“Through Antiquity Springs Modernism:” The Multifunctional Influence of Sound Produced by Lawrence Abu Hamdan’s Forensic Listening

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Abstract

As modernity develops it distances itself from the past. This rings true for working methods, which in turn must develop as times change. This paper discusses how the spheres of Science, Engineering, Design and Art are interlinked, and to use multifaceted approaches in any one of these topics may benefit them all This paper examines the interdisciplinary approach of designer and professor Neri Oxman and applies it to the new practice of Forensic Listening developed by Sound Artist and “Private Ear” Lawrence Abu Hamdan. Abu Hamdan’s work demonstrates a clear amalgamation of these topics which ultimately results in an impactful and meaningful artistic product that is used to raise awareness about the social and legal injustices on which his work centres. The accessibility of Abu Hamdan’s art is a huge asset to his work that allows the viewer to not only absorb it but to interact with it. This blend of artistic presentation and practical use is an example of how the interdisciplinary approaches of modernity can in turn create diverse and dynamic products.

Recommended Music to accompany this article

Abu Hamdan, Lawrence, “Conflicted Phonemes,” http://lawrenceabuhamdan.com/conflicted-phonemes (Accessed 8 December 2020).

——, “Earshot,” http://lawrenceabuhamdan.com/earshot (Accessed 6 December 2020).

——, “Rubber Coated Steel,” Forensic Architecture, 2014, https://www.youtu.be/lFIvUV5vmMU.

——, “The Hummingbird Clock,” http://www.hummingbirdclock.info/about (Accessed 4 December 2020).

"Through Antiquity Springs Modernism:" The Multifunctional Influence Produced by Lawrence Abu Hamdan's Forensic Listening

The birth of any movement is hallmarked by a detachment from a preceding prevailing practice. Jürgen Habermas claims that this detachment is achieved by claiming power over the former epoch, which by default deems the new practice as "modern."[1] Habermas' definition of this practice can be summarised with: "Through antiquity springs modernism."

Within auditory perception, hearing provides key sensory context which enables us to make more accurate judgements in particular situations. For example, in *The Audible Past*, Jonathan Sterne creates an "Audiovisual Litany" which claims that "hearing tends toward subjectivity, vision tends toward objectivity."[2] This essay centres on the birth of a new auditory movement entitled "Forensic Listening" coined by sound artist Lawrence Abu Hamdan. Forensic Listening derives from "Forensic Phonetics" which surfaced in Britain in 1984 with the introduction of the Police and Criminal Evidence Act.[3] This Act imposed mandatory recordings for all police interviews, meaning that the subject's spoken voice was captured in full, in place of mere transcriptions. Forensic Phonetics "focuses on the analysis of spoken communication... It includes speaker identification, enhancing and decoding spoken messages, analysis of emotions in voice, authentication of recordings."[4]

Returning to the delineation between modern and antiquated, recorded interviews evolved from the transcriptions that preceded them, and a

[1] Jürgen Habermas, "Modernity - An Incomplete Project," https://platypus1917.org/wp-content/uploads/2010/10/habermas_modernityproject.pdf (Accessed 30 November 2020).

[2] Jonathan Sterne, *The Audible Past* (Durham & London: Duke University Press, 2003), 15.

[3] Lawrence Abu Hamdan, "What Now? - The Politics of Listening," Keynote Speech, The New School, New York, NY, April 24, 2015, (https://youtu.be/kvpunh2ew6s&t=2614s), 04:17.

[4] Harry Hollien, "About Forensic Phonetics," *Linguistica* 52, no. 1 (2012): 1, (https://www.researchgate.net/publication/307445282_About_forensic_phonetics/fulltext/57d79e0008ae5f03b494eb5d/About-forensic-phonetics.pdf).

new era of listening with a legal platform was born. Abu Hamdan amplifies the practice of Forensic Phonetics by applying its listening processes to subjects that are not strictly vocal. He uses sound to create evidence that influences legal decision making that would have otherwise been left unnoticed. In a similar style, Professor Neri Oxman combines the interconnected spheres of science, engineering, design, and art. She notes:

