

## “WHATS IN THE ROOM IS NOT REALLY IN THE ROOM” – Seth Kim-Cohen

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Hyperreal 2.0 is an audio-visual simulation of an imagined environment. The name of the work is a self-aware reference to the post-modernist theory of hyperreal by Jean Baudrillard in which he argues we live in a culture in which simulation of reality is indistinguishable from reality, and thus truth collapses in on itself. The “2.0” primes the audience for a virtual experience as it indicates a second version or improved copy of the original, akin to another prominent hyperreal theorist Umberto Eco’s description that we create improved versions of reality simply to consume them; think the perfect family in a TV sitcom. The installation is primarily a virtual soundscape using mimetic digital synthesis techniques but equally requires the use of visual stimulus to create the simulation. Sound, moving image and sculpture are used to “dissolve boundaries between subject and object, interior and exterior, self and other, and in doing so the audience may become re-sensitised” to their environment (Davies, 2006, p 104).

### PHASES OF THE IMAGE

Hyperreal 2.0 is a work for ensemble and electroacoustic soundtrack that loosely takes inspiration for its structure from Baudrillard’s *Orders of the Simulacra*, by moving from direct quote to more abstract by the final section (see Table 1). An ensemble of bass clarinet, double bass and percussion play alongside the electroacoustic part whilst the laptop performer is recording sections of the music for the last section. The graphic score is generated from midi-data and spectrograms whilst utilising the Decibel Scoreplayer for iPad.

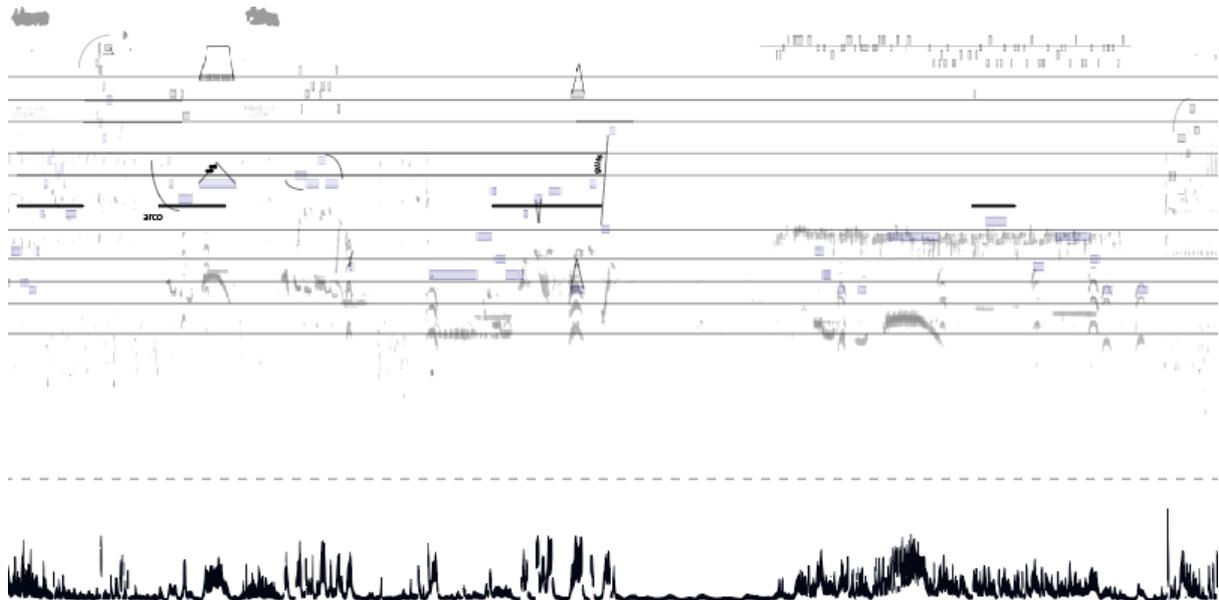
Table 1 Orders of the Simulacra and structure of Hyperreal 2.0

