

**INNATE PAINTING:
INVESTIGATING OF ORIGINS OF ARTISTIC PRODUCTION THROUGH
CONNECTIONS BETWEEN CURIOSITY, EXPERIMENTATION,
AND CREATIVITY**

VOLUME I

by

Jessica Ann Montgomery

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ABSTRACT

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Jessica Ann Montgomery

Supervisor: Dr. Johan Thom
Department: Fine Arts, Humanities
University: University of Pretoria
Degree: Master of Arts in Fine Arts
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There is no doubt that culture and art history have shaped art practice over time. Much contemporary art theory and contemporary anthropology would argue that artwork and human art-making behaviour is a culmination of culture, the sharing of ideas, and other “...non-genetic means” (Dutton, 2010, p. 4). However, what if we examined the art-making process from a more basal, even primordial viewpoint? If we focus on and examine the artistic process as stemming from innate, evolved characteristics, what is the result?

This exploratory study focuses on a selected series of universal characteristics, and the connections between them, proposed to be crucial in the development of art-making behaviour: curiosity, experimentation, and creativity. This study posits that art-making behaviour is a resulting product of innate, human adaptations and intends to create a body of work

representative of both this universal and intimate scope. This study will begin with exploring the universal determinants and origins of art-making in *Volume I* and will culminate with comparative, subjective accounts and experiences of this universal act through a body of practical artwork in *Volume II*¹. This study is hinged upon this body of artwork and is documented and examined thoroughly in *Volume II: Catalogue & Findings: A Personal Journey from Curiosity to Creation* of this dissertation, which should be read in parallel with this initial, *Volume I* document.

While parts of this proposed, art-making system (curiosity, experimentation, and creativity) inform the general behaviour of humankind, this study and its resulting, practical artworks (*Volume II*) attempt to review and observe these traits on an intimate scale as part of a greater, behavioural whole. This study attempts to do this by creating a resulting body of artwork that is both a symbol of this universal process as well as a vehicle for its personal investigation.

The purpose of this study is to examine the origins of creative, artistic behaviour as a product of evolution through connections between curiosity, experimentation and creativity.

¹ Comparative analysis on personal experimentation in art-making is also examined in [2.7 From Curiosity to Creativity: The Bridge Between Thought and Action](#) (p. 33)

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CHAPTER 1: BEGINNINGS, BEHAVIOURS, AND US: METHODOLOGY & THEORETICAL FRAMEWORK

1.1 METHODOLOGY

The very universality of art-making strongly suggests the existence of a series of innate interests, capacities, and tastes laid down through a process of natural and sexual selection (Dutton, 2003). This study operates within this assumption and aims to study the innate, universality of the art-making process through connections between three selected evolved characteristics: curiosity, experimentation, and creativity².

This study explores the universal origins of art-making behaviour through reducing the art-making process down to this proposed, simplified and selected system of traits from our broad behavioural complex, as well as individually examines contributions of each trait to the overall behaviour and resulting processes themselves. The study examines the journey from the initial beginnings of traits, to their synthesis through a proposed ‘generative’ system³ of universal, cognitive art-making⁴.

This study is centred around the art-making process. Therefore, this study is processed-based and its research hinges on the exploratory journey charted in *Volume II* where the artworks produced were created in order to investigate proposed, universal origins and stages of the art-making process. This practice-led work guided the research path in *Volume I* and contributed to the outcome and framing of the final research project in *Volume II*.

This study employs critical discourse analysis throughout the body of the text and utilises exploratory, contextual research methods and integrates supporting secondary literature from established fields of evolutionary psychology, bioaesthetics, traditional scientific practices and

² Why I’ve personally chosen these three traits specifically is further addressed in *Volume II*.

³ According to Galanter, [complex] systems are composed of a large number of components that interact with similar, nearby components. The study of complex systems examines how parts of the system can affect the behaviour of the system overall (Galanter, 2003).

⁴ See 4.4 Naturally, Generative Art (p. 53)

art theory throughout the research document. This was done intentionally to reflect the exploratory path taken through art-making and research processes, and in turn to take the reader on a similar, exploratory journey through the text. Personal comparisons and reflections on the art-making processes (found in depth in *Volume II* and within *Volume I*, see Experimentation, p. 36) are utilised to assist in expressing this intended journey, as well as to compare intimate art-making accounts with broader, universal theory.

1.2 AN INTEGRATED STUDY

As stated this two part, practice-led study should be read parallel to one another as the procedural path taken in *Volume II* affected the research path in *Volume I*. The study mimics the exploratory procedures of the practical study in *Volume II* by beginning with an exploratory research review of relevant, secondary research that creates a principled foundation of the research problem, followed by process-led connections to experimentation and creativity. Similar to practical, exploratory art methods, this research study is aligned to formulate and answer questions, as well as generate new ideas and avenues for further growth and discovery.

This study intends to investigate a proposed system of behavioural art-making, the individual parts [traits] proposed, and how parts of this system gave rise to the collective behaviour of the system itself. Therefore the research and literature review of this study is integrated, processed-based, and connected to the aim and processes of the practical research project.

The conclusive, practical artwork and processes (*Volume II*) associated with and created for this study are emulative, if not symbolic, of a system of curiosity, experimentation, and creativity, as well as their synthesis (which is explored thoroughly in *Volume I*) within the art-making process. In addition to being physically symbolic, the developed working-processes became the site of personal art-making experience, exploration, and reflection. *Volume II* begins with a description and development of this art process and culminates with personal observations and comparisons of how universal characteristics appear within my intimate experiences with art-making, ultimately exploring ideas of predetermined, cognitive systems, the universality of art-making, and the individual.

Throughout *Volume II*, supporting and comparative personal accounts of the proposed traits and processes further researched in *Volume I* are detailed. During the creation and implementation of my own art-making processes and artwork, the intent and focus was that the entire body of work created visually and explored conceptually, and ultimately through their processes, the universal process of ‘art-making’. In addition the parallel research studies intend to reconcile the very intimate act of art-making within the broader act of cross-cultural, human art-making behaviour through both a personal, physical art-making project and an exploratory research project. Experiencing and exploring broad universals through personal experiences: this is art-making definitively, and at the core of this research study.

1.3 BEGINNINGS, BEHAVIOURS, AND US: AN INTRODUCTION

A blank canvas is anything but blank. There is history there. A culmination of events led for that canvas to be constructed, stretched, and primed. Before a single mark is made, the predestined journey has already begun. Comparable to the highly contended, theoretical ‘blank slate⁵’, we [the human race] too are primed with a history. As artist Marcus Coates states, “...we ultimately cannot escape our own humanness” (Larson *Et al.*, 2009, p. 297).

This study sets to explore a system of traits (curiosity, experimentation, and creativity) and their relationships to both the universal and individual art-making process. Therefore, this study will begin with a broad survey of evolutionary theory, followed by subsequent chapters investigating the cognitive origins of each characteristic and their connections to the art-making process.

As this is an exploratory study, foundational and contemporary theorists, spanning basal Darwinian theory to current investigations into generative art, will be consulted. Anthropological studies of art and culture, from theorists such as Dissanayake (1995) and Dutton (2010), and contributions from the field of evolutionary psychology will be compared alongside pioneering experimental studies from the likes of Desmond Morris (1962) and Van Heerden and Munro

⁵ Blank slate (*tabula rasa*) refers to the theory that humans are born without any imparted mental qualities and that all knowledge is gained from experience (Pinker, 2003).

(2014). In addition to these broadly sweeping studies of *us* [humankind], personal accounts relating to these themes will be woven throughout this study in an attempt to reconcile the intimate art-making experience with these universals.

Art serves as a broad term in this study. For the purpose of this investigation, art can be defined as any means of creative expression. Dissanayake states,

...art can be regarded as a natural, general proclivity that manifests in culturally learned specifics such as dances, songs, performances, visual display, and poetic speech (Dissanayake, 1995, p. 5).

The vehicle in which an artist chooses to express their idea is relative. The intended pursuit of this study is to explore why we uniformly exist as artists at all, and what transpires within us to allow for these displays and behaviours to occur.

1.4 ART & INSTINCT: EXPLORING COGNITIVE ORIGINS OF ART-MAKING BEHAVIOUR

The study of making art entails the co-evolution of biological and cultural sources and requires examining a vast network of biological traits in addition to the impact of cultural influence and empirical experience. A philosophy or study of art-making cannot survive if it ignores art's natural sources or cultural character (Dutton, 2010). However, cultural perceptions and local definitions of art and artist are not fixed and in flux with the current 'social-cognitive network' (Turner, *Et al.*, 2006, p. 7-19), or what we perceive art-making to be at this current epoch. However, this study is concerned with the behaviour itself and its origins. This study does not focus on the evolution of the content produced by this behaviour but rather the cognitive processes leading up to its manifestation.

Concerned with exploring the origins of art-making this chapter seeks to survey 'Why do we make?' rather than, 'What do we make?' Or, 'How do we make it?'. Asking 'Why?' focuses this

study on our universal cognitive structures and systems and exposes the universality of art-making behaviour. Tooby states,

...when humans are described from the point of view of their complex adaptations, differences tend to disappear, and a universal architecture stands out in stark relief (Cosmides, Tooby, 1995, p. 78).

In order to examine the connections between specific traits and the origins of the art-making process, it is essential to first review the theoretical origins of human behaviour and those pivotal studies leading to this study's research question. By exploring this seminal act and its connections between other traits, this study intends to explore and reflect on the creative, interconnectivity we all cognitively share as a species.

To state that art-making behaviour is a behavioural product of evolution is to state that it is necessary to the organism and ultimately a biological imperative (Dissanayake, 1995, p. 33-34). Under the scope of evolutionary psychology, Darwinism, anthropology, biology and art theory this chapter will briefly address the origins and departure points of contemporary human thought and behaviour, and introduce cognitive and generative systems. There is no doubt among scholars (Dissanayake, 1995, Turner, 2006, Dutton, 2009) that this cross-cultural act is a behavioural adaptation serving a cognitive benefit. Therein, utilitarian art will be cited for historical and theoretical value; however, this research will primarily explore the intrinsic drive behaviour to make non-utilitarian art and the cognitive rewards and drives of this behaviour.

By understanding the origins of modern human cognition and the foundational mental processes that initially adapted to award us with art-making behaviour, we can then examine its connection to other behavioural traits, including those that are culturally motivated and contextually derivative.

1.5 HOMO AESTHETICUS⁶: NATURAL SELECTION AND HUMAN ART-MAKING

Long before picking up twigs and genially drawing patterns in the sand, our ancestors swung from these eventual drawing tools. The modern human minds that we recognise today have only been in existence an approximate fifty thousand years or so, yet they had undoubtedly found their footing long before (Turner *Et al.*, 2006, p. 3). Early *Homo*, and cousins thereof, set the stage for our later cognitive development and behavioural advancements crucial to the universal art-making behaviour. It is argued here that by looking to this shared past, we are able to explore the animal origins of the most complex human mental functions (Larson, 2009, p. 55).

The branching off of *Homo* and eventual *Homo sapiens*, led to a multitude of rapid behavioural changes unlike any organism before. We stood upright, our hands developed dexterity and the ability for finer work; this led to the first tools and early artwork following shortly thereafter 30,000 years ago⁷ (Harari, 2011, p. 10). Unlike any organism or behavioural process before it, humans developed a new way, a universal language, to engage with their environment: art-making. And though the reason for making art is often sought in theology, history, or psychology, to examine the universal need and behaviour of art-making is ultimately a biological study (Dissanayake, 1995, p. 33-34).

