Worldmaking as Techné

Participatory Art, Music, and Architecture

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This article is an adaptation of a talk given by Mark-David Hosale at the Worldmaking as Techné: Participatory Art, Music, and Architecture book launch that took place at the Toronto Media Arts Centre on September 26th 2018.

It began in a pub in Milan…

Sana Murrani, Alberto de Campo and I had the first ideas for this collaboration in 2010 over a beer on a snowy December day at the end of a conference on Generative Art at the Politecnico University in Milan. The conference’s theme of generative art attracted participants from various disciplines, and as a result, the presentations included almost as many approaches to the subject as there were participants. Without exception our backgrounds and perspectives added to the tapestry of this milieu as well.
Sana Murrani is an urban theorist and an experimental architect. She currently holds the position of Associate Head of School for Graduate Affairs for the School of Art, Design and Architecture at the University of Plymouth, UK. This is in addition to her role as the Stream Leader for History and Theory of Architecture and Critical Context. Sana’s main research interest lies in the formations of marginality and displacement.

Alberto de Campo is a composer and performer, and teaches Generative Art/Computational Art. He is Associate Professor at the University of Art (Universität der Künste) in Berlin. In his work he explores a wide range of topics in collaborations with other artists and students: code-based network music performance, biologically informed/inspired art, hybrid audiovisual performance instruments and interactive systems, and improvisation strategies in different contexts.

I am a computational artist and a composer. Within the collaboration I could be seen as a bridge between the domains of architecture and music. At the time of the conference I was an Assistant Professor in Architecture at the Technical University of Delft in the Hyperbody Research Group. While I am not a trained architect, architecture and music have a large role to play in my works, which explore the boundaries between the virtual and the physical world through immersive interactive environments.

While at the time of our conversation in Milan we used different terminology and perspectives to describe our work, we still recognized in each others’ work some common themes. One was the integration of theory and practice, an integration to the extent that theory and practice are indistinguishable from one another. This included the use of the same system to embody theory and practice from process to dissemination. In exploring this integration, we had each arrived at the use of frameworks to govern our methodology, as well as the role of the observer in our works. While our works may affect the observer, the observer is also part of the system, reciprocally affecting the work.

The challenge in describing these ideas to each other was in finding a common language around these approaches. After some deliberation we arrived at two terms: techné and worldmaking.
We used the term techné in our work to describe the process from creation to presentation as part of a continuum. Techné (which literally means art or skill) is an ancient philosophical concept that, in simplified terms, is concerned with the art and craft of making. For Aristotle, techné is also key in the completion of the hexis of a virtuous person. As Aristotle stated, “art is the same thing as a rational quality, concerned with making, that reasons truly.” From this definition one can understand techné as a mode of rationalization capable of concept forming, a form of discourse in its own right.

Like Aristotle, Heidegger saw techné as a form of discourse and concept making. He states: “techné is the name not only for the activities and skills of the craftsman, it is also the name for the arts of the mind and the fine arts.” As an art of the mind, techné is a fundamental tool in the exploration of knowing, and key in the process of revealing truth.

In Heidegger’s essay, The Question Concerning Technology, the need for techné is presented with urgency. Heidegger does not think we can escape the rise of new technology; therefore, in order to make the world a better place we must embrace technology responsibly. For Heidegger, technology at its worse has the potential to be out of control, at its best to benefit humankind. As he states:

Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it.

Such a realm is art. But certainly only if reflection on art, for its part, does not shut its eyes to the constellation of truth after which we are questioning.

For Heidegger art is something fundamentally different from the frenzied nature of technology. Especially when the artwork is not complacent in the trajectory of technology, but confronts that trajectory by questioning it through a critical discourse grounded in techné.
Worldmaking

For Heidegger technology is also the means whereby we enframe the world. As we enframe the world through an apparatus, an instrument or a device, we also shape it. But the world is made perceptually as much as it is made physically; and therefore while we are shaping the world, we help reveal it at the same time.\(^8\)

If the essence of technology lies in *enframing*, the questioning of technology lies in *how* the world is *enframed*. Through our apparatuses and media we can manipulate the senses, shifting perception in order to critique and question the world. We change the frame, change the perspective, and thereby change our understanding of it. To make a (different) world is to know (differently).