> "Usually, art is for expression, science is for exploration, engineering is for invention, and design is for communication. And I thought "Why can't we take these four squares and create a circle out of them? A clock... Where you're constantly moving or shifting from one domain to another. And the input for one domain becomes the output for another." So, if you think of science, science converts information into knowledge, and engineering converts knowledge into utility, and design converts utility into cultural behaviour and context, and then art is taking that cultural behaviour and then questions our perception of the world."[5]

This practice, which for the purposes of this essay will be referred to as *Oxman's Clock*, uses a systemic approach which acknowledges the state of modernity at the time of the art's creation. Abu Hamdan's creative process follows a similar structure to *Oxman's Clock*, presenting the scientific and legal data collected on artistic platforms.

This essay will analyse how three of Abu Hamdan's works, namely *The Hummingbird Clock*, *Earshot*, and *Conflicted Phonemes* demonstrate his use of sound to influence legal decision making and to create art by following *Oxman's Clock*. The methodology of discussing each work will be divided into three sections. Firstly, the legalities of the subject of the work. Secondly, the art piece created by Abu Hamdan. Thirdly, how the process of creation abides by *Oxman's Clock*.

"Abu Hamdan amplifies the practice of Forensic Phonetics by applying its listening processes to subjects that are not strictly vocal."

[5] Julia Reagan (prod.), "Neri Oxman: Bio-Architecture," *Abstract*, Season 2, Episode 2 (Netflix, September 25, 2019), 20:27.

The Hummingbird Clock

Modern nations' electricity is powered by a central electrical grid. This grid emits a hum as a byproduct of creating the electricity. This hum is inaudible to the human ear though is detectable in recordings. In 1986, Dr. Catalan Grigoras discovered that the sound of the electrical grid changes over time, making it sing.[6] The frequency pattern and cadence is unique to the time it is recorded. As a result, the recorded hum creates an electrical timestamp which therefore gives the grid surveillance power to substantiate or discredit legal evidence. This timestamp is then used as a control for analysing and comparing recordings. According to Abu Hamdan, the U.K. police have been recording the grid since 2006 so they can use it to validate evidence.[7] The use of the grid's recording has proven useful in the legal system. For example, in 2012 three men were found guilty for being involved in the supply of firearms. Undercover police had purportedly recorded the accused participating in an arms deal. However, the accused appealed, alleging that the evidence had been tampered with. By comparing the hum of the grid at the time in question with the hum of the recording supplied in evidence, the court concluded that the evidence had not been tampered with as the grid recordings matched.[8] In this case, sound's subjectivity validated the evidence and influenced the legal ruling over the accused.

The Hummingbird Clock is a project that was developed by Abu Hamdan in 2016 for the Liverpool Biennial of Contemporary Art. It is a public timepiece which exists both as a physical structure (where it can be experienced in person), and online (where it can be accessed at http://www.hummingbirdclock.info/). Visually, the work is a camera-like structure positioned opposite Liverpool's law courts. The public can peer through the camera-like binoculars to focus on the clock of Liverpool's town hall and read the numeric frequency of the hum of the United Kingdom's electrical grid at that moment.

Abu Hamdan calls this a "counter-surveillance project"[9] as it reverses the roles of surveyor and subject: the public inspecting the state. Online, users can listen to the perpetual yet unique humming of the United Kingdom's electrical power grid. The website also allows the public to submit enquiries on the legitimacy of a recording at a particular point in time. Coupled with the visual installation, Abu Hamdan's dual approach seeks to bring the concept of

[6] Lawrence Abu Hamdan, "The Hummingbird Clock," http://www.hummingbirdclock.info/about (Accessed 4 December 2020).

[7] Lawrence Abu Hamdan, "The Hummingbird Clock," interview by Liverpool Biennial, 2016. https://vimeo.com/179050391 (Accessed 4 December 2020).

[8] Rebecca Morelle, "The hum that helps to fight crime," *BBC News*, December 12, 2012, https://www.bbc.com/news/science-environment-20629671 (Accessed 4 December 2020).

[9] Abu Hamdan, "The Hummingbird Clock."

counter-surveillance to the wider public.