Natural Selection, first proposed by Darwin in *On the Origins of Species* in 1859, is the biological process by which an organism interacts with its environment and if the organism is suited to continue existing in that environment, by solving an adaptive problem⁸, it is then able to pass these inheritable characteristics to their offspring (Secord, 2008). Natural selection provides a naturalistic explanation; encompassing that of both humans and non-humans, on the relationship between an organism's characteristics and its survival. Passing this ecological fit test affords an organism the ability to pass down these favourable traits and behaviours to offspring, furthering the success of the species. Therefore, according to Darwinism, all features of a

⁶ In reference to Dissanayake's work, *Homo Aestheticus* (Dissanayake, 1995).

⁷ Ivory figurine of a lion, c. 32,000 years ago, Stadel Cave, Germany (Harari, 2011, p. 25).

⁸ An "adaptive problem", a problem that affects reproduction (Barkow, *Et al.*, 1995, p. 9).

species, biological and cognitive⁹, are either adaptations or byproducts (Cosmides, Tooby, 2001, p. 9-12).

Today, behavioural adaptations are characterised as those traits passed down through providing aid for the survival of an organism in its given environment (Dutton, 2009, p. 86). Beneficial, behavioural adaptations that aid in survival can be relatively simple and translate easily across a number of species. (For example, the ability to hunt.) Modern humans share many behaviours with their pre-sapiens ancestors, as well as our primate cousins living today. For example: the maternal bond between mother and offspring in both humans and chimpanzees endure longer than most other species, with chimpanzee infancy lasting until age five. Art-making; however, as an innately driven behaviour, is characteristically ours alone and may be difficult to assert to a clear evolutionary benefit (Cosmides, Tooby, 2001, p. 7).

Chimpanzees and great apes have also been known to create works of art. In *The Biology of Art* (Morris, 1962) Desmond Morris explored the relationship between ape picture-making and human art through observation and art-related experiments. During the fifty-year span of these experiments and observations, a total of thirty-two primates produced drawings or paintings. However, Morris claimed that there was no aesthetic guidance given to the primate artists, and when instruction to copy or other direction was attempted it was unsuccessful. They were however given limited instruction on how to use the drawing and or painting tools, but no physical rewards for engaging with the materials. One chimpanzee created over 400 individual works (Morris, 1962, p. 141).

There is great likelihood that the brain structures involved in human aesthetic experience has homologues in non-human brains. However, art-making as a behaviour has not arisen independently in the ape kingdom. In staggering contrast, every accounted for human culture on the globe creates or has created a form of art and adopted it as cultural practice. Ape picture making may be attributed to a number of other sensory needs; for example, the need to explore the physicality of new materials presented in the environment or an effect of mimesis. And

⁹ Cosmides-Tooby state, “Natural selection is the only explanation presently known to the scientific community for functional relationships that are more highly ordered than chance can account for” (Cosmides, Tooby, 2001, p. 6).

though this does not dismiss these primate drawings and paintings as physical works of art or the potential internal award received by its artist, it asserts rather the cognitive footing for the later behavioural changes and cognitive advancement to afford our species the ability to adopt art-making as an imperative behaviour to humankind (Turner *Et al.*, 2006, p. 28). Darwin argued in *Descent* (Secord, 2008) that these types of behaviours, those behaviours indicative of humankind, were “higher mental powers” rather than purely instinctual and defined us from other animals (Secord, 2008, p. 237). These ‘higher powers’ translate to more intricate cognitive operations such as complex emotions, imagination, and eventual development of language and art-making, the turning point for humankind.

1.6 THE COGNITIVE REVOLUTION AND ART-MAKING

—I imagine seeing through the rhythms to the structure underneath, and sense that we all have the same minds (Dutton, 2009, p. 29).

Art-making and artistic behaviours have survived alongside *Homo* for thousands of years. In the encompassing dissection of humankind provided in *Sapiens* (Harari, 2011), Harari argues that alongside an Agricultural Revolution and an Industrial Revolution, humankind also experienced a Cognitive Revolution (Harari, 2011, p. 3-23). Approximately 70,000-30,000 years ago humankind experienced an immense, cognitive event, forever forging the groundwork for the strong, distinct, sapiens-branch that we all dangle from today.

This time period afforded the *Homo* brain to grow in ways that no other organism had before. Leaps in cognition formed the basis for many internal and social behaviours. We became self-reflective, we developed the ability to foresee and to plan. We developed cognitive attributes crucial to the development of communication and later, “we became a species obsessed with creating aesthetic experiences” (Dutton, 2010, p. 3). Such cognitive events in human history have biologically altered our cognitive systems allowing for these and other adaptations to influence one another and be passed down. The development of the ability to self-reflect coinciding with the rise of art-making behaviour is congruent.

As Merlin Donald states, “all art is metacognitive in nature” and “...derives from an innate human capacity of self-reflection” (Donald, Turner *Et al.*, 2006, p. 6). The act of making art purely to make art is notably a personal act and denotes a sense of self and the ability to reflect on oneself. It is contemplative, expressive, and subjective and somewhat resistant to Darwinian explanation. Amongst the assemblage of adaptations and a multitude of changes to the *Homo* psyche and genetic character, art-making behaviour was and is a survivalist-riddle. How did such a behaviour arise? And, more perplexing, how did it survive?

Chapter 3 of Charles Darwin’s seminal book, *On the Origin of Species* (Darwin, 1859, cited Secord, 2008), bears a staunch and foreboding title, ‘Struggle for Existence’. In this chapter, Darwin questions how a species’ varieties ultimately convert into distinct species themselves and how these ‘exquisite adaptations’ have allowed (or disallowed) for a species’ progeny. However, the struggle for existence does not only pertain to the survival of the species itself; it includes the existence and survival of traits and those formed behaviours and adaptations. Darwin definitively states that, “This preservation of favourable variations and the rejection of injurious variations, I call Natural Selection” (Secord, 2008, p. 141).

Natural selection is the only explanation as to highly ordered relationships (Cosmides, Tooby, 2001). Therefore, each part of an organisms’ internal and external design, every trait and behaviour of a species are either seen as adaptations, byproducts, or genetic debris (Cosmides, Tooby, 2001, p. 6). Natural selection and survival of the fittest weening out undesirable traits and behaviours, elicits considering this ‘struggle for existence’ in terms of art-making behaviour and its place in human evolution.

From an evolutionary theory perspective, it can be difficult to see art-making behaviour, purely for the sake of art-making, as a beneficial trait. The customary standards of a beneficial behaviour pin art-making to be non-utilitarian, or non-essential to survival, as they do not conventionally follow, according to Cosmides-Tooby, “...the struggle to achieve adaptive changes in the external world” (Cosmides, Tooby, 2001, p. 16). Aesthetics are not necessary to feed or shelter us, yet every culture around the world houses art-making behaviours. However, it

is relatively easy to assign sexual selection and sexual attractiveness to this behaviour as it has the potential power of demonstrating value through artistic skill to attract a mate.

1.7 SEXUAL SELECTION: A BRIEF DISCUSSION

On sexual selection, a mode of natural selection operating through the preference of certain characteristics in the opposing sex, Darwin proposed, "...[sexual selection] depends, not on a struggle for existence, but on a struggle between the males for possession of the females... victory will depend not on general vigour, but on having special weapons, confined to the male sex" (Secord, 2008, p. 146).

Theorists, such as Dutton (2009) and Dissanayake (1995) respectively, have hypothesised that tool-making and the creation of functional artwork may be employed to exhibit and demonstrate an individual's skill, dexterity and ability to utilise one's environment to provide for offspring and attract a potential mate. This argument holds validity today when applied to such worlds as high-end galleries and million-dollar art dealers where prestige can be used as a sexual 'weapon' (Dissanayake, 1995). Compare this act to that of the male bowerbird, whom Darwin professed to have a notable 'sense of beauty'¹⁰ (Secord, 2008, p. 243), which assembles intricately composed, artfully woven and adorned structures to win a female.

However, with regard to more non-utilitarian art-making behaviour, it is often argued that art-making satisfies an internal, psychological reward subjective to the individual which is debatably equal to that of other external drive responses. Though 'art for art's sake'¹¹ is deemed so, ultimately by the individual, art for propagandistic or other ends still hinges on a demand by the consumer and their need for an intrinsic reward or pleasure (Cosmides, Tooby, 2001, p. 8). Pleasure-seeking drives are internal drives that motivate us to simply find rewarding activities

¹⁰ Darwin suggested that bowerbirds possessed an 'aesthetic sense', utilised in sexual selection as these created 'bowers' were constructed by males to be viewed by females (Endler, 2012).

¹¹ Art for art's sake: the philosophy and art movement whereas art-making was purely a means to seek beauty and artistic, self-expression. Théophile Gautier states, "Art for art's sake means for its adepts the pursuit of pure beauty - without any other preoccupation" (*The Art World*, 1917).

and experiences (Fowler, 1966). Following the sudden cognitive shift given our post cognitive revolutionary minds, we developed numerous amounts of drives connected to these newfound subjective pleasures and the later adaptations to fulfil them.

1.8 PLEASURE & ART-MAKING

Humans all over the world receive pleasure from beautiful things, and although this is a universal occurrence, it may not come as a shock that this experience varies from individual to individual. Aesthetic pleasure¹², pleasure received from beauty, may be subjective and consist of an unending list of variables; however, its existence is universal. The pleasure derived from experiencing and creating art is often attained from a multitude, yet distinguishable group of pleasures experienced simultaneously or in close succession, such as the layering of paint to create a painting or the collection of individual songs and lyrics constructed together to create a Broadway musical (Dutton, 2009, p. 52).

When examining aesthetic pleasure, it is important to point out that a majority of past studies have been done on the aesthetic experience of art rather the experience of its production (Maquet, 1986). The study of production tends to focus on theory and studies on experience rely on empirical and neurological data; rarely meeting in the middle. However, it can be argued that these two experiences should be considered jointly as, "...artistic creativity and aesthetic experience equally result from the dynamic interplay between agent and context" (Brinck, 2007, p. 407). This possibly allows for the artist and viewer to have similar cognitive experiences with regard to an artwork.

It can be argued that pursuing rewarding activities has led humankind towards other adaptive directions by attempting to secure not only external equilibrium but internal as well, driving us to create new activities and resulting behaviours. With this highly functioning brain constant nourishment is needed. The most rewarding result for our ever-evolving brain is when a

¹² Similarly, bowerbirds build bowers and adorn its perimeter with a pleasurable, colour gradient of objects to attract females (Endler, 2012).

behaviour is useful internally and externally (Cosmides, Tooby, 2001, p. 16); making a case for the longevity and adoption of human art-making behaviour and its never-ending varieties.

1.9 MIMESIS

Prior to the cognitive revolution, we developed mimesis; a definite and fixed precursor to art-making. Mimesis encompasses many forms and conditions¹³. However; for the purpose of this study, mimetic ability will be defined as the broad attempt at representation of the natural world in art-making. It is conceded though, however, that there is some degree of selectiveness within mimesis and art-making. Art does not and cannot replicate nature. “Art invariably selects which parts of the world to depict and, which parts are chosen determines how they are depicted” (White, 2010).

