

# Expanding the Vocalist's Role Through the Use of Live Electronics in Real-Time Improvisation

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## ABSTRACT

This paper presents reflections on research where artistic practice has been a main focus. As an improvising singer, it has been my experience that the use of new interfaces for controlling sound processing can open up new roles and possibilities in improvised vocalist/technology interplay. I focus here on two main facets of such interplay: (1) the distance from natural voice sound created by sound processing; and (2) the organization of voice sound through sampling techniques. I point at how these (relatively) new musical possibilities open up for the roles that I call “soundmaker” and “soundsinger.” I will point out how these roles are relevant in my own practice, as well as how they can be combined with the more traditional performative roles of “the singer” and “the speaker.” Further, I discuss some of the challenges experienced in my work with live electronics.

## INTRODUCTION

In my work as an improvising, experimenting vocalist, I have gradually made live electronics an important part of my musical expression. As a fellow in the Norwegian Artistic Research Fellowship Program 2009-2012, I explored new possibilities as a vocalist through my work with the combination of electronic sound processing and acoustic sound in real-time improvisation [1]. This research program viewed the artistic product as a main goal, and my research was conducted both *through* and *on* artistic activity. The main part of my artistic work took part in different musical constellations, but primarily with musicians from the Scandinavian modern jazz and improv scene. To identify an important part of this scene – which is quite multifaceted and hard to define – I would point to the Norwegian groups Jøkleba and Supersilent. These bands relate somewhat to the mix of jazz, rock, traditional music, and pop which was introduced in the 1970s by Weather Report/Joseph Zawinul, Miles Davis, and others, but at the same time with a freedom in form, a

sound focus and a collective, improvised interplay inspired by the movements of free jazz, modal jazz, and the “open form”/Fluxus movement in experimental music. (These specific groups have also been a great source of inspiration.)

Working within the field of improvised music, I am both reflective *in* and reflective *on* the action of making music in real-time. I have focused on what musical roles the use of electronic devices open up for in such improvised interplay, and also on some of the challenges I meet as a performer with live electronics.

## 1. EXPANDING THE VOCALIST'S ROLE

The electronic manipulation of sound is a possibility for expansion of – or even redefining – both the voice as an instrument and a vocalist's role in musical interactions with other instrumentalists. Many vocalists (and also composers) have challenged the traditional roles of the vocalist acoustically through the use of voice experiments and new musical approaches.<sup>1</sup> Still, the use of live electronics presents radical new possibilities compared to the acoustic voice alone, particularly through the *distance from* and the *new organization of* voice sound.

### 1.1 The Freedom of Distance

I started to work with collective improvisation as an improvising singer in an a cappella experimental quartet.<sup>2</sup> While making use of the whole range of singing practices, from bel canto to extended voices techniques, we could easily blend into or stand out from the sound of each other's voices. It was possible and natural for all of us to take on various roles, not just the roles of lead singer or soloist. While I wanted to take part in this kind of collective improvisation in ensembles involving other instruments than voice, I experienced severe limitations. Specifically, I felt that the voice did not blend in, and sounds that were intended to make a musical color (or to accompany something else) mostly stood out as “human comments” that introduced a different focus than the

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<sup>1</sup> Related composers and artists from various eras and genres include Luciano Berio, John Cage, Meredith Monk, Cathy Berberian, Diamanda Galas, Bobby McFerrin, David Moss, and Jaap Blonk among others.

<sup>2</sup> This group, Kvitretten, was an a cappella ensemble with Eldbjørg Raknes, Solveig Slettahjell, /Kjersti Stubø, and Kristin Asbjørnsen.

result I desired. Why? In addition to the conventional expectations connected to the historical role of the singer in an instrumental ensemble (which will not be discussed here), I believe there are also historical and neurological explanations: the sound of the voice seems to have a preferential position over all other sounds for human beings.<sup>3</sup>

In this period, I had already started to experiment with electronics. Through the use of guitar effects and looping technology, I discovered that the transformation of voice sound and the use of sampling could create a kind of freedom in the interplay with drums and synthesizers. As an artistic researcher, I explored further possibilities for using live electronics in my practice, and I reflected on the reasons for the freedom I experienced.

