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An Interview with David Bobier of VibraFusionLab
Entretien avec David Bobier de VibraFusionLab

David Bobier
Founder and Director of VibraFusionLab
bobierdavid@gmail.com

Kim Sawchuk
Professor of Communication Studies
Concordia University
kim.sawchuk@concordia.ca

Samuel Thulin
Artist and Researcher
samuel_thulin@yahoo.ca

Abstract

VibraFusionLab founder and director, David Bobier talks about the genesis of his explorations of vibration and accessibility in art-making, his current collaborations, the effects of the COVID-19 pandemic on vibrotactile artwork and issues of access, and the future of VibraFusionLab. He was interviewed by special issue editors Kim Sawchuk and Samuel Thulin on 23 November 2020. Bobier was co-curator of, and participating artist in, the *Vibrations* exhibition in Montreal, which launched in parallel with the VIBE symposium.

Résumé

Fondateur et directeur de VibraFusionLab, David Bobier parle de la genèse de ses explorations de la vibration et de l'accessibilité dans la création artistique, de ses collaborations actuelles, des effets de la pandémie de COVID-19 sur les œuvres d'art vibrotactiles et les problèmes d'accès ainsi que de l'avenir de VibraFusionLab. Il a été interviewé par les éditeur·es de ce numéro spécial, Kim Sawchuk et Samuel Thulin, le 23 novembre 2020. David Bobier a été coprogrammateur et artiste à l'exposition *Vibrations* à Montréal, lancée en parallèle du symposium VIBE.

Key Words: Access, Technology, Accessible Art-Making, Vibrotactile, Deafhood, Disability

KIM: What is the story behind VibraFusionLab and the vibrotactile work that you've been doing?

DAVID: VibraFusionLab started at the time that we adopted our two kids, both Deaf. That whole experience of raising them and experiencing life to some extent through their senses made

me acutely aware of tactile experience and how they responded to things that vibrated, particularly sound. In my work I've always been interested in finding ways of experiencing things in life in a slightly different way, or emphasizing aspects that are perhaps not as evident. We're so visually-aware that that tends to overtake the other senses, at least in my experience. For most of my creative practice exploring things through sound has been integral.

I think the next major event was learning about the research that was happening at Ryerson University 8 or 10 years ago in what's called the Inclusive Media Design Center (IMDC). They were working on a project called the Emoti-Chair, which was essentially a redesigned chair for the Deaf to experience cinema, with an emphasis on vibration. My first experience was a concert at a bar in Toronto, where they had a number of bands playing and they'd set up some of their chairs. I took the kids to the event and had the chance to meet some people that were involved in the research. I reached out to them.

As an artist, I was interested in exploring elements of vibration in my work and to consider the possibilities of taking the research the IMDC were doing out into the community and hosting workshops with Deaf artists. They were very accommodating and eventually invited me into the project. We started doing workshops outside the academic environment, reaching out to members of the Deaf and disabled arts community. The researchers involved in the Emoti-Chair project applied for a SSHRC (Social Sciences and Humanities Research Council of Canada) grant in collaboration with VibraFusionLab to set up a research space in London, Ontario under the name of VibraFusionLab.

The funding allowed the lab to operate for three years in a public space, a sort of open studio space in London. During that period, we hosted weeklong residencies and invited artists to explore the technology. A lot of relationships developed out of that. A lot of invention around vibration took place. We started to see the potential of developing the lab and the potential of the technology having much broader applications.

KIM: Who did the Emoti-Chair in Toronto?

DAVID: Predominantly Dr. Deb Fels, who is the director of the lab there, Carmen Branje, who was doing his PhD at the time on the Emoti-Chair, Maria Karam, who did her PhD on the project – she'd done a lot of the original research and she's now running the Redwood, which is a theater space in Toronto, where she has a lot of the technology there. Dr. Frank Russo, director of the SMART Lab, was also instrumental in this research. As for the Emoti-Chairs themselves, a number of them came to VibraFusionLab, and then from there we started other applications.

One of the things I found when we started working with the chairs much more directly with people from the Deaf and disabled communities was that the chairs were not necessarily the solution for many of them. In particular, for someone using a wheelchair, that was not a suitable option. So we started other kinds of systems and prototypes that were more appropriate for those individuals – for example, pillows that they could hold or hug, systems that we could put at their backs, ones that they could hold in their hands, those sorts of things. We've done experimentation with ramped vibrotactile floors. They work quite well with wheelchair users, who are able to get onto the floor and feel the vibration up through their wheelchairs.

KIM: Before we go further, can you describe what vibrotactile technology is, what happens when you use this technology, what it's intended to do, and how it works a little bit?