In this spirit Nelson Goodman stated:

> Worlds are made by making such versions with words, numerals, pictures, sounds, or other symbols of any kind in any medium; and the comparative study of these versions and visions and of their making is what is called a *critique of worldmaking*.\(^9\)

The domain of worldmaking is one of possibility. When we make worlds, we conject the Other. In doing so we also help shape the world and its trajectory. One of the leading thinkers in the domain of speculative worldmaking is researcher, artist, theorist, and *transarchitect* Marcos Novak.

According to Novak, the extreme changes brought forth by technology create unprecedented new opportunities to conceive of new kinds of spaces\(^10\) (or worlds). The characteristics of these spaces transformed conventional modalities of expression from a familiar medium to a new and unfamiliar form, what Novak calls an *extreme intermedium*.\(^11\) In *Liquid Architectures in Cyberspace*, Novak’s describes the extreme intermedium:

> Architecture becomes liquid, music becomes navigable, cinema becomes habitable, dance becomes disembodied. As distant as these new options seem from their origins and from each other, they are related to one another by what can only be called ‘worldmaking.’” He goes on to say, “Worldmaking is … the key metaphor of the new arts.”\(^12\)

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\(^8\) Ibid. 25 – 26.


\(^11\) Ibid.

\(^12\) Ibid.
The emergence of new domains is happening at a frenzied, exponential pace. In recent history this has been evident in the rise of digital technologies, the internet, and related technologies; and it is present in newer domains such as nanotechnology, biotechnology, quantum technology, robotics, and artificial intelligence. In this rising tide we are faced with two options: we can wait and see how these domains take shape, then respond; or we can try to anticipate, even derail the course of these domains and help create them, thereby shaping the world.

Structure of the book

The book is organized into three sections: po(i)etic, machinic, and cybernetic. The intent in creating sections in this book was not an attempt to create rigid categories within the discourse; rather we wanted to create connections between them. We did this by selecting unconventional texts by familiar authors and by including texts in sections that fall outside of their normal categorization in order to break the frame.

Po(i)etic

The title for the first section of this book is a portmanteau between the terms poiesis and poetry. Poiesis is an ancient Greek term meaning to bring something new into existence, which either involves autopoiesis (self-creation) or allopoiesis (the creation of the other). The concept of poiesis provides a meta-description of the processes of nature, readily encapsulating systems of evolution, homeostasis, emergence, and similar processes that are the foundation of the living world.

Poetry, which means making, is derived from poiesis. Often understood as a literary form, etymologically the origins of “poetry” can refer to any kind of making, especially any human-made work that brings forth aesthetic results.

The bringing together of these two related terms is meant to describe the drive to make living artworks. Living artworks are poietic (unexpected/emergent), but are shaped by the artist (poetic) in order to express a particular
idea or experience that is either a reflection of the known world or a view into a world that is alien and unfamiliar. The balancing of poiesis and poetry is fundamental in the aesthetics of worldmaking and computational art.

Machinic

The machinic section includes contributions by authors who use abstract assemblages and frameworks to describe and implement their work. We derived the term *machinic* from the first chapter in this section, *Machinic Heterogenesis*, by renowned philosopher Félix Guattari. In the simplest terms the machinic describes the relationship between human and machine. *Machinic Heterogenesis* also includes the world of living beings, which have similar qualities to machines (or are even considered machines in their own right) but without an anthropocentric purpose (or any “purpose” at all).\(^{15}\)

*Machinic Heterogenesis* provides a description of the high-level processes that govern a machine and its modality of production. There are two aspects to the machinic: the diagrammatic and the materialized machine. The diagrammatic machine exists virtually, as a *protomachine*. The materialized machine exists as an instance of the diagrammatic. The diagrammatic is capable of producing many materialized machines and, unlike the materialized machine, is unfixed and always in flux.

