Distributed Synthesis - Milestone 2

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Abstract

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Contents

Abstract

Browser-based distributed synthesis is a novel, lithe technique for co-located networked music performance that leverages the ubiquity, connectivity, and computational capacity of our personal devices to achieve multi-channel sonic works. It continues a lineage of historical networked and participatory music performance practices that make use of contemporaneous technology to agitate hegemonic, commodified forms of music performance ritual. The paradigm repurposes the substrate of the internet as its artistic materials, aligning the practice with the educational project of creative coding, and entangling it in the messy problematics of surveillance and platform capitalism. This research employs a critical posthumanist frame to clarify an ethical position from which creative work can be produced in this arena, with particular focus on the themes of texture, ritual, and emergence.

Introduction

The purpose of this document is to articulate a literature review that situates distributed synthesis within the confluence of a set of material-discursive cultural practices which includes *synthesis*, *creative coding*, *networked and participatory music*, and *phone art*, histories which have overlapped, bifurcated, and converged at certain moments in sometimes surprising and interesting ways. While the explicit purpose is to help map out a location for my research, I wish to also acknowledge the role that these sorts of texts can play as an *origin story* - implicitly setting the normative coordinates of a project's trajectory. (Rodgers, 2010) It is with this in mind that wish to use this introductory section to explain my general approach in putting this review together.

To clarify what is meant by a "material-discursive cultural practice", we might understand *synthesis*, for example, to denote not merely the production of an audio signal comprised of fluctuating voltages in a wire, but also both the productive practices that give rise to various material forms of the synthesiser, *and* the various uses of those material forms in production of *expressive* cultural forms. Similarly, we might understand *creative coding* to denote not merely the production of specific pixels of particular colours on a screen (for example), but also both the cultural practices which scaffold audiences to experience creative coding as *expressive* in some way, *and* the productive practices that give rise to the various programming languages, computing hardware, and educational resources etc. – the material forms on which those cultural practices are predicated.

My use of the word "expression" here should be scrutinised. As I will argue in a later chapter, when used in the context of creative cultural practices, "expression" denotes the construction of a mirage - an unalienated human subject - the performer or artist, as percieved within the context of some ritualistic cultural infrastructure. This image then acts as a nexus, an interface for inference between a semantic field of representation, and a pragmatic field of possibility. There is a lot to be extrapolated in dynamic, but for the moment I think it is important that we are able to understand *expression* to be fundamentally entangled with notions of what the word "work" might mean, via the normative inferential relations implicit in the construction of this Vitruvian mirage. (Braidotti, 2013; Brandom, 2009)

I bring these notes forwards into the literature review so that we can give these material-discursive cultural practices their properly ecological standing – it is not possible for the history of synthesis, nor the history of computing (creative or otherwise), to be understood as a succession of white male inventors who made great discoveries by scouring the internal resources of their own, encapsulated genius. Rather, I will attempt to give a more mundane perhaps, but more realistic, and ultimately much richer account, not of heroic inventors, but of *workers* (plural), of all genders and denominations. Touching-feeling end-nodes, collaborating intimately with the texture of materials, not just in the production of material forms, but in the simultaneous co-evolution of material and cultural forms. (Sedgwick, 2003; Tomlinson, 2015)

This work inevitably occurs in the context of a productive, self-propagating, polyphonic

entanglement of cultural, economic, and institutional structures – inevitably some centre, institute, or laboratory signifying a transitional ecology living in and around its walls. We might compare the creativity of these assemblages to networks of mycelium in the soil of these transitional ecologies, growing omnidirectionally, slowly accumulating reciprocating relationships, transforming their environments just as they themselves grow and transform, and eventually reaching critical density in just the right conditions for them to produce a fruiting body. (Tsing, 2017)

In the literature review that follows, I attempt to tell a story of mycelial assemblages – material-discursive practices producing both material and cultural forms – their fruiting bodies. These fruiting bodies release spores via cultural activity, and it is here that the cyborgian circuit is closed: these spores retain some DNA of their originary mycelial assemblage – techniques, values, aesthetic logics, and, importantly, notions of what "work" could be. In this way, I hope to situate the coordinates of my research project, distributed synthesis, here in the soil of the transitional ecology that lives in and around the walls of the School of Design at RMIT.

1 Synthesis: A Voice from Nowhere

My fascination with analog synthesisers began in what Rodgers, and other synthesiser historians, term the "analog revival" of the early 2000s. (Freke, 2020; Pinch, 2002; Rodgers, 2015) At the time, just as now, the attraction seemed to be just as much about the objects themselves – their *material forms* – as the role they play in making various styles of music – those *cultural forms* that ostensibly inform synthesisors' design and purpose. This dynamic is evident in the internet forum trope depicting synthesiser enthusiasts as obsessive neurotics hoarding vast collections of synthesisers, but never releasing any music. (mylarmelodies, 2025) We might also acknowledge the birth of the term "gear acquisition syndrome" (GAS), as denoting a similar phenomenon – a spontaneous propensity to inhabit an autotelic relation which luxuriates in the material form, and which is in no hurry to fulfil its extant teleology in a concretely expressed cultural form. (Herbst & Menze, 2021)

When theorising about synthesis, even more than its material or cultural forms, it is

before the spontaneous phenomena of synthesised sound that we must make ourselves accountable.

1.i The Apocryphal Pythagoras

2 Networked & Participatory Music Performance

2.i Key Concepts & Terminology

2.i.a Networked Music Performance (NMP)

2.i.b Mobile Music

2.i.c Participatory NMP

2.i.d Local Nework Music

2.ii Pioneering Works & Practitioners

2.ii.a Pre-Smartphone Era

2.ii.b The Rise of Laptop Orchestras

2.ii.c The Smartphone Orchestra

2.ii.d Web-Based Participation

2.iii Frameworks & Platforms

2.iii.a soundworks (IRCAM)

2.iii.b Collab-Hub

2.iii.c PeerJS / SimplePeer

2.iv Relevance

2.iv.a Shift in Framing

2.iv.b Technological Contemporaneity

2.iv.c Media Archeology & Critical Infrastructure Studies

3 Creative Coding & Live Coding as Cultural Practice

3.i Ethos of Inclusion

3.i.a Historical Precedent

Conclusion

Summarize your work and future directions.

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