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Microphones, microscopes, and puppet animism: A conversation about scale, sense making and immersion in recent compositions by Rama Gottfried[1]

Rama Gottfried, Johannes Bernet

This conversation is related to the essay by Johannes Bernet *Living things: Sound and Physical Presence as Measures of Musical Agency and Immersion in Apophänie by Rama Gottfried* included in *Nuove musiche*, no. 5, 2018, in the context of the project *Writing <--> Technology. Composers 1973-1983* (G. Albert, A. Valle, eds., *Nuove musiche*, 5-7).

JOHANNES BERNET In many of your recent compositions, for example in *Apophänie*, but also in older pieces such as *Spindle*, you use techniques of amplification and magnification on various levels. I would like to know what draws you to the idea of scale implied by these techniques, and what role do the technologies you use in your pieces play in this regard?

RAMA GOTTFRIED Scale is such a huge topic for me, although it's hard to pinpoint exactly why, or where this fascination came from. In terms of amplification, I suppose it has something to do with my history, growing up the child of an electric guitar player. As a kid, we often had bands practicing in our living room, and my dad always had a studio at home where he would work on layering multitrack recordings. For my allowance, I used to work the 8-track reel-to-reel machine, hitting the record button for him at the right time, so he could overdub guitar solos. And then later I started playing electric guitar in bands as well, and also dabbled as a DJ. Playing electric music with a band felt a bit like surfing. I got used to the feeling of touching electricity through the strings, where little details of articulation could become enormous gestures.
The mediation principle of amplification is really interesting for me as well. For example,

[1]This written conversation is based on a talk we had over coffee in Berlin in June 2018. Most of the things we talked about then are also discussed here, although some in more, others in less detail.

the experience of walking around town with a microphone and headphones. After a while, you forget that you have headphones on, you can communicate and observe the world as usual, but through the microphone everything becomes a little flatter, a little more compressed, like a photograph. There is a sense of framing. With this shifted context of listening, certain details are accentuated that change the way we experience all the sonic textures, timbres, and spaces around us.

Really, all recordings are by definition amplified music, so the question of scale is a deep part of the way that we listen to music, and I think due to so many years of listening to recordings, I hear acoustic music through the lens of amplification as well.

I've also spent a lot of time working with microscopes, due to my family's company for neuroscientific software. One of my first jobs was to configure and calibrate computer-microscope systems, and so I used to spend hours looking in microscopes, examining organic tissues at 100x where the focal-plane is only a few microns thick, and slowing focus down through the tissue.

As with listening with headphones, looking through optics for a long time gives you a different experience of the world. For example, in photography, you look into a little view port to see the fragment of the world you are capturing. And even more extremely with macro-photography, which lets us explore totally foreign landscapes that exist everywhere. After spending the day looking through a camera, I used to start seeing everything as though it had a frame around it. I think the idea of *scale* is closely tied with these surrounding ideas of *framing* and *context*.

These transformative effects of shifting scale and context are used all the time in language. For example, a metaphor transforms a situation into something else completely, giving you a new perspective. Even just a single word, a noun, a verb — words are symbolic micro gestures that give the mental impression of something else, a transformation of medium. There's a lot of poetry wrapped up with the question of scale.

You can find archetypal forms, even the tiniest particles. Something like a contrapuntal motive — a single interval in the context of a gesture can be expanded into macro forms; a speck of dust can be seen as a sculpture.

I remember one extreme experience of scale I had around age six or so. I was falling asleep and suddenly had the distinct physical feeling of being both extremely small and extremely large at the same time. It was such an intense experience; I forced myself to wake up and tried to get the feeling back into my body. A friend of mine also had this experience and named it "the biggy-smalls". I know some people get uncomfortable thinking about things like an infinitely large universe that surrounds us in all directions, but I actually kind of like this feeling now, it feels somehow freeing. I also grew up going to a meditation ashram, so maybe this is part of it as well. In Vedanta there is a meditation technique of "neti neti" (not this, not this), where you negate each element of perception, an analytic approach that attempts to perceive something that is not perceivable — which I've experienced as a kind of blurring of dualities between scales and contexts.