What was actually at play here? An important area in my research is the experience of “distance.” The electronic processing and transformation of sound can create an experienced distance from the natural voice sound. In my experience, this distance is central to opening up new possibilities for my interactions with other instruments.

Through the use of electronic processing, three main types of “distance” are experienced as musical parameters in my work. These include distance in space, time, and in structural and timbral characteristics. Reverb and delay effects offer the possibility to work with space and time. I can “place a sound” in a range of spaces – from close up to far away – through the use of artificial reverb. This effect can also lead to an experience of time: something that is far away is also often experienced as “the past” or at least something that is not necessarily happening in a given moment. This effect also gives a possibility for making music where the voice does not take first focus, because it is not experienced as “close” in space and/or time. (By contrast, a very “dry” voice sound has a nearness in space and time that often demands a primary listening focus, at least the first time it is introduced.)

The use of processing and effects that change voice sound in a more structural way creates a distance in structural and timbral characteristics. For instance, if I want to, I can make the voice almost impossible to recognize as the source of the sound. Pitch-shifting, granular synthesis, filtering, distortion, etc., are effects that make it possible to sound “not human.” Through such tools, I can take part in the improvised interplay more as “sound” than “voice.” In addition, the possibility of balancing smoothly from a natural voice to different levels of transformed voice sound opens up performative possibilities for playing with different grades of nearness/naturalness (human, not human, almost human, strange human, etc.) as a musical parameter in itself.

Andreas Bergsland has developed a framework for understanding and describing the experience of voices in acousmatic and electroacoustic music and related genres [2]. Bergsland suggests a model of the maximum and minimum voice, where the maximum voice can be described as the neutral, intelligible speaking voice, and the minimum voice as heavily manipulated and abstracted.

The imagined space between these two extremes is thought of as a continuum that extends from a central zone, defined by the maximum voice, to a peripheral zone, defined by the minimum voice [2, p. 3]. Although developed for analyzing acousmatic music, this model seems relevant for understanding and articulating what I think of as a “play with nearness/distance” or “playing with zones” through the use of live electronics [1, see §3.2.3].

Bergsland breaks his continuum down to seven key “premises,” which are described as partly interrelated dimensions in the experience and evaluation of voice sound. These premises can all be traced in my use of voice and electronics in music, and I see them as being helpful for understanding how such music is actually working.

The notion of a “clarity of meaning” is one important example of Bergsland’s continuum premises. The use of live electronics can have a great impact on the use of and perception of words and sounds that are “word-like.” For instance, I often use text, words, and “language-like” sounds on many levels in the whole range between words as meaning and words as sound. This play with levels of meaning can also be explored acoustically, but the range is much wider when I can work with distance and nearness through electronic processing. A word or sentence can be highlighted through filtering, compressing, and a dry reverb, or it can be almost unrecognizable through heavy processing. In both cases, there is an impression of someone – or something – “speaking.” Here, one could also discuss the conception of “meaning” in a wider sense. In her 2008 book, *Playing with Words*, Cathy Lane invites composers, performers, and academics to reflect on their work with “spoken word” as artistic material [3]. Many of her contributors think of spoken word as a link to the “real world” and as a contrasting element in otherwise abstract music. Thus, to these artists, the voice – and especially spoken words – represents “reality.” Lane herself points to the compositional possibilities in words, particularly as they offer semantic meaning, on one hand, and abstract sonic qualities, on the other hand – as well as all sorts of graduations in between [3, p. 8]. In my opinion, this span in words – from clear meaning to abstract sound – resembles Bergsland’s model, and a conception of “clarity of meaning” will in both cases be a relevant premise for analysis.