This early, foundational behaviour gave us the early ability to mimic nature, communicate about our natural world, and eventually led to more complex language abilities such as conceiving imagined realities (Harari, 2011, p. 27). Mimesis’ effects, coupled with the intellective ability to conceptualise past events and share information afforded to us during the cognitive revolution, led humans to be able to discuss and share imagined scenarios; decoupled cognition, fictions, and eventual storytelling¹⁴ (Harari, 2011, p. 27).

1.10 COMMUNICATION, ART-MAKING, AND COGNITIVE DEVELOPMENT

Storytelling, and other forms of narrative art are all functionally adaptive extensions of specialised mental qualities acquired by humankind that can satisfy both internal and external drives. Although the drives responsible for such behaviours are relatively intrinsic to the individual, an external social component appears to have been needed for its unique growth

¹³ Scientists have developed four key components, central to mimetic ability: mime, imitation, gesture, and the ability to rehearse a skill (Donald, Turner, 2006, p. 14-16).

¹⁴ Mimesis within the art-making context and benefits therein will be explored further in [Chapter 3](#) (p. 36).

pointing to our collective, external need to develop a communicative culture (Dissanayake, 1995, p. 12). Parallel to physical art-making, activities like storytelling and the use of imagined worlds can provide a benefit to this collective goal by using imagined scenarios to further communicate more complex ideas. Harari states, "...the truly unique feature of our language is not its ability to transmit information about man and lions. Rather, it's the ability to transmit information about things that do not exist at all" (Harari, 2011, p. 11).

The specialised, cognitive machinery we house has allowed us to conceptualise, participate in, and share fictional experiences. The overwhelming surge in cognitive development responsible for this onslaught of newly developed, creative behaviours, may have ultimately produced a 'human art nature', or at least a human, art-making system of traits and cognitive processes.

1.11 TO BE UNDERSTOOD IS TO UNDERSTAND: SYSTEMS AND ART-MAKING

Noam Chomsky (2012) states, "Humans have certain properties and characteristics which are intrinsic to them, just as every other organism does. That's human nature". Evolutionary psychology distinguishes psychological traits and universal behaviours as evolved adaptations and the results of the generative processes of our neural-networks (Barkow, *Et al.*, 1995). As proposed, we all house an inherited cognitive architecture, a 'human nature'. This architecture is segmented and structured in such a way that it continues to lead us towards adaptive directions by seeking out experiences and interactions. However, before reaching these adaptive goals and overarching behaviours, all mature adaptations depend upon the prior existence of adaptations designed to build them. It is theorised that a human's brain consists of a number of sub-adaptations that need to transpire (i.e. language) before more complex adaptations are to be instituted (Cosmides, Tooby, 2001, p. 13-16).

The human brain can be compared to that of a computer's. We are programmed from birth via a large stock of traits, ideas, and emotions and set out into the world to solve more complex problems. We are an unending series of processes and our internal hardware is constantly updating. And while some archaic arguments press that we are born with a supposed 'blank

slate' (Barber, 2016), it is argued that much of our mental content is not derived from experience but rather elicited by it (Barkow, *Et al.*, 1995, p. 22).

When evolutionary psychologists state that art-making is a behaviour born of natural selection, they are claiming art-making as a biological imperative hardwired into our very being. In an interesting comparison, Noam Chomsky's linguistic theory of Generative Grammar is a structure of rules based on a model of the psychological system of the unconscious knowledge that underlies a speaker's ability to produce and interpret language (Chomsky, 2012). Generative grammar hypothesises that sentences are generated by a subconscious set of procedures as per our cognitive abilities and that the governing principles of language are not learned but rather innate (Carnie, 2012, p. 6). Is it possible that there are similar systems at play with regard to art faculty? Dissanayake writes,

One can make an analogy with language: learning to speak is a universal, innate predisposition for all children even though individual children learn the particular language of the people among whom they are nurtured. Similarly, art can be regarded as a natural, general proclivity that manifests itself in culturally learned specifics such as dances, songs, performances, visual display, and poetic speech (Dissanayake, 1995, xii).

There are parallels between the art and language faculties. Surmising that both language and art competence arose out of communicative needs and are universal, 'post-cognitive revolution' behaviours, citing the "...intrinsic shift in motivational structure...as well generate and experience emotional states" (Deacon, Turner *Et al.*, 2006, p. 28), it is possible to propose that art-making is also the result of a system.

In an interesting, allegorical correlative, artist Matthew Barney's work, *Ambergris* (2005) (Figure A, p. 21), comments on these natural, generative relationships between innate and external components and the results produced and left behind. The large, foreboding ambergris, the recreation of a naturally occurring waste object produced by sperm whales, appears in Barney's film *Drawing Restraint 9* (2005). This byproduct and its representing biological processes are symbolic of results produced through interacting with one's environment fused with innate and catalytic properties. Being informed by one's innate self, in combination with

our environment, creates something new. Citing his work *Ambergris* (2005), Barney states in an interview with the San Francisco Museum of Modern Art, “Your language is informed by the environment, and hopefully your language can leave something behind” (Barney, 2006, 1:10).

The ambergris object serves as a representation of a system of environmental and internal factors, the reaction between them and ultimately the expulsion of something new as the result. Barney reflects that while what the whale ingests nourishes or partly nourishes the whale, what the whale cannot ingest and is expelled is at least now partially informed now by the whale. This expulsion becomes something new entirely, though having been initially informed internally by the whale (Barney, 2006, 1:10).

I propose that the same can be inferred about art-making and its results. Though this study is ultimately about process, artworks, much like naturally forming ambergris, serve as an artefact of our own biologically imperative processes.



(Figure A) *Ambergris*. Matthew Barney. 2005. mixed media (shrimp heads & plastic).
Serpentine Galleries. London.

1.12 CONCLUSION

In the *Descent of Man* (1871, Secord, 2008) Darwin writes,

Many of the faculties, which have been of inestimable service to man for his progressive advancement, such as the powers of the imagination, wonder, curiosity, an undefined sense of beauty, a tendency to imitation, and the love of excitement or novelty, could not fail to have led to the most capricious changes of customs and fashions (Secord, 2008, p. 236).

These advancements, asserted by Darwin (1871), are those creative faculties and behaviours that have cemented art, or those “...most capricious changes of customs and fashions” (Darwin, Secord, 2008, p. 237) in our behavioural and communicative culture. Like the ambergris, art takes from the environment to be internally informed by the individual in order to create something new. Without these innate, catalytic cognitive steps taking place, art-making behaviour and art would fail to exist.

Within both houses of science and art, this study intends to explore the basal origins of art-making, as well as propose and examine a partial system of traits responsible: curiosity, experimentation, and creativity. Through both examining the theoretical origins of each trait proposed, as well as reflecting on experiences within my own art-making process, this study intends to review the universality of art-making behaviour. As stated in its methodology, this study concludes with the creation of both a body of work representative of this research and examination of the journey to create it. This working process and resulting artworks act as an intimate microcosm encompassing and exploring a much broader, universal, and omnipresent act: universal art-making behaviour.

CHAPTER 2: CURIOSITY

2.1 CURIOSITY: STARING INTO THE ABYSS WITH A LONGING TO GO FURTHER

Down...down...into the depths...two men in a hollow steel globe...and while you are listening to other programs for the next hour, the Bathysphere will be going ...down...down...down... END OF FIRST BROADCAST (Ford Bond, NBC group, radio broadcast of Bathysphere descent. September 22, 1932, cited Matsen, 2006).

Between 1930 and 1933 famed zoologist William Beebe and financier-turned-adventurer Otis Barton conducted a number of unprecedented deep sea dives, exceeding 3,000ft into the abyss, cramped inside a 1.5m diameter, 22mm thick steel ball with one porthole window; which, on its first descent, began to leak and eject steel bolts reminiscent of live ammunition throughout the sphere injuring Barton who had already been charged with the life-preserving task of fanning trays of calcium chloride to ward off carbon dioxide poisoning (Matsen, 2006, p. 130-132). In the name of Darwin himself, why would anyone do such a thing?

It was the height of the American Great Depression¹⁵, hope and optimism were at an all-time low, and fatal factors abound in the making and deployment of such a deep sea diving vessel; yet, Beebe scrawled in his journal (1931) of a longing to see “beyond the sunlight” (Beebe, 1931, Matsen, 2006). In 1931 Beebe writes,

I pressed my face against the glass and looked upward and in the slight segment which I could manage I saw a faint paling of the blue... I peered down and again I felt the old longing to go further, although it looked like the black pit-mouth of hell itself... (2006, p. 675).

Staring into the abyss with the longing to go further is paramount to our human nature. It is arguable that this type of ‘longing’ is counterproductive to the survival of our species (Fowler, 1966, p. 3). However, this unending and endearing human desire to seek ‘beyond the sunlight’

¹⁵ American Great Depression, 1929-1939 (Encyclopedia Britannica, 2018).

and fulfil our curious nature, regardless of how outwardly detrimental or unknown the result may be, is indicative of the human experience and blankets a variety of human behaviours, definitively art-making. From the depths of space, to the depths of the ocean, to the inner-workings of the mind and body and the simple desire to peer under a rock, or make marks on a canvas; humans have always been, above all, curious. For the purpose of this study, two questions will be posed. Firstly, what is curiosity and what are its origins? And, how is curiosity connected to the art-making process?

2.2 DEFINING CURIOSITY

Curiosity is unique. As an evolutionary trait, it departs away from being an outwardly beneficial behaviour¹⁶ and has long been considered to be a relative, adverse byproduct of other more viable behaviours conducive to our survival.¹⁷ It is not unique to humankind, yet it houses an important space in our uniquely human cognition. This conundrum of a trait is difficult to universally define, as its parameters and functions are subjective in their severity and affect to the organism itself. However, for the purpose of this study, curiosity will be defined as a quality associated with inquisitive thinking and desire for the continuous exploration of our world.

Far more than just childlike wonder and awe, curiosity veils over nearly every aspect of human life, as exemplified in the fact that we are all in constant need of, in search of, and in the act of processing new stimuli and information resulting in reception and action. According to Fowler (1966), behavioural curiosity supports a *sensus communis*¹⁸, gives us insight into our own unique functioning, accounting for many human behaviours and, ultimately, achievements of our species (Fowler, 1966, p. 75). Curiosity leads us to formulate questions and hypotheses. Curiosity is the basis of action and, ultimately, creation.

¹⁶ 'beneficial behaviour', a behaviour that directly contributes to survival natural selection (Dissanayake, 1995, p. 35).

¹⁷ Until recently the psychology community also viewed artistic behaviours (storytelling, creative behaviours etc.) as byproducts, but ultimately concluded these solved other problems between parties through interpretation and negotiation (Cosmides, Tooby, 2001, p. 11).

¹⁸ *sensus communis*, a shared human sense (Dutton, 2003).

2.3 AN IRRATIONAL BYPRODUCT, OR KEY TO HIGHER DEVELOPMENT?

Early on in the field of evolutionary psychology, scientists were apprehensive to investigate curiosity because of its subjectivity (Kidd, Hayden, 2015). Due to this perception, behavioural studies were rather concerned with what were deemed ‘primary drives’, those drives associated with survival instincts brought about by environmental disturbances, and their behaviours; i.e. the search for food when an animal is hungry. These drives are seen as internal, biological disturbances that force the animal to act in order to return to a state of homeostasis; the animal acts to satiate its hunger¹⁹ (Fowler, 1966, p. 11-12).

