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Evidence suggests, that the neurological need to learn culturally played a major role in driving the rapid expansion of our ancestors' brains. Our species has evolved to deliver information culturally. Cultural evolution initiated the process of selfdomestication through the common universal practices of ostracism and punishment. This drove the evolution of our ancestors to favor the docile rule- followers and upholders of social norms. These selection pressures driving a rapid development of human brains are called the Machiavellian intelligence hypothesis. In this theory our intelligence was driven by a race to see who could outwit manipulate trick and ultimately dominate one another (7).

Observational learning is necessary for cumulative cultural change, leading to cultural and societal practice. Cumulative cultural change implies that through natural selection humans were more apt to survival if they could transmit ideas to one another. In early humans it was an absolute asset to be able to exchange ideas, plan for winters and learn from mistakes made by older generations. In this way culture must be beneficial for humans natural selection. For human cultural practices to work, cultural transmission would require both transmission of mental representations and persistence of these representations. This means that ideas could not only be transmitted to one other human. This happens in many species. One ape will learn how to sharpen a stick from another. However the difference in humans has to do with the intergenerational transmission and persistence of information.

The Nash Equilibrium experiment provides indicators of traits in human phenotypes that were potentially crucial in for the aptness of early humans to survive. Humans showed evidence that they were struggling to prohibit a natural response. This response was copying (7). This experiment suggests that humans may have developed through many generations of natural- selection an aptness and neurological trait to copy.

This experiment suggests the human need to copy may be a product of ancestral natural selection and cultural evolution. Perhaps the human ancestors best equipped to survive were those the most apt at copying others before them. "Natural selection favored genes for building brains with the ability to learn from others" (35 Henrich).

As a species we tend to rely on the knowledge of others most when the stakes are highest. When determining whom to rely on we use a combination of factors: age, success and prestige. These, Authority Cues, are visual or verbal signifiers that identify one individual as having important knowledge vital to decision making.

Through models of prestige, success, and age, humans conduct our natural inclination to copy other humans. It seems the wisdom of the crowd is built into our psychology. This wisdom of the crowd is the ubiquitous human trait of mass conformity through copying. As a social species humans are neurologically wired to copy what other people do, especially if others are linked to cues of prestige. Our species is so prone to copying and observing prestige cues that we will even imitate against our own self -interest

I have constructed two conceptual works that derive from my research. Both works can be read on many levels and will have something to glean for viewers at all levels of aesthetic knowledge. This is not to say that those who have read about the concepts or those who are keyed into preexisting aesthetic dialogues may not glean more complex information.

The first work is a fifty- inch by sixty- inch painting with pencil. Importantly the piece will be titled, "In many song birds song traditions are transmitted by imitation but little to nothing else", (2). This quote concerns, "how culture is transferred in species" (2). This work starts with a pencil appropriation drawn in the top right corner on top of a loosely painted surface in a cold white. This appropriation is an image of a figure that is a conglomeration of many famous comic characters. The process goes as so, after the first drawing is complete I appropriate from that drawing, then moving right on the canvas. I repeat this process of copying from the appropriation to the left until the surface is covered with nearly the same drawing in a grid like fashion. In this way except for the first drawing, each drawing is an imitation of the drawing directly to the left of itself. I am not aloud to look at any iterations of the figure except the one drawn directly to the left of the new one. Further more through human imperfection this drawing has mutated and changed over time, but remains similar only through the process of imitation. This painting is a both conceptual and proses oriented work. This work directly acts out social learning and helps us to understand the difference between social learning and cultural learning. For cultural learning to take place, both transmission of a tradition and persistence of the tradition must take place between multiple generations (2). Song- Birds are particularly interesting in this light because they experience social learning, not cultural learning, but manage to carry their information cross generationally. Like human oral traditions, if a speaker in the chain is lost, or changes the content of the tradition the tradition is lost or changed forever. This is how the Iliad and Odyssey changed and were traditionalized and eventually canonized in ancient Greece. In this way this Painting is conceptually tied both through its titling and its process of imitating social learning, to the adaption of social learning and its precarious nature.

The second work derives from the Nash Equilibrium and how it relates to what could separate us from other hominoids. The failure of humans to anticipate the Nash Equilibrium, our aptness to copy and our struggle with not copying in the pennies game provides evidence that we are a species that systemically adapted to evolve to copy well (7). I am interested in our human desire to copy and how this relates to natural selection. Early humans more inclined to copy what they saw other humans doing, through observational/social learning were more apt to survive their harsh lives. Human beings are more apt to survive when existing cooperatively and in groups copying and culturally learning from one another. These ancient humans apt for observational/social learning and cultural learning learned generationally. This continual passing of knowledge made their kin more apt t survive. This insinuates that conformist transmission or being part of mass culture is an adaption pressured through natural selection and generational evolution. Without more information, conformity adapted through prestige cues, is in part likely due to a genetically evolved series of traits. In these works I explored how information understood culturally and transmitted cross generationally can be observationally socially and culturally administered as well as manipulated.

