

Aftersound

Mhamad Safa in Conversation with Gascia Ouzounian

ABSTRACT This conversation, which took place at The Showroom, London, on March 8, 2022, brings together the sound producer and architect Mhamad Safa and the sonic theorist Gascia Ouzounian in exploring Safa's work on sound, trauma, and acoustic jurisprudence, with a focus on Beirut and Lebanon. The conversation covers a range of topics, from the differential policing of noise along lines of social difference; to earwitnessing war and conflict; to the long-term unfolding of auditory forms of trauma and "sonic aftershocks." Safa and Ouzounian discuss the need for better legal frameworks for confronting the harms of sound; what "collateral damage" might constitute in the context of listening to warfare; and what justice would mean for survivors of sonic violence. **KEYWORDS** sound, violence, trauma, warfare, justice, Beirut

This conversation took place at The Showroom, London, on March 8, 2022, as part of the series Countersonics: Radical Sonic Imaginaries hosted by Gascia Ouzounian. It was co-presented by The Showroom as part of the public programming for Haig Aivazian's solo exhibition All of Your Stars Are but Dust on My Shoes (January 26–March 26, 2022). It has been lightly edited for clarity and length.

In this conversation, Mhamad Safa, who works across sound, architecture, and the law, and Gascia Ouzounian, whose work is focused on sound, urbanism, and violence, discuss Safa's work on noise, sound, trauma, and earwitnessing in the context of war and conflict, with a special focus on Beirut and Lebanon. They explore Safa's work on noise legislation in Beirut, including the inadequate protections for Syrian refugee construction workers and other laborers who are forced to work for long periods in sites of high exposure to noise, and local authorities' differential policing of community noise along the lines of class, ethnicity, and citizenship. They revisit Safa's *50 cm Slab* (2015), a sound installation that uses granular synthesis to evoke the experience of hearing a building crumble on itself during a thermobaric explosion, as was reported during the 2006 Israel-Hezbollah war; and the related rise of defensive architecture—architecture that anticipates future wars—in Beirut.

The discussion considers in depth Safa's 2022 article "Reverberation and Post-War Trauma," which develops a framework for understanding sonic trauma as unfolding over long periods of time versus occurring only in the moment of a loud or harmful sound—an unfolding that Safa conceptualizes as "aftersound" and Ouzounian describes as "sonic aftershock." Safa reflects on the specific harm of hearing low-frequency, explosive sounds in the highly reverberant and acoustically disorienting context of an urban environment,

Resonance: The Journal of Sound and Culture, Vol. 4, Number 4, pp. 381–390. Electronic ISSN: 2688-0113 © 2023 by The Regents of the University of California. All rights reserved. Please direct all requests for permission to photocopy or reproduce article content through the University of California Press's Reprints and Permissions web page, <https://www.ucpress.edu/journals/reprints-permissions>. DOI: <https://doi.org/10.1525/res.2023.4.4.381>

a trauma specific to listening to war in cities. Safa and Ouzounian discuss the need for better legal frameworks for confronting the harms of sound; what “collateral damage” might constitute in the context of hearing warfare; and what it would mean for survivors of sonic violence to have justice. The conversation closes with a poignant and powerful reflection by Safa on earwitnessing as it pertains to Beirut and Lebanon: the role of sound and listening in the 17 October Revolution in 2019, civil protests against government incompetence and corruption; the experience of earwitnessing the August 4, 2020, Beirut port explosion and the hypersensitivity to sound that many survivors reported in its wake; and the reliving of sonic traumas in a place marked by perpetual conflict and crisis.

GASCIA OUZOUNIAN: We met in 2018 at Ashkal Alwan, which is an important artist development and residency center in Beirut. At the time you were doing a project that explored noise legislation and the politics of noise in Beirut. Can you tell us about that early research on noise, and what inspired you to start exploring noise in the Beirut context?

MHAMAD SAFA: I started from the practice of architecture. The practice of architecture was not this nice design, fancy, cute architecture. It was more like raw building at heavy construction sites. My main experience was in the postwar reconstruction of the southern suburb of Beirut. My relationship to building and architecture was connected to intense work environments, directly dealing with laborers, construction site workers.