J. B. The title of your piece *Apophänie* refers to a perceptual process, which is basically about recognizing familiar shapes in random patterns. It seems to me that this has a lot to do with reading or, in your words, "sense making". How is this process of sense making connected to the acts of reading and writing (in *Apophänie* or in general)?

R. G. Right, I think this is connected to our discussion of *scale* in the context of metaphor and archetype.
When we are confronted with new information, we have to somehow make sense of it. It has to fit into a context that we can use to understand the relationship between things and figure out what it means for us. If we can't figure out what something means, or what it is, then we tend to compartmentalize it into the "weird-stuff" category, or maybe then we just ignore it, and then it's invisible to us. Context is everything.
In the case of metaphor, we can usually tell where a metaphor begins, and what its frame of reference is. So, we could say that there is a kind of proportional scaling between ideas. A metaphor is usually used to briefly describe something understood to be more "real", which is the true subject of the sentence. The author Richard Brautigan is a great example of someone playing with, and blurring the structural proportion between metaphor and reality.
Apophänie is a similar kind of process to reading a metaphor. We attempt to find meaning, or recognizable patterns that relate to the contexts we perceive in the world. Sometimes this can be like seeing animals in the clouds, or it can be a kind of paranoia or superstition where we think people are talking about us, or the universe giving us hints; a kind of super-active reading of situations which is often found in cases of schizophrenia, but also related to how we might read a painting for meaning.
My grandfather suffered from schizophrenia. He was an abstract-expressionist painter who died before I was born. Unfortunately, his mother burned all of his paintings, so I can only try to imagine what his paintings looked like. This was another inspiration for *Apophänie*. Growing up I was often afraid that maybe I would become schizophrenic someday, but really I think that this process of working to find meaning in the world is something that we *all* do, all the time. It's just that "normal" people tend to interpret things in terms of what they've learned the "right" way to understand the world is.
This is another issue that *Apophänie* brings up: just because we don't understand something, is it really nonsense? Maybe part of making sense of things is making a leap of context — to attempt to understand something from a completely foreign perspective. Of course, on the other hand, how can we ever really understand something from another perspective? But at least we can make an effort, and look for parallel relationships between what we know from our personal experience, and the outside perspective, *the other*. I think it's important to be open to the idea that maybe what we've learned through society is not necessarily correct, and is certainly not the full picture.
More practically speaking, the piece *Apophänie* asks the performers to analyze in real-time with their own eyes and experience what they see on the screen. They are supposed to find and create characters out of organic material (bits of crumpled up paper, glitter, feathers) blown up to large scale via projection and macro-photography lenses. The original instructions were to look for bodies, faces, eyes, etc. and once found, try to make them coherent to the audience through the movements. As time went on, we started developing more repeatable characters, but this is still really important to the performance of the piece — that the performers have to keep their eyes on the screen, and make their movements for the screen. This is a bit like the TV monitor techniques used by Jim Henson's group for "made-for-the-screen" puppetry production. Everything has to look right on-screen, and this often means that the performers can only make sense of their movements by looking outside themselves; they have to re-learn the

relationship between their muscle movements and the resulting actions seen from the perspective of the camera.
A second layer of reading in *Apophänie* is the computer, which processes the live input from the performer's movements in the miniature set, and analyzes the object's shape in a number of different ways, and uses this data to produce the "voice" of the character. The computer then is kind of an intelligence, with its own criteria for making sense of the shapes. But of course, I've programmed the computer to interpret the shapes in particular ways, to produce the sounds and character's voices, so it's composed, but also more alive, more expressive than what I could program since the material is continuously evolving through the performance. The instrument in the piece is a kind of video-production interpretation system, where the performers' actions create a scenic score, in the form of the video image, which the computer then reads, analyzes, and performs sound from its interpretation; and then this also informs the performers in their process of making sense of their movements. So, there are multiple layers of reading and writing involved.

