Henley, 1999, p.90).

From Play to Work (or Proto-art to Art)

Dissanayake, Kramer and Henley have all written about the relationship between play and making special. Henley wrote that play is a creative impulse, which is on a developmental continuum with work being at the other end. In the evolutionary framework of making special, play is synonymous with proto-art and work is synonymous with art. Play is grounded in basic mimetic cognition: rhythmic movement, gestures, pantomime, imitation, and rehearsal of skill (Donald, 2006). In play, or proto-art, the mind and body are connected and cognitive "roots" are established. From here, more advanced processes can begin to take shape as higher cognitive, psychological and physical functions become integrated and balanced through the guidance of the art therapist. The continuum of play to work (or proto-art to art) is conceptualized by Vija Lusebrink's expressive therapies continuum and well laid out by Lisa Hinz in her book, *Expressive Therapies Continuum: A framework for using art in therapy* (2009). Part of the role of the art therapist is to help the client gather the material discovered through play and direct the impulse into creative form. The role of the art therapist is that of the good mother, as described in ethological terms by Coe (2003), who uses art making to secure the psychological health of the individual in order to reinforce the values that gives the individual and his or her social group a sense of balance, belonging and purpose. On the issue of quality in art, Kramer (1992) states that true art making is more

akin to work than play. When we speak of quality in the artwork of our clients, what we are really talking about is the quality of inner, psychological work as evidenced by the individual's progressive relationship to their manifest object. It is not enough to allow a client to remain in play mode, neither is it productive to remain in an overly intellectualized analytical mode. Though play and exploration are critical, real work is required to transform the substance of play into real-world value. It is our job to guide the client towards higher and more balanced functioning. The "work" is finding the balance between naturally conflicting defenses, motivations and desires, in order to give the client the full freedom to be a part of and contribute to a healthy society. The true art in art therapy is not found in the outward aesthetic beauty of the object, rather it is in the artistry of the creative process- in the creative skill required to use the materials to find balance, meaning and one's sense of connectedness to the world at large. This explains why almost any object can be made aesthetically: even the most ordinary objects can be transformed through authentic focus into something special. Beauty in art therapy is in the ability of the client to use the materials to heal him or herself.

The Object

What makes art therapy unique is the creation of an object and the triadic relationship between the client, his or her artwork, and the therapist. The object is, and has always been, a representational record of a psychic process and its presence acts like a portal to that process. The process of creation has two directions: from impulse to form and from form to impulse (Kramer, 2001). Kramer explained, "Artist and audience travel together in two directions, from the primitive source of the creative impulse toward its final form and again from the contemplation of form to the depth of complex,

contradictory and primitive emotions" (p. 39). Of these two directions, impulse to form is the most ancient, primordial and biologically based. The primary impulse to create came before the ability to understand our motivations or to reflect upon our actions. The primary impulse is a proto-art behaviour, which includes magical thinking, ritualized behaviour and play (Henley, 1999). Impulse to form can be seen as being on a continuum, where the direction towards form is increasingly complex "as the impulse to make special is not limited to a single source or dynamic, but is composed of a constellation of forces" (Henley, p.138). Form to impulse is the more conscious and reflective direction. In our ancient history, the movement from form to impulse was the dawning of self-awareness, when we became aware of our actions and the effect these actions had on the other. We began to purposely direct ourselves through more conscious, purposeful action. The ability of the client to work in both directions is ideal, though not always possible due to mental illness or other cognitive impairments. Once externalized in a concrete form, a distance is created between the individual and the potentially threatening feelings contained in the object. Though content can be extremely powerful, the form itself- colour, shape, contrast and line, can evoke a physiological response because these characteristics carry biological and neurological signals that are translated into physiological experiences and emotions. Form and content combine in the object to become a simulation, or reproduction, of the original traumatic or threatening stimulus and thus, a safe therapeutic distance is created. Reflective distance allows the client to integrate experience and emotions and to gain insight. The object represents a type of alternate experience, which is low cost and low risk. It satisfies the need to deal with the unknown and threatening aspects of real experience. Our earliest art-making ancestors

have long understood the ability of the art object to contain, represent and hold human experience at a reflective distance, especially when it comes to that which is threatening and anxiety provoking. The distancing effect of the object is very much in line with analytic, insight-oriented art therapy and correlates with the concept of the observing ego. Caution must be taken however, with clients who may have difficulty in distinguishing reality from fantasy. What is unique about the art object is its direct connection to the most efficient and primal means of understanding. Not all insight and understanding derived from the therapeutic creation of the art object can be verbalized, as the image resonates in the realm of the complex connections between body, mind and emotion that was established well before words. Dissanayake described how multi-modal associations inherent in art making "render artworks difficult to describe but remain meaning-rich" (1992, p.102).