This work manipulates both domestic and institutional prestige cues. These cues are potentially genetically hardwired and have been developing through adaptations and ultimately natural selection throughout the history of hominoids (7). Though prestige

cues are powerful indicators, the information they carry can vary. In this series of appropriations work I manipulate domestic and institutional prestige cues in order to administer information relating to either cultural or social systems of learning.

These appropriations are executed as digital prints mounted on museum board and then tacked, with clear tacks, to cork board. This work operates on an administrative but metaphorical level in relation to the concept of cultural learning as an adapted, evolved trait. Obviously most of human culture has been a product of cultural learning. However the neurological difference between ubiquitous mass cultural information and the intricacy of specific cultural information is not dissimilar to the difference between the process of social learning and the human adaptation of cultural learning. In this way some of the images include information an average American viewer can glean observationally. One is an image of a 1990 Honda Civic Hatchback. All American viewers will read this as middle to lower middle class automobile. Another is image of two police men. All American viewers will read this as such. Another is an image of an extremely expensive automobile. All American Viewers will view it as such. Another is a scene of Trump Supporters. All American viewers will read this as such. Another image is of a volcano. All American viewers will read this as such. The last of the images relating to social learning is an image of a painting by Malevich. Though Average American viewers may not know this context, part of Malevich's intention with this work is that all viewers will read it as a black cross in a square. There is nothing else to glean. In this way this image spans race, class, culture and gender. The second group of appropriations contains information a viewer can only glean from specific cultural learning. These works make specific references that are more or less rare to know and occupy idiosyncratic locations in human culture. These works require context and are much harder to access content from. One image is of a mutated hand from the film Hiroshima Mon amore. Another is a photo of a scientific diagram lacking enough information to be read en mass. Another is an image of a meme that is now commonly used to make fun of the forty- fifth president of the United States. Another is an image of Tommy Wiseau, a famous actor from B movies. Another is an early twentieth century anti-Semitic Disney cartoon. The last of the images relating to cultural evolution is a still from the Ralph Bakshi film Wizards, an offbeat but important film to comic history. Mounting these appropriated digital prints to museum board usurps an art world prestige cue for important information. Institutions and canonical structures, in place in the art world, have hard- wired long time art viewers to take the physical manifestation, via museum board of a plaque as a prestige cue. Then when pinning these mounted images to cork board a domestic cue for relevant information is usurped. In the end this work administers appropriated information. In this way it conforms to the adaptation of copying though appropriating information. The final product suggests a metaphorical difference between social and cultural learning, as well as exploits some of the prestige cues, vital for both social and cultural-learning.

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"In many song birds song traditions are transmitted by imitation but little to nothing else", (Pencil, Acrylic, stretched canvas) 46 inch by 51 inch



Mood Board (Cork board, museum board, ink jet prints, clear tacks,)

1. Steven A Frank. 1998. *Foundations of Social Evolution*. Princeton: Princeton University Press.

Social evolution occurs when there is tension between conflict and cooperation. The earliest molecules competed with their neighbors for essential resources. This book is about the economic concepts of value used to study social evolution. It is both a "how to" guide for making mathematical models and summary with new insight about the fundamentals of natural selection and social interaction.

2. Robert Boyd and Peter J. Richardson. 1996. Why Culture Is Common but Cultural Evolution is Rare. *Proceedings of the British Academy* 88: 77-93

Cumulative cultural evolution requires the capacity for observational learning. The evolution of psychological capacities is vital to cultural evolution. Cumulative cultural adaptation cannot occur when these capacities are rare. These results suggest why these capacities may be rare in nature.

3. Daniel J. C. Kronauer and Joel D. Levine. 2017. The ultimate and proximate underpinnings of social behavior. *Journal of experimental biology* 220: 4-5;

How does evolution shape social interaction and social behavior? How Doe socialbehavior plays out on a mechanistic level? These are fundamental questions. Social evolution theors provides a unifying framework in which social behavior behavior and evolutionary dynamics

4. Noam Chomsky. 2017. Language Architecture and its importance for evolution. *Neuroscience & Biobehavioral Reviews* 73

Language appeared, not long after the emergence of Homo sapiens. The complexity/ Variety of languages derives from changes since the shared capacity evolved. The origin of human language is obscure. This poses a highly difficult evolutionary question. It is wrong to thing that language evolves non- biologically.

5. Timothy Taylor. 2010. *The Artificial Ape*, Palgrave McMillan, New York

Are we intrinsically artificial? Is our evolutionary fitness not determined Biologically? This Book lays out the biological basis for our species and takes us on a compelling journey of our rapid cultural development that has far outstripped the glacially slow changes of traditional genetic change.

6. Adrian Viliami Bel. 2014. Cultural evolution and the way we Count. *National Academy of Sciences USA*, 1227-1228.

The way we count and that we count, in the abstract, is a key factor of our survival. Ideas like the magnitude effect and being able to remove the self from a calculation is key. This article details how a small totally isolated pacific island community made numerical calculations, abstract and literal, and determined stats based on food supply.

7. Joseph Henrich , 2016, *The Secret of Our Success*, Princeton University Press.

Culture is essential when understanding human evolution. How do genes interact with culture? How did we become human? Did cultural evolution make us special on earth. How have practices and beliefs and instincts come do be through our cultural learning?