What was striking with the construction site workers in Lebanon is that there were almost no noise mitigation policies, particularly for workers in the sites, especially foreign workers coming predominantly from Syria. My work started as an investigation on hearing loss and hearing impairment. The project was investigating specific construction sites and engaging with workers there and an audiologist to make a larger argument about who has the right to absorb noise and who is shielded from noise. I examined the relationship of the government with noise, the relationship of the government with noise legislation. It’s related to labor laws as well. If there’s hearing impairment as a result of noise, will there be a certain reparation? Or a certain form of compensation for the worker? There was none of that.

GO: Something that I felt you were bringing forward is the idea that, not only was noise legislation underdeveloped in the Beirut and Lebanon contexts—so civilians and workers aren’t protected from sonic harms as they might be—but the implementation of noise legislation in the city was also very different in terms of *who* you are, with regards to implementation by police or local authorities. I remember you talking about how, if you’re a tourist, you can make noise, and it’s different if you’re a local. Your work was thus engaging both with who is protected from noise and whose noise is considered permissible or, conversely, whose noise is proscribed—considered to be beyond the law. Can you talk about this differential implementation of noise policy?

MS: It was striking that the government was allowed to enforce specific restrictions on how much noise was being produced in specific contexts. But in the context of a construction site, it would sound ridiculous if you want to try to mitigate noise because the real estate industry was so sacred, so extreme.

One of the repercussions was on workers; and one was on noise legislation. Let's say you try to file a noise complaint. It will be rejected. You will get the answer, "Oh, you're not going to make us stop building." You're not going to even go into any kind of confrontation with real estate investors because they're stronger than the government. Noise was a repercussion of all this: the result of what you're allowed to do, what you're not allowed to do, and how much real estate was pushed to its extremes.

50 CM SLAB

GO: It's interesting to think about noise as the byproduct of this frenzy of overbuilding, and the particular kind of reconstruction that happened in Beirut following the Lebanese Civil War in which so much of the architecture was outsourced to international companies and starchitects—this strange reconfiguration of the architecture of Beirut in that context. As part of your architecture research and your artwork at the time, around 2018, you had a fascinating project called *50 cm Slab*, which entailed visiting a site which had been bombed and creating a sound installation in response. Can you tell us about *50 cm Slab*?

MS: When I was working as a trainee architect in the construction site, after the war, it was still the beginning of the reconstruction project. The southern suburb of Beirut was totally razed. There was nothing. Most of the conflict in 2006 was a conflict between Hezbollah and Israel. Hezbollah had a stronghold in that area. Many of their headquarters were there. We went to visit a site that was a legislative council for Hezbollah. It was a huge complex, and we noticed that the whole building was like sand. While we were investigating the building, we saw that the basements were still intact. I was a trainee at the time. I was following these engineers and they were looking at these buildings and these slabs and they were saying, "Okay, this is interesting, look how it's holding. The missile couldn't penetrate it."

The engineers were always talking about the vacuum bomb, a type of missile which is being used now in Ukraine by the Russians. The technical term is a thermobaric weapon. The Israeli military was using something called GBU 28, which is a guided missile that has a bunker buster. It penetrates. It starts to break slabs and it counts while it's breaking slabs. And when it gets to a certain number it releases a white powder. The white powder penetrates porosities; and it implodes later. It makes this huge explosion. It sucks the air out of the environment. This kind of weapon uses the oxygen from the surrounding environment to explode.

The main challenge for the Israeli military is that most of that area had really fixed slabs, specifically where there was proper military and administrative activity happening. The slab resisted. When they were rebuilding later, they made a thick slab which went up to around 50 centimeters. Usually in architecture standards it can get to 15, 20, 25 centimeters. But when we think about 50, we're thinking about something that has an intention to hold. The project was not only reflecting on the war that already happened, but also on an upcoming war as well. It was thinking about how there will be these basements now. The war *is* going to happen. We don't know when, but the war is going to happen. Because the conflict is still there.

With *50 cm Slab* it's the idea that these people in residence, the civilians, are going to go under these basements, and they might not die. But what's going to happen is that they're going to listen to the building collapsing on top of them, and to the bombardment happening on top of them. The installation was a slab that had two speakers. I used a generative form of composing music. It can constantly generate these small granulations of sound as if something is collapsing on top of you. It was really extreme when we installed it: 10, 20, 30 seconds was the maximum amount of time that someone could stand under it.