Orders of Simulacra	Phase of the image	Hyperreal 2.0 Structure	Part
Symbolic Order	Art reflects a basic reality	The installation as a whole.	All
First Order	Art masks and perverts a basic reality.	Manipulated field recording with ensemble playing more direct transcriptions	1
Second Order	Art masks the absence of a basic reality	Synthesized field recording with ensemble that play graphics and shapes rather than notations.	2
Third Order	Art bears no relation to reality at all	Feedback creating effects with mic and loud speaker	3

The first part is a manipulated field recording from the Lake Inoon, Eneabba, Western Australia. Sections have been pitched down between one and four octaves to place the sound in the same registers as the instruments and to slow them down for better comprehension. Midi notes have been drawn by hand to match the pitch of sounds. This has then been exported from the DAW and imported into Sonic Visualizer, which is used to create an image of the proportionate midi notes. Finally, it was overlaid onto proportion staves, a technique first used by Ablinger in *Pacific Sirens* in 1968 (Vickery et al. 2016). Proportionate staves are spaced to allow for the extra semitone difference between major thirds and minor thirds. Various techniques were explored to create midi notes such as preset algorithms for converting audio to midi. These however rendered unpredictable

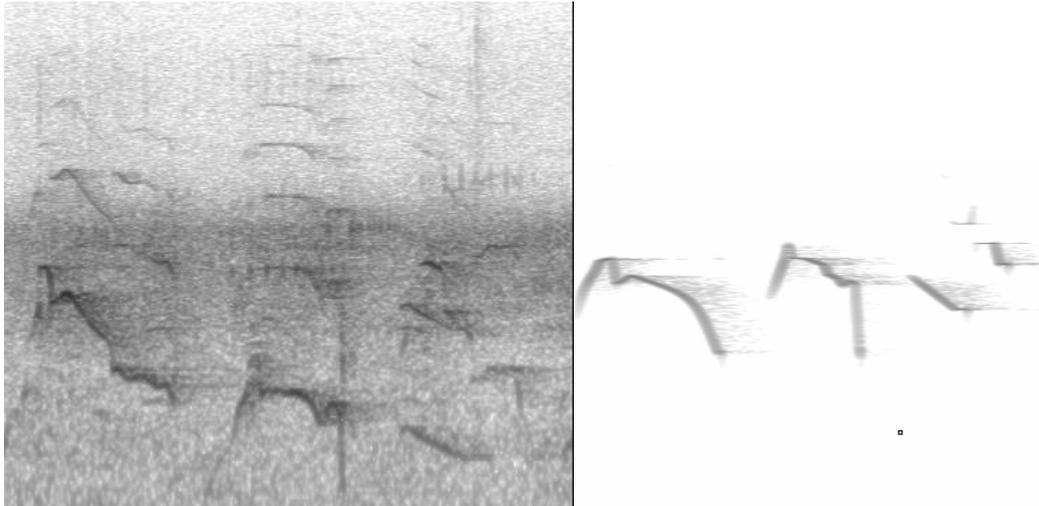
and often unpleasing results. Notes were chosen to emphasise some sounds, whilst there is a deliberate choice not to score some of the sounds so as to allow the recording to be heard on its own. Careful observation of a spectrum analyser and listening for unison between the recording and the midi notes was how each pitch was determined.

Figure. 1 Whole score excerpt shows proportionate stave. Grey parts are bass clarinet and purple is double bass. The spectrograms are the percussion. Velocity of the percussion is indicated by the waveform at the bottom.



