Instrumentality in Sonic Wild{er}ness

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Abstract In 2015, a group of six sound practitioners including the authors came together for 'Sonic Wild Code' and engaged in a series of sonic wilderness interventions with portable electronic instruments. We investigated notions of coexistence, communication and potential for interaction in the hybrid ecology surrounding the lake and settlement of Kilpisjärvi, located close to the three-nation corner of Finland, Sweden and Norway. By immersing ourselves into the vast and raw landscape of the Samiland, we researched and tested musical conversations between us players and the site which we found sounding, vibrating, and speaking for itself. This text is a collection of fragments originating in discussions between the two authors on the theme of such sonic wilderness interventions.

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Fig. 1 The Sonic Wild Code group in the Tundra.

1 A first day in the field

On our first day in the field with the 'Sonic Wild Code' group, we started walking and, after an hour, reached a valley of hills. Low-pass filtered over centuries by ice waves, wind and weather, the environment felt calm yet empty. We initiated our first intervention: screaming into the landscape and listening to its response. First each person's voice alone, then together. The soft mountains echoed back at us, leaving us impressed by the power, reflection and interpretation of our own voices.
An extract from our blog report (Greie-Ripatti et al., 2015) describes the day's progress:

> We had lunch at the Saanajärvi "päivätupa", found a gas stove, made tea and talked. A small group of reindeer came for a visit and we eventually spread out, searching for things to record and capture within our little devices. Some of us started making sounds integrating found objects: Creating audio feedback within rock formations, sampling water streams and wind. A first glimpse of an improvisational piece appeared. This was the moment Dinah Bird, one group member, referred to when she mentioned the intensity she found in being able to mix artificially induced sounds with the acoustics and soundscape of the landscape in her recordings, walking around and trying to find her own subjective listening space. Whether it was the feedback sounds, the voice improvisation, playing the blade of grass or simply our strange behaviour that again caught the attention of reindeer, we don't know for sure. But we had the feeling to have made an impression on the landscape.

2 Evolution of outdoor music intervention

Musicians always performed in homes and public spaces. Over time performance stages evolved from common areas, located i.e. in the centre of settlements, to locations such as churches, concert halls and clubs, that were intentionally designed for music practice.

But music practice is not bound to such places. Moreover, it is an integral part of, e.g., street and festival culture as well as camp-fire gatherings. Such outdoor performances enrich soundscapes of areas that are not commonly considered to be environments for making music.

Outdoor music practice exists since the emergence of human culture. Yoik, a voice practice of the indigenous people of northern Scandinavia in the stateless tribe called Sami, is an example. Inspired by the environment and common day-to-day life, Yoik is performed to the land, the self, the animal and the ethereal.[1]

The reason for people to sit at desks, heads close to computer screens has been brought onto stage in the form of playing digital instruments, practised in buildings with either seated or dancing audiences. Since then, music technology evolved and computers got smaller which opened up new possibilities for sound production and musicians. Current digitisation and amplification techniques allow not only storing but manipulating, synthesising and distributing sound in real time. At the same time, miniaturisation enables such electronic and digital instruments to be as portable as, e.g., flutes or jaw harps.

[1] For a more detailed introduction see e.g. the interview by riley French (2016) with Chris Watson and Ande Somby.

Fig. 2 Antye and Till in Norway.

3 Deconstructing wilderness

What we call “wilderness” is hard to find or not to be found at all. It seems to be a mere romantic concept that does not exist in this pure form. Even finding a place that is “sonically wild”, i.e., where one hears only natural sounds is harder than we thought. We experienced this on our journey to and around Kilpisjärvi, the northernmost settlement of Finland.

To reach it, we flew to the nearest open airport, Rovaniemi, still a 5-hour bus ride away from Kilpisjärvi, going through a seemingly endless area of boreal forest until we reached the tree limit towards the open tundra. Being next to the three nation border to Sweden and Norway, Kilpisjärvi has about 100 permanent citizens, living in houses along a central street with regular border traffic of mainly trucks and tourist cars. From there, it took us another two hours to finally escape the car sounds from the local road, only to be overflown by a helicopter.

With this in mind, we state that humans colonised the planet almost completely and all notions of wilderness are romantic constructs. Even the word “wilderness” itself has a history as a political notion of colonisation (Callicott, 2000).

