Fully Automated Luxury Composition

Paul Wolinski

University of Huddersfield

paul.wolinski@hud.ac.uk

Abstract

This practice-based research attempts to answer the question of how utopian thinking might be applied to popular music composition. It begins by looking at automation, utopia and the utopian impulse and how they complement as well as conflict with understandings of popular music. A methodology is established using automated, generative music techniques, based on Attali's ideas of a future mode of composition where anyone can produce streams of non-ritualized, non-repetitive music. The resulting practice-based research tests the incorporation of these techniques into popular music composition. It also highlights conflicts between a generative mode of utopian composition that tends toward infinite, endless streams of music and the finite intentionality demanded by expectations of popular music shaped by capitalism. This opens up areas for further research investigating how far utopian thinking can help resist the pressures of capitalism in relation to popular music composition.

KEYWORDS: utopia, generative music, automation, composition, capitalism

The composition that is part of this study can be found here:

http://www.iaspmjournal.net/index.php/IASPM_Journal/article/downloadSuppFile/814/233

Introduction

In *Inventing the Future*, Williams and Srnicek (2015) set out an ambitious proposal for a long term, counter-hegemonic project to create a more equal society after what they see as capitalism's inevitable collapse. They argue culture can play a significant role in pushing towards this post-capitalism by creating utopian narratives to embolden our collective imaginations and suggest that, "If we want to escape from the present, we must first dismiss the settled parameters of the future and wrench open a new horizon of possibility" (2015: 346). How might this kind of utopian thinking be applied to popular music composition? This is the question being explored in the accompanying practice-based research.

Attali describes music as a "herald of times to come" (1977: 4). In his view, "complex, vague, recuperated, clumsy attempts to create new status for music — not a new music, but a new way of making music — are today radically upsetting everything music has been up to this point" (1977: 134). His conception of composition is a vision of a utopia — music that moves beyond the codes and rituals we now associate with popular music. There is a blurring between composer and listener. In Attali's composition, people spontaneously compose and listen simultaneously, without being bound by expectations or standards, "A music produced by each individual for himself, for pleasure outside of meaning, usage and exchange" (1977: 137). How could a composer compose in such a way that is at once their own style, yet at the same time present themselves with a fresh listening experience? One answer would be for a composer to create a generative music system[1]. This system could be based on their preferred writing techniques, but with a level of autonomy in the system that allows it to surprise the composer with unexpected arrangements or melodies within a known or controlled sonic environment.

Automated composition in and of itself is not new. The history of automated music goes as far back as Mozart and his "Dice Music" compositions (1792) and the current state of the art in this respect far surpasses what is being used here. See Google's ongoing Magenta Project to get a sense of cutting edge techniques in teaching computers to write music. The research contained herein is more concerned with the utopian ideas behind such techniques rather than the complexity of the automation itself, or notions of computer-simulated creativity. This essay begins by setting out definitions of popular music and utopian thinking as well as the reasons for composing in this manner. It then describes the methodology chosen and finally reflects on the strengths and weaknesses found within the practice-based research this writing accompanies.

Defining Popular Music

The context of this enquiry takes popular music being a valid form of practice-based research as its starting point. A definition for exactly what is meant by popular music is therefore necessary. Adorno talks of a popular music in terms of its difference from "serious music" (1941: 1), and posits that a fundamental part of popular music is a level of standardization inherent in its very existence, impossible to circumvent even if the composer actively tries to. Furthermore,

> Popular music must simultaneously meet two demands. One is for stimuli that provoke the listener's attention. The other is for the material to fall within the category of what the musically untrained listener would call "natural" music: that is, the sum total of all the conventions and material formulas in music to which he is accustomed and which he regards as the inherent, simple language of music itself, no matter how late the development might be which produced this natural language. (1941: 10)

Whilst some aspects of Adorno's popular music seem outdated or simplistic compared to contemporary popular music, for example "the rule that the chorus consists of thirty-two bars and that the range is limited to one octave and one note" (1941:2), his ideas stop short of becoming entirely anachronistic by noting that this natural music is defined by the subjective opinion of the untrained listener; this is something that can be changed and conditioned by the popular culture of the day. There is no reason that what might have sounded like

experimental, abstract noise from the world of serious music to Adorno could not be considered popular music today.

For this research, defining my own practice as popular music is relatively simple. Despite Adorno's humbling deconstruction of pop music compared to serious music, I would consider a successful composition as something I feel could communicate specific emotions to an unknown audience, regardless of whether this makes the music itself little more than a "multiple choice questionnaire" (1941:14), in thrall to a system too big for a maker of popular music to compose outside of. The exact meaning of the music for any given person will always be entirely subjective but, if Adorno is correct, by using compositional techniques learnt over a lifetime of listening to popular music, and sticking inside its standardized domain, I am creating song structures of chords and melodies that are intuitively grasped by the listener. I can use this shared vocabulary of conventions and musical formulae to guide or at least color likely interpretations of it.