This piece has followed the structure of *Oxman's Clock* as the outputs for science, engineering, design, and art flow into each other to create a holistic product. The science involved in creating *The Hummingbird Clock* is the electrical grid itself. As a byproduct to powering the United Kingdom, it emits a fluctuating hum. The engineering element of *The Hummingbird Clock* is the recording of the grid. It takes the knowledge provided by the output of the grid and converts it into utility. The design element is the *Hummingbird Clock's* website and physical structure outside the courts of Liverpool. Abu Hamdan has shown how this utility has been used in modernity's cultural behaviour. The artistic message of the piece makes us question our perception of privacy and exposes what is usually unheard. Physically, the piece gives the public the opportunity to survey the courts and read the numeric frequency of the hum at that particular moment. Online, the work allows them to substantiate or discredit audio and visual recordings, which forces the public to question the validity of evidence. Perhaps most importantly, the piece is accessible to anyone with an internet connection which creates a useful resource as well as makes an artistic statement on surveillance.

Earshot

In 2014, two teenagers, Nadeem Nawara and Mohammed Abu Daher, were killed in the occupied West Bank, Palestine. The teenagers had suffered fatal wounds fired by Israeli forces from supposed rubber bullets. Abu Hamdan was invited by "Defense for Children International" to investigate the incident. Israeli forces are permitted to fire rubber bullets but not live ammunition. The incident took place on the 15th of May, known to Palestinians as "Nakba." This is the day which commemorates the establishment of Israel and is marked by protests in Israeli occupied areas of Palestine.[10] The fatal shots were recorded by news stations' recording cameras. Abu Hamdan used these recordings to investigate the ballistics. Visually, it appeared the Israeli officers were firing rubber bullets, as they had rubber bullet extensions on their weapons. Abu Hamdan could not audibly detect a difference between the recordings of the fatal shots and control recordings of rubber bullets being fired. Therefore, he displayed the recordings of the fatal shots, together with recordings

[10] Forensic Architecture, "The Killing of Nadeem Nawara and Mohammed Abu Daher," https://forensic-architecture.org/investigation/the-killing-of-nadeem-nawara-and-mohammed-abu-daher (Accessed 6 December 2020).

of rubber bullets and live rounds, on Spectrograms. These are visual portrayals of sonic frequencies. The spectrograms visually displayed findings which were imperceptible to the human ear.
The fatal shots broke a frequency barrier that ordinary rubber bullets could not, though they did not break through this barrier to the same extent as live rounds. Abu Hamdan concluded that due to the rubber bullet extenders on the soldiers' guns, the sound created was not simply rubber bullets or live rounds, but a fusion of the two: "The sound of live ammunition fired through a rubber bullet extender."[11] Abu Hamdan showcased his audio-ballistic findings from this investigation in 2016, with the exhibition *Earshot*. This exhibition consists of a video entitled *Rubber Coated Steel*,[12] and displays the spectrograms from his research. *Rubber Coated Steel* follows the proceedings of a fabricated court case on the murder of Nawara and Abu Daher. His findings were broadcast by news channels such as CNN to draw attention to this case and presented before the U.S. Congress as an example of a breach of the the American - Israeli arms agreement and they forced the Israeli army to retract its original statement of denial.[13] Ben Deri, a member of the Israeli border police, was arrested as a bullet found in Nawara's bag was discovered to have been fired from Deri's weapon. Abu Daher's body was buried on the day of his death in accordance with the Islamic faith and his family did not exhume the body for evidence. In 2017, Nawara's father claims he was pressured by a government representative to sign a deal which would see Deri admit negligence by admitting to mistakenly firing a live round "which accidentally fell into his magazine."[14] Following a trial of nearly four years, Deri was charged with manslaughter and sentenced to a total of nine months.
Applying *Earshot* to the practice of *Oxman's Clock* demonstrates the fluidity between science, engineering, design, and art. Military Science is the science and methodology behind warfare. It converts information into offensive and defensive tactics to be used to a country or region's advantage. Israeli forces were using military science to create and advance settlements in the West Bank. The engineering element is the recording of the fatal shots, which were captured by news stations' reporting cameras. The recording of regular rubber bullets and live rounds as controls are another product of engineering. The design element of *Earshot* is the portrayal of the sonic evidence on the visual spectrograms. By capturing the data gathered from the

[11] Abu Hamdan, "What Now? - The Politics of Listening," 27:50.