The Ponca Native American chief Standing Bear (1998) said:

> We did not think of the great open plains, the beautiful rolling hills, and winding streams with tangled growth, as “wild”. Only to the white man was nature a “wilderness” and only to him was the land “infested” with “wild” animals and “savage” people. To us it was tame. Earth was bountiful and we were surrounded with the blessings of the Great Mystery. Not until the hairy man from the east came and with brutal frenzy heaped injustices upon us

> and the families we loved was it “wild” for us. When the very animals of the forest began fleeing from his approach, then it was that for us the “Wild West” began.

With this background we like to talk of “sonic wilderness” as a term that describes places that appear to us sonically uncanny, alien, sublime. Their soundscapes fail our common understanding: they remain wild –in the sense of seemingly “untouched”– of cultural sounds and music. It is a subjective term, one that changes with the time one spent within the surrounding of a sonic wilderness. The more one learns about the surrounding, the less it appears to be “wild” and becomes “tame”.

Fig. 3 Dinah Bird blending into the rock.

4 Preparations and practicalities

Feedback represents physics.
Stone-throwing represents time and the human body.

Computer represents algorithms and complex programming.
Live coding represents intellect and the human capacity to think music as a concept.

The author's sonic wilderness interventions revealed several practical factors that greatly facilitate wilderness performances.

Lightness

Gear should be chosen based on the principles of carrying light, and maximising aptitude. Every element involved in an outdoor performance has to be brought, unless it is part of the performance site. Light yet robust material, with multiple uses is preferable over heavy, single-purpose items. Additionally, everything should be rainproof and electronic components should be self-powered and energy-efficient.

Modularity

For the instrument setup, modularity is key. A collection of building-blocks can be combined to create a variety of different sounds. The instrumental setup becomes a toolbox that helps to adapt to the unknown sonic qualities of the performance site.

Dependency on technical material

Electronic instruments often require additional technical material. E.g., if the instrument itself does not include a transducer, a loudspeaker and appropriate cables are required. While small speakers are preferable for their lightness, they mostly sound tinnier than bigger ones. Besides the inherent sonic possibilities of the instrument itself, its final sound depends on the specifics of the chosen additional materials.

Sound mixing

A matrix mixer allows to mix everything connected to its inputs to everything at its outputs. Effects can be driven into feedback, while still maintained with a mix of external material. The Figures 8 and 9 show two performance set-ups, each built around a matrix mixer.

5 Sonic ecology

Outdoor sites for sonic interventions can be differentiated roughly into *terrain* and *inhabiting life forms* (both non-human and human). Together with us visitors and our instruments, such sites form a temporal *ecology of sonic wilderness intervention*.[2] This ecology possesses a unique soundscape and can be differentiated into *keynote sounds*, *signals* and *soundmarks* (Schaffer, 1994).

> The *keynote sounds* of a landscape are those created by its geography and climate: water, wind, forests, plains, birds, insects and animals. [...]
> *Signals* are foreground sounds and they are listened to consciously. [...]
> The term *soundmark* is derived from landmark and refers to a community sound which is unique or possesses qualities which make it specially regarded or noticed by the people in that community.

These elements form the performance ecology's *sonic conditions* and determine both the intervention's starting point and its development. There are several ways to actively integrate the site into an intervention: Structural elements such as rocks or trees influence the sonic perspective of artists and their audience. Being in front of or behind a rock, close to a stream or on top of a tree affects the sonic experience of the intervention.
Engaging with non-human agency not only means to identify with the site and nourish the temporary ecology but also to possibly identify an audience or even playing partners. In our case those were the wind, the hills, plants, reindeer, lemmings, rocks and a waterfall.
The site shapes the timbral character of musical instruments. Particularly instruments which integrate feedback into their sound generation depend highly on their surrounding. They pick up local acoustic properties of, e.g., rock formations or the open reverberation properties of a forest. In a sense, *the site is a crucial part of the instrument itself*. For other electronic instruments, non-intrusive sensors like barometric, gas, temperature or humidity placed into (or onto) site-residing elements such as mud, water, plants or mushrooms allow the site to contribute its condition into the performance.

6 Immersing and dissolving

> One can just go and be.
> Sometimes, dropping yourself to the ground is enough.
> Just fall and watch ants or frozen structures.
> It can catapult you instantly to just being.
> It is a personal experience.
> A childhood memory.
> When alone with the Land and prepared for a wilderness performance, you can allow yourself to reflect on your self-being.