J. B. You told me about the compositional process of the piece *Spindle* for solo acoustic guitar, that in the beginning you tried to notate the actions the performer should perform, but ended up notating the sounds you wanted to hear. Why is that switch important, and what does it say about the relation of gesture and sound?

R. G. Yes, writing the piece *Spindle* I realized that the action notation I was using wasn't working for my imagination. I had this whole, totally worked out system of notation for the performer's movement that would produce the sounds, but somehow this notation was chafing against my imagination.
Usually, my approach is to figure as much as possible about the piece, the form, the palette of sounds, the meaning, etc., and then if I've managed to think everything through correctly, when I sit down to start composing, I can be free playing with the material, and the piece spins out from itself; I can just follow it in my imagination.
In that first version of *Spindle* I had the whole piece mapped out, but then when I started to compose it was like running into a brick wall, or getting stuck in quick sand; painful. It was then I realized that I really needed to think about the *sound* and represent the *sound* itself symbolically, and let the actions be a product of the sound. So, I reworked the entire notation system and suddenly the piece took off and flew.
I suppose this says, in regard to your question about gesture and sound, that in the first version of *Spindle*, maybe the physical gestures were *so* different from the sounds, that I was having trouble finding the relationship between them symbolically, visually.
My old professor, Nils Vigeland once lamented that most new music was written in slow tempos, and challenged the class to compose in faster tempos. But now that I think about it more, I think there is a visual reason for this — it just makes sense visually that perceptually a long note *looks* long, imagine a whole note, and a short note *looks* short, like a 32nd note, it has flags on it that are waving in the wind it's going so fast. So, I think this more extreme variation between durations is really part of the visual language of composition. Of course, it's all relative, and at a faster tempo, the meaning of the material changes, and this is also interesting, but I think this audio-visual relationship is important for communication through notation.

J. B. You called *Apophänie* a piece for video-puppetry-instrument. How is your interest in puppetry connected to the aspects of sound and gesture and the idea of scale?

R. G. Growing up in Vermont I used to go see the Bread and Puppet theater a lot — they really blew my mind; I think probably Bread and Puppet has inspired me more than anything else I've seen. The scale of performance they use is spectacular: fields, forests, with sometimes hundreds of people working a single puppet.
But the forest pieces I think were the ones that impressed me the most. One of their stages was set inside a pine forest, focused on a kind of treehouse stage, built out of simple plywood. At this one particular performance in my memory, we were all sitting on a small set of bleachers watching the slow moving, almost silent performance on the treehouse stage, and then suddenly you hear instruments from somewhere in the distance, out of view, and then you realize that the stage is much bigger than you thought. And then the whole forest seemed to come alive, puppets revealing themselves from upper branches in trees, large tree-sized puppets begin walking, and then all of the puppets seemed to have left the stage and walked off into the forest, leaving the audience to decide for themselves to sit and wait, or leave, or get up and start following the puppets to where they went next.
Ever since seeing Bread and Puppet, I've dreamed about doing pieces with large-scale puppets. I think a lot of the kids I went to high school with had the same impulse. For fun, we used to hang out in the woods and make sculptures out of trees. And then one painter friend and I started sketching out plans for a traveling puppet / music performance group, but it got so expensive that we had to abandon the project. But I've never really stopped dreaming about this kind of performance (my great-grandparents were in the circus as well, so maybe that explains some part of it).
In terms of sound and gesture, I think what's so interesting for me about puppetry is that puppets can be literally anything, and move in impossible ways. Puppets can also be a kind of scenography, emerging from landscapes; alive, but in the end, they are a projection of our imagination, like an *Apophänie*.

J. B. You did not use transducers[1] in *Apophänie* (although you mentioned in the score that you might add them at some point), but you used them in a number of other pieces. What makes transducers so attractive to work with?