DAVID: Right. Vibrotactile is simply exploring the vibrational frequencies or qualities of sound. On our body we can experience vibrations that tend to be in the lower frequency range quite distinctively. Percussive bass frequencies translate really well into vibration. It does reach up into the voice range, as well, although there are some limitations with the technology. One thing that we're hoping to explore is how we can actually build systems that will integrate higher frequencies. The hardware is what's called the transducers or voice coils or exciters. Essentially they are like the core of a speaker – the centre part that visually when you look you see it move, it vibrates. Transducers are designed to enhance the vibration even more. They're designed as vibrotactile elements as opposed to audio elements. The transducers are connected to an amp – and that's typical of any audio system. Audio is sent into the amp and the amp feeds the frequencies into the transducers that produce the vibrations. And of course, this all has to be plugged into an electrical outlet. So in terms of freedom of movement, they can be a little bit challenging to carry around. Having cords and cables is a bit of a distraction and difficult to manage. It's not impossible, but it can be cumbersome.

That's why the wireless system we hope to develop is so important. Typically vibrotactile systems can be experienced in various parts of the body depending on the preferences of the individual and their sensitivity and capabilities to experience tactility. Hands and fingertips are the most sensitive part of the body and bottoms of the feet are also highly sensitive. What we do

with an individual is we explore, with them, what's most comfortable and responsive. In a nutshell, the transducer can be attached to anything or encased in anything that will then charge that object with the vibration. They're interesting because you can attach them to a table or a window or any kind of hard surface and that surface will become a speaker. So there's lots of ways of experimenting and creating that can happen around using the transducers.

SAM: Could you talk a bit more about where VibraFusionLab is today? What work are you doing now and how did you get to this point?

DAVID: Yeah, so the initial funding of course ran out. I've been able to receive arts funding to support the lab and the research. But typical of grant funded projects, they run out in terms of funding. So I had to start looking at another model. We became more of a mobile project. And the funding started to come in to travel to locations or to organizations or to individuals that were interested in what we were doing. So we became this project that moved around. That's one of the things that's happened and is still happening. All of it has grown organically.

People have been reaching out to us. The driver behind VibraFusionLab now is other people coming in, other organizations contacting us. The work we are involved in is morphing increasingly toward the needs and requests of those we are working with. Acting on these requests and connections, we then work closely with the individual or community to adapt existing systems or develop a new device that fits their needs and the specific situations they are involved in. This may be something that assists them in the creation of a work of their own or in ways that make their work more accessible and inclusive for their audience to experience.

The technology has changed a lot. As I mentioned, we're currently working on developing a wireless system that frees up any individual that's working with it, giving freedom of movement. We feel that's really important, especially in thinking about dance and theatre and performance artists. And that's being driven in response to requests from outside. So we've become something of a resource. People are reaching out to us now from all over the place.

SAM: That transition you've talked about from a more physical space to a more mobile project shows that there is this really intense interest in the work that you're doing. I'm interested in how people heard about it and started contacting you.

DAVID: I'll give a couple of examples. I got this email from a woman who was studying at MIT who said, "I want to come to the lab." And within a couple of days she arrived. Her visit resulted in a long-term friendship. Her name's Adi Hollander. She lives in Amsterdam. She hosted a symposium there called *The Other Abilities* that I attended in 2019. Our collaboration has developed into a new project, funding dependent, to create a fully immersive architectural space emphasizing the vibrotactility of sound and movement and considering all areas of this space including walls, floors, ceilings, and objects within this space. If successful this would bring in specialists in Deaf and disability arts, sound art, tactility, architecture, movement, etc. from Israel, Netherlands, Canada and MIT in Boston and would take place at Centre[3] for Artistic and Social Practice and LIVELab, McMaster University in Hamilton, Ontario.

The ultimate aim of this project is to develop into a second phase of creating models or prototypes for providing greater accessibility to art gallery and museum exhibitions and collections.

Recently an audiologist sent me an email. He lives in Owen Sound and he works for the school board there and has a student, a young woman, who is autistic and Deaf. In working with her he came to recognize that music was really important to her. But with COVID and isolation she's been cut off from accessing any musical activities at the school. So he's very concerned about her situation. He started looking outside of the practice of audiology and to find other ways that she could have access to music, which led him to VibraFusionLab. Once it's possible to travel, we'll go there and work with her with some of our systems and develop whatever's necessary to enhance the possibilities around her love of music through vibration.