[2] See e.g. the highly site and time specific sound works by Grill (2014).

You can dive into a conversation with the site. You have the opportunity to (re-) connect with it, to try your borders, shout. Or just, very quietly, whisper. Narrate a story meant only for you and your environment, the Land. Find yourself and get connected with the Land. Gain and immediately follow new ideas. These steps may help you to immerse and dissolve:
Meditation is a strategy to get into an attentive mind-space. Meditate to be in the moment. No purposeful listening is needed. Select a spot where you feel safe, as meditation practice relies on trusting the surroundings. Meditate in the Land, meditate the Land.
Contemplation means getting to know what is already at the place where you plan to play. Contemplate the Land. Practice passive and active listening to get an idea of your surrounding.How do you anticipate it to affect your performance?
Taking action means playing, making music. Make use of the Land as material and playing partner. Express your mood and incorporate what you found while contemplating. Improvise, recognise the Land as your playing partner.
Reflection means to consciously take the time to revisit what happened. To give afterthoughts, observations and new ideas a dedicated space to form themselves. How did the Land affect your playing? How did your playing affect the Land? How are you feeling? Are things different than before?

7 Active and passive listening

> Observe.
> Take in.
> Embrace.

Passive listening means taking in everything that surrounds you. Take a walk, stop at random spots, listen closely to what you hear. This practice is closely related to *Soundwalks*, an "excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are" (Westerkamp, 1974).
In contrast, *active listening* means mixing present sounds by positioning ourselves with respect to the sound sources. One can search for sounds, make it a task to identify as many sounds as possible, or create a dynamic "live mix" by moving from one place to another, pushing certain sounds into the foreground over time; pass them from left to right.
Amplification, headphones and a (stereo) microphone support active listening practice because they introduce an abstraction layer. That their *immediateness* is different from listening directly shifts one's experience from hearing "nature" or "the environment" to thinking and perceiving in more abstract terms such as loud, quite, harsh, soft, high-pitched, or repetitive.

Fig. 4 People listening in the snow.

8 Intervention structure

Derive all sound from the environment.
Process and interact with the space and play it.
First pre-condition: start with microphones, or other capturing devices.
Use a sustainable and ecological energy source.
Incorporate digital processing.
Process sound live, code live.
Possibly add a built-in modular synthesiser.

A wilderness intervention can be composed with the help of *event scores*. They were introduced by George Brecht as collections of written instructions intended to be either followed or explicitly disobeyed (Robinson et al., 2005; Ouzounian, 2011). Such a compositional approach provides a framing in which performers can move around freely. They allow a performance to be re-enacted, either at the same place or somewhere else, very likely with a completely different outcome but still identified as the same piece.
Sonic wilderness interventions also thrive on improvisation, the —possibly complex— process in which artists contribute to a piece by selecting *while playing* from an extensive repertoire of figures and phrases. Choice is based equally on subjective listening and the direction towards which the artist intends the piece to develop. Improvisation means to ground the selection of phrases and musical expressions not only on the piece itself but also on the impressions from the site.

The two concepts of event scores and improvisation complement each other. Rules introduced by an event score may be interpreted as guidelines for an otherwise improvisational performance. They offer a way to interpret the site as a playing partner to which one can act and react, listen and talk. Consequently, improvisation techniques can be interpreted as rules of an event score.

9 Digital music, computers versus nature

Connecting specifically digital music with nature is a curious starting point for these experiments. Using powered PA systems and more sensitive radio FM transmission technology resulted in the conclusion that it is important to move off the grid. The setting is too delicate to invade with powerful machines and impose digital music on natural places. The music has to be derived from the environment and developed from there. The power, the sound source and the electricity must come from the site, that seems like the ultimate goal. A collaboration of digital space and the environment.

By employing a variety of live sampling applications, where a sound is recorded and processed in realtime, a potential symbiosis is formed with the sonic ecology and the musicians playing. The listening is performed both ways. Respect to the environment is established.

Complex apps for tablets offer live sampling, processing, granular syntheses, and all possible audio manipulation. Sonic results merge into a music which is electroacoustic by definition. A minimal simple setup to go out and work with is a tablet with live sampling apps such as Borderlands, FieldScaper, SAMPLR, AUM (complex app mixer), an attachable microphone, a battery powered speaker, a stereo field recorder and for documentation a camera with tripod.