Defining Utopia

It seems particularly ironic to be putting strict parameters on any definition of utopia, but it is necessary to set out the limited focus of this research whilst acknowledging that utopian thinking covers a much wider spectrum of possibility. Fredric Jameson's exhaustive account into utopias, *Archaeologies of the Future* (2005), explores popular culture's ability to communicate utopian thinking into people's world views. Here we encounter our first problem. As De Cock puts it, "For Jameson, the vocation of Utopia is precisely to confront us with our incapacity to imagine it (…) We cannot imagine an absolutely original future, since any imaginable future must be fashioned out of the tainted materials of the present" (2009: 442). Striving for utopian constructs is not only about the finished structure though. Jameson himself explains that "Utopia can serve the negative purpose of making us more aware of our mental and ideological imprisonment (…) the best Utopias are those that fail the most comprehensively" (2005: xiii).

He goes on to make a clearer distinction between the utopian genre or text itself and a "Utopian impulse which infuses much else, in daily life as well as in its texts" (2005: xiv). It would seem initially that it is the utopian impulse that is of most use for this practice-based research. However, for Jameson, this impulse "is not symbolic but allegorical: it does not correspond to a plan or to Utopian praxis, it expresses Utopian desire and invests it in a variety of unexpected and disguised, concealed, distorted ways…" (2009: 442). It is an after-the-fact interpretation of "unconscious Utopian investments in realities large or small, which may in themselves be far from Utopian in their actuality" (2009: 442). This is no conscious, deliberate act of the composer. Here we brush against the dialectic of Utopian thinking, as whilst a critical reading of this specific practice-based research could detect the utopian impulse in the harnessing of machines to automate the compositional process, actively writing music in such a manner under the guise of chasing a utopian future is still resolutely stuck using the "tainted materials [and tools] of the present" (De Cock, 2009). It is, in and of itself, not a utopian text and any conscious striving for utopia does not necessarily reveal the true utopian impulse.

An example of such a utopian impulse is the phenomenon of file sharing in music. A new technology emerges and creates conditions that hint at a new social order. However, David Rando points out that, "even though filesharing trackers

are experiential networks of affect and feeling that contain utopian impulses, the practice of filesharing itself is hardly a utopia" (2014: 333). Some users see the act of sharing music as a utopian ideal, the sharing of information, the sharing of affect and experience, endless, free music. Meanwhile, the system itself is not as non-hierarchical as it might seem and remains stuck in a resolutely capitalist way of thinking about pieces of music as productions to be catalogued and objectified.

For the purposes of this practice, the utopian self-reflection stops short of being paralyzed with the unknowability of a truly utopian music. Attali's vision of a music that spontaneously creates itself from a person who is both composer and listener is a utopia worth striving for. Acknowledging that to strive for utopia is to knowingly fail to reach it, the question then becomes not how do we realize Attali's notion of composition, but the more modest, what might we be able to achieve with the tools at hand to take a step in the right direction?

Fully Automated Luxury Composition

"Fully Automated Luxury Communism" is a symptom of the contemporary radical left trying to engage in future-building from a more utopian, progressive perspective. It is a slogan that originated in a YouTube video published by Novara Media (2014). The video describes fully automated luxury communism as the idea of a post-work society, machines taking care of factory-based drudgery, leaving us to live lives full of creativity and freedom. This ties back in to Williams and Srnicek's *Inventing the Future* project, which also accepts that automation is an inevitable part of late capitalism and looks at ways it could be embraced as a potential emancipatory force rather than as an enemy of the workers (2015).

"Fully Automated Luxury Composition" (2016) is the title of the piece of music composed as the research associated with this essay. This music is a way to pull all these ideas together to create a methodology for a practice-based investigation into utopian thinking. For Attali's notion of composition to exist in the real world — an endless stream of music, non-ritualized, non-repetitive, spontaneously emanating from every person — then generative music technology would have to play a part. The composition needs to be automated.

Based on Attali's suggestion that "inducing people to compose using predefined instruments cannot lead to a mode of production different from that authorized by those instruments" (1977: 141), I created the piece using Max for Live to make custom patches that generate MIDI based on my own compositional preferences. Whilst this is clearly still a mode of production that has boundaries, Max for Live is a relatively open sound-making environment compared to much other music software in that rather than framing composition within a linear, left-to-right piano roll-style user interface, the composer is given a blank canvas and a collection of objects that can be linked together in countless ways. This allows the composer to build bespoke, highly customizable instruments and musical sequencers. Armed with these tools and the discussed notions of utopia and automated composition, I created a set of rules for composing this piece of music:

1. The MIDI machines are built first.

2. The choices made in the machine design will be based on my compositional style. The aim is to make patterns that sound like me but are not necessarily patterns or phrases that I would have written myself.