Two months ago I got an email from Noah Fields, Events and Logistic Assistant for the Chicago Poetry Foundation. They were looking at ways of increasing access to their programming post-COVID, of course. They have a gallery space and a library and performance space, so that's something we'll pick up once it's possible to travel. We can hopefully add to their capabilities around access.

So those are some examples of people reaching out and what we're experiencing right now in terms of interest in VibraFusionLab.

KIM: Following up on that, David, you mentioned that the pandemic has affected your vibrotactile practice and collaborations. Can you talk a little bit about what that's both closed off and opened up for you?

DAVID: Many of the other systems that I talked about earlier, like pillows and handheld objects are not usable during the pandemic under the health protocols. So we have had to rethink our new prototypes. I have started working closely with Jim Ruxton, who is an electronics engineer and media artist in Hamilton, who ran Subtle Technologies for many years in Toronto, a symposium on arts and technology. He's been working with me on small handheld objects with all of the technology built-in. So what you would get is something that you would hold in your hand and that would then connect to an audio source. We're hoping to develop these as inexpensively as possible so that we can provide them if you have an art exhibition and you want to access a piece that has sound. We would provide these handheld systems, then the audience would actually take them home. Then they could be used at home, plugged into your TV or your radio or your iPhone: any audio source. They would become your own personal vibrotactile system. We've got prototypes right now. I'm working with another artist at the University of Windsor, Professor Rod Strickland, who does a lot of design and printing. We're working on what that object's shape would be. We have to consider different hand shapes, different hand movements, different hand abilities, also texture and tactile sensitivity. Once we're able to get back into working with the community we'll be able to further develop these systems.

SAM: That's really exciting because of the possibilities for networked collaborations when you have several people who have these devices and who can connect somehow and work on things

through them. Are there some other significant artist collaborations you've had in your experience with VibraFusionLab that you'd like to share?

DAVID: One of the more enjoyable and successful would be the VIBE project in Montreal that came out of the exchange program that we had with Together! 2012 in London, UK. The symposium was one of the most enjoyable experiences that I have had in people-gathering because it really felt like an extended family. It really made me feel like I belonged to a community. And as an artist, all my life I probably never have felt that close to a community. And that feeling continues today. In such a community, we don't have to start at ground zero and explain everything. It's about common knowledge and common practice and common experience and from that things grow very quickly.

Another collaboration is a project called Scored in Silence, which we've been working towards for about six years with a Deaf dancer and performance artist from London, UK, Chisato Minamimura – a Japanese born artist. Scored in Silence is a project based on the Deaf survivors of the bombing of Hiroshima and Nagasaki, and the performance actually has some interviews with survivors.

It's essentially Chisato telling the story in sign, performance, projected animation, sound and vibration. It was featured at the Edinburgh Festival over a year ago, last August. And it is planned to come to Canada, again post COVID, and will be presented in Hamilton, Toronto and Montreal. From the perspective of VibraFusionLab our contribution was to design a wearable system for Chisato. Jim Ruxton built a wireless vibrotactile system that was embedded in the

back of Minamimura's gown to enhance the tactility of the sound on her body and to help provide cues for her movement and her performance in British Sign Language. The audio production is experienced as vibration and sound for the audience members through individualized vibrotactile systems called Woojer straps. We are able to accommodate a maximum audience of 50. What we found in the various presentations held in the UK is that we would have an audience where roughly half the people were Deaf and were disabled. So we were able to diversify the audience.

We have also worked on several projects with other prominent Deaf Canadian artists/performers such as Jenelle Rouse, Gaitrie Persaud and Tamyka Bullen in workshops and performances in collaboration with Centre[3] for Artistic and Social Practice, Hamilton; Toronto Creative Music Lab; Theatre Passe Muraille, Toronto.

Another project that has been ongoing, and which is really exciting: we've been working with an integrated dance group in Ottawa called Propeller Dance. Their core dancers represent a number of disabilities including autism and wheelchair users and I have already presented a week-long workshop with them demonstrating some of our vibrotactile technology and exploring ways for them to incorporate the technology into their choreography. They are reimagining their direction and wanting to have much more digital content in their future programming and performance building. So we're going to be working with them and various other professionals in dance and sound. That would result in some new productions and obviously much more accessible and inclusive performances.

To pick up on just one more project called Blurring the Boundaries, I have linked up with two disabled artists now living in Montreal. Charles Matthews is a neurodiverse musician and sound engineer, and Gift Tshuma is a disabled musician and composer and a disability advocate. This project was funded by British Council Canada, Farnham Maltings, and the High Commission of Canada in the UK, and was first launched as a workshop and presentation at the Drake Music Lab in London, UK, one of our collaborators along with Propeller Dance. This project brings the emerging practice of rapid accessible instrument creation to integrated dance: blurring the boundaries between musicians, dancers, and technologists/makers and aiming to re-imagine accessibility in an integrated dance context using digital technology.