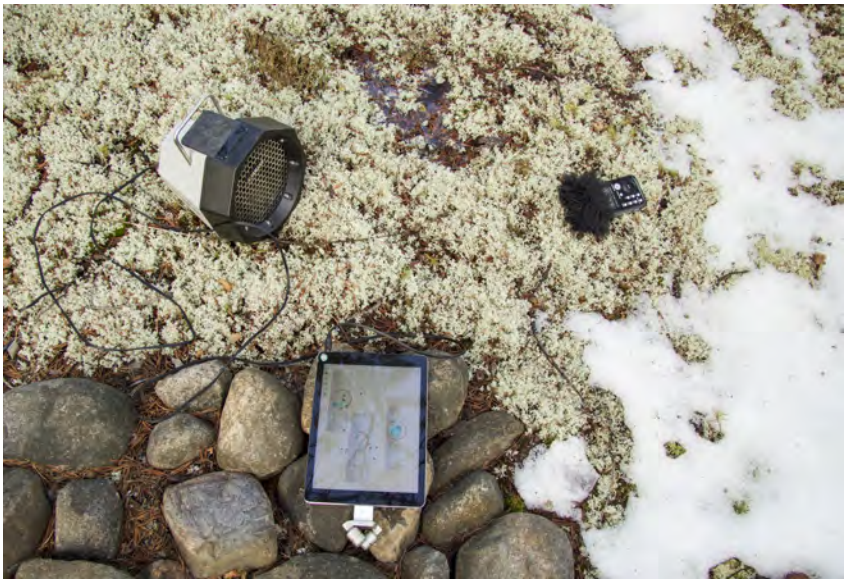

Fig. 5 Antye's field setup.

10 Voice — the embodied instrument

There is one instrument one always carries. It embodies identity, and many consider it the most personal instrument. There will soon be eight billions of them. The voice is part of the human body and, if you stroll through "wilderness", you have a strong self-powered instrument right with you.

Fig. 6 Shouting with and against a waterfall.

The human voice is a source for melody, rhythm, and acoustic intervention. At the same time, it can imitate sounds like wind or dripping water. Whether used individually or in groups, it easily becomes part of the environment and a natural source to work with. Acoustic scenes immensely contribute to its appearance. For example, screaming in a valley manifests itself differently than when shouting against a powerful waterfall or humming in a cave.
Composing vocal pieces along the landscape brings us to Yoik. Yoik is a voice practice by the Sami people and, while the Sami culture has a poetic approach to language, Yoik is wordless (Wikipedia):

> [T]here are no references to how and where yoik originated. According to the oral tradition, the fairies and elves of the arctic land gave yoiks to the Sámi People. Just Quigstad, who recorded the Sami oral tradition, has documented this legend in several works. According to music researchers, Yoik is one of the longest living music traditions in Europe.

Screaming, yoiking and whistling is used in mountain areas by indigenous people to communicate between villages. The whistling language "El Silbo" practiced on the Canary island La Gomera is one example which has been declared as World Cultural Heritage by the UNESCO.
Our voice is a powerful instrument, especially when use without words or language, it can contribute immensely to an outdoor intervention, communicating with the sonic environment. Using voice without words can also remind us of a more animalistic, ancient thread within us and our subconscious. It leads to intriguing and sometimes funny results.

Humans tend to control their vocal expressions closely and self-consciously train not to express themselves non-verbally. An outdoor intervention can open up this possibility.
Use your voice!

11 Live coding

> Live coders expose and rewire the innards of software while it generates improvised music and/or visuals.

Typically, the rewiring as described in the above quote from toplap (2011) is performed via textual interfaces, a drastic contrast to the organic environments in which sonic wilderness interventions take place. While they may seem impractical, it is rather a question of understanding the benefit of such live coding interfaces within a wilderness intervention. Their power lies in their flexibility: starting with parameters and value ranges (e.g. frequency or amplitude mapped to controllers) to the DSP algorithms themselves; nearly everything can be adjusted or changed on the fly, while performing.
The addition of generative elements such as the BetaBlocker environment make a live coding environment good for pad sounds and ambient/evolving elements (Bovermann and Griffiths, 2014).
Next steps in research suggest to interpret and reflect natural processes by integrating data drawn from external sensors: in a DSP-oriented language, microphones are the easiest to integrate but one can also include environmental data such as the local temperature, humidity, light, colours, or gas concentration, captured with sensor elements in realtime.