GO: It's remarkable to think about this practice of defensive architecture: anticipating a future war. It's a region where there is a perpetual conflict. This idea of standing under this slab and listening to this . . . your sound installation was reproducing or producing this kind of experience for people. Why was it important for you to bring that kind of experience to other people?

MS: At the time I didn't have a close relationship or understanding of sound and trauma and the overwhelming experience of listening during warfare. Because I lived in warfare, and my relationship to sound was not . . . I couldn't translate it into writing or words. And many, many people living in Beirut couldn't have this kind of translation. We'll think about sound as an extreme phenomenon but wouldn't know what is the relationship between sound and our sense of being.

I was doing this as a first iteration of the experience of thinking you're safe, thinking you're shielded. But at the same time, moments of violence and death and imminent destruction are being transported to you by sonic elements—by the compression of air moving through particles towards you. You are in contact with violence while thinking you are in the shelter. What is happening with sound is breaking all these relationships between you and your safety. Between you and your sense of being.

SONIC AFTERSHOCKS

GO: That early work seems to have led directly to your MA project in research architecture at Goldsmiths, where you worked closely with Susan Schuppli. Your article "Reverberations and Post-War Trauma" came out of that MA research. It's an important article that extends our understanding of sound, reverberation, trauma, and their entanglements. One of its major contributions is, when people study sound in the context of warfare, they're often looking at the *immediate* harmful effects of sound on the listener. We know, for example, that loud sound can cause anxiety, heart palpitations, heart failure; it can even cause death. It can cause miscarriages. One of the paradigmatic shifts proposed by your research is that you're thinking about it not only in the moment of experiencing the sound but in this very long-term sense, which also reformulates the concept of reverberation and the unfolding of trauma over a long period of time.

An idea that came to me as I was reading your paper was that of a "*sonic aftershock*." You write that, even though this bombing of the residential complex happened in 2006, "it continues to reverberate and resonate today." Can you speak about the long-term effects of sonic trauma, or what we might think of as sonic aftershocks?

MS: That's one of the most important reasons I'm doing this research. There are so many questions that were important as a contribution to sound studies and sonic cultures. When it comes to how sound can be harmful, it's a vague question. You would say "sound is harmful." It's really vague. There is no proper framework. *Why* is sound traumatic? How can that happen? I thought about a framework—a method to think both about sound being violent and about trauma overall.

I started from trauma studies, from the work of people like Cathy Caruth, Judith Herman, and Robert Jay Lifton. There was always a problem with diagnosis. There was always trouble with language. There was always the trouble of thinking about the stressors themselves. Bessel Van Der Kolk claims that trauma has an external stressor. My question was, "Okay, there's an external stressor. But how would that work on you? What's the mechanism of the external stressor?" And this got me to the question of reverberation, because for many trauma theorists, especially Caruth, or even post-Holocaust trauma theorists, it was always the idea of "long lasting." Trauma is something that takes time to unfold, and it has a repercussion or a harmony of the event. I would think of all these theories of the event. Thinking that the event reverberates. The event has specific harmonies and vibrations that go beyond its immediate proximity.

In terms of a sonic framework, reverberation was a strong framework to think about how to make a diagram for trauma, firstly; and second to think about what's beyond the impact. If we're thinking about a sound of an explosion, or a sound of warfare, if you deconstruct it, you would think about a startling sound. But this is instantaneous. The longest sound that can get stitched in your sense of being is its aftersound.

This is where an urban context comes in. Warfare is not happening in the void. It's not happening in a desert. It's happening between buildings that have specific acoustic qualities. They allow sound to reverberate. And reverberation, it happens that the louder you're getting, the more there are reflectors. The more there's an environment that has low absorption—for example, with glass and concrete to a certain extent—sound will reverberate more, and it will reflect more, so it will overlap on itself more. If I do a louder impact, it will reverberate more.

This is what I was thinking about. What is it that is traumatizing about a sound? Is it the impact itself? Or is it its aftersound, its drone-y sound, its long-lasting repercussion?

GO: One of the insights of your article is of low-frequency reverberations, particularly in the urban context, traveling and spreading through the city—their disorienting nature. You draw attention to how a person's sense of sound localization is disturbed and interrupted with these low-frequency, loud sounds.