The domain of the computational is an exemplar of the machinic. Computational processes are not limited to digital computation and can include mathematical, biological, and other systems as their basis. What is unique in the digital domain is that the diagrammatic computational system (model) and the materialized result of that system (instance), are created using the same tools. As a result, the machinic processes of abstraction and implementation are often blurred. For instance, the materialized form of the computational machine has the ability to evolve, *dematerialize*, and produce other machines *auto-* and *allopoietically*. The diagrammatic can even produce materialized machines that recursively rewrite the diagram and re-instantiate themselves as they run.
Cybernetics is a meta-discipline that aims to describe and understand systems and processes from very different domains with the same set of fundamental concepts. It was constituted as a field in the Macy conferences organized by Warren McCulloch from 1946 to 1953, who invited the leading scientists of the times from fields like anthropology, mathematics, neurology, psychiatry, biophysics, and others.16

The Cybernetic section of this book explores the world as a system (as manifested in First Order Cybernetics) and leaps into the new cybernetics of participatory environments where systems are in fact actor, agent, and observer dependent (as seen in Second Order Cybernetics). This connection is based on a feedback loop, where the participant and the environment are just as much a part of the system as the algorithm (and interface to the algorithm) itself. As with the machinic, cybernetic systems can be seen as having diagrammatic and materialized forms. Because of this, cybernetics could be seen as a branch of the machinic.17 One of the key differences between cybernetics and other machinic systems is the approach. While other systems tend to approach the question of technology by seeking to shape the frame, re-enframing the world, cybernetics attempts to change the manner in which we associate with technology altogether by engaging the processes of nature as part of a system.

As the pioneering cybernetic artist Roy Ascott, states:

In this sense, art itself becomes, not a discrete set of entities, but rather a web of relationships between ideas and images in constant flux, to which no single authorship is attributable, and whose meanings depend on the active participation of whoever enters the network. In a sense, there is one wholeness, the flow of the network in which every idea is a part of every other idea, in which every participant reflects every other participant in the whole... The observer of the ‘artwork’ is a participator who, in accessing the system, transforms it.18
Future Directions

Our ambitious goal in this volume is to attempt to outline practices that challenge the world and its possibilities through a kind of future-making, and/or other-world making. But most importantly, what we strive to create in our work are alternate realities that are simultaneously ontological propositions that can be understood through experience as much as through language. By exploring art as techné we create experiential concepts that enframe the world we live in. In doing so we offer a critical discourse about our world and how the world is constructed.

While the foundation of worldmaking is deeply philosophical and rigorous, there is a need to connect this work to the world of our everyday experience. As we contemplate issues of why we might want to make a world, we are confronted with the responsibilities of making the world as well. There is an ethical urgency in the world today to change from a path of mutually assured destruction to one that leads to viability. In this context, we see the future of a worldmaking based practice as an opportunity to explore the world as it is, and the myriads of ways how it could also be, to make the world a better place for now, and for future generations.
Mark-David Hosale is a computational artist and composer. He is an Associate Professor in Computational Arts at York University, Toronto, Ontario, Canada. He has lectured and taught internationally at institutions in Denmark, The Netherlands, Norway, Canada, and the United States. His solo and collaborative work has been exhibited internationally at the SIGGRAPH Art Gallery (2005), International Symposium on Electronic Art (ISEA 2006), BlikOpener Festival, Delft, The Netherlands (2010), the Dutch Electronic Art Festival (DEAF 2012), Biennale of Sidney (2012), Toronto’s Nuit Blanche (2012), Art Souterrain, Montréal (2013), and a Collateral event at the Venice Biennale (2015), among others. He is co-editor of the anthology, Worldmaking as Technē: Participatory Art, Music, and Architecture (Riverside Architectural Press, 2018).

Mark-David’s work explores the boundaries between the virtual and the physical world. His practice varies from performance (music and theatre) to public and gallery-based art. The connecting tissue in his work is an interest in knowing. How do we come to know something? How do we know we know? And, how do we express what we know to each other? Through immersive art we are able to create new experiences that express concepts that are beyond language and only genuinely knowable through the senses.