12 Ensemble playing

> Take X amount of people to the field.
> Find an instrument or select a landscape.
> Bring: acoustic and digital sound making devices, sound objects, portable battery powered Speakers, cameras, microphones, recorders.
> Listen, start to play.
> Listen to the landscape, to the non-human, and to each other.
> Let it happen.
> It ends when it ends.

Playing and interpreting the landscape in multiple ways by multiple players has great potential. A wilderness ensemble performance thrives particularly on the unfolding multitude of instruments and approaches. The variety of the participating concepts contributes to the narrative created. Examples for complementing practices are: Real-time sampling combines effectively with physical interactions and

movement. An auditory feedback system interacts with acoustic properties of the surrounding landscape. Contributions from a DIY pocket synthesiser and the rhythm of tangible actions such as throwing stones on natural surfaces culminates in complex sonic results.
The more the environment as material informs the sound processing, the more the two will blend into each other. The more the human interaction intermixes and harmonises with the storytelling of the land, the more the entire story is resonating. Being creative in the field largely depends on non-intentional listening. One person's perception can be misleading but a group's perception based on collective listening supports the emergence of a shared sonic truth, a truth that can in fact be felt.

Fig. 7 Ensemble — taking in the Land, adding something as a group.

13 Solitude

> Solitude.
> Introversion, contemplation, introspection, self-reflection, daydreaming.
> Being self-absorbed, immersed into oneself and the environment.
> Self-sunkenness.

Even if you are by yourself and do not notice anyone listening, there is always something or someone around you that will be affected by your actions. At the same time your surrounding has an effect on you, both subliminally and consciously. Playing in what at first seems to be solitude invites to explore possibilities and embrace the surrounding. By close observation you can find actors and inspiring elements on site from which you can choose playing counterparts: There are sonic cues such as the

rustling of leaves in the wind or the humming of a distant street. There are visual cues such as the shape of the horizon or the colour variations of the moss next to you. There are dynamic cues such as the movement of water or the behaviour of visiting (wild?) animals. You can select from those sounds, shapes and movements and make them part of the same piece you are playing.
A prominent participant of your performances –one that actually takes part in every single intervention you do– are you yourself. How does it feel to recognise yourself as artist and audience at the same time? Being the only member of the (human) audience and the "solo artist" at the same time questions the "performance" as the core element of music making. The act of playing rather becomes an opportunity to reflect upon decision processes and let oneself drift without the pressure to perform for others. The absence of a critical audience can be liberating. You alone decide: What are the rules for the performance? What are the rules for listening? Will you play solely for your own pleasure, or do you, e.g., practice for a future performance? Do mistakes vanish into the void of distant remembrance, or do they stay and be subject of further interpretation? Will your performance only exist within the moment or do you record it with the aim to turn it into a lasting piece? Will you allow yourself to rethink those decisions while performing?

14 Unfolding instrument design

Amplification or synthesis? Feedback or re-synthesis?
Harmony or noise? Generated or sample based?
Acoustic or electronic? Haptic or code?

The gestalt of a sonic wilderness instrument is within the artists's choice. It consists of a multitude of different elements, ranging from objects found at the site over bodily elements such as the voice up to technological artefacts like samplers, microphones, transducers and computers.

Adaptability

A core feature of a sonic wilderness instrument is its adaptability: it gets re-invented constantly depending on the playing situation. Its gestalt therefore reflects the site it is played at as well as the performer's mood and emotional state. Playing a wilderness instrument is musicking in its purest, utopian form; a never-ending process of design, build, play, practice, refine, repeat (Green, 2014).

Experimentation

To engage in sonic wilderness interventions means to experiment also in designing the instrumental setup. How do certain sensors behave when applied to objects

found on site? How does sound get picked up from a transducer? Which instrumental parameters are musically most interesting?

Energy

Instruments with electronic components and amplification require electricity. As an alternative to providing the energy via batteries, it can also be harvested on site. Depending on the location, solar, wind, water or biochemical processes can be used. The natural fluctuation of such sources (changes in wind speed or clouds overshadowing solar panels) could even be directly used as an additional sensory element for the system by means of power starvation techniques (as known from circuit bending techniques).