But what about other voice sounds? Laughter, yawning, crying, emotional outbursts, imitations of dogs barking, etc. – all these vocalized sounds can also represent reality, and each gives meaningful information, not verbally, but nevertheless very precise suggestions about a state of mind or something happening. (And, of course, the way the words/sounds are spoken in a text provides equally valuable notions for interpretation.) Is this information considered to have “clarity of meaning”? Bergsland points to the importance of context in understanding this premise. For me, this discussion makes clear that when I use live electronics, the distance I find so liberating actually provides a distance from meaning in this broader sense. Not only is there a potential blurring of verbal, semantic meaning and all the different levels and grades of “language,” but there is also a blurring of the

<sup>3</sup> Neurological research suggests that the human brain seems to have areas and mechanisms that are especially devoted to processing vocal sounds. Andreas Bergsland discusses this literature in [2].

emotional, “real-life-referring” meaning that is often naturally embedded in, or associated with, the human voice. I emphasize that the experienced freedom, for me, lies in the possibility to move freely across the whole area of Bergsland’s continuum, not just in “maximum distance.” To be able to blur traces of reality and emotions through electronic processing is a musical tool, not an ideal as such.

Some musicians describe electronic voice sounds as being somehow “out of this world.” I can recognize this idea as a description of my own experience with a lot of processed voice sounds, which can often move towards, or be within, Bergsland’s “peripheral zone.” I could actually say that from my experience, the use of reverb and effects makes it possible to go out of time, space, and reality, and that the mix of acoustic and processed sounds makes it possible (at least in terms of perception) to move back and forth within these parameters. For me, as an improvising musician, this playing with nearness/zones is not based on conscious reflections in real time, but is – at least when it is working – an intuitive action based on my musical experience that has developed through working with my voice and electronic devices.

## 1.2 Sound Organizing

As opposed to the strictly acoustic voice alone, sampling and playing back sound-samples in different ways creates new opportunities for the vocalist [1, see §3.5]. These opportunities are many and they include the use of continuous sounds of unlimited length through looping, the creation of multiple layers, the recording and playing back of material in real-time during performance, and the pre-sampling and mechanical triggering of sound. It is further possible to have a library of recorded voice sound ready to use and to process in the performance, and thus you actually do not need to open your mouth to let the sound of your voice be heard. Such a scenario also suggests another musical parameter of time at play: a recording played back is always from the “past,” but it can be experienced either as history or as a sound produced in the moment, depending on how that sound is created and performed in the musical context. The difference between performing voice in real-time and performing a pre-recorded voice is also a play with “reality.” Combined with the use of the different types of “distances,” both as a musical parameter itself, and as a means to blend with other instruments, this approach is especially interesting in improvisation. Of course, one could discuss whether I am still a vocalist when I am playing back sampled sound. To me, working with my own voice as the only source of sound, and always relating to the possible mix of sounds, roles and functions, the live electronics is experienced as an extension of my voice whether I play back pre-sampled voice-sound or not.

## 1.3 Vocalist Roles in the Improvised Interplay

Observing my practice, I have tried to roughly categorize my interplay functions into four roles [1, see §4.2]:

- “The Singer”: The traditional vocalist role, singing a lead melody with or without words.
- “The Speaker”: Reciting or speaking text, including poems, lyrics, improvised text, and other material. This is also a traditional role for the vocalist.
- “The Soundmaker”: Using different types of sound to add colors, accompany, comment on, or interfere/interact with the musical scenery – using both traditional elements as pitch and rhythm along with abstract sounds. This is a more instrumental approach to making music than the first two roles, and the main focus is on the sound and its function in interplay.
- “The Soundsinger”: This role can include the use of melody as a comment or accompaniment rather than being a foreground focus. Lyrics are used as sound more than a bearer of meaning or language. This is a mix between a vocal and an instrumental approach.