Belonging, Social Action and Group Therapy

I began to wonder about the importance of belonging and group cohesion and its relationship to individual psychological health. It seems that group psychotherapy was developed by our ancestors, long before we came to understand its value. They knew instinctively what social psychologist Kurt Lewin believed, which is that "the individual's personal dynamics are bound with the social forces which surround him" (Waller, 1993, p.13). On the topic of the biological and therapeutic need for attachment and belonging, Jeremy Holmes wrote: "If secure bonding and group cohesiveness enhance individual fitness, the biological role of psychotherapy can be conceived as the regulation of an individual's relationship with his family group and wider social network." (1993, p. 437). If art making originated due to its power to manage and

maintain the wellbeing of the group, I wonder to what extent art and the community should be emphasized, or even central, in the practice of modern art therapy. Should art therapy be more socially based than other therapies? If so, to what extent? There are several ways social or group therapy can be visualized. Kaplan and others (2007) argue that the role of the art therapist is naturally geared towards that of a social advocate. She visualizes a type of "social action art therapy" that "operates outside the usual box of individual illness (mental or physical) and addresses societal problems by providing services to perpetrators, victims or people who work with members of these groups" (Kaplan, p.13). Another approach is the traditional "studio" setting, which was the style most popular among pioneering art therapists working within mental health institutions (Rubin, 1999). This type of individual art therapy in a group setting remains popular among many practitioners today. In this type of framework, participants share the same space but there is little to no emphasis on group interaction or social dynamics. However, Judith Rubin writes that the trend in art therapy is again returning to the more conscious utilization of "the power of the group in conjunction with the power of the art" (Rubin, 1999, p.167), known as interpersonal or interactive group art therapy. In interpersonal group therapy, interaction between the members of the group in the "here and now" is theorized to be the chief agent of change (Waller, 1993). From my understanding of the theories regarding the complex origins of art making, it seems apparent that art therapy is naturally and uniquely suited to this kind of group therapy framework. I believe that group interactive art therapy, which is grounded in group analysis, interactive group psychotherapy, and systems theory would be greatly enhanced by an ethological understanding of art as well as evolutionary psychology.

A Note on Mental Dis-ease

Implied in the concept of sublimation is the awareness that man's instincts are in disarray and can no longer be relied on to safely regulate behaviour. –Edith Kramer, *Sublimation and Art Therapy,* (2001, p.28)

The decline of the everyday use of art began with the written word and the technologies developed to mass-produce it. Art was soon replaced by words as our main form of communication. Morris (1962) stated that we have returned to a purely aesthetic art and compared the current state of popular art to that of man before the creative revolution of the Upper Paleolithic era, where humans are more like the great apes who enjoy art making insofar as it is self-rewarding, but have no motivation, beyond aesthetic pleasure to create it. Dissanayake (2006) questioned how it is possible that the needs humans developed over thousands of years are being met by today's rapidly changing culture. She believed that the first cause of our growing anxiety and mental dis-ease are environmental deficiencies, one of which is the lack of a sense of belonging and meaning making that art once brought us. She stated, "…*For the most part* human problems today are caused by the mismatch between evolved Pleistocene psychology and the demands and deficiencies of a contemporary milieu that is far different from what in which such a psychology evolved." (p. 318). In today's Western culture humans seem to be losing the sense of attachment and purpose and that was central to their survival for thousands of years. The anxieties, and inter and intrapersonal difficulties Upper Paleolithic humans faced were dealt with constructively in art and ritual. Modern humans faces the same fundamental fears, and demands but are being forced to manage them in ways that their

psychological and biological systems are not as well adjusted for. Dissanayake's concern is in line with the evolutionary psychological perspective, which holds that "psychopathology occurs when the genetic endowment is defective or when the environment fails to meet bio-social needs critical for human development" (Henley, 1999, p.44). If this is the case, then I believe that art therapy, as it is based on naturally evolved adaptations for the welfare of the individual who functions best as part of a group, truly has much to offer our ailing society.