3. The machines will run unaided in a prepared sonic environment to ensure that the output is captured in a high-fidelity manner.

4. The output will be edited and curated. If none of the output suggests a song arrangement, this selection and editing process will provide one.

5. Where the generative music fails to achieve the desired results, I will step in and manually program melodies or beats where I deem it necessary in order to fit the idea of popular music as defined above.

Reflections

The final piece of music is a piece of recording and programming, much of which has been built manually. Some noteworthy observations include:

- The first 46 seconds are entirely the output of custom Max For Live MIDI generators.

- 0:46 - 1:46 includes manually programmed percussion and synth. The generative output was not repositioned within the song, only selectively muted.

- The phrase from 1:46 - 1:57 is centered around generative output. The manual programming was composed in a supporting role, to emphasize melodies that the generative system wrote itself.

- From 2:00 - 3:28, manual programming takes precedence. Without it, the generative music failed to achieve any sense of forward momentum.

- From 3:28 until the end, the percussive bells are the output from a generative instrument. They are activated at this point in the song and allowed to run unaltered.

Until the manual curation started to take place, the generative output produced by the MIDI machines sounded closer to something like Schafer's definition of a soundscape (1994) rather than Adorno's pop music. Whilst atmospheric, without the MIDI machines being able to conceive of an overall arc for a distinct song, the output was interesting but aimless and prone to sounding repetitive even if it technically was not. Brian Eno once described his ambient work as a "continuous, endless place in time" and presented the idea of music, not as a "sonic narrative", but more a "sonic landscape (…) A landscape always in the present tense" (2003). There is no reason why ambient music cannot be considered popular music. Indeed, in a literal sense it clearly is very popular. Aphex Twin's *Selected Ambient Works Volume II* (1994) and Brian Eno's *The Ship* (2016) both charted in the UK top 40, to name just two prominent examples. Yet these albums are commercial releases and therefore still have to comply with the conventions of mainstream physical and digital distribution channels. Specifically, both contain finite amounts of music split into songs of fixed length. This is a technical limitation from the realm of commercial physical music which has been carried over into the digital realm. Composers of ambient music or, indeed, any kind of generative music need not adhere to these demands. Even if they are aiming to make popular music, they can try to expand the definition of what that can be from the outside. However, in respect to this practice, the current notions of popular music embedded over decades of popular culture are succinctly represented in the call for papers for this special issue, which allows for a piece of music between 2-10 minutes long. This specific research is designed to aspire to a truly endless music based on Attali's ideas of a constant stream of unritualized, unrepeated music,

albeit through the lens of the expectations of popular music defined in this article. These fundamental differences in terms of temporal structure were hard to reconcile.

Tailoring an algorithm to compose over a finite length allows for certain design choices to be made. The algorithm could be given the means to know its place within the overall song structure. It could draw upon formal musical structures and create a linear narrative arc across the duration of the piece. In contrast, the algorithms driving the MIDI machines in this piece do not know whereabouts in the song they are. They are not designed to take into account a structure for the whole song. This means that instead of drawing upon classic popular musical structures built around verses, middle eights and choruses, the music leans towards an arrangement that is somewhat episodic. The machines focus on layering complimentary phrases, melodies and sounds to create a feeling of forward movement, always evolving without becoming unrecognizable.

The final piece of music emerged as a collaboration with algorithms rather than a piece of purely generative music, a sculpting of a song out of raw musical material. This curatorial approach adapts generative forms into something closer to a pop song than might otherwise be achieved, but by adjusting generative musical output to fit expectations, this compositional act is as much an evolution of capitalism as an imagining of a new utopian music. As Martin Stokes puts it,

> The value of the commodity, as Marx painstakingly demonstrated, derives from how long somebody takes to produce something (…) To increase value, the capitalist must not only reduce the amount of time taken, but also transform the kind of labor that has gone into the making of a particular product (…) It is thus obliged constantly to reach beyond the world that it establishes in order to reconstitute itself. (2013: 172)

Rather than ushering in a new utopian concept of composition, automating the writing of popular music serves to reinforce existing notions of the form. This reflects Jameson's view that utopian thinking can serve the purpose of revealing ideological imprisonments. Popular music and the form of a pop song in particular are embedded within capitalist society, precluding dramatic shifts of definition during the act of production. Peter Manuel explores a Marxian comparison of structure within song forms and bourgeois society. Whilst he accepts that the abstract nature of musical structure makes it hard to empirically prove that the form of any given piece of music was influenced by societal norms, he points to how unique the song form is to bourgeois society, and how "uncharacteristic of pre-modern, non-bourgeois societies it is" (2013: 47). Ultimately, this practice is a piece of music that embraces compromise. Whilst the algorithmic output generated unexpected chord progressions and interesting sound palettes that were useful, they implied a more experimental form than fitted this context. This particular research reflected the pressures of a composer's need to shape their music into the frame of popular music.