In my experience, the last two of these roles are new resources for vocalists in instrumental improvised interplay, having been made available through the use of live electronics. As mentioned earlier, artists and composers have explored new roles for the acoustic voice in music in various ways. From that perspective, one could argue that the last two roles are not “new” as such, as similar roles could be pointed out in existing acoustic vocal/instrumental music. I will not discuss this further here, but simply state that in describing these new roles in my artistic research, I am clearly operating within experiential categories and not a theoretical framework as such. However, based on my observations, what I find interesting to discuss is how and why live electronics *change the situation* for the real-time improvising vocalist. One could start by asking why it seems so hard to take on these new roles *without* the electronic manipulation of voice sound.

Why do I need this “distance” from the acoustic voice sound to be able to take a more instrumental role in the interplay? When discussing the voice in popular music, Simon Frith points to how the listener is experiencing and interpreting the voice as a body, because to Frith the listener himself has/is a body:

Because with singing, *we feel we know what to do*. We have bodies too, throats and stomachs and lungs. And even if we can’t get the breathing right, the pitch, the note durations ... we still feel that we understand what the singer is doing in physical principle (this is another reason why the voice seems so directly expressive an instrument: it doesn’t take thought to know how that vocal noise was made) [7, p. 192].

This perspective is also supported by Bergsland, who observes:

The ability to engage in imitation of other people’s vocal production appears to be a part of our pre-programmed disposition in how we relate to voices

of others from very early on, and it is also crucial for spoken language acquisition. Recent research has indicated that, even without explicit imitation, the imitative process is so much a part of our perceptual system that it is going on continuously as a form of simultaneous mental simulation that is triggered by stimuli from all sense modalities [2, p. 76].

In other words, we tend to subconsciously “imitate” the voice sound that we hear. We know – or our body knows – how to produce something similar.

This imitative ability could explain further the experienced *focus or preference* of the voice sound in vocal/instrumental music. Our body reacts instantly to the recognisable vocal sound. In this perspective, extended vocal techniques (sounds produced in an unfamiliar way for the listener) will have a more instrumental function than conventional techniques. Electronic processing even makes it possible to totally “disguise” how the sound is produced, and thus make it hard/impossible/unnatural to imitate. Therefore, while it is possible for the vocalist (through processing and re-organising the voice sound) to operate in an instrumental way, the sound is less – or not at all – interpreted as connected to the body.

As I see it, Bergsland’s “minimal” voice function (meaning a heavily processed, and thereby “instrumental,” voice) is not the only important issue here, although it seems to open up a new space in the interplay. For me, what makes live electronics a unique possibility as a singer is, as stated earlier, the *play within the whole range of the continuums of “distance/nearness,” “natural/unnatural,” “maximal/minimal,”* etc. These continuums are not only related to the interplay with instruments, but are musical/expressional parameters in themselves. As a parallel, it is not only the new vocal roles as such that interest me, but the possibility of both switching between and combining the “singer,” “speaker,” “sound-maker,” and “soundsinger” within the same music.

I have observed how I employ these vocal roles in my various musical projects. There are differences in balancing the roles related to the musicians I perform with. For example, in my duo constellations,<sup>4</sup> my accompanying role is often more obvious than when I play with trio or quintet.<sup>5</sup> This difference seems natural – with only two musicians playing, there is usually more space in the interplay, and it is therefore often easier both to define and to experience what I do as accompaniment (rather than a musical comment or color) both by my fellow musicians and myself. So, my roles are not just defined by what I do, but how fellow musicians interpret and react to this in the interplay. There are various parameters that have an impact on the vocalist role: the musical framework and aesthetics; the degree of listening and interacting in the improvisation; and, not least, to what

degree the other instrumentalists open up for other roles in their playing. (For instance, in a more “conventional” part of a performance, the drummer might stick to a solid groove and the synth player to a bass line and even harmonies. By contrast, in a more open musical approach, the roles are less defined.)