Curiosity was initially dismissed and viewed as a secondary drive in early evolutionary psychology as these behaviours only occur in the absence and satiation of presumed primary drives²⁰ (Kidd, Hayden, p. 2015). However, a problem occurs seeing that not all behaviours are products of strong stimuli or negative effects on the body. Biological motivators influence actions and behaviours to satiate an organism, but many behaviours arise from positive states or are simply non-experiential at all (Fowler, 1966, p. 18), but rather innate.

Curiosity Drive Theory (CDT) claims that an organism acts to achieve homeostasis by actively seeking out new and rewarding experiences, some of which are often accompanied with risk and uncertainty, to resolve and achieve coherence and eliminate uncertainty (Litman, 2005). We are afraid of what we do not know and aim to change that and experience reward through this resolution. CDT sees curiosity as a naturally-occurring, sovereign urge that must be satisfied by gathering new information about relative, novel and complex stimulus (Berlyne, 1950, cited Litman, 2005).

If curiosity is, as Hebb states, “autonomously motivated” and experience varies from individual to individual (Berlyne, 1954, p. 78), it is difficult to examine and difficult to define; therefore,

¹⁹ These reactions to internal drives are later cemented as characteristic behaviours through reinforcement as they become associated with particular stimuli (Fowler, 1966, p. 4-17).

²⁰ The order of drives and behavioural satisfaction is similar to the pyramid of needs as stated in Maslow’s hierarchy (Maslow, 1943).

difficult to assert its fundamental role and benefit²¹. Curiosity is an experiential trait concerned with a specific organism's experiences and motivations, therefore there is no set goal for this behaviour to be measured as beneficial or not (Fowler, 1966, p. 18). One might also go as far as to question what benefits can come from adaptations that are not essential to a life-form's survival. After all, as the old adage goes, we all know what happened to the cat. However, as popular as this quip may be, curiosity is often equated with motivation, seeking knowledge and is seen as an essential component of a species' progress.

Curiosity is not something we've gained from experience, Barrow (1995) claims, but "...rather the ground for experience itself" (Barrow, 1995, p. 11). The desire to learn, or general inquisitiveness occupies a crucial bridge between cognition and motivation, between thought and action. In turn, curiosity creates actions and outcomes.

In the early development of the species of *Homo*, a disproportionate expansion of the prefrontal cortex in relation to some of our primate cousins, gave us expanded motor control, metacognition, and increased ability to have forethought, rehearse, and reflection on our actions (Donald, Turner *Et al.*, 2006, p. 15). Arguably, this autonomous development and metacognition allowed for such a subjective and self-governing trait like curiosity to exist and set a path for us as a species to engage with our environment unlike any organism before.

In *Homo Aestheticus* (1995), Dissanayake paraphrases Lopreato²², stating, "...these attributes, along with curiosity and the exploratory drive, necessitated combining or associating one thing with another: hence the development of...ingenuity, creativity, imagination, experimentation, and curiosity" (Dissanayake, 1995, p. 95). Dissanayake goes on to propose these 'higher mental activities' coincided with early art-making; or, what Dissanayake coins as, "making special" (Dissanayake, 1995).

²¹ D.O Hebb (1904-1985), pioneering neuroscientist, proposed issues with blanketing behaviours as being the result of prior experience by posing the problem of 'spontaneous fears' and non-experiential fears and anxieties (Fowler, 1966, p. 18).

²² Lopreato, Joseph. *Human nature and the biocultural evolution* (1984, cited Dissanayake, 1995).

In *The Art Instinct* (2009), Denis Dutton reflects, “We are what we are today because our primordial ancestors followed paths and riverbanks over the horizon. At such moments we confront remnants of our species’ past” (Dutton, 2009, p. 28). Here’s to the cats.

2.4 HIGHLY CURIOUS, HIGHLY MOTIVATED: EXTRINSIC AND INTRINSIC CURIOSITY

Curiosity, as it has been defined, can be further compartmentalised into various types: extrinsic and intrinsic. Extrinsic curiosity is environmentally driven and can be related to one of an animal’s more obvious, reward-driven behaviours such as satiating hunger (Fowler, 1966). While intrinsic curiosity²³, which we will associate with art-making, appears outside of the parameters of stimuli deprivation, or the abundance of, and acts without an immediate or clear goal or benefit.

By both definitions, curiosity is a building block for further cognitive development and has the ability to effect and potentially create behaviours. Rather than reacting to negative stimuli²⁴, an organism intrinsically seeks out pleasurable states by purposefully seeking out new, never before encountered stimuli (Fowler, 1966, p. 10-12). Although this reinforces the subjective quality of the trait and highlights its unique, intrinsic motivation and equally subjective physical behaviour, the universal goal of this characteristic is to seek out something new. Or, potentially, create something new.

Fuelled by curiosity, art-making is, as Dissanayake states, “...a natural, general proclivity that manifests in culturally learned specifics” (Dissanayake, 1995, p. 5). The novel-variety that art-making provides within its sphere of media and malleability (therefore, perpetual ability to surprise one’s audience) may account for its behavioural longevity. Dutton concludes novelty to be one of the non-formal features considered when confronted with the question, ‘Is this art?’

²³ Intrinsic curiosity is subjective, self-motivated and may encompass seeking out new stimuli to further the intellectual growth of the organism (Fowler, 1966, p. 24).

²⁴ Curiosity Drive Theory (CDT) states that we can assert an organism may also act to achieve homeostasis by reacting to negative stimuli in its environment (Litman, 2005).

Dutton states, “The unpredictability of creative art, its newness, plays against the conventional style or formal type...Creativity and novelty are a locus of individuality or genius in art...” (Dutton, 2009, p. 54).

Now while Dutton and Dissanayake comment on novelty’s effect on the art-viewing audience, how does novelty contribute to the art-making experience itself?

2.5 THE LONGEVITY OF NOVELTY

There are other, apparently innately creative people in whom the drive to creativeness seems to be more important than any other counter-determinant. Their creativeness might appear not as self-actualization released by basic satisfaction, but in spite of lack of basic satisfaction (A. H. Maslow, 1943, 2013, p. 9).

In 2010, artist Ethan Murrow gave a talk inside the intimate, window gallery space of Kendall College of Art and Design where he presented a series of large-scale graphite drawings depicting scenes of pointlessly-doomed explorers and their fanciful inventions intended to guide them. Reminiscent of both Wes Anderson’s *Team Zissou*²⁵ and a low-budget Otis Barton and William Beebe, works such as *Banvard and the whale meter*, 2007 (Figure B) and *They claimed that the Narwhal Sonar Buoys attracted the leviathans with expediency*²⁶, 2007 depicted the misadventures of two brothers and their obsessive drive for adventure and discovery.

I was in attendance and recall Murrow speaking, pressing the absurdity of these characters he created and the trivialness of their often surreal, outrageous, and idiotic pursuits. Though, admittedly, these ‘idiots’ he spoke of were self-portraits. Murrow told of gathering materials and fusing together props to create wild instruments, naming them and their supposed functions, and then donning them to create his ‘absurd’ characters and misguided pursuits of discovery. He stressed that these characters were obsessed in unclear and prideful quests without a set objective

²⁵ *The Life Aquatic with Steve Zissou*, Directed by Wes Anderson. 2004.

²⁶ Ethan Murrow: Drawings and Video, 2010, select works in conjunction with *DUST*, 2008; a short film directed by Vita Weinstein Murrow.

other than not turning back to admit scornful defeat. They were chasing a golden ‘something’, regardless of its form, often self-sacrificing to obtain it (Murrow, 2010).

While Murrow asserts commentary on man’s pride or drive for fame, I viewed a more optimistic reflection of human nature being projected as well; I envisioned an optimistic view that humankind is, and will constantly be, driven to create in order to discover.

The drive to seek out something new -to simply to seek out something new, can be compared to a similar impulsion, the need to create -simply to create. As explored in this chapter, by both actively seeking states of pleasure, or ‘homeostasis’, art-making is a fluid, experiential state as well as a cemented, cross-cultural act. The pursuit of satiating this need to create something new results in both an artwork being created as well as the experiential pleasure generated by creating this new object; as well as, an undoubted pleasure extenuating to the viewers of these works.

Though this create-reward relationship is primarily a fixture of cognitive response, a study by Van Heerden and Munro (2012), *Reflecting on the art making process* observed whether correlations could be found between both the physiological reactions and empirical accounts of five artists before, during, and after creating art. This joint study examined the artistic experiences of individual creators, and the ‘neural mechanisms’ that mediate them throughout a monitored, art-making session²⁷.

²⁷ Van Heerden and Munro’s study (2012) monitors five artists from the same geographical area. This study examined the correlation between an artist’s description of the art-making experience and data of physiological responses: skin conductance, skin temperature, respiration, electrical impulses and heart rate (2012, p. 295).



(Figure B) *Banvard and the whale meter*. Ethan Murrow. 2007. graphite on paper 74"x74" Big Paper Airplane.

The physiological data was relatively conclusive between the five artists and revealed signs of elevated heart rates prior to making art, signaling excitement, and a slowed respiratory rate post the art-making session indicating calmness and satisfaction. The interviews conducted throughout the art-making session reciprocated the physiological data and bore interesting conclusions. Prior to the session, the artists unanimously reported feelings of irritability, impatience, and feelings of negativity. While engaging in their art practice, the artists had an overall consensus of both excitement and calmness and a reported satisfaction of creating something ‘new’. One artist, referred to as ‘AB’ claimed, “It is exploring the new, creating something unique. I have a sense of pushing the envelope –what I’m doing must be fresh” (Van Heerden, Munro, 2012, p. 303). And, as one may expect due to its universal adoption, post-art-making many artists described feelings of satisfaction, reward and excitement.

What makes this study the most interesting however is that there seems to be a physical response connected to the reported ‘mental sense of reward’ caused by creating something new, specifically (Van Heerden, Munro, 2012, p. 300-303). This reinforces the proposed biological need of art-making behaviour and its place in our cognitive reward repertoire regardless of the specific media; one may paint or dance, and so forth (Dissanayake, 1995, p. 38). This universal, mental state of reward, or “feeling good” as Dissanayake strips down (Dissanayake, 1995, p. 27), indicates a survival need for art as it satisfies a deeply intrinsic, fundamental human need (1995, p. 24-34). Curiosity is an expansive, broad behaviour fulfilling an unquantifiable, yet essential pleasurable need.

J. R. Platt (1961) claims curious, novelty-seeking behaviour, like art-making, “seeks to exhaust the landscape” and by doing so the organism gains a cognitive reward (Platt 1961, cited Fowler, 1966, p. 74). It feels good to satisfy our own curiosity. Free from an exclusive form, art-making manifestations vary in their expressions, forms, and contexts to satisfy an individual’s need; whether that be through painting, dancing, or inventing (Dissanayake, 1995, p. 38). Art-making, while its final state may arguably be intended for an audience, its behavioural process also functions as a self-serving, satiating endeavour.

2.6 I'M CURIOUS; THEREFORE, I AM

The chorus of morning sounds of an expedition camp was always reassuring to Beebe because it reminded him that he was exactly where he was born to be, preparing for another day in which nature might bless him with the thrill of discovery if he [William Beebe] worked hard enough to earn it (Matsen, 2005, p. 68-69).