Amplification

The way how signals are picked up and, after creative processing, rendered as acoustical waves has a massive influence on how the electrical signals of an instrument are perceived. Apart from the obvious variations in size and amount of loudspeakers, also their specific sound-generation technique can be altered.[3]

Modularity

A sonic wilderness instrument is often not a single object but a setup consisting of several parts as shown in Figures 8 and 9.
The instrument could be further extended by integrating networking capabilities. Then it would not necessarily be located solely at the performance site but in part at other locations, connected wirelessly.

15 Instruments to complement sonic niches

Each potential site for a sonic wilderness intervention is a unique constellation of sonic elements. Making music at this site means to add something to it, to complement it and interpret the resulting soundscape as music. Since it is unclear what kind of sounds to expect from the site, it is beneficial to pack instruments by which one can create a broad variety of sounds, so one can contribute sonic elements that complement the sonic niches within the environment.
An instrument with a diverse timbral repertoire such as a digital synthesiser allows to play percussive drum-like sounds as well as sustained drones. Thus it can be

[3] See e.g. the alternative methods of sound generation in the Resophonic Manta and the Bass Manta by Snyder (2011).

played in situations that call for percussion (to impose structure) as well as when, e.g., a gurgling creek inspires to play a low-pitched pad. Instruments based on sampling technology or acoustic feedback, on the other hand, can be used to pick up and extend site-specific sonic cues. Yet again, to introduce sounds contrasting to the site's soundscape, instruments based on classic additive or subtractive synthesis are useful. All in all, it is the inclusion of both *environmental* as well as *artificial* sounds which enables the player to react musically to the ecology of sonic wilderness intervention.

Altering sounds with filters and effects adds another layer of sound shaping. Here, time-affecting effects like artificial reverberation, echo and granular re-synthesis can be differentiated from sound-shaping effects like distortion, modulation or filtering. The combination of such electronic and digital sound making and shaping techniques with acoustic elements such as resonating bodies found at the site results in hybrid sound structures. Hybrid, in two ways: they integrate digital elements with acoustics and they allow to draw sonic characteristics from the site yet imprint it with artificially induced elements. Figures 8 and 9 show examples of such instrument setups.

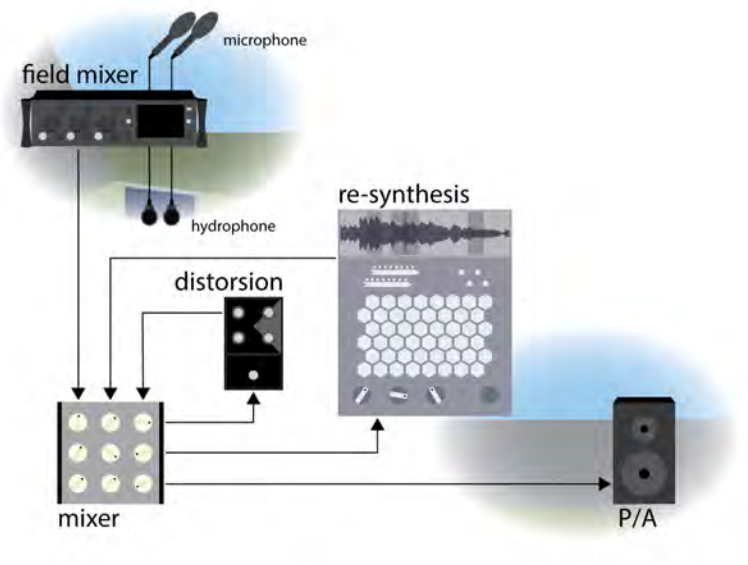

Fig. 8 The combination of an artificial feedback system (a distortion effect wired into a feedback loop) complemented by a set of microphones on a field mixer is picked up by a digital re-synthesis system that can be played percussively.

