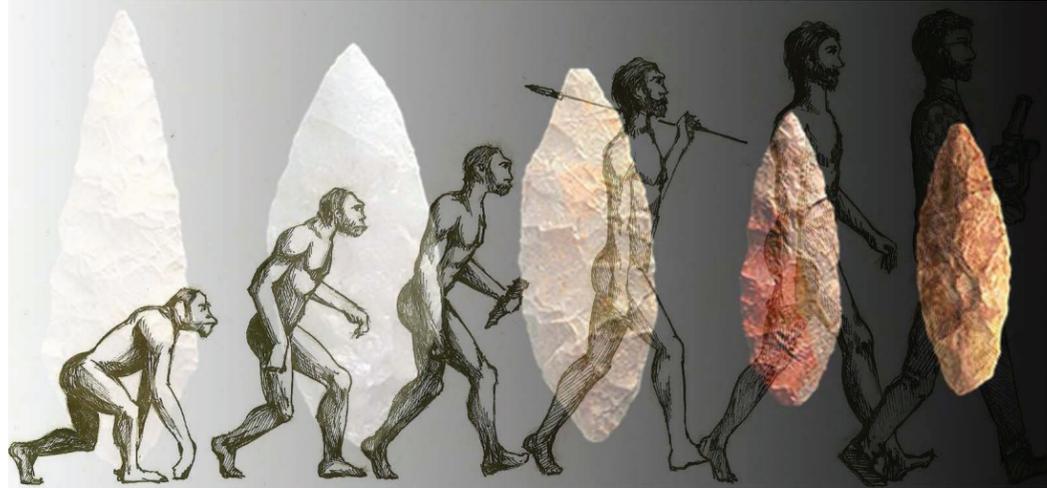


Digital Craft in Architecture

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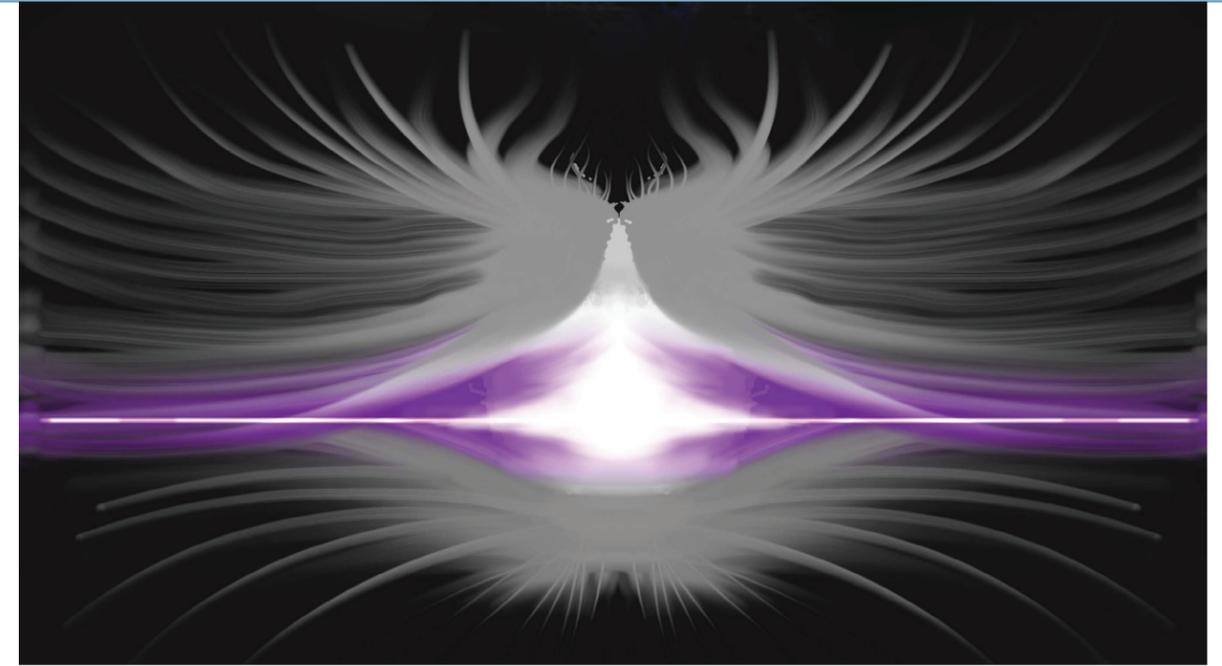
I. EXTENDED ABSTRACT

The mission of this conference is to “ignite change and unlock the potential of Neuroscience for Architecture.” In this brief overview we address: 1) How the digital era is rapidly reforming craft in Architecture via new tools; 2) Neurological implications of digitally reformed design, specifically craft and experience thereof.