So that gives you an idea of a few of the projects we have undertaken in working with the Deaf and disabled arts communities and in building audiences from these communities.

KIM: Could you talk a little bit about your piece for VIBE? I have very fond memories of it – seeing this kind of device that felt like it was from another century, but using this very modern technology, and also having a player piano component in it. It was something that you really did want to touch. It was a very beautiful piece aesthetically and visually had the warmth of old technology embedded in it.

DAVID: I appreciate that I was able to put some of that across. You're absolutely right. I come from an analog age and also one that is curious about how things work. So typically I take something that creates sound or has action or something, and I take it apart. And typically I can't put it back together, but I put it together in other ways. I think the marriage between analog and

digital gives it a sort of timelessness that you can't really place. I really enjoy disrupting the common understanding of something. So that piece has what's called a programmable music box with a crank. You mentioned player piano. It's very similar to the idea of a player piano – there are strips of hardened paper that you can punch out a score or a pattern of holes, that when you pass it through the music box, it creates sound. Each hole creates a different sound.

That sound is translated to vibration using transducers on the fingertips of wooden hands that you can place your fingertips on. What is specific to that piece is that – not being a musician, I don't know how to write music – I was going to have to create my own score, so to speak.

Centred on the idea of communication again, and the exchange of ideas and forms of communication, I typically work from phrases or experiences of people from the Deaf and disability community. I will take a phrase and translate it into braille. Then that braille is sort of a coding system for the score. The idea is that braille, which is a tactile language experience, becomes sound and then that score – the paper – passes in front of a projector light and is projected onto the wall so the braille becomes a visual language.

Then it passes back through to the tech on the hand as a tactile finger tips experience. So there's a sort of system of language and communication that gets altered as you interact with the piece.

The audience is invited to activate the music box. Those kinds of things are still really important to me. Where I'm going right now is working with water as both a medium and as a source of sound. I'm recording underwater sounds. I have small metal vessels or bowls filled with water with the transducers and an amp attached to the base of them. Underwater recordings are passed through the amp to the transducers, which then activate the water in the vessel as a visualization

of the sound that's been recorded underwater. You get all these lovely visual patterns and sounds happening that way.

KIM: Can you talk a bit more about what a transducer is and the process of transduction?

DAVID: Yeah. What does it mean? It means to kind of transport something, a medium or in this case sound from one source to another. So in the case of the water, for instance, the underwater recording, that's the sound source. And then the vibration on the surface of the water becomes the transduction of that sound but in a visual format.

KIM: Adding amplification to the process of transduction helps to render visible or audible what is imperceptible: the vibrational moments that are in communication.

DAVID: I think what happens too, if we think about sound taken from under the water, but then is passed through water as a medium, well that medium changes the sound. That sound coming out of the transducer would be different than the one that's coming out of the water vessel. Digitally we can do so much with sound, right? I mean, you can raise frequencies, lower frequencies, do all sorts of guitar pedal stuff, do all kinds of stuff with computers. It's certainly a medium that people are exploring as sound artists in infinite directions.

SAM: I think your work brings up the energetic aspect of transduction too, and the impact it has on people. There's a kind of energy and there is a force to it and the way it circulates and changes. There's a power that it has as it does that.

DAVID: It is a force. In terms of science, everything vibrates so we're made up of millions of little vibrating parts. So it's understandable that vibration would have an impact on people in some sort of elemental way.

SAM: What is the potential that you see in these practices, in terms of thinking about how they could be taken up in other communities, and thinking of what they could mean for the future of art?

DAVID: I see endless possibilities. That would be a simple answer. I think the more we explore it the more possibilities we realize there are. I think one possibility outside of the realm of art, is in the area of health and wellness. People are using vibration as healing. I've had various conversations with people in the medical community, talking about vibration for rehabilitating or re-growing skin cells or alleviating phantom limb pain. There are possibilities there that I'm not even going to attempt to talk about because that's not my background and that's not where we're going, but I think there's enormous potential in that area.