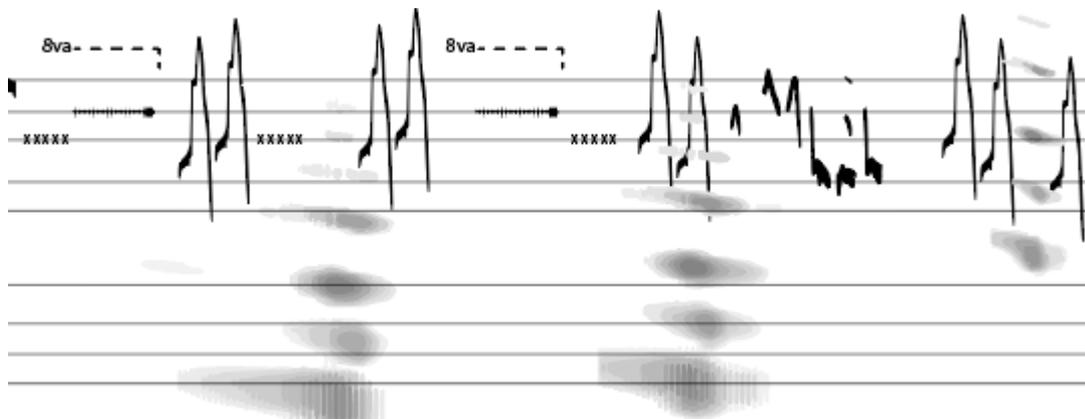
The centrepiece of the composition is an electroacoustic soundscape synthesised entirely within the DAW. The aim was to create the experience of listening to a field recording, in particular a nature walk. It is important to emphasise that the intention was not synthesise the experience of being in nature, but rather to synthesise a listening of someone who recorded their nature walk. From the audience perspective, it is a listening of a virtual listening. The purpose of this is to highlight to the audience the subject/object phenomena, or what Baudrillard would call when society reflects back on itself in ad-infinitum, “the mirror of madness” (1994, p8). But it also nods to the acousmatic practice of listening walks. This soundscape is comprised of processed sine waves and white noise. A spectrogram was then created from this audio and laid over the same proportionate staves to create section two. One of the advantages of creating a spectrogram from synthesised sounds is that the visual data is very clean, as opposed to usual field recordings, which can be hard to isolate the pitch contour from the general noise floor captured. Figure 2 shows a spectrogram of a black cockatoo call on the left and a synthesised version on the right.

Figure 2. Spectrograms of real black cockatoo (left) and synthesised cockatoo (right)



The score for the ensemble in this section is much less prescriptive in terms of exact pitch as graphics of the spectrograms are used to indicate contours. Figure 4 of the bass clarinet shows how the black cockatoo call was scored from the spectrogram in figure 3.

Figure 4. Excerpt of score from second section.



The last section is an improvisation where the performers replace their instruments with a microphone and point it to a speaker to create acoustic feedback. This would normally create unbearably loud, high pitches, but instead recordings made by the laptop performer during the piece are released from the speaker. A routing technique was devised inside the DAW with a vocoder effect whereby acoustic feedback is used to modulate the recordings, which are the carriers, of the performance. This essentially means that the recordings are playing, but no sound is heard from the speaker until feedback is created. In this final mimetic act, musical abstractions from the players' own imitative gestures are layered upon one another to create an image that bears no relation to its original.

## THE SOUNDSCAPE AESTHETIC

The extra musical potential of field recordings has been a possibility since the advent of recording technology, but ideological constraints created an aesthetic challenge to adopting it as a practice until the ubiquity of audio recordings impacted the nature of listening in the seventies (O’Callaghan 2011; Vickery et al. 2016). An established practice for analysing structural data of field recordings to then attribute to an instrument or parameter is known as ecostructuralism (Opie and Brown 2006).

Hyperreal 2.0 uses ecostructuralism as a technique for developing the work, but does not strictly adhere to the rules as set out by Opie and Brown. A prominent composer creating new music in this way is Lindsay Vickery. Recent works such as *takdanobaba* [2018] and *njookenbooro* [2018] use processed field recordings as a basis for spectrograms to transcribe (Vickery 2018) into graphical scores. Vickery has written extensively on composing from field recordings and graphically notating them for performance with acoustic instruments (2016; 2017). This author is thankful to have informally learned some of Vickery’s methods and they have been adapted for creating this score. Various audio and image processing software was used in generating this piece.