## 2. CHALLENGES

My reason for using electronic devices is both my fascination for the artistic material, new sounds and new musical parameters, and (as pointed out) the experience of freedom and new roles in improvised interplay. There are of course challenges connected to this choice of instrument and music. The improvised interplay is challenging on many levels, and that choice of bringing in live electronics can be experienced as adding complexity to the situation. The use of technology is demanding in several ways, both regarding the connection between performer and instrument (skills and control), and the fact that technology sets premises for performing. Further, the orientation towards sound and sound texture as a musical element – in a combination with more conventional musical parameters – is a challenging operation involving different musical paradigms. Below I will refer briefly to some of the discussions that are experienced as relevant in my work with live electronics.

### 2.1 Choice of Instrument

The process of developing the technical and musical ability to work intuitively with electronic sound processing is like learning a new instrument, but very different from the process of becoming a singer. The setup – the devices I choose to use and how the controllers are mapped – is crucial. Working with improvisation, I also need to be able to carry out musical ideas on the spot. Musical activity and technical control therefore ideally have to be in my hands and my ears, more than in my thinking and planning. Still, I choose to work with conventional commercial technology, not specially designed, gesture-controlled instruments. To me, this approach is a natural choice due to my relationship to, and experience with, this setup as part of the instrumental interplay. An example of another possible combination of voice and live electronics can be seen in Alex Nowitz’s impressive work with voice and gestural controllers [4]. During my artistic research, I considered trying out a similar way of working. Ultimately, I decided that this path would probably not lead me to where I wanted to go. For me, a system like Nowitz’s would, as I saw it, become very limiting in terms of what parameters I actually could manage to control in real-time. The changing of effects and reverb parameters – and also the oversight, balancing, processing, and combining different loops and sampled sounds – seemed to me to be very hard to control without both different sets of dedicated one-to-one controllers and also the visual feedback from displays and faders. Even if Nowitz’s gestural controllers seemed to offer a very flexible, organic instrument (at least when used by Nowitz), this kind of technology would change the way I could operate as a musician, and it would make

<sup>4</sup> With Thomas Strønen, drums and electronics, and Michael Duch, double bass. See [www.toneaase.no/musical-projects/](http://www.toneaase.no/musical-projects/).

<sup>5</sup> My trio projects include work with BOL (with Ståle Storløkken and Tor Haugerud) and Undercover (with Krister Jonsson and Per Oddvar Johansen). See [www.toneaase.no/musical-projects/](http://www.toneaase.no/musical-projects/). The quintet work include projects with BOL (centrally with Snah and Stian Westerhus, see [www.bol.no](http://www.bol.no)), and with Marilyn Mazur (different projects).

me less flexible in my musical context. Obviously, in many of my instrumental operations, there are not close and natural connections between bodily gestures and musical sound. Although this can be a challenge (both to me and to my audience), I choose control before complexity so that I might be able to function within my choice of musical settings.

## 2.2 Technical Skills, Intuitive Action, and Latency

In the artistic research project “T-EMP Communication and Interplay in an Electronically Based Ensemble” [5], Øyvind Brandtsegg, et al., discuss various reasons for (and types of) latency while working with live electronics and improvisation. Brandtsegg points out that a trained musician playing a conventional instrument will, through years of exercise, overcome a mental latency, as his body and instrument will be “almost as one.” Such a musician does not have to think about how to play- the instrumental action is a physical and instinctive reaction to stimuli (what he hears).