MS: This is really important in terms of thinking about the structure of trauma. I had this interesting relationship with trauma literature related to victims of abuse, and especially within feminist writings and in psychiatry and psychoanalysis. This is the idea of survival mechanism and the idea of localizing threat. What happens with the specific experience of violence of being exposed and being in an area that is ridden by loud explosive sounds daily? The main thing from witness testimonies was always the question of, "We don't know where it's coming from. This is what

makes us scared for our lives. We're worried that it might be really close, it might be far. We cannot localize it."

This is very interesting. First of all, sound localization is really important because it's a very basic evolutionary capacity that humans have, because otherwise they wouldn't have been able to localize predators. It's not only the fact of listening. No, it's just as well knowing *where* what you are listening to is: how far is it and where is it according to your head. Is it here? Is it here? Is it here? Etcetera.

With low frequencies it's more complicated. What's complicated about low frequency is that the behavior of what we call in acoustics an explosive sound, a shockwave—this belongs to a field called long-range acoustic propagation. What we know about this field is that sonic behavior is really chaotic. It's unpredictable.

Someone who wrote about this is Tim Hecker, the famous ambient musician. His PhD was on shockwaves and loudness. He mentions that the nonlinearity of acoustics in low-frequency and long-range acoustics is that it behaves as if it's quantum physics to normal Newtonian physics. It's really unconventional. It comes from different sides, especially when it reverberates as well, it becomes more complicated because sound is coming to you from different angles. This is what I really like to look at: ubiquity, where sound is totally ubiquitous, so we don't know where it's coming from. This is what *accentuates* the experience of threat. You have a moment—an event of death, an event of violence—which you cannot locate. You're more vulnerable to it.

GO: Listeners who are experiencing warfare are already in a state of hyperlistening or hypervigilant listening. They can't stop listening. You *have* to listen to survive, you're always listening for a sonic signal of what's happening. And often listening is the main sense that you're using. Visibility is going to be reduced. There are going to be electrical outages and so on. So, in that context, and particularly, as you're saying Mhamad, in the urban context—which is already a confusing sonic environment, with so many different reflections happening all around you—that feeling of threat is amplified.

Another major contribution in your article was showing how sound, the city, and architecture become entangled within this framework of violent sounds. My question is, when there is a spectacularly violent campaign of bombing and shelling in a city, as is happening now in Ukraine, does the city itself become weaponized through sound? Does the city act as a carrier and transmitter of harmful sound? And how did you find that in Beirut?

MS: That's really important. There's a key work on that for me: the book *Sonic Experience* by Jean-François Augoyard and Henri Torgue. It's a very strong manuscript on the urban context, the built environment and how sound behaves in it. They make an inventory of sonic effects, and they use terminologies that are related to music composition, like delays, filtering, etcetera, to describe how a city might function as a kind of huge conductor of sound. That is not the case in other environments. I would even go to the work of R. Murray Schafer, and about how every object in the city, how every kind of decision that is taken by an urban planner or by city planner has strong acoustic repercussions.

When it comes to warfare, all these elements are amplified. They work as an amplifier. What happens in an urban context, in Beirut for example, is that

reverberations are not only the effect of the buildings themselves; they're also an effect of the decision of a city planner who decided to make narrow streets, who decides to build this way. The real estate mania that was happening in Lebanon—building every single lot that was available—all of this modulated every single aspect of what would happen in a city.

The most striking part about it is that, to activate all these elements, you need a substantially loud sound. If I go down the street here and clap, it's not going to reverberate like it's a church. But when I make a really loud sound, like an explosive sound that goes beyond 200 decibels, the effects are going to be very substantial in the city. Sound is going to be pushed to its extremes because of the urban configurations. The relationship between architecture, urban decisions, and real estate, it really affects sounds and listening; and within an environment of conflict this becomes more prominent.

COLLATERAL DAMAGE

GO: It's difficult not to think about the Beirut port explosion in thinking about spectacularly violent, harmful sounds. You are now doing a PhD in law, architecture, and sound. Can you tell us about what you're working on, and where this research has led?

MS: In terms of my PhD research, I'm thinking about an area of law called international humanitarian law: the laws of armed conflict. I'm questioning this idea of whether hearing can be considered collateral damage, and not in a figurative way or a metaphorical way. Collateral damage is an actual, important variable. It's a very strong metric used to assess if a military operation is considered legal or not.