[12] Lawrence Abu Hamdan, "Rubber Coated Steel," Forensic Architecture, 2014, https://www.youtu.be/lFIvUV5vmMU.

[13] Lawrence Abu Hamdan, "Earshot," http://lawrenceabuhamdan.com/earshot (Accessed 6 December 2020).

[14] Forensic Architecture, "The Killing of Nadeem Nawara and Mohammed Abu Daher."

recordings, the spectrograms displayed a key feature of *Oxman's Clock*: breaking the accepted cultural behaviour. Abu Hamdan presents the findings of the science, engineering, and design elements to the public to create his piece, *Earshot*. The art points out how easy it is to blur the lines between "institutionalized violence and wanton bloodshed."[15] The public must question what other criminal activities can slip through the cracks of the law when allowances are made. *Earshot* exhibits a combination of science, engineering and design using detailed audio-ballistic analyses to create a diverse artistic product which has had impact beyond the arts.

[15] Abu Hamdan, "What Now? - The Politics of Listening," 30:10.

"Applying *Earshot* to the practice of *Oxman's Clock* demonstrates the fluidity between science, engineering, design, and art."

Conflicted Phonemes

Since the implementation of the aforementioned "Police and Criminal Evidence Act," the entirety of the voice has been considered as evidence in police investigations. Professor Peter French developed this methodology of 'Forensic Phonetics' further, providing independent, research-led expertise to criminal justice systems worldwide.[16] The recordings of interviews from 1984 and of emergency calls from 1997 accumulated a vast library of accents, intonations, and audio-based evidence. The emergency call recordings were also used to identify other peripheral sounds, such as gunshots.[17] In particular, this audio archive has been used to identify the accents of people seeking international protection. By using the accent archive as a control, authorities can compare asylum seeker's accents and further their case investigations to discern whether the individuals in question are truly in need of international protection. However, this methodology contains certain inherent flaws. Firstly, the accents on file do not cater for the personal differences of individual applicants. Secondly, they are not always contemporaneous with the diaspora of people from particular regions: they represent timestamps, which easily become outdated or inaccurate. This leads authorities to occasionally make inaccurate

[16] JP French Associates, "Professor Peter French," http://www.jpfrench.com/peter-french/ (Accessed 8 December 2020).

[17] Abu Hamdan, "What Now? - The Politics of Listening," 07:45.

decisions as a result of the information which is available to them. To illustrate this by way of example, Abu Hamdan shares a story about a man named Mohammed from Palestine who was denied international protection based on the way he pronounced the word "Tomato."[18]
In 2012, Abu Hamdan hosted a discussion in Utrecht on the use of Forensic Phonetics on applicants for international protection. The research of this discussion created Abu Hamdan's piece *Conflicted Phonemes*. Among those present were linguists; immigration authority personnel; and twelve Somali refugees who were denied asylum applications by the Dutch immigration forces. The immigation authorities understood that these refugees were from a Northern area of Somalia which was not recognised as overtly dangerous, meaning that they were not deemed in need of asylum. Based on these discussions, a graphic designer produced a map which sought to illustrate how different accents may have been affected by the diaspora of Somali people in response to the country's history, particularly its instances of mass movement of population. The map displays the variety of influences on the Somalian accent and the vast linguistic combinations which were created as a result. Abu Hamdan's piece displays the map, together with the outcomes of the applicant's linguistic analysis interviews for the spectator to view. The portrayal of this linguistic variety sends a message to immigration bureaus around the world, as it shows how history affects a country's vernacular and what additional factors could be taken into account if accent assessment is to be used as a form of identification. The research collected from *Conflicted Phonemes* was brought before a UK Asylum Tribunal and presented to a chief judge working within the Dutch immigration authority.[19]
The creation of *Conflicted Phonemes* demonstrates the interlinked relationship of science, engineering, design and art. The science used is the practice of Forensic Phonetics. This method is implemented to discern whether an applicant is in need of international protection. The engineering element is the recording of the applicant's voices, creating a utility from the database of information collected in the linguistic interviews and the discussion held. The design component of this piece was the creation of the map. This map displayed the information gathered through discussions with the asylum seekers and critically framed this knowledge against the practice of Forensic Phonetics. By drawing awareness to the niche differences in accents created by a country's history, the map illustrates the cultural behaviour that traditional Forensic Phonetics fails to account for with respect to individual applicants. The art exhibition of *Conflicted Phonemes*