Conclusion

Two strands of thinking about utopia in the context of popular music emerge from this study. The first focuses on technical specifics and the limits of applying generative music processes to popular music. In this context 'Full Automation' seems a limited success. In comparison, Sony's Flow Machines used artificial intelligence (A.I.) to write a song in the style of The Beatles (Sony CSL-Paris,

2016), a somewhat retro use of the technology. However, using machine learning to teach an A.I. how to write a song by making it analyze pop music of previous generations is not particularly utopian, chasing a nostalgic vision of what popular music has been, rather than exploring what it could be. Additionally, there is still a firm human hand guiding the A.I. through its compositional process.

The second strand is focused on the utility of applying utopian thinking. It reveals aspects of the commodity form that capitalism demands from popular music, exploring the complex dialectic within it. As Stokes points out, whilst the introduction of money into the sphere of music inevitably leads to homogeneity of music and culture, it can also lead to "communal solidarities" (2013: 174) that help musicians. The logic of capital helps create the vital, thriving solidarities and communities, the immediate, visceral qualities of the quintessential pop song form that are visible in much of today's popular music scenes. They still exist inside of the mechanics of capitalism and therefore cannot avoid the pressures it places on them.

Utopian thinking in popular music composition is not a means of creating utopian music, but if Adorno's summation is accurate and there is something like an Overton window in popular music, a complex set of conditions and values that determine what is generally accepted as being called popular music before it becomes something else, then finding ways to make music that nudges those values in the direction of Attali's unrealizable ideals of a pure, un-codified composition is a useful working strategy. A question remains as to whether these steps toward utopia are able to offer progress toward an emancipatory popular music, a symbol of (or soundtrack to), a counter-hegemonic project that will succeed capitalism, or whether they serve to make already-existing modes of creative production more efficient. As Jameson reminds us, when it comes to the dialectic of utopian thinking, "There are good reasons for thinking that all these questions are undecidable: which is not necessarily a bad thing provided we continue to try to decide them" (2005: 14).

Endnotes

[1] Generative music is a broad term, applicable to a range of rule-based compositional techniques and algorithmic musical processes, not necessarily limited to computer music. However, for the purposes of this article, 'generative music' refers to the "real-time computational music-making" (2009: 1) sense of the term, as set out by Collins and Brown.

References

Bibliography

Adorno, T. W. 1941. On Popular Music (with George Simpson). *Zeitschrift für Sozialforschung* 9(1): 17-48. http://dx.doi.org/10.5840/zfs1941913

Attali, J. 1977 *Noise: The Political Economy of Music*. Minneapolis: University of Minnesota Press.

Collins, N. and Brown, A. R. 2009. Generative Music Editorial. *Contemporary Music Review* 28(1):1-4. http://dx.doi.org/10.1080/07494460802663967

De Cock, C. 2009. Jumpstarting the Future with Fredric Jameson: Reflections on Capitalism, Science Fiction and Utopia. *Journal of Organizational Change Management*, 22 (4): 437-449. http://dx.doi.org/10.1108/09534810910967198.

Jameson, F. –
    2005. *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*. New York: Verso.
    2009. *Valences of the Dialectic*. New York: Verso.
Manuel, P. 2013. Modernity and Musical Structure: Neo-Marxist Perspectives on Song Form and Its Successors. In R. B. Qureshi Ed. *Music and Marx: Ideas, Practise, Politics*. New York: Routledge: 45-62.
Rando, D.P. 2014. The Music of Wish Images: Walter Benjamin, Filesharing, and Utopia. *Journal of Popular Music Studies* 26 (2-3): 321–345. http://dx.doi.org/10.1111/jpms.12079
Schafer, R. M. 1994. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, VT: Destiny Books.
Stokes, M. 2013. Marx, Money, and Musicians. In R. B. Qureshi Ed. *Music and Marx: Ideas, Practise, Politics*. New York: Routledge: 139-163.
Williams, A. and Srnicek, N. 2015. *Inventing the Future: Postcapitalism and a World Without Work*. London: Verso.

Videography

Novara Media, 2014, "Fully Automated Luxury Communism!", YouTube. https://www.youtube.com/watch?v=dmQ-BZ3eWxM. Accessed: 4 December 2017.
Sony CSL-Paris, 2016, "Daddy's Car: a song composed by Artificial Intelligence - in the style of the Beatles", YouTube. https://www.youtube.com/watch?v=LSHZ_b05W7o. Accessed: 4 December 2017.

Interviews

The Long Now Foundation, 2003, Brian Eno Interviewed by D Hillis, Seminars About Long-term Thinking, 14 November. http://longnow.org/seminars/02003/nov/14/the-long-now/. Accessed: 4 December 2017.