Table 2.

Software	Process
Ableton	Audio manipulation and synthesis
Voxengo SPAN	Spectrum analyser for visual monitoring
Sonic Visualiser	Making spectrograms
Illustrator	Graphical Score
Scorecreator and Scoreplayer	Playing the score
MaxMSP	For launch the Scoreplayer inside Ableton via Max4Live

The modus operandi of The World Soundscape Project has been instrumental in foregrounding the environment as a genuine extra musical domain for composers to situate their practice. Originally established by social scientist R Murray Schafer in the early 1970’s and then joined by a group soundscape composers, its purpose is to draw attention to the sonic environment (World Soundscape Project [WSP], n.d.). One of the pioneering soundscape composers is Barry Truax. Truax (1996, 2001) defines soundscape composition as:

...a form of electroacoustic music characterized by the presence of recognizable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination related to the soundscape.

Furthermore Truax adds that:

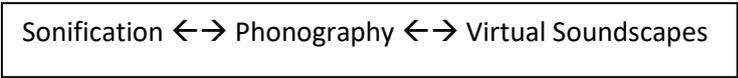
“...the work enhances our understanding of the world and its influence carries over into everyday perceptual habits.”

It is this point that goes the essence of Hyperreal 2.0, that the soundscape composition seeks to carry influence into everyday habits. Hyperreal clearly attempts to bring awareness to the environment, but additionally, it seeks to highlight the culture-nature relationship through the use of mimetic techniques and meta-processes.

Truax proposes a spectrum of soundscape composition practice that ranges from sonification to virtual soundscape, shown in Figure 5. His work *Island* (2001) sits across this spectrum, and similarly Hyperreal uses a range of these compositional methods, but it is the virtual soundscape that this

piece is based around. This type of sonic emulation of reality is what Barry Truax would call virtual soundscape composition, “one that perhaps seems “hyper-real””(2012).

Figure 5. Barry Truax’s spectrum of soundscape composition



This piece sits across all of this spectrum at times. The acoustic parts are sonifications of animals and natural environmental sounds, the phonography is the field recordings and the virtual soundscapes is the synthesised part.

### COPYCAT

Birds, cars, crickets, frogs, wind, footsteps, thunder, lightning and rain are all synthesised from scratch to create this virtual soundscape. These sounds could possibly have been derived by sophisticated analysis software and programming knowledge, however they were manually created using the soft-synthesiser Operator, in Ableton software. Accurate visual analysis of the sounds using Voxengo SPAN spectrum analyser is made possible with its range of adjustable parameters, in particular to freeze peaks and zoom in both on the frequency axis and amplitude axis.

The starting waveform was selected depending the amount of pitch content in the sample as outlined in Table 3. For example, bird calls contain relatively minimal pitch data and so the starting waveform chosen was a sine wave. Conversely, rain and footsteps are relatively complex in pitch content and so white noise was chosen. All sounds also required amplitude automation to ensure that dynamics remained relatively idiosyncratic. Much of this was process was done visually and by hand by drawing and automating contours that were similar to the peaks and troughs of the source sample.

Figure 7. Showing the operator settings and pitch automation used for the black cockatoo.



Table 3 shows the summary approach to creating each sound

Sound	Waveform	Processing	Note length
Bird	Sine	Reverb, eq, amp automation	Short
Car	Noise	LP+HP filter sweeps, panning using random lfo, reverb	Long
Cicada	Sine	Amp automation, manual phase-shift L/R, reverb	Very short
Frog	Sine	EQ, reverb	Very short
Wind	Noise	EQ, reverb, randomised lfo to pan	Long
Footsteps	Noise	EQ, volume automation, filtering, saturation, reverb	Short
Thunder/lightning	Noise	Reverb, EQ	Long/Short
Rain	Noise	EQ, Reverb, De-noise thresher	Very Short

All sounds required the application of reverb to assist accurate depiction. An important part of the process is to ensure that the reverb decay settings are realistically. In particular, when mimicking bird sounds that have been down-pitched, reverb should be applied before rendering and pitching back up so as to ensure the reverb tail is proportionate to the pitch, and this size of the object.