Conclusion

Organizing my research into a meaningful narrative has truly been a journey of discovery for me. Though I had tried to control and direct the information, I have found that every step of the way the information has guided me. My research had a life of its own that at times threatened to expand exponentially without an end in sight. I have done my best to honour all the information I have received, to summarize it accurately and to allow it to guide me to new insights and ideas. I did not know exactly where it would lead me, but I genuinely feel that it has helped me to come to a deeper understanding and appreciation of art and the field of art therapy. What I have attempted to gather, explore and express throughout this paper are the evidence and theories that demonstrate the deeply complex development of art making behaviour and its vital role in the evolution of the human species. My purpose is to better understand the nature of art so that I may better understand the nature of art therapy. In summary: The capacity for art behaviour developed from the interactions between our physiology, visual information processing

systems, neurology and cognition which co-evolved and gave form to the functional complexity required of art making behaviour. At the same time, the process of sexual selection was favouring attributes of "specialness". Specialness, marked by extraordinary colour, symmetry or size for example, signaled a high level of genetic fitness, which was the most desirable condition for mate selection. Specialness was a biological adaptation in sexual selection but also the fundamental behavioural tendency that would eventually become making special. These two factors- the budding capacities for art behaviour and the biological adaptation of specialness- ran parallel for quite some time as our ancestors advanced to be the species we are today. For our species, specialness slowly transitioned from a biologically, sexual selected phenomenon to a more conscious, voluntary behaviour most closely related to what we call art. While sexual selection was still involved in continuing this behaviour, the escalating complexity of the social structure, coupled with significant leaps in cognitive development, demanded more advanced and effective methods of communication and group management for survival. Soon, making special was adapted as a way of dealing with this increasingly complex world. Making special was a ritualistic behaviour vital to maintaining a strong, cohesive social unit. It was a surrogate "good mother" who contained anxieties, reinforced communal values, and integrated the demands of the outside world with the needs and fears of the inner world.

This research has dramatically altered my understanding and expectations of the use of art as therapy- from a rigid and misguided notion of "art" to the concept of art as a behaviour called "making special". I can now conceptualize how any object can be made to be special through work. Making special requires patience, tolerance, and genuine

presence. The client's work in therapy is about seeking balance, healing, self-discovery and reconnecting with others through the creative process; it includes being present to whatever concrete forms take shape as a result of this psychological work.

It is really time to put aside the politics and the confusion of aesthetic criticism and take art down from the proverbial pedestal and examine it up close. The practice of art therapy is in danger of losing all credibility if we continue to insist on making claims about the effectiveness of art therapy without a grounded, scientific understanding of why and how. If as art therapists we seek to truly define art therapy as its own unique and viable field, we must understand what art really is and the best place to start is from the very beginning. Evolutionary theory has done so much to deepen and enrich our understanding of other fields, and I believe it is the key to opening up a new dialogue and research possibilities in our own. An evolutionary perspective of art making highlights the most salient and unique issues and features of using art in therapy. It can not only verify the claims made by art therapists that all humans have the capacity to make art and that art has the power to heal but it can explain how and why these claims are true. It gives credibility to the importance of art making because we are able to discuss it as a complex behaviour that draws on natural proclivities and cognitive strengths. Furthermore, we can discuss how art making integrates mind and body and is an accessible, natural, efficient means to reaching therapeutic goals. An investigation into why and how art making evolved not only brings together the best of analytic, humanistic, cognitive and developmental theory, but it has the potential to ground them firmly in one unified concept. Is it true that our Western society is increasingly dis-eased?

May this be due in part to the failure of modern culture to meet our biosocial needs by making demands that we are not biologically or psychologically designed to withstand? If so, then I believe even more strongly that art therapy, and all creative arts therapies, are needed now more than ever. Engagement with the arts can bring us back to a more integrated and natural way of being- a way of being that has helped us cope with the most difficult of situations for almost the entire history of our species.

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