There's a legal framework for war. Anytime there is a military operation, or there's a military conflict, under this law, you're allowed to kill combatants. You're not allowed to kill civilians. This is the basic framework of international humanitarian law: civilians and their objects should be protected. But you are allowed to have a certain amount of collateral damage. Collateral damage can be legitimate if it is proportional to the military advantage you're gaining. Let's say you're killing a general. You're allowed to kill 100 people with this general. "It's fine, we can allow that." But if you're killing a soldier with a rifle and you kill 10 people with this soldier, they will tell you, "No, this is disproportionate." They count how much collateral damage there is.

So, my question is, if there is a legal military operation, meaning an army is attacking another army, there are no civilians that were harmed physically, there are no civilians that were killed physically, but there are civilians that heard it: would they be considered collateral damage? The problem with that question is that it will force this law and this legal framework to understand what is damaged from sound. How can you be damaged from sound? I'm ultimately thinking about trauma. But for this legal framework, the idea of inserting trauma in this equation might become a very complicated question. It will become, "Oh, it's not physical harm. There's no hearing impairment." But how do we go about this?

GO: This is one of the big questions I think your work is posing: what needs to happen in the law for there to be justice for survivors of sonic violence and sonic harm? Will sonic harm ever be properly investigated or prosecuted? Can we develop better systems for protecting people from sonic harm?

MS: There were substantial case precedents on this. The most intriguing case precedent was in the Occupied Territories in Palestine, in 2005 or 2006. There was an abduction of an Israeli military man, Gilad Shalit, in Gaza. And the Israeli Air Force had deliberately done a massive number of sonic booms. A sonic boom is when a fighter jet travels in supersonic speed, it breaks the sound barrier and creates a shockwave. It flew over Gaza deliberately over a few days. Human rights groups like Beth Shalom and other groups like Physicians for Peace filed a lawsuit against the Israeli government. They were allowed to do this because they are Israeli groups. They went to the court and their argument, with physicians and expert psychiatrists, showed that there was substantial evidence that people were substantially damaged from sound. People had anxiety. People had what they call in law “irreversible effects” and “superfluous effects”: unnecessary suffering because of this military operation.

The case didn’t go anywhere, but it created a legal conversation. The Israelis said that this operation was directed towards militants, Hamas militants, and it was mainly done to cause discomfort and distract them. Civilians were an “incidental effect.” What happened to civilians was incidental. This is the first time this question of sound being incidental came up.

EARWITNESSING IN LEBANON

GO: The law around this is still very much in its infancy. Yet at the same time, we know that these military actors are not naive. They’re doing these kinds of operations on purpose. And the law, through work like yours, is catching up to this. That’s why it’s so important to think through these frameworks and ideas very carefully: What is this kind of trauma? How does it evolve?

Perhaps as a last question, before we move to a Q&A: thinking about the wider context of listening in Lebanon, I wanted to ask you about the concept of earwitnessing. We’re familiar with the idea of the eyewitness as someone who has witnessed historical event. Earwitness is the aural equivalent to that: someone who has *heard* a historical event; in this case, let’s say a war. Can you tell us about why earwitnessing is important in the Lebanese context?

MS: The idea of witnessing is very important in this context. I was indebted to the work of Susan Schuppli on earwitnessing, and Lawrence Abu Hamdan, and thinking about the ear rather than just thinking about the eye and visibility.

In the context of Lebanon, it’s spectacular, the idea of listening today. It was already something important after several wars, because this country has lived through several short wars that were swift but really loaded and aggressive. In the 2006 war there were 7,000 military operations in one month. To give you a context of the scale: in the Saudi coalition war on Yemen, it’s been five years now, and there were 24,000 military operations. So, by comparison, 7,000 in a month is huge. All this is death. It’s violence, but it’s also sound. It’s people who didn’t die, but people

who listened. It's the thing that you cannot escape. You can close your eyes, you can *not* see, you can move away, but sound is going to travel. It's going to penetrate any porosity; it's going to go inside you. You're forced to listen.

Earwitnessing is a forced form of witnessing. The eyewitness can decide not to see. But even if you close your ears, vibrations are going to make you feel what's happening. This is very important, understanding the earwitness, in my opinion.