One of the perceptive phenomena that this piece substantially uses and relies on to a certain extent is Gestalt psychology, described by one of its founders Koffka, as the “whole is *other* than the sum of its parts” (Heider, 1977). The synthesised piece certainly functions better as a whole, each separate sound is more acceptable when in context with other sounds. On a larger level, the acoustic instruments, and the ensemble as itself, form a kind of figure-ground relationship with the electronic part. The audience becomes conscious of the musicianship, and the cult of performance, forgetting or not realising that the soundscape has been composed also.

#### ENVIRONMENTAL SUPPRESSION LOOPS

The last part of the composition calls for the players to swap their instruments for microphones and point them at the nearby speaker. Instead of a gestural act of mimicry which the previous two sections required, this sections is a procedural imitation involving all performers. The method, as described previously, is essentially a recording of the recording. This is a similar approach to Alvin Lucier’s *I am Sitting In a Room*, whereby an original recording is reiterated until it is unrecognisable. In this work the recordings are re-pitched and played back in the space. This might be considered an ambient loop based approach similar to Brian Eno’s compositional methods used in *Music for Airports* (1978).

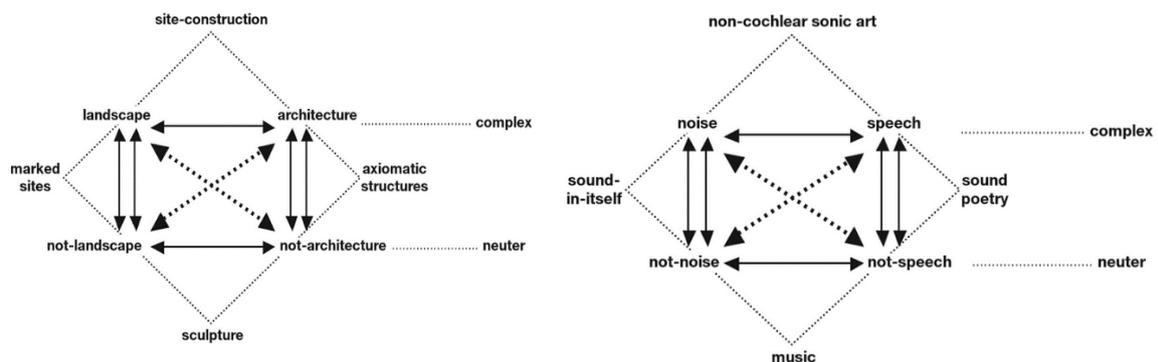
From a socio-cultural perspective these loops, that are from a real environment, a simulated environment and of musical instruments, are suppressed in a networked system of technology that is controlled by humans. This movement of music is alludes to the control and responsibility that humans have with their relationship to technology and the environment.

The act of creating feedback with a microphone and loudspeaker is generally avoided, especially as a performance practice. There is an element of danger in the sense that the resultant sound is unpredictable, but the reward is in the risk. The players choice to control the feedback, or not, may be considered a wider metaphor for the control, or lack of, humans have with the environment, with technology placed firmly in between and all around.

“IT, IT TURNS OUT, IS NEVER SIMPLY IT” – Seth Kim-Cohen, 2009.

Musicologists have always struggled to define what music is, as Seth Kim-Cohen alludes to in the above quote. “Pointing at it only obscures it,” he adds (2009, p. 151). In his book, *In The Blink of an Ear*, Cohen makes the case for sound to push beyond itself as a contained notion, to embrace its relationship to the context of which it might arise, or to juxtapose. Just as conceptual art moved beyond its materialism, so too can sound. Kim-Cohen looks to the work of Rosalind Krauss to create a framework for this idea (see figure 6).