As Brandtsegg notes (in the T-EMP project and other sources), since the development of technology and instruments never stop, the personal instrument/setup often changes. Body and instrument are therefore- at least for periods- not “almost as one”, and thus the process of diminishing mental latency is much more difficult. In my participation in the T-EMP project, and also in my other work, I partly observe an intuitive, relatively immediate, musical action in my work with live electronics. (It has to be noted that compared to the other musicians in the T-EMP project, I do *not* change my instrument or setup often – in part because I want to be able to work intuitively as much as possible.) In some contexts though, I still observe a mental delay when I play. Sometimes this delay is caused by a need for “technical thinking before/while doing.” At other times, the delay is simply a matter of musical hesitation – it is not clear to me what to bring into the improvised interplay, what my response should be to the music played: I/my body does not instantly “know” what to play. This situation is not unusual in improvised music, and it is also a necessary position to undertake as improvising musician – you need to be open for what is to come. Therefore, one could argue that this kind of latency is not special for musicians using Digital Music Instruments (DMI), and that it has to do with the improvising situation. Still, from my experience, I would like to point out at least two relevant reasons for a “musical delay” when playing DMI in an improvising ensemble: (1) the lack of established conventions and roles for the DMI in improvised music; and (2) the amount of possible choices of sound. Even if the blurring and changing of musical roles is present for all musicians in much modern improvisation, the short history of DMI in my genre of improvised music – especially as a vocalist in an instrumental interplay – leaves me with few direct examples to lean on and to learn from. At the same time, the amount of possible sound alternatives in an improvised situation probably can make the process of choosing more time-demanding. Both of these possible reasons for latency are also what led me – and probably many DMI musicians – to this choice of instru-

ment. The lack of conventions and the extreme amount of available sounds creates a huge openness and a possibility to create new music. That said, the defining of roles and the process of creating new sounds while we are playing will sometimes will slow down the reaction time.

## 2.3 Musical vs. Technical

A conventional solo vocal performance with loop station can often be interpreted like this: “first layer, second layer, third layer ... and then the song starts.” The different devices we use naturally form our musical thinking. This observation is true with conventional instruments as well as the DMI (and this relationship is probably necessary in order for us to have an idea about what we are going to play). The musical thought is also often a technical thought (I refer here to the discussion above). We think in terms of what the instrument can do. This perspective can lead to musical conventions, habits, and limitations. As Brandtsegg notes, a music technologist will often build or change their instrument to fulfill a musical or technical vision or need. In my experience as a performer working with more conventional devices [1, see chap. 2], one important challenge is to explore and question my own thinking and habits regarding my instrument. For example, looping is a technique that can be challenged by working “against” the repetitive and periodical feeling, while still striving to keep the sensation of flow (this goal can be a rewarding musical investigation). Further, the combination of various conventional devices in a setup can widen both the possibility for each device and the total outcome. For instance, a sampled sound can be varied by different kinds of processing (space, time, and structure), and in this way it can be “repeated” with controlled (not random or pre-programmed) variations/changes, and therefore avoid producing the same sound. Similarly, by using loops with various lengths from different machines in the setup, I am able to avoid a strict periodic loop experience.

## 2.4 Combined Aesthetics

*What I also like about jazz is that it can be influenced by other music than just pure “tribal music.” A very relevant issue is the difficult “mediation” between the interval-based and the sound-based music. They are virtually being mediated and tested against each other, and I think that’s exciting, because, as a composer, I have decided to neither give up the interval, nor throw overboard my experiences with sound experimentation during the last 50 to 60 years.*

Lasse Thoresen, 2011.<sup>6</sup>

Working with live electronics gives access to musical parameters that do not necessarily go seamlessly together with other parts of my musical identity. On the one side, I explore the energy of noise, the beauty of sound transformation, the small variables in filtering, and the ex-

<sup>6</sup> Lasse Thoresen, interview, *Jazznytt*, 2011, no. 2, pp. 45, author’s translation.

citement of working with random functions in a MaxMsp- patch. On the other side, I include conventional parameters like melodic lines, groove, lyrics, and harmonies.

In trying to combine these musical parameters, I recognize what Lasse Thoresen describes as kind of mediation in jazz between different paradigms for musical performance and experience, including the sound-based and the interval-based. I also experience my work with modern improvisation as being a somewhat parallel mediation between what George E. Lewis describes as being “Afrological” and “Eurological” paradigms in improvised music [6]. Lewis is referring to the differing aesthetic paradigms represented by the improvisational traditions of Charlie Parker and John Cage. Lewis observes that

Perhaps the most trenchant conception of what improvisation can be is to be found in this testament by Charlie Parker: “Music is your own experience, your thoughts, your wisdom. If you don’t live it, it won’t come out of your horn.” The clear implication is that what you do live, does come out of your horn.