Similar to Beebe's journey into the unknown in search of the unknown, art-making comes with certain pleasures derived from the uncharted. In my personal art-making experience, my sentiments tend to echo that of Van Heerden's and Munro's (2012) artists, I experience an assured feeling of reward or pleasure from creating. However, I can't say that this satisfaction hinges on the work's completion, but rather in its chase, process, or transpiration²⁸. I enjoy the descent of the bathysphere, not through reporting its findings aboard the ship. Satisfaction comes from fulfilment, yes; but not necessarily from completion.

The bridge between a longing to interact with or investigate something new; whether it be with a material, an idea, an audience, and then the subsequent pleasure achieved via that chosen behaviour, solidifies the relationship between curiosity and art-making. As I create or conceptualise an artwork, I feel a comforting sense of growing closer to my environment. I feel a sense of optimism as I create within this 'struggle for existence'²⁹; that art exists as an individual behaviour, let alone universally, at all, is phenomenal. Accordingly, and comparable to expansive discovery, I feel a sense of reward at the experiential knowledge gained by the physical processes themselves and how knowledge of these processes inform the work and future results. Overall, these feelings of gratification are not felt by creating specific works or final works necessarily, but by simply creating; the intrinsic benefit lies there.

Our eager minds want to know and our eager minds want to create. Like Beebe's Bathysphere or the whimsically-doomed figures of Ethan Murrow, an extensive aspect of the human condition is that of constant curiosity and the actions taken forth to satiate it.

²⁸ A more comprehensive investigation of my own art experiences in relation to this study will appear in *Volume II*.

²⁹ Richard Dawkins, *The Selfish Gene* (1976), describes natural selection as a 'differential survival of the fittest' and proclaimed it a 'struggle for existence' in the eyes of Darwin (Dawkins, 1976, p. 2009: 9).

2.7 FROM CURIOSITY TO CREATIVITY: THE BRIDGE BETWEEN THOUGHT AND ACTION

The phrase, ‘Curiosity killed the cat’, is in fact only half of the story. Though appearing numerous, unattributed times throughout literary history, in its full variation the quotation reads, ‘Curiosity killed the cat, but satisfaction brought it back³⁰’. Contentedly, the cycle of curiosity and creation continues to manifest itself in human art-making behaviour. Many scholars, such as Cosmides-Tooby (1995) and Barrow (1995) cite curiosity as partially responsible for the furthering of our species, claiming it to be an, “...essential feature in progress of natural environments” (Barrow, 1995, p. 8). Our desire to fulfil our species’ curious nature manifests itself in an array of behaviours; notably, art-making. Considering this, and at times being considered an irrational trait, it’s easy to see curiosity’s place in the development of our species and the development of some of its most defining behaviours.

In my personal experience, art-making satisfies a personal need to connect with and explore my environment and explore that part of myself. Prior to a specific art problem being developed, a cycle of curiosity and exploration begins on a very simplistic form. Simple questions are posed with welcoming, exciting, and experiential answers to follow. Questions, such as:

- What will happen if I mix this material with that?
- Why am I doing this?
- What will this surface look like if I place this material here? That material there?

Followed by more conceptual questions such as:

- What is the goal of this artwork?
- Who is my audience?
- How will material choice influence the work or the audience’s reception of the work?

³⁰ Often attributed to Eugene O’Neill’s play *Diff’rent* (1920), the extended phrase is said to have first been printed by *The Titusville Herald* newspaper in 1912 (Halliwell, 2017).

Our curious mind is a cross-cultural phenomenon with insurmountable effects. It is the tinder to our flame; it is a catalyst between thought and action. Without eager listeners wondering how the story will end, there would be no stories to tell. Curiosity is a motivator, pushing us forward in search of and creating *new*, furthering the development of our species. This inner drive to seek and *do* may be the most important and foundational of all human traits. Barrow (1995) goes on to say, "...our mental pictures of the world are incomplete; though remarkably, they are complete enough to realize that they must be incomplete" (Barrow, 1995, p. 8).

CHAPTER 3: EXPERIMENTATION

3.1 EXPERIMENTATION: BETWEEN IDEA AND EXECUTION

Experimentation is a basal, epistemic behaviour hinged on the acquisition of knowledge and outlines the unbiased, empirical test of a hypothesis, regardless of how simple or complex that knowledge may be (UIAH, 2007). From basal experimentation, such as using a new material and seeing how it may react on a surface, to more complex and intentional experimentation intended to achieve a certain cerebral outcome, it can be argued that experimentation is at the core of our relationship to art-making and perhaps experiencing art as well.

In the previous chapter, curiosity was introduced as an inquisitive, behavioural building block (Fowler, 1966, p. 75); CDT³¹ sees curiosity as an act of gathering new information about relative, novel and complex stimulus (Berlyne, 1950, cited Litman, 2005). If curiosity sets us in motion to cross the river, surely it is experimentation that aides us to find the best pathway across. Experimentation, in the variety of forms discussed in this chapter, tests our previously conceived hypotheses.

This chapter will explore the fundamental roles experimentation plays within the art-making process through examining the physical, conceptual, and personal aspects of experimentation encompassing art-making. This chapter addresses the catalyst between an idea and its final execution.

3.2 WE MUST LEARN THE RULES IN ORDER TO BREAK THEM: MIMESIS, EXPERIMENTATION, AND ART-MAKING

I make art like a mathematician or scientist, striving to unravel perplexing scenarios through careful consideration, thoughtful manipulation, and happy accidents
(Eliza Stamps, 2011).

³¹ Curiosity Drive Theory, CDT (Litman, 2005).

Throughout the years of taking practical art courses, some of my most memorable instructors were those who encouraged the notion that we must, ‘learn the rules in order to break them’, or some variation of that charge. While attending material and process courses in my undergraduate university, I was generally taught that before we can fully realise the limitlessness of art, we must first learn the boundaries, abilities, and impacts of the physical materials we are using to make it with. We were to learn about the materials first and then expand on their aesthetic possibilities later.

A common exercise in undergraduate art courses is the recreation of a Renaissance ‘Master’ work. This usually entails the selection of a famous work of art, usually an oil painting, be it Renoir or Caravaggio, and re-rendering these works in either monochrome charcoal or in a full range of pastels. These replicative studies were done to learn from the respective compositions, structures, and colour theory practices of these classically, renowned artists. It was very tedious; however, very beneficial.

Recreation, whether it is of nature, a skill, an image, or an action, has long held place and power in the development of us, and art. Mimesis, a term describing a cluster of behavioural capacities such as mime, imitation, gesture, and the rehearsal of skill, developed early in our hominid prehistory³² and broadly refers to the imitation of nature, predominantly in aesthetics (Dissanayake, 1995, p. 15). Anthropologist Michael Taussig describes mimetic faculty as, “...the nature that culture uses to create second nature, the faculty to copy, imitate, make models, explore difference, yield into and become Other” (Taussig, 1992, cited Puetz, 2002).

For Plato, this ‘second nature’ was an abstraction of an already preconceived imitation of reality which made the artist “...an imitator of images and is very far removed from the truth.” (Republic X, 27, cited in Puetz, 2002). In doing so, Plato asserts that art is an imitation of our experiential world, which mimes the authentic, ‘real’ world. Having professed that art imitates a world formerly far removed from authentic reality, Plato claims that an artist merely copies the appearance of an object, sacrificing the need of authenticity or awareness of the object itself in

³² Components of mimetic cognition can be found in primates; an orang-utan mimicking using a tool it had just seen a human use for example, however it is far more developed in humans (Dissanayake, 1995, p. 15).

favour of emotional manipulation over the audience; an artist imparts their own way of seeing an object to the viewer in order to guide their perception (Stumpf, Fieser, 2003, p. 53). Dissanayake (1995) states, “Mimesis is therefore the direct result of consciously examining our own embodiment of the brain using its body as a reduplicative device.” Mimesis is our attempt to recreate some aspect of reality and, in turn, “...the original source of human culture” (Dissanayake, 1995, p. 17).

Mimetic faculty may, arguably, be the baseline for creative behaviour. However, the correlation between curiosity, pleasure drives and novelty, proposed in Chapter 2 of this paper, contends that it is not what is satisfied by mimetic behaviour that leads to creation, but rather what is left unsatisfied by it. I propose that the desire to create, manipulate or experiment may be, in part, the result of ‘failure’ in its desired replication; in that, it is the already distorted reality presented through mimesis that advances the cognitive possibilities of experimentation and creativity. There is a distinct liberation in our lack of precise replication that offers us the freedom to create something new, or the ‘other’, as coined by Taussig (1993). Perhaps it is through our failure to ‘recreate’ that we are then free to experiment and, ultimately, ‘create’.

Plato argues that art-making will never achieve the eternal patterns of true ‘forms³³’; a beautiful work of art is merely a copy of ‘beauty’. In relation to art-making, I argue that in this attempt to initially replicate, or ‘follow the rules’, we are led to inevitably create something new through personal variation and experimentation, or the ‘breaking of rules’.

Art-making, a supposed ‘higher mental power³⁴’, is a further extension of our cognitive disposition to acquire knowledge through replication and eventual modification. Aristotle describes imitation as a creative process of selection, translation, and transformation from one media to another and that artists strive to achieve a sense of ‘universal truth’, an ‘essence’ (Shields, 2016). Artists attempt to convey an image or message recognisable to one’s audience.

³³ Plato’s view that ‘ultimate reality’ is located in the abstract, spirit-realm containing archetypes of things, such as beauty or justice. Forms are changeless and eternal (Stumpf, Fieser, 2003).

³⁴ ‘higher mental powers’, Darwin argued in *Descent* (1871, Secord, 2008) that behaviours indicative of humankind; i.e. art-making, were higher mental powers rather than purely instinctual, defining us from other animals (Secord, 2008, p. 237).

However, though this selective and transformative process is set into motion by mimesis, experimentation recognises and attempts to arbitrate the gaps in this replication.³⁵ It is mimesis that leads to the purposeful manipulation and experimentation within our formal environment to create an artwork.

3.3 PHYSICAL & TACTILE: THE IMPORTANCE OF TACTILITY

Tactility, the exploration by touch of the shape of physical bodies (Dissanayake, 1995, p. 146), holds a definitive place in art-making; and, I propose, precludes important instances of experimentation within the art-making process. The act of engaging with and testing the physicality and reactions of materials provides the artist with a sense of control, knowledge, and perhaps an eventual penchant for one material over another, resulting in a preferred practice; or, as Berlyne would reduce, a “habit” (Berlyne, 1960). This type of physical engagement, interacting with external stimuli, echoes a type of selection and classification process and is a common epistemic behaviour (Berlyne, 1960, p. 266).

How is it that we begin to ‘know’ things? We squeeze. We scratch. We play. We destroy. We ingest. We imitate. We manipulate. We create. As infants, we are constantly reaching out and literally grabbing on to the unfamiliar. Our infantile bodies are fundamentally in constant states of exploratory and investigative conditions. Gibson’s theory of perceptual development argues that perceptual development is, “an active cognitive process in which we interact selectively with the array of possibilities afforded to us by the environment” (Adolf, Kretch, 2015, p. 133). It is through this consistent engagement with the world around us that we stand to further our knowledge of it, and, successively further new interactions with it. Gibson’s theory continues to express this idea claiming that by exploring our environment as infants we, “...come to understand which objects are best grasped, squeezed, tasted or avoided” and that, “Knowledge...allows us to respond to the world with sensitivity, rather than making reactive blunders to every stimulus presented to us” (Keenan, Evans, 2009, p. 133). Through engaging

³⁵ “...our mental pictures of the world are incomplete; though remarkably, they are complete enough to realize that they must be incomplete” (Barrow, 1995, p. 8).

with our tactile environment in an exploratory and experimental manner we are then better equipped to use and employ aspects of it.