Figure 8. Rosalind Krauss’ Expanded Field of Sculpture (1979) and Seth Kim-Cohen’s the Expanded Sonic Field (2008)



Seth Kim-Cohen essentially attempts to address two things about the sonic arts: (1) “To recuperate the history of the sonic arts since World War II by rehearsing it for what it is: a practice irreducible to the singularity or instantaneity; and (2) to propose a way forward, out of the dead end of essentialism, along a path blazed by the second generation reception of minimalism, connecting sonic arts to a broader textual, conceptual, social and political concerns” (p. xix).

The full title of *In The Blink Of An Ear, Toward A Non-Cochlear Sonic Art* is a play on Duchamp’s famous “non-retinal” statement on visual art, his attempt to reject traditional judgments of taste and beauty. Kim-Cohen expands on this notion speaking of what came decades after Duchamp’s tongue-in-cheek statement:

The conceptual turn is not intrinsically an inward turn from gaze to navel gaze. Instead conceptualism allows art to volunteer its own corpus, its ontology, as a test case for the definition of categories. ...If a non-retinal visual art is liberated to ask questions that the eye alone cannot answer, then a non-cochlear sonic art appeals to exigencies out of earshot. (p. xxi)

Kim-Cohen does not purport that sound art can simply do away with sound, but he makes the case that sound-in-itself is unsatisfactory since we cannot define *it* without remainder. He articulates for an expanded definition of music that evaded the dialectical canon of art, of which Hyperreal 2.0 attempts.

One seminal piece he examines is Alvin Lucier’s *I Am Sitting In A Room* (1969). The work involves recording spoken word in a room, and then playing it back in the room and re-recording it so as to emphasise the room acoustics. This was done until the original recording was unrecognisable. It could be argued that *I Am Sitting In A Room* is a kind of music simulation. Lucier repeats the recording in an act of procedural mimesis. But each time he completes a cycle he has created a more abstract version of the original. He has rendered a representation of an original thing, by process, in

to a thing that no longer resembles itself. "It is the generation by models of a real without origin or reality: a hyperreal," as Jean Baudrillard stated in *Simulacra and Simulations* (1994, p. 8).

Hyperreal 2.0 attempts to embrace the context for which it arose by appealing to the audience's personal relationship with place, nature and culture. What we sense cannot alone be defined by external perception, but we do elicit meaning from whatever we sense (Merleau-Ponty, 1962, p. 9). The installed component aims to visually harmonise with the ear. The long drapes of material form abstract trees that catch the light from the projector which plays a film of a nature walk. The work would not carry the same meaning if it were simply just an electroacoustic soundscape composition. Performance of the environment, of natural sounds, in the crafted space deliberately draws attention to the environment. As put by Mathew Burtner (2011, p. 235), "an environmental audio sample won't make a work of art music; the experience of a place may."

## CONCLUSION

*"The artistic technique of simulation consists of creating worlds that refer continually to reality and also extend it, establishing a dialectic between memory and creation, the real and the virtual."* Jean-Baptiste Barriere

Hyperreal 2.0 is another work in a long line of composer who use the environment as a source inspiration or as a sign for a wider context. The electroacoustic soundscape sits in the camp of Truax-esque style of composition, while the acoustic transcribing methods are referenced from the work of Lindsay Vickery. The work uses extra musical media such as sculpture and video projection, embracing the context of sound, placing itself deliberately in the expanded field of sonic arts as described by Kim-Cohen. The believability of synthesised recording is supported by its introduction by a real field recording, and then followed by an abstract process of ambient loop making, along the while being juxtaposed by the acoustic ensemble that has figure-ground effect.

The irony of this entire work is that it is by the use of technology that audience is prompted to consider their relationship to the environment. Further improvements in technology will close the perceptive gap between synthetic and real. Whilst the image has always been at the centre of a Baudrillard's hyperreal, there is fertile ground to explore the possibility of simulated audio environments, or of what we might call, hyperreal music.

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