[18] Abu Hamdan, 36:16.

[19] Lawrence Abu Hamdan, "Conflicted Phonemes," http://lawrenceabuhamdan.com/conflicted-phonemes (Accessed 8 December 2020).

amalgamates these findings and presents them to the public. The piece seeks to create public awareness of the limitations of this methodology, counterpointed against the significance of these decisions for the individual applicants. The combination of science, engineering and design produced a unique art piece which exposed how language can be used (or indeed, misused) as a tool of identification.
The utilisation of sound to unearth truths has produced many revelations in the legal sphere. Abu Hamdan believes that for as long as freedom of speech is a human right (while freedom of silence is not), the scales will be perpetually imbalanced. This is because he claims that self-expression is forced upon us, whereas silence implies that we are hiding something.[20] He extrapolates by saying "We need more listening, ...because the truth which is being extrapolated by the recordings which concern us will always be somehow partial."[21] Abu Hamdan's fusion of science, engineering, design and art through sound ensures that his work is politically active, artistically engaging and above all else, accessible. The widespread reach of his work draws attention to human rights issues, while also contributing to the development of art and illustrating how activists can promote their causes through art.
If, by Hagermas' terms, movements are to claim modernity through detachment of antiquity, then Abu Hamdan's approach to sound art has created a new methodology which draws upon many disciplines before creating a final product. This methodology is similar to Systems Theory, which can be defined as "an interdisciplinary study of systems as they relate to one another within a larger, more complex system."[22] Systemic approaches broaden the parameters of research and artistic practice, which consequently widens the scope of possible outcomes. These experimental and interlinking methods can work together to make art and science more versatile, relatable, and accessible to wider audiences which they otherwise may not have reached.

"Abu Hamdan's fusion of science, engineering, design, and art through sound ensure that his work is politically active, artistically engaging and above all else, accessible."

[20] Martina Raponi, "Lawrence Abu Hamdan: The Political Implications of Sound and Silence," http://digicult.it/articles/lawrence-abu-hamdan-the-political-implications-of-sound-and-silence/ (Accessed 8 December 2020).

[21] Raponi.

[22] Online MSW Programs, "Introduction to Systems Theory in Social Work," https://www.onlinemswprograms.com/social-work/theories/systems-theory-social-work/ (Accessed 3 December 2020).

Conclusion

Neri Oxman tells her team:

> "You have to be ready for your project to appear in the atrium of The Museum of Modern Art, and at the same time on the cover of *Nature and Science*. We don't do either, it's only both."[23]

[23] Reagan (prod.), "Neri Oxman: Bio-Architecture," 20:27.

Abu Hamdan's modern approach follows the structure of *Oxman's Clock*, and has proven its versatility by using sound's subjectivity to influence legal action and highlight human rights issues, all through the medium of accessible art. *The Hummingbird Clock* allows people to submit claims on the legitimacy of recordings while making a visual statement against state surveillance. *Earshot* draws the world's attention to human rights violations that slipped through the cracks of the eye of the law. *Conflicted Phonemes* demonstrates the flaws in the practice of Forensic Phonetics which fails to cater for individual applicants, and thus can result in unjust rejection of asylum. The common thread between these works is the use of listening to highlight what otherwise goes unnoticed. The arts and the law must be in a constant state of evolution, otherwise they risk repeating the movements of the past which no longer reflect the world. By detailing how Lawrence Abu Hamdan's work follows the interdisciplinary approach of *Oxman's Clock*, this essay evidences how the subjectivity of sound can influence legal action and how this content can be translated into art.

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