R. G. I think this is part of my puppetry obsession — I've also used motors in some installation pieces, which serve a similar function to transducers: to actuate a physical medium to create sound. I'm attracted to the fact that we can use actuators to control sounds in instruments that appear to perform without human interaction (even if behind the scenes, we might be controlling the performance electronically).
For example, in one piece, *Spectacle Landscape on the Polar Circle*, a sound/sculpture

[1] In this context the term 'transducer' refers to small electronic devices also called 'exciters' or 'tactile transducers', which can turn almost any solid surface into a loud speaker by causing the surface to vibrate at the frequency of a transmitted signal (https://en.wikipedia.org/wiki/Tactile_transducer, accessed 03/25/2019).

installation in collaboration with Berlin artist Hideaki Idetsuki, I used transducers to create the experience of some kind of small animal hiding inside organically shaped paper structures. Using the sound of crumpling paper, played back through the paper sculptures, created a very realistic feeling of aliveness. So, I guess you could think of it as a kind of sonic-puppetry.

J. B. It seems to me that another important aspect in many of your compositions is space. However, this can take very different forms. In the third scene in *Apophänie*, for example, the visual scene does not change, while the focus of the stable camera moves through the scene. In this scene, I get a very strong sensation of depth and space, both visually and sonically. During your time at IRCAM you worked a lot with spatialization technologies, like Wave Field Synthesis and Ambisonics. How is your research in this area related to the kind of abstract spatiality in *Apophänie*?

R. G. One of the big things I learned in my experiments at IRCAM was that spatialization is one part of creating a spatial scene, but that actually, psychologically, we use many more perceptual cues than a sound's position in space to form a mental image of a spatial scene. For example, even with a very high-resolution system like WFS, if you play a low frequency sound with a slow attack, I hear it as having a somewhat larger/wider, softer edge than a high-frequency sound played with a sharp attack. So, the *content* of the sound has a large influence on the way we perceive it spatially. It goes back to Bregman and *auditory scene analysis*, thinking about how we group streams of perceptual stimulus to make sense of things, and also related to this idea of "sense-making" we've been talking about. But actually, in this scene from *Apophänie* it's just a simple stereo field recording, no fancy spatial audio rendering involved, but visually, the camera is focusing through a kind of foreign landscape, using a macro-lens, so the focal plane is nice and thin. The landscape is visually designed to give a sense of depth, and particularly, after two scenes of a more constrained, flat setting, moving into a scene with strong fore, mid, and background, paired with a field recording, the sense of depth is emphasized.

J. B. Spatialization technology like WFS is often associated with the term 'immersion', in the way that the listener is surrounded and enveloped by sound. In *Apophänie* I get a very different sense of immersion, which is the feeling of being drawn into the microscopic world of the piece. You referred to these two contrasting sensations as "pushing" and a "pulling". Would you say that these ideas are important for your music in general, or just certain pieces?

R. G. Right, and this goes back to the idea of scale, I think. One of the things that I really like about small things is that they pull you towards themselves. Like a tiny picture on a wall, you have to put your eyes very close, and focus to make out the image. This is a strong kind of "immersion" for me — but it's different from what we usually mean when we think of "immersion", which is usually some big system that *immerses* you, literally, or even *submerses* you by wrapping around and "pushing" the environment towards you. The alternative, maybe more seductive approach, is a kind of immersive *engagement* which draws you in through suggestion and understatement. To me, the kind of *pushing*

immersion has a more passive subtext connected to it, whereas immersive engagement is a more open, and active participation, even if it is just a psychological participation.
I think yes, this idea of *inviting* the audience is something that is important to me, in all my work. Over and over, I keep coming back to ideas that subtly activate the performance space in different ways, like that imaginary tree performance at Bread and Puppet. For instance, even in purely musical pieces, I'm constantly drawn towards quiet, fast moving sonic textures that as a listener make me more aware of the micro-details of everything in the room. So, I guess this might be some kind of ASMR music. My grandmother once called it insect music, and I think this is part of the idea in *Apophänie*: there is a real-life breathing animistic world being created right in front of us, and actually *by* us; since we, the public, are actively engaged in parsing and making sense of what we're seeing.

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