In the context of Lebanon there were all these events. People were already familiar with explosive sounds, lots of car bombings, assassinations. It was really common. But there was a break for a few years. And then recently, three years ago, there was this great financial collapse that happened in the country and this substantial uprising that happened. And many of the tools that were used by protesters were generating loudness. Protesters would try to go inside the parliament, but it was heavily fortified. So the only way they could communicate and show anger with the representative of the state was by banging on huge metal sheets nonstop. Then, when protesters took over a few monuments, they would play loud music as a form of protest. Sound was totally present. But after that there was the 4th of August explosion. The amount of sonic shock that happened and the amount of sonic energy from it . . . I was in Beirut when it happened. I wasn't really far [from it]. It was indescribable the amount of sonic force that came out. And it was accompanied by very strong vibration. The shockwave was really substantial.

After that, there was this phenomenon where everyone I know was talking about how sensitive they are to sound. If you just click on something, if you just drop something on the floor, you would notice lots of startling from everyone. Startle reflexes were everywhere. And then after that there were a few instances where the Israeli military had done deliberate, low-altitude raids over Lebanon. People were reliving specific traumas. And this discourse started to become much more prominent. It was the first time in my life where I saw a territorial discourse on trauma, and particularly trauma being sensitive to sound. It's like, "We're really sensitive to sound, we cannot handle sound."

Something that was really striking after the 4th of August blast: we went to a protest on the 8th, which was four days later. And everyone was so strict that there shouldn't be any music or any banging. No one wanted to listen to anything. People were really, really sensitive to sound. And it still continues until now. A month ago, there were two Israeli jets that flew on low altitude over Lebanon. I was looking at Instagram, and most people were using trauma dialect, through words relating to trauma: reliving, exposure, triggers, external stimuli, etcetera. It was really prominent, the idea of sonic culture.

GO: In your article you close with a discussion of the idea that the traumatized subject is a governable subject. And so, particularly in terms of what you're describing, it's very disturbing to think about this mass trauma which has occurred in Lebanon. At the same time, I know from having visited there and having family from there, they're people who have such a strong sense of power, politics, and resisting this kind of oppression.

Thank you so much, Mhamad. Thank you, everyone. ■

MHAMAD SAFA is a sound producer, architect, and researcher based in London and Beirut. His work focuses on the sonic makeup of multi-scalar spatial and techno-scientific conditions. He explores their intersections with aural traditions, subcultural practices, and environments of conflict. Safa was a fellow at Ashkal Alwan HWP in 2018. He graduated from the Centre for Research Architecture at Goldsmiths, University of London, and is currently a PhD candidate in international law at the University of Westminster. Safa has shown individual and collaborative artwork and performances at Goethe-Institut Lebanon, Beirut; Arab Center for Architecture, Beirut; the Institute for Contemporary Art, London; the Centre for Research Architecture, London; and the Sharjah Architecture Triennial, among others.

GASCIA OUZOUNIAN is a sonic theorist and practitioner whose work explores sound and music in relation to histories of science and technology, urbanism, and violence. She is the author of *Stereophonica: Sound and Space in Science, Technology, and the Arts* (2021, MIT Press) and numerous essays on a wide range of topics including sonic memories of the Armenian genocide; counterlistening; vibrational architectures; sound art in radical Black arts traditions; women in sound art; and the acoustic mapping of cities. Ouzounian is associate professor of music at the University of Oxford, where she directs the European Research Council-funded research project “Sonorous Cities: Toward a Sonic Urbanism” (soncities.org).

ACKNOWLEDGMENTS

The authors wish to thank Haig Aivazian for his incisive and inspiring work; the wonderful staff at The Showroom, including curator Lily Hall, managing director Seema Manchanda, and assistant curator Oana Damir; and the Sonorous Cities project administrator Olivia Thornton for their generous support of this event. They wish to extend a warm thanks to María Edurne Zuazu for the generous invitation to contribute to the Militarized Ecologies series co-edited by Zuazu and Alejandra Bronfman; and Jay Needham for his support with this publication.

The conversation at The Showroom was funded in part by The Consortium Commissions, an initiative of Mophradat, and the European Research Council (no. 865032). This article is funded by the European Research Council (ERC), under the European Union’s Horizon 2020 research and innovation program, as part of the project “Sonorous Cities: Towards a Sonic Urbanism” (grant agreement no. 865032).