I believe that similar environmental interactions are basal forms of experiential experimentation and structural to the art-making process. If curiosity leads us to formulate a question, experimentation can guide us to seek tactile ways to address this question, as well as potentially provide solutions for future questions to come. Physical experimentation, in my own art-making process, is both an unconscious and notably pleasure-driven act, as well as an intentionally employed method to arrive at the best possible technical outcome for an artwork. Comparable to learning and breaking the formal ‘rules’ of replicating nature, we must also first learn the abilities and limits of our physical medias.

In the *Logic of Science* (1959), philosopher Karl Popper states that, “A scientist whether theorist or experimenter puts forward statements...and tests them step-by-step.” He continues, “In the field of empirical sciences...he constructs hypotheses and tests them against experience by observation and experiment” (Popper, 1959, 2002, p. 3). Comparable to art-making, I believe that this behaviour and respective results are both employed by, and affect, the personal, art-making process. Hypotheses and physical experimentation within art-making lead to knowledge gain, preference, and habits; and, perhaps a resulting affinity towards a working process, material or subject.

Haptic³⁶ engagement, relating to the physical sense of touch, perception, and manipulation of objects, is a fundamental property of art-making and the refinement of a process. Prytherch and Jerrard composed a study, *Haptics, the Secret Senses* (2003), in which a group of ‘highly renowned artists’ were interviewed with regard to their sensory relationships within their working processes and daily lives. In this study, while undoubtedly and chiefly vision played a key role in the making of artwork, it was concluded that touch was of equal stature in their working processes, claiming that “...touch was inseparable [from art-making], though in a more subtle and pervasive way” (Prytherch, Jerrard, 2003, p. 387).

³⁶ Scottish psychologist R. W. Pickford, adopted the term ‘haptic’, claiming the creation and perception of visual art, as well as other perceptions, involve the externalisation of inner feelings and experiences, particularly in bodily sensations (Dissanayake, 1995, p. 146).

One unnamed interviewee, a glass blower by trade, claimed that sight and touch “complimented each other” and that while vision was used as a guide, touch was dominant and more trusted (2003, p. 389). Another participant asserted that their sense of touch helped to develop knowledge of materials as well as provide a sense of ‘deep satisfaction’, which Prytherch and Jerrard noted in *Haptics* (2003) to be a motivating factor of artists and creators overall (2003, p. 391).

When I was young, I distinctly recall preferring to draw in the sand behind the bleachers of my brother’s Little League baseball practice field, as opposed to the gravel next to the dugout. I preferred its texture and I knew that I could achieve a finer detail doodling in it. It was more fun. I came to develop this preference through touch and the eventual results of these haptic encounters. Even at a young, infantile age I was performing rudimentary-level, micro, art-experiments of my own, asserting preference through tactility.

Art educator Marilyn Wolf (1983) asserts that, in art-making, the “...visual sense and the tactile sense cannot be separated”, even referencing the idiom, ‘let me see it’ actually means ‘let me touch it’, or, ‘let me validate its existence’, rather (Wolf, 1983, p. 81). Similar to the beneficial engagement produced via curiosity, the knowledge gained from physical, tactile interaction is undoubtedly beneficial and irreplaceable; critical engagement with materials shapes our art practice and refines our communications with the viewer through eventual ‘stimulus selection’³⁷.

Basal forms of experimentation are still very much an active part of my own working process; the sensation of holding a material and sensing its properties is still rewarding to me, through knowledge of its ‘affordances’³⁸ and beyond. However, in my current working process, I find that satisfaction comes from the testing and combining of materials to reveal the limitations and possibilities of these combinations, and rather the serene intermediary that experimentation provides before the decisiveness of a final artwork.

³⁷ ‘stimulus selection’, continued in section [3.4 Experimentation and the Conceptual](#) (p. 42)

³⁸ Gibson’s theory of perception states, “Affordances are the properties of objects that offer the individual the potential to interact with an object” (Adolf, Kretch, 2015).

The periodic freedom of physical, tactile experimentation is an essential period of exploration and impermanence within my art-making process. It is a place of boldness and possibility and a place to discover, simply, what ‘works’. ‘Can I touch it?’ and ‘What does it do?’ are two of my most favourite, habitual questions.

3.4 EXPERIMENTATION AND THE CONCEPTUAL

In C. P. Snow’s seminal work, *The Two Cultures* (1959), he expressed the seemingly irreparable cultural and academic rift between the sciences and humanities. He claimed,

There seems then to be no place where the cultures meet. I am not going to waste time saying this is a pity. It is much worse than that... This polarization is sheer loss to us all (Snow, 1959, p. 10-12).

However, as argued throughout this study, the principles of science have never left art. Artists explore ideas, test them, create techniques, develop materials and compile research. Artists develop art and attempt to communicate concepts with personal, potentially unlearned and unconscious variants on the scientific method and, just like scientists, use and analyse these results to improve and create subsequent works.

The University of Art and Design Helsinki addressed this concept in Developing Art with Scientific Methods (2007) stating, “It seems credible that an intensive use of research and theory will result in better works of art, just as research is today used in almost all successful industrial product development,” and that ‘testing’ was an essential part of the physical and conceptual process (UIAH, 2007).

Although this sentiment may appear to adhere to only two-dimensional art forms and their physical processes, according to Dissanayake (1995), research and consecutive experimentation applies to all art forms. Also, it has been established that physical responses, reminiscent of

tactile encounters, can be experienced while appreciating³⁹ and viewing art as well (Dissanayake, 1995, p. 146). Therefore, it can be proposed that experimentation plays a definitive role in the conceptualisation and intended perception and anticipatory experiences of an artwork.

Stimulus selection, rather than asking, ‘What response will this animal make to this stimulus?’ addresses, ‘To which stimulus will the animal respond?’ (Berlyne, 1960, p. 6-7). Stimulus selection is predominantly used to refer to an experimental situation resulting in predictable, physiological responses to certain stimuli (Berlyne, 1960, p. 7-8).

Applied to the art-making process, I propose artists engage in a similar behaviour. Along with practical and material experimentation, a form of conceptual experimentation must occur as well; in doing so, relying on a presupposed ‘hypothesis’ or anticipated and preferred viewer reactions. In material acts of selection, artists select combinations of stimuli to present to their audience in order to elicit a certain response⁴⁰ and direct a conversation.

While mimesis arguably depicts an already augmented reality (Stumpf, Fieser, 2003), artists use experimentation to discern ways to shape an audience’s perception by anticipating common reactions to different, perhaps culturally established, stimuli. Plato (cited Stumpf, Fieser, 2003) contends an artist copies the appearance of an object, sacrificing the need of authenticity or awareness of the object itself in favour of emotional direction over the audience (Stumpf, Fieser, 2003). Therefore, art is further expansion of this communicative behaviour in which we depict and project a proposed ‘reality’ through an empirically chosen combination of materials and forms of which are chosen in order to elicit a desired response.

Berlyne (1960) reserves using the term ‘communication’ in regards to stimulus selection; however, he argues in *A Theory On Human Curiosity* that, “...art, unlike most exploratory behaviour, has a communicative function” and biologically characterises the exchange as simply,

³⁹ Has a piece of music ever raised the tiny hairs on your arm? Those are a result of dopamine levels being spiked via evolutionary pleasure responses in the brain (Daley, 2016).

⁴⁰ I propose that this would also apply to the creators themselves, as certain responses received from unfamiliar juxtapositions may not yet be realised until physically created. ‘How will I feel if I use that colour there?’

“One organism performs a response which gives rise to stimuli affecting the behaviour of an organism” (Berlyne, 1960, p. 228). Berlyne states,

The audience’s reactions to a work of art include ones determined by properties of stimulus elements, by relations between stimulus elements, and by groupings of stimulus elements...The mastery of the artist has to mobilize all the devices that can help to control the potential chaos (Berlyne, 1960, p. 235).

In the study of aesthetic behaviour, the ‘formal or structural aspects of art⁴¹’ act as a conceivable language in that there is a general, collective understanding of how each element can direct perception and experience (Layton, cited Morriss-Kay, 2010). These collective statements then assume that the audience is receptive to the stimuli, or intent, being presented and has the ability to *decode* the message. Though interpretations of art vary and true “communication”, according to Berlyne (1960), only occurs if the “...signal has the same meaning for the originator as for the recipient” (Berlyne, 1960, p. 228-229), there are indications of an inclination toward a shared, conceptual, generative art-language.

Through physical and ultimately conceptual experimentation, artists are able to further their knowledge of the communicative properties of the formal elements of art and combinations therein. Artists deduct and assemble from this shared understanding to relay, perhaps, an idea that spoken language could not articulate. Sequentially, after the decided success of a tested hypothesis, an artist can further ascertain the potential communicative abilities between an artwork and an audience; therefore, forming concise methods and formal combinations to better communicate their respective concepts.

⁴¹ Layton (cited Morriss-Kay, 2010) claims that we can, “...identify artworks in a formal sense because we find them aesthetically pleasing and we find that they enhance our perception of the world around us...” (Morriss-Kay, 2010, p. 159).

3.5 HYPOTHESES & HUES: AN ARTIST'S INNER SCIENTIST

Hypotheses are nets; only he who casts will catch (Novalis, cited Popper, 1959, p. xiii).

There is definite satisfaction in seeking out understanding. We, as humans, like to compartmentalise. Everything has its box; this does this and that does that. It's a survival behaviour⁴². After an in-depth personal reflection of my own art-making process and beyond, I've concluded that I employ basic forms, and at times definitive forms⁴³, of experimental behaviour to explore material properties and discover personal preferences. At a secondary level, which I believe was instilled in me through my academic career, experimentation is used to attain a desired conversation with an audience and continue the search for authenticity in my work.

Science and art both aim to reveal a respective truth. As Plato noted, art-making may very well be an unconscious search for reality through the creation of a 'false environment'⁴⁴, an essence of reality; and while it may be at the core of scientific practice, experimentation also serves as a method of selection for the development of these newly created realities. Aiming to invoke a *sensus communis*⁴⁵, or perhaps adhering to an aesthetic, generative grammar⁴⁶ of sorts, experimentation is crucial to the development, execution, and reception of an artwork.

In *The Two Cultures*, C.P. Snow (1959), proposed that the void between the arts and the sciences was a misunderstanding and an "over-simplification" (Snow, 1959, p. 4). Snow, and his colleagues caught in the middle, expressed that there must be at least a 'third culture' we can subscribe to. He reported the sentiments of his inner circle, claiming that, "...though they are not scientists themselves, they would share a good deal of scientific feeling" (Snow, 1959, p. 9). I dare say, I too 'share a good deal of scientific feeling'. I feel it when I'm exploring new materials

⁴² For example: We've classified over 100,000 species of mollusks alone (Britannica, 2016). How many species of poisonous plants?

⁴³ See *Volume II* of this document, [How To Grow Microbial Cellulose](#)

⁴⁴ False environment; 'imagined reality' (Harari, 2011).

⁴⁵ *sensus communis*: a shared human sense, primarily for the study of aesthetics (Kant, cited Dutton, 2003).