Craft is a highly involved demonstration of skill with origins predating language. The bodily skills associated with craft have been passed down through a lineage of mimetic learning. Homo-sapiens pass down corporeal knowledge of tool-use from generation to generation.¹ Studies on Japanese macaques demonstrate how tools may have been neurological extensions of the body.² Craft/tool use is neurologically understood and appreciated similarly today as it was at the dawn of mankind. In this light the digital era has not reshaped how theorists view craft, but professionals, such as architects, who enthusiastically lend their profession to machines for better or worse.³ Thus the digital age ushers in a diverse range of neurological implications from craft to aesthetic experience. Aesthetic experience of craft is defined by meticulous and masterful articulation of attractive materials. Electroencephalogram (EEG) studies in art have shown that aesthetic experience may be neurologically enhanced by: 1) Pathologically gained expertise; 2) The perception of creative bodily motion.⁴ Industrialization and development of digital tools has, through veils of false precision, beckoned architects to replace traditions of craft. From this point of view digital tools may be responsible for degradation in aesthetic experience. Dilemmas surface when CAD drawings, 3-D modeling, rendering, etc. fraudulently render corporeal design methods, namely sketching and modelcraft, obsolete.⁵ The benefits of increasingly easy digital functions are favored while strengths in fabrication are ignored. Computers, as neurological extensions of the body, allow the architect innovative methods of production.^{2,5} Digital is a medium through which architects may merge their design ideas with material reality.

Craft is the intimate process of engaging material reality to create objects. To craft as an architect is to toe the line between the architect and the contractor, between the theorist and the engineer, between the philosopher and the mason. Architectural craft is rooted in the human body through its actions and intentions. It is created through the movements of the craftsman and appreciated through the observer's understanding of objects. This is now corroborated by the discovery of mirror neurons.⁴ Before the digital era, the tool hand was the sole proprietor of craft. A new emphasis on mind tools arguably results in the loss of identity and corporeality in design process. Notions such as industrialization and mass production detach users from crafted objects. However, the role of digital tools in the design process was not intended to replace human ingenuity, rather to assist in the production of material objects. With the rise of digital tools, designing buildings may have been becoming more of a visual art than a bodily one. Architects are using computers to craft visualizations instead of aesthetics grounded in embodied tectonic logic.⁶ If the computer has a place in the design process, it is production. Computer fabrication is essential to the architect in particular, because of the nature of buildings and their numerous components. An architect must become more than a mere designer or a producer. Engaging modern tool development is an opportunity for architects to become more involved in the construction process, thereby, placing them more in control of the material world. The simultaneous engagement of creativity and production may allow the architect to reclaim the title of the master builder.



2. REFERENCES

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3. AUTHOR BIOS

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I have always been drawn to working with my hands. Two years of collegiate engineering did not fulfill the wants of my hands; I transferred to Architecture. I have a multitude of construction experience. Grounded in the world of production we live in, I have been lured towards philosophy, science, and art. By keeping an open mind, I keep a creative mind. I am a knight of optimism, drawn to the dream of a better world for living.

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My father was a cabinet maker and currently a woodworking hobbyist. I have heard lively critiques of craftsmanship throughout my life. In high school I was drawn towards the arts and music. Early in college I stayed in my hometown to maintain a band. Meanwhile, I studied journalism. Detachment from hands-on visual arts left me disillusioned. Architecture afforded me the opportunity to express myself visually. Currently, I study at the Institute for Advanced Architecture of Catalonia (IAAC) in Barcelona to explore the urban role of the fablab. I will return to Kansas State for my final year of studies in the fall.