He continues by arguing that

Another important and very different model of “improvised music” is practiced among the European “free” improvisers... The term was adopted, I believe, not to distinguish it from jazz in the sense of critique, but to better reflect the European improvisers’ sense of having created a native model of improvisation, however influenced by Afrological forms... One important aspect of the Afrological improvisation is the notion of importance of personal narrative, of “telling your own story.”... Eurological improvisers have tended to look askance at the admission of personal narrative into improvisative activity. I believe that, for post-war Eurological improvisers, the ideas of Cage have, again, had the greatest impact in this regard: “What I would like to find is an improvisation that is not descriptive of the performer, but is descriptive of what happens, and which is characterised by an absence of intention” [6, pp. 282-283].

When sound and sound structure – or “distance” and “space” – are important parameters in music, it is obvious that a strong musical structure like a melody or a rhythm can dramatically change the premises for our musical perception. (Or, to use the words of fellow musician Ståle Storløkken, “The melody always wins!”) I recognize these paradigms at play in my various roles in the interplay: the “singer” and “speaker” is often telling a (personal) story, the “singer” usually within the interval-based paradigm. The “soundmaker” can easily (but not necessarily) operate within the sound-based (and perhaps even the “non-intentional”) paradigm, while the “soundsinger” often mediates between these paradigms. The balance between being in a state (of musical flow) and making a musical statement is one of the great musical possibilities I find as a vocalist working with live

electronics. But it also presents a great challenge. A sense for how various musical elements affect each other is necessary in this mediation. Balanced combinations, cross-fading and overlapping techniques, and “prepare-for-new-elements” strategies – all these are key ideas in rehearsal and practice. By exploring and further developing the ability to take on various musical roles in the interplay, I will hopefully increase my musical sensibility and develop a fruitful mediation between paradigms.

### 3. CONCLUSIONS

As an artistic researcher, my focus has been to investigate and further develop my use of live electronics in the improvised interplay of my genre and traditions. The “newness” of my research has to be seen in light of my musical field, where the norm involves working within the “mediation” between conventional and the experimental paradigms. It is also important to recognize how this project is closely connected to the process of real-time improvisation. Through this work, I have wanted to investigate and articulate how the use of live electronics could expand the vocalist’s role. My reflections were first and foremost initiated and fed by important observations and experiences in the artistic practice, rather than a theoretical framework and plan. As a result, among other things, I came closer to understanding and forming both the material I was working with, the musical roles I was undertaking, and the musical paradigms that were at play. I further developed my techniques, my skills, and my instrumental setup, and I reflected on how music technology can create both new possibilities as well as severe challenges that need to be considered, discussed, and criticized.

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- [5] Ø. Brandtsegg, et al., “T-EMP: Communication and interplay in an electronically based ensemble,” *T-EMP* website,

[www.researchcatalogue.net/view/48123/48124/10/10](http://www.researchcatalogue.net/view/48123/48124/10/10) (accessed 23 June 2014)

- [6] G. Lewis, "Improvised music after 1950: Afrological and Eurological perspectives," reprinted in C. Cox and D. Warner, eds., *Audio Culture: Readings in Modern Music*. Continuum, 2009.
- [7] S. Frith, "The voice," in *Performing Rites: On the Value of Popular Music*, pp. 183-202. Harvard University Press, 1996.

## 5. APPENDIX

Shorter excerpts from some of my projects:

Duo: with Thomas Strønen:

<http://www.toneaase.no/aasestronenduo/>

Solo: <https://vimeo.com/17077575>

Trio: BOL: Skylab Audiovision;

<http://vimeo.com/8802365>

Quintet: BOL + Snah&Westerhus:

<http://vimeo.com/12196139>

The artistic results of this work were presented through various concerts and recordings/records. My reflections are presented in the form of a web document with text and embedded audio/video. This can be found at <http://www.toneaase.no/researchproject/>.