⁴⁶ Generative grammar: a linguistic theory in which a system of rules generates word combinations and interpretations within a given language (Carnie, 2012).

and the potentials of the environment around me. I feel it when I spontaneously mark-make with charcoal sticks, ink splatters, or sticks in the mud. I feel it when I initially set out to create an artwork with a specific conceptual intent, ‘formulating a hypothesis’. I feel it when I subject myself to the vulnerable process of showing that work, ‘testing my hypothesis’. I feel it when I’m in the equally foreign position of being a viewer, encountering a new work and intentionally exposing myself to something new.

3.6 CONCLUSION: EXPERIMENTATION, A PATHWAY TO OUR OWN TRUTHS

Habits are “...psychological dispositions formed by learning” (Berlyne, 1960, p. 262). The epistemic knowledge gained via new and novel attempts, provides an internal reward to supplement the external and is therefore reinforced as a behaviour (Berlyne, 1960, p. 262-66). Mimesis contends that it is human nature to attempt imitation and replication of our environment and its natural forms; we are instinctively drawn to this type of habit (Taussig, 1993). Art-making is a natural extension of this habitual faculty as many artists not only attempt to recreate natural forms but also use, engage, and manipulate these natural forms to better develop and create their artworks. In order to pursue our own ‘truths’, we must experiment.

Experimentation, like curiosity, is a self-bettering, self-evolving behaviour that has the power to advance *us* on varying personal and communal degrees. We engage in this behaviour to learn about the world around us and, potentially, use the resulting empirical ‘data’ to change perceptions of it. Curiosity formulates a question. Experimentation tests that question and provides respective results. It is now up to us to decide what we do with these results.

CHAPTER 4: CREATIVITY

4.1 CREATIVITY: A FLUID DEFINITION

Creativity⁴⁷, though difficult to universally define, is comparable to inventiveness and the creation of something new (Vernimmen, 2016). In art-making, Dutton claims that, “Creativity includes both the attention-grabbing function of art...and the artist’s perhaps less jolting capacity to explore the deeper possibilities of a medium” (Dutton, 2009, p. 112).

Non-exclusive to art-making, the ability to ‘be creative’ equated to problem solving abilities in early *Homo* and demonstrated beneficial, evolutionary traits, such as: intelligence, the ability to plan, foresight, motor control, accessibility to materials, etc. To this day, we admire clever and creative solutions to a variety of ‘problems’ –from intricate engineering solutions to complex, symphony arrangements (Dutton, 2009). Creativity is a virtue that holds a place of high-esteem and positive connotations; even a ‘creative murder plot’ speaks to some level of admiration.

What is designated as ‘creative’ within art-making, however, exists exclusive to the individual through the rearrangement of culturally recognised, formal components, the ability to surprise an audience, and relative novelty (Dutton, 2009). As explored in Chapters 2 & 3 of this document (Curiosity, p. 24, Experimentation, p. 36), it was hypothesised that the need to experiment within the art-making process was partially driven by a need to create something new. I believe that creativity is a continuation of, and inherent through, these novel-seeking behaviours.

We question. We test. We learn. We create. Curiosity endows us with our questions. Experimentation investigates these questions and provides results. The results compiled from

⁴⁷ Bayles and Orland state in *Art & Fear* (1993), “CREA**VITY: Readers may wish to note that *nowhere* in this book does the dreaded the C-word appear. *Why should it?* Do only some people have ideas, confront problems, dream, live in the real world and breathe air?” (1993, p. 103).

It is my assumption that disdain for the ‘C-word’ stems from a belief that only ‘some people’ are artists and that overall, ‘creativity’ has sadly failed to ascend in the repertoire of academia.

these artistic ‘experiments’ are then utilised and mingled together with prior knowledge in personal and, or, culturally significant ways to further communicate and explore ideas and create. We experiment to find new and interesting ways to make and express, and look for the best combinations possible to achieve these intimate goals. Creativity is our final, subjective hand. Creativity synthesises the conceptualisation of our questions and the physical means by which we choose to express them.

This chapter will dissect aspects of creativity, its origins, and will investigate particulars of creative behaviour within the art-making process, including: dynamic creative interactions with the environment and early art-making, formal language and ‘generative art’, and reviewing art-making in the continuum of novelty and pleasure.

4.2 HOW DO YOU KNOW WHEN IT IS DONE? WHEN IT IS NEW IN THE END: CREATIVITY, PLEASURE, AND NEWNESS

We’ve established throughout this study that we possess a reoccurring drive to actively seek out pleasurable states through new experiences and novelty. We seek to ‘exhaust’ the landscape to experience new, cognitive rewards (Platt, 1961, cited Fowler, 1966) and; arguably, we create art and engage in creative behaviours to satisfy these novel needs. We seek new, or at least some version of ‘new’. In *The Biology of Art* (Morris, 1962) by Desmond Morris, upon completion and reflection of his ape, picture-making study, Morris outlined, ‘The Biological Principles of Picture-making’, bridging the multi-species artist gap, “... [there] appear to be the only six principles which apply to picture making as a whole and cover everything and everyone from Leonardo to Congo [the ape]” (Morris, 1962, p. 158).

Chiefly, Morris crowned ‘The principle of Self-rewarding Activation’ as the first out of six principles that governed the creation of art. This principle aligns itself with our previously established, internally pleasure-driven rewards offered by creation; in that, we are partially driven by a pleasure to create [something new]. In interesting correlation, Morris’ fourth principle, ‘The principle of Thematic Variation’, claimed that both human and ape artists create

patterns or themes within their respective art-making processes and then strive to create variations of these decided forms (Morris, 1962, p. 58-64). The goal being to create something new but still recognisably tied to 'the original'.

Morris compares the repetition and variation of 'fan-patterns' painted by Congo to that of human explorations and new variations of forms and themes in various art-making processes. Morris states:

Congo [the chimpanzee] settled for a basic theme (the fan pattern for instance) and then rang the changes through a number of variations (split fan, curved fan...) without losing sight of the basic motif, so will a human artist use a similar progression as part of his basic method of working. Some [human] painters continue...with only one theme, which they vary after time. It is more usual, however, for a painter to progress from theme to theme, each time exhausting a wide range of variations (Morris, 1962, p. 163).

In observations and in conclusion, Morris states, "There is pleasure in the familiar and the repetitive... then there is excitement in the novel and unfamiliar" (Morris, 1962, p. 164); I believe this is applicable to both formal and conceptual aspects of creative behaviour and permeates the definition of creativity. We strive to create new yet recognisable forms and ideas and build from an established language⁴⁸ of sorts; creativity is the construction of the 'pleasurable-new' out of recognisable and relatable motifs. We find pleasure in this behaviour and its results, and further consciously employ this method as a tool to create successful works and further the successful communication of an idea.

We experience pleasure, by artist and audience alike, through the subjective moulding, juxtaposition and transformation of materials to create artwork. There is a distinct pleasure felt from taking 'nothing' and turning it into 'something'. We are able to mould earth into ballerina figurines and cast them in bronze. We are able to source, grind, and bind cadmium into pigment and paint the recognisable, bright red skin of an apple. Dissanayake states, "Whatever sensual pleasures inhere in the artworks, the distinctive and necessary aesthetic factor would appear to be the mental appreciation of how their makers have shaped and embellished the sensuous raw

⁴⁸ 'language', explored further in [4.3 Creativity: A Language of its Own](#) (p. 51)

materials” (Dissanayake, 1995, p. 29).

Subtle, basal creativity remains in art-making and simple ‘creative’, transformative processes contribute to the pleasure derived from art. Arguably, what distinguishes our experience of beauty and pleasure in nature from beauty and pleasure derived from art objects⁴⁹, is that the latter have had their forms imposed on by human creators. Though nature is often hailed as being the ‘original artist’, it seems that what distinguishes the aesthetic pleasure received from art is that an artwork is “...assembled from and transformed by a product of nature itself” (Dissanayake, 1995, p. 29).

The creation of an artwork demonstrates the union and synthesis of the perceived and the conceptual, a melding of what we can see and what we can envision to see and eventually create, and the reincarnation of aspects of our environment. We take and reinvent. Nothing is new; though, through our own subjective arrangements, it can be. And we like that. A lot.

I recall attending a ceramics workshop at Central Michigan University late in the fall of 2011 where a visiting artist⁵⁰ was giving an informal lecture inside the academic studio space. He was working with terracotta clay, and similar earthy bodies, creating portrait busts. They were all created instinctively from his imagination or facial memory. He moulded the cheeks from within the works by pushing out upper jawbones with his thumbs. He created brows by adding bits of extruded clay and marked the brow hairs with a needle tool. He reached up into the throat to protrude out a chin. It was mesmerising.

A fellow student raised his hand and offered up a question that both it and its answer have stuck with me to this day. ‘How do you know when it is done?’ the student asked referring to the gestural sculpture of an elderly man the artist currently held in his hands. The artist’s immediate response: ‘When it is new in the end.’

⁴⁹ Renaissance philosopher and art theorist, Leon Battista Alberti, even proposed that sculpture may have originated accidentally by observing shapes in nature that looked like other objects, such as notches in trees, and then modifying them accordingly to create a likeness, “...not without pleasure” (Gombrich, 1960, cited by Morriss-Kay, 2010).

⁵⁰ I am paraphrasing my experience.

In definition, “Novelty is inherent to the creative process,” and “creativity implies the generation of something new” (Gillebaart, 2013). Driven by cognitive motivations to learn, to encounter new experiences, and create something new allows for us to participate in art-making behaviour and other abilities which require us to think outside the supposed ‘box’ (Gillebaart, 2013). Monkey see, monkey make new.

4.3 CREATIVITY: A LANGUAGE OF ITS OWN

Cosmides and Tooby (2001) regale that, “...the most rewarding situation of all is when the same behaviour is useful externally and internally” (Cosmides, Tooby, 2001, p. 16). Art-making behaviour is undoubtedly one of those ‘most rewarding situations.’ It’s been established that art-making behaviour sustains its universal longevity from satisfying personal, internal needs; however, art-making behaviour also serves an obvious, external, communicative function that benefits both the creator, recipient, individual and whole.

Art has the ability to convey abstract concepts and emotions and serves, according to Donald, as “...an activity intended to influence the minds of an audience” (Donald, Turner, *Et al.*, 2006). It is crucial to the emotional communication in the human world and, through creating and presenting artworks, artists strive to engineer the experiences of others (2006). Art has the capacity to direct and target aesthetic responses, in ourselves and in others; therefore, we retain a certain ‘aesthetic response system’ capable of this exchange (Steen, Turner, *Et al.*, 2006). An artist must be able to anticipate an audience’s response and provide the correct ‘language’ in order to communicate their idea successfully and generate said response.

My blue, fabric bound, 1st edition of Desmond Morris’ *The Biology of Art* (1962) is perhaps one of my most prized possessions. As fate would have it, I happened upon this forgotten gem deep within a dusty, fifty-cent bargain bin inside the now defunct Barnes and Noble bookstore outside Grand Rapids, Michigan. Initially, I did not know what I’d stumbled upon. I opened it and was met with an inscription: “For my friend Nathan- Let’s hope that no one ever shows the apes a naked lady! Jack Besig.” Sold.

Firstly, Mr. Besig has a sense of humour. Secondly, he actually poses an interesting situation: The presentation of a recognisable ‘art’ form (an allusion to the reclining nude⁵¹) to an audience (who so happens to be an ape) in anticipation of a certain, reactionary response.

