Technology, Aesthetics, and the multi-disciplinary design process in research creation methodologies.

Omar Al Faleh
MA Individualized Studies
Concordia University.
1455 De Maisonneuve Blvd. W.
Montreal, Quebec,
Canada H3G 1M8
http://www.morscad.com
omar@morscad.com

Topological Media Lab
Concordia University.
1455 De Maisonneuve Blvd. W.
Montreal, Quebec,
Canada H3G 1M8
http://topologicalmedialab.net
topologicalmedia@gmail.com

Abstract
This position paper discusses the role of technology and technical decisions in the creative process of multi-disciplinary digital art making. Design consideration and aesthetical decisions are studied, analyzed, and approached from a research creation point of view.

Author Keywords
Technology; aesthetics; experience design; multi-disciplinary design process; research creation; system affordances;

ACM Classification Keywords
J.5 ARTS AND HUMANITIES

General Terms
Design; Experimentation

CHI'13, April 27 – May 2, 2013, Paris, France.
ACM 978-1-XXXX-XXXX-X/XX/XX.

Discussing technology and its roles and aesthetics in cross-disciplinary digital art making is a vast subject that calls for a review for the novel working and collaboration methodologies. An attempt to have a position on the matter requires looking at the different ways technology was integrated in the art making process, and the role it plays in the final product.

Heidegger defines technology as "means to an end"[1], which compels us to look at technology as a production tool. However, with the emergence of computer vision tracking, sensor electronics, microprocessors, and real time sound computing, technology can also play an active role in shaping the artistic the experience, in which case it becomes a means to an experiential and aesthetical end, therefore an essential element in the aesthetic and design decisions that should be considered when performing a critical analysis of the process of creative conception.

The use of technology as a medium for artistic expression imposes rigorous conditions that may (or may not) limit the artistic freedom of the artist or the performers, but can also open a lot of potentialities to examine and play with.

This draws our attention to an essential player in the creative process: The technologist, whom Heidegger mentions as one of the four main causes in the instrumental definition of technology as means to an end (Causa Efficiens).

The technologist can be the artist himself, or can be a commissioned co-producer that might not come from an art background. The biggest challenge in producing a multi-disciplinary digital art piece lies in finding a common ground between the artists and the technologists (if the case may be), and the artists and the audience/performers, in order to communicate the potentials and the affordances of the final product without compromising the aesthetics and experience.

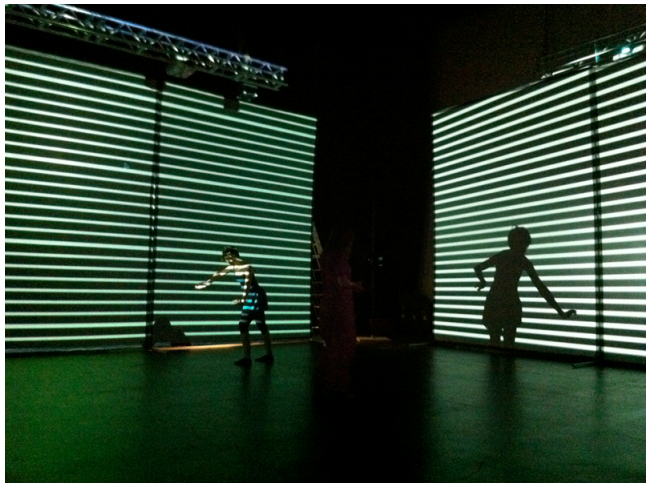

Figure 1. TML - Bright Shadow dance / Striped bodies (2012)

Performance arts, such as theater and public story telling, have historically defined cultural and narrative constructs that were used to allow creators and actors to work together within a common framework. Italian Commedia dell'Arte and Middle Eastern Shadow Puppetry theatre defined character stereotypes and story constructs over the years, which gave performers and directors a common ground to work from, thus giving them the freedom of improvisation and a creative license to interpret texts according to their needs without losing the common line of enjoyable

narrative. The same principle can be found in public story telling where the audience knows the outlines of the story, yet they allow the narrator the creative freedom to change the details of the story to enrich the performance.

This common ground in the case of digital artwork would be a common understanding of the limitations and potentials of technology, which allows the artist to design the experience with those potentials in mind, and allows the technologist, if different from the artist, to communicate the possibilities, potentials, and obstacles to the artist without misunderstandings or false expectations.

Felxi Guatari considers techno science machinic phylum to be of a creative essence, which is why it tends to connect with the creativity of the artistic process[2]. This connection, for Guatari, "is achievable by shedding visions of the machine and promoting a conception that encompasses all the aspects of this machine: technological, biological, informatics, social, theoretical, and aesthetic."

This calls for a reflective analysis of the interactive artwork and the phenomenological effect it has on the audience: can the same experience be achieved without the presence of technology, or is technology essential in crafting aesthetic experience, therefore inseparable from other elements in the piece?

A digital art piece that aspires to creating a subjective experience might turn into a showcasing of technological breakthroughs and compromise the aesthetic experience. Inversely, it can also implement an improvised and un-optimized digital layer in exchange of an unrealistic aesthetic aspiration or last minute decisions.

Some cross-disciplinary research-creation laboratories that specialize in interactive arts choose to looks at computational media from a traditional software engineering perspective. This allows them to have a scientific precursor to investigating the conceptual process of digital arts making.

Interactive and responsive media installations follow the life cycle of an event-driven computational paradigm where the flow of the program is determined by input from human interaction or other parallel computational processes. Therefore, the first design consideration would be to tackle the state of idleness, where the system goes into idle mode if there was no input.

The human factor differs from computer systems whereas the body and consciousness don't disappear when one comes to a state of motionless. This is a crucial consideration when designing interactive systems that depends on gestures and movement to generate responses, especially systems that depend on screen-and-camera systems and visualize movement.

The other design consideration comes from observing the nature of digital technologies as discreet machines, and the continuity of the human consciousness and mobility. The slightest delay or jitter in a system response will break the audience engagement and drastically change their experience.

Computer systems that perform motion analysis and gesture tracking need highly controlled environments

and high-performance machines, which might affect the portability of this system. Off the shelf computer technologies impose certain limitations on image processing and motion analysis due to limited processing power; therefore they generate images and effects with quality and resolution that can't compete with human vision and hearing, and open to question attempts for realism.

The Topological media lab (TML) at Concordia University is a research creation laboratory that invites artist and programmers from a multitude of backgrounds and interests to collaborate in building responsive architectural environments, choreographed media performances, urban interventions, and real time audio and video processing systems.

The TML works on building tools and techniques to visualize and sonify gestures and movements, and packages those techniques as instruments. These instruments can be used in collaborations with artists and musicians as well as performers.

The TML's interdisciplinary approach to art and experience building led to several movement workshops where media artists present their tools and instruments to performers and dancers, and invite them to experiment with them and engage in a dialogue to discuss the potentials of implementing these tools in a performance setting.

Figure 2. TML/Alkemie–Practices of everyday life (2012)

Building instruments removes the complexity and overhead of technical development, provides clear expectations of the potentials of these instruments, and allows content creators and performers to focus on experience design and the aesthetics of the work instead of worrying about the technical obstacles, thus making technology in this context a means to an end and an active element of the final experience.

References

[1] M. Heidegger, *The question concerning technology, and other essays* (Harper Perennial, 1982).

[2] F. Guattari, *Chaosmosis: an ethico-aesthetic paradigm* (Indiana University Press, 1995).