I do think there's potential in developing – maybe we could call them – alternative languages, emotional languages. We're such aural, visual people that our other senses, mentally speaking, we're not even aware of them. And often when we're looking, we're not aware that we're hearing. It's kind of re-examining the importance of the senses. I think that's part of the future. I think it's also necessary, as a result of COVID and the pandemic and the virus and the isolation, that we explore other ways of enhancing our lives. I see the possibility of having inner body experiences

on the outer body. There's research in EEG (electroencephalogram) brainwave technology where they're able to create a visual interpretation of brain patterns and then sound interpretations of brain patterns. It's interesting to think about how that can become a vibrotactile experience back on the external body – so that you're actually feeling your thought pattern and perhaps controlling thought patterns in terms of emotions. Like what does anger feel like on your external body? How can you alter it? What ways do we have for affecting emotion? Obviously I'm talking in positive ways. For every positive there's a negative, but we're emphasizing the positive here.

One of the current international projects that we're working on, that I mentioned earlier, is to look at developing more immersive experiences of art. It involves Adi Hollander – an Amsterdam media artist, whom I have been working with – and a couple of people from Israel who are part of the Woojer company that designs vibrotactile systems for gaming as well as four or five people from the Netherlands, two people from MIT, McMaster University's LIVELab and is in partnership with Centre[3] - for Artistic + Social Practice in Hamilton Lab. Our idea is for galleries and museums to start thinking beyond “normal”, typical experiences, and begin increasing access and increasing inclusive experiences for and with Deaf and disabled people. To go back to my first statement, the possibilities are infinite in my mind, and gratefully I'm seeing it happen. People are realizing this much, much more and my experience is that galleries and theatres are really realizing that the status quo is not part of the future. So it's about change.

KIM: What do you wish for the legacy of VibraFusionLab?

DAVID: I've been thinking about that a lot. In the later part of my life it's been a really astonishing experience where VibraFusionLab has gone, where it's taken us. And I do think VibraFusionLab now is an entity on its own. I still drive it. I still care for it. I take care of it. But it has become something beyond the space that it started out in. And so in that sense, I think that there's a legacy. I would imagine that some people that I've worked with could potentially continue its purpose.

But on the other hand, I think that there is such an interest in the movement and in accessibility and the awareness around accessibility. Maybe at some point VibraFusionLab does not have to exist. The vibration, the ripple effect will continue. Just having this conversation and knowing that with both of you and with many other people in Montreal and elsewhere, we're still having this conversation and how important it is to keep having this conversation, and to know we've shared this together, is a joy to me. I will never forget that time in Montreal.

KIM: I have one final trick question for you, David, and don't feel like you have to answer it. I'm wondering as an artist who's been involved in collaborating with many academics and worked in the arts and the academic context, does the term research-creation get used and what does it mean to you if it does?

DAVID: I don't think that's a trick question. It's really important. I was a member of the academic community for around 10 years both at University of Windsor and Mount Allison University and I think as an artist it's about balance. To some extent I question... and you know, there's a resistance to that kind of analysis. But at the same time, I've had numerous projects

inherently connected to research-creation and they have been nothing but supportive and integral to the development of VibraFusionLab. In particular, Ryerson gave me access to all that technology and the opportunity to take that technology out of the academic community and into the public. To me if we can go back and forth in that exchange, that's where the excitement is. I could never work in an academic environment that would be closed or non-responsive to the individual and the creativity that is happening outside. One feeds the other to me.

It's really a feast of nourishment and nurturing. It nourishes you and opens up alternative thinking, looking at things from different perspectives. I still have trouble reading academic papers because of a certain resistance, but at the same time it's part of the growth and part of the sustainability of VibraFusionLab.

Bio:

David Bobier is a hard of hearing and disabled identified media artist whose creative practice is researching and developing multi-sensory and vibrotactile technology as a creative medium. This work led to his establishment of VibraFusionLab in London, Ontario, a creative multi-media, multi-sensory centre that has gained a reputation as a leader in accessibility for the Deaf and Disability Arts movement in Canada and abroad. The Lab is now situated at the artist's studio in Thorndale, Ontario just outside of London.

As a practicing artist his exhibition career includes 18 solo and over 30 group exhibition projects across Canada, in the United States and the UK. Bobier's independent work as an artist and as Director of VibraFusionLab has received funding from Canada Council for the Arts, Ontario Arts Council, Social Sciences and Humanities Research Council of Canada, Ontario Centres of Excellence, Grand NCE (National Centres of Excellence), Province of Quebec and British Council Canada.

Bobier has served in advisory roles in developing Deaf and Disability Arts Equity programs for both Canada Council for the Arts and the Ontario Arts Council and was an invited participant, more recently, in the Canada Council for the Arts – The Arts in a Digital World Summit and a panel presenter at the Global Disability Summit in London, UK. Bobier has twice received Canada Council for the Arts funding to do ongoing research of the Deaf and Disability Arts movement in the United Kingdom.