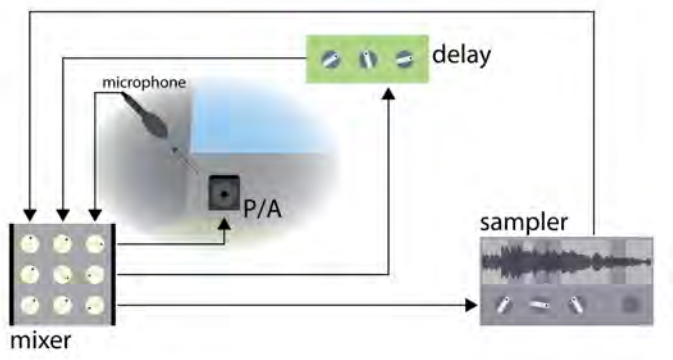

Fig. 9 An acoustic feedback loop can be directly played as well as artificially altered with a delay. The sampler can be used to preserve phrases, repeat and alter them in the ongoing session.

16 Interfaces for playing

An instrument's form and intended playing style thoroughly influences the character of a sonic wilderness intervention. If the instrument e.g. supports immediacy in sound generation (you press a button and a sound appears or changes) and features a simple playing interface, it makes it easy to react to the performance site. Contrastingly, an instrument that semi-automatically generates musical gestures (e.g. a drum machine that creates rhythmical elements) introduces a musical layer that can unfold without the performer's dedicated attention. This allows her to focus on other elements of the intervention (de Campo, 2014). A combination of these two instrument types into one setup means that the performer can shift her attention between the two musical layers: she can either adjust parameters of the generative part, or play on top of its output. This is especially useful in wilderness interventions because it is often not clear from the beginning of the performance what level of control fits to a specific playing situation. The lack of rehearsal time at the site itself requires a setup as dynamic as possible. It is possible to integrate the two levels of interaction –immediate versus generative control– into one instrument by means of a live-coding interface that gives access to the mapping algorithms between (pre-defined) instrument components (Bovermann et al., 2014). It allows the performer to decide while playing: "I want to have fine-grained manual control over the rhythmical elements and then record them into a slowly changing a pattern", or "Let's change the scale from Dorian to Lydian".

17 Documentation

Documenting magic is an art form in itself.

The format in which a sonic wilderness intervention is documented is a significant statement on the artists' viewpoints. Within the Sonic Wild Code sessions, Dinah Bird, an experienced field recordist and experimental radio artist recorded and captured our interventions exclusively.[4]
Independent of the intended usage of such documentation, we recommend to capture every wilderness session in as varied forms as possible. From our experience the actual moments of intervention are so precious and intense that a recording is often a welcome help to re-imagine it later-on. If possible, sound and video recording should be combined with photography to capture the intervention in its context. One approach is to tightly integrate the documentation process into the set-up, possibly recreating a more subjective view of the intervention from the artist's perspective.
Documenting while playing can distract the performers from the creative process itself. Careful planning and prior preparation can help here as well as inviting a dedicated documentarist to participate. Such an external documentation adds a subjective perspective and captures the performance from a distance. In our venture it turned out to be even more interesting when the documentation is performed *actively*, i.e., the recordist moves around the site, changing focus between its sonic ecology and the sounds added by the sonic intervention. The documentation becomes a composition in itself, an interpretation of the moment that captures the soundscape, the playing, and the various sound sources.

[4] The result can be listened to at archive.org (Bird, 2015).

Fig. 10 Dinah Bird and Vygandas Simbelis capturing the stone field session with audio and video.

18 Implications

A great number of artists of the 20th century contributed to the liberation of sound as a diverse musical material with vast creative possibilities. Sonic wilderness intervention and outdoor music are powerful examples of such contributions. Still, they are only at their beginning stage and struggle with technical circumstances as well as conceptual and philosophical questions.
Technical challenges include that commonly available electronic musical instruments are rarely suited for being played both in and with a sonic wilderness: Not only do we need to develop instruments that are more capable in incorporating aspects of their environment into their sounds, further, we should integrate mechanisms that enable them to harvest their electricity needs from their surroundings, e.g., via solar cells, wind turbines or electro-chemical reactions.
Conceptually, sonic wilderness interventions challenge the common understanding of performance not only by breaking up the dualistic approach of *performer vs. audience* but also by questioning its anthropocentric viewpoint: interventions are equally intended to be both perceived and experienced by non-human agencies. This circumstance immediately raises questions that require more investigations and, most essential, a personal experience of sonic wilderness interventions:

Does a stone field listen?
What does it mean to communicate with birds and wind?

Are we still Nature?
Can we deepen our understanding of ourselves by making music in sonic wilderness?

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