Continuing down the list of Morris’ ‘Biological Principles of Picture-making’ is ‘Universal Imagery’ (Morris, 1962). Morris claimed, through controlled experiments and observation, that certain, recognisable, formal characteristics arose independently in a number of ape paintings, comparable to the ‘growth of basic imagery’ among human infants (Morris, 1962). This ‘basic imagery’ can be explored as part of a cognitive system that allows for art-making to exist at all.

Though what is created or deemed ‘artistic’ is culturally variable, the behaviour itself is essentially culturally universal (Steen, Turner, *Et al.*, 2006) and we possess, as a species, the capacity to engage with, internalise and respond to the results of such an individualistic behaviour. Comparable to Noam Chomsky’s theory of generative grammar⁵² and biolinguistics⁵³, in which it is stated that “...language involves an infinite use of finite means (Chomsky, 2012)”, art-making arises through a similar system of particulars stemming from a foundational system of understanding. Chomsky asserts that the ‘use of language’ demonstrates creative capacity through individual arrangements to produce meaning. What is physically produced is irrelevant, it’s how we “...subconsciously get from sounds to words to meaning” that drives us to speak (Chomsky, 2012).

Though cultural context sways our perceptions of art, debating a fixed, human nature towards aesthetics (Dutton, 2003), we’ve established that the capacity for this behaviour to exist uniformly among cultures suggests some formal commonality. In turn, the existence of such a system, capacity for understanding, transcription, and ability to decipher unmistakably affects what is ‘chosen’ to be said.

⁵¹ A reoccurring theme in Western art; “More than any other figure, the female nude connotes Art” (Nead, 1992).

⁵² generative grammar: the capacity to produce an infinite number of grammatically correct phrases through a system and collection of finite means [i.e. vocabulary] (McGilvray, 2017).

⁵³ Biolinguistics, according to Chomsky, “language capacity must be a biological property” (Chomsky, 2012).

‘Stimulus selection’ is used to elicit certain responses amongst viewers; individuals change environmental stimuli to affect others or to promote further, investigatory responses (Morriss-Kay, 2010). In art-making, this translates to formal material choice, intentional juxtaposition, thematic, cultural commentary, etc. An artist’s choice of particular, formal combinations intended to elicit certain responses are culturally relative, but this selective-behaviour helps bridge the communicative gap between an artist’s intent and its reception.

In *Art & Fear* Bayles and Orland (1993) claim,

...what counts, in making art, is the actual fit between the contents of your head and the qualities of your materials. The knowledge you need to make that fit comes from noticing what really happens as you work (Bayles, Orland, 1993, p. 18).

Art is a communicative tool that furthers the cycle of communication through both the systematic creating and decoding of messages between creator and audience. Creativity relies on internal systems to function and the rearrangement of the recognisable components of these systems to create and engage with the viewer. Art, like matter, cannot be created nor destroyed, simply rearranged and conveyed.

4.4 NATURALLY, GENERATIVE ART

We all draw. When you draw you have no time to be anyone else... You follow the pen and allow it to flow and you allow it to go wherever it goes, wherever it needs to go, wherever it wants to take you. You are a willing passenger... and over time, as an artist with practice and a conscious refinement you get to extract what is yours from it and decide what is your line (Shantell Martin, 2017).

The development of a ‘creative’ work, when dissected, manifests and is employed to initially solve a ‘problem’, an artistic problem. Creativity in art is the particular rearrangement of a culture’s specific, recognisable components of a formal ‘language’ within that culture and is used to convey this problem, and its potential solutions.

Creativity is an active behaviour, driving us forward and guiding us to find different ways to express and find the *new*, in art-making and beyond (Gillebaart, 2013). In this respect, I propose that we are all generative artists. Innate ‘systems’ of evolved capacities, characteristics, and their various products, are set in motion by our initial, foundational and motivational instincts to seek pleasure and eventually produce and are responsible for art-making behaviour. Both internal and externally driven ‘motivational systems’ operate within our subconscious and, according to Cosmides and Tooby, were designed to find rewarding acts and experiences and led to the development of aesthetic-driven behaviour (Cosmides, Tooby, 2001, p. 13).

Accordingly, I propose that we are all ‘generative’ artists. Similar to instances of computer-generated graphics, CAD designers, and now algorithmic works created by artificial intelligence, human artists also function partially off of innate, ‘pre-programmed’ systems.

By definition, generative art refers to:

...any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art (Galanter, Romero, 2003, p. 317).

A key element of generative art, according to Galanter is that “...the artist cedes partial or subsequent control” (Galanter, 2003, p.4). Though, Galanter also states that the term ‘generative’ refers to how an artwork is *physically* made, not conceptually made, I argue that we house a similar, cognitive, generative system of art production.

The ambitions and goals may differ for individual artworks, a motivational, creative language capacity exists to create and interpret artworks and lends to the artist’s creative ability to control the experiences of both artist and viewer. There is pleasure in both engaging with this innate system and imparting our own discretion in its application, if we are in fact in control of it.

We, humankind, are all naturally creative beings that engage in various pleasurable acts of newness, mergers, and communication, to contribute to both the growth of the individual and of the whole. Creativity is the final, subjective, decisive act of a deeply inherent system used to control and generate outcomes and resulting experiences. We take from our internal, shared language, our internal, intimate selves, and external natural and cultural environments (finite means) to create and share the perpetually infinite.

CHAPTER 5: CONCLUSION

Throughout this research project and this resulting exploratory document, I put forward the argument that art-making is an innate, universal behaviour having relationships with a selection of other characteristically human, and innate behaviours. This study explored the universal origins of art-making behaviour by reducing the art-making process down to a proposed, simplified and selected system of traits (curiosity, experimentation, and creativity) and individually examining the contributions of each trait within the art-making process itself.

In conclusion, this study puts forth the proposition that these three traits act as a simplified, innate ‘system’ partially responsible in some form for personal, yet universal, art-making behaviour. Curiosity endows us with our questions. Experimentation investigates these questions and provides results. Creativity mingles these results together with prior knowledge in personal and, or, culturally significant ways to further communicate and explore ideas in artwork.

In Chapter 2 of this study, I surmised that curiosity leads us to form a question. These questions are the result of reactions to and engagements with our environment as well an internal longing to effect change in our environment. Curiosity drives us to satisfy our inquisitions into the ‘novel’ and the unknown and even drives us to create a ‘new’ novel and unknown in order to satisfy. Though it may carry the weight of proverbial demise, curiosity is a gateway to action and progress and is instrumental in the development of our species (Barrow, 1995).

While there is no set goal for curious behaviour and its resulting actions, the general desire to learn and investigate permeates numerous human conditions and behaviours. In art-making, curiosity acts as a crucial bridge between thought and action, between motivation and creation. Curiosity is a driving force that leads us to investigate and, eventually, create something new.

We seek the unique, the novel, and, as coined by Dissanayake, we seek the “special” (Dissanayake, 1995, p. 96). Though what is ‘special’ is relative. Curiosity is a universal behaviour functioning on personal and subjective degrees and motivations, much like art-making itself. Dissanayake states that art-making is, “...a natural, general proclivity that manifests in

culturally learned specifics” (Dissanayake, 1995, p. 5). Taking many forms, I argue it is curiosity that initially drives this natural ‘proclivity’ and leads us to satisfying, discovering, and manifesting our subjective drives through and within art-making behaviour.

Once curiosity has led to the establishment of a question, experimentation then ‘tests’ that question in varying degrees. In Chapter 3, I argued that experimentation is also an ingrained, innate behaviour and instrumental in the art-making process. Experimentation confronts our initial questions and then asserts the best course of physical and conceptual actions to address them. Experimentation functions as the experiential learning between an idea and its execution, and functions to ‘test our hypothesis’ established through curiosity.

Physical experimentation and conceptual experimentation are crucial to the structure of an art-making process. Tactility, the exploration by touch of the shape of physical bodies (Dissanayake, 1999, p. 146), holds a definitive place in art-making. The act of engaging with and testing the physicality and reactions of materials provides the artist with a sense of control, knowledge, and perhaps a preferred practice.

Similar to the beneficial engagement produced via tactile experimentation, I argue that artists engage in forms of conceptual experimentation as well to better assert communicative outcomes. Artists engage in acts of ‘stimulus selection’ in order to address how an audience will respond to the artwork being presented. Stimulus selection, rather than asking, “What response will this animal make to this stimulus?” addresses, “To which stimulus will the animal respond?” (Berlyne, 1960, p. 6-7). Artists experiment with formal elements to discover the potential communicative abilities between an artwork and an audience; therefore, forming concise methods and formal combinations to better communicate their respective concepts.

In Chapter 4, I argue that creativity expands on the knowledge gained through and within experimentation in art-making to create an effective, intended outcome. The ‘data’ gathered from artistic forms of experimentation reconcile our perceived intent with what is received by our audience and leads to a creative ‘tool box’ of sorts, where artists can draw from and wield elements to generate a designated response (ideally).

In art-making, creativity is employed to engage our audience and satisfy a subjective, pleasurable, internal drive. We experience pleasure, by artist and audience alike, through the subjective moulding, juxtaposition and transformation of materials and fusions of ideas to create artworks. In material and conceptual acts of selection (stimulus selection), artists select combinations of stimuli to present to their audience in order to engage the audience, elicit a certain response and direct a conversation.

This chapter (Chapter 4) argued that perhaps the concept of creativity shares parallels with Chomsky's 'generative grammar' and that creativity acts as a device of subjective rearrangement of a deeply inherent system used to control and generate outcomes and resulting experiences. We take from our internal, shared language, our internal, intimate selves, and external natural and cultural environments to create and communicate ideas.

Considering the universality of creativity and art-making, one can argue that art-making behaviour has permeated our species' culture in part due to a similar, shared faculty. Dutton claims so in his aptly titled, *The Art Instinct* (2009). Dissanayake states in *Homo Aestheticus* (1995), "...aesthetic faculty is a basic psychological component of every human being" (Dissanayake, 1995, p. 157). Perhaps it is part of our unique cognition that prone us to art-making behaviour and the commonality of art experiences.

When Darwin first published *On the Origins of Species* (1859), theorising that humankind was the result of a biological history rather than divinity, the public was outraged (Secord, 2008). We were a divine being, modelled after greatness, separate from nature and certainly sequestered from those primitive apes. We were apart, different, individual and proud of it. Now, rather than a series of distinctions, an entire potential history of occurrences and connections surrounded and permeated us and our biological history. To me, this is more comforting than anything else.

We are united together as evident by our biology and our behaviour.

An evident component of this unity, as artists, humans, or simply higher communicative apes, is the subconscious employment of systems and characteristics to appeal to a universal communicative language. Art-making is a language receptive to dialogue, problem solving and intimate human understanding, employed to better receive and understand one another as well as ‘to be understood’. Selected from this uncountable series of traits and factors, curiosity, experimentation, and creativity are samples of acts used to resolve certain drives and, in turn, further resolve and create growth and dialogue between ourselves, our environment and each other.

We are innately creative beings, unified through a cross-cultural, creative, generative-system of communication. We are curious. We investigate, test, and examine and ultimately take from these formal results to express and commune with others. Through both innate cognitive systems and culturally imposed decrees, art-making is synonymous with the human experience.

I create; therefore, I am.

(To be read in conjunction with, *Volume II: Catalogue & Findings: A Personal Journey From Curiosity to Creation*)

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