EJPAE

Sonic Extractions:

On developing understandings through arts-based research in a performative context

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Abstract

The aim of this study is to investigate how arts-based research can contribute to developing understandings of six concepts in a performative context: *sonic ambience, master station, operating by limitation, locations, preparing, and black dubs.* The research is methodologically informed by arts-based research, and the empirical material is based on the main findings from a previous study on record producer Daniel Lanois's practice. In the present study the empirical material is explored through my own practice, the performative process of which is informed by the six concepts noted. The study is guided by the following research question: "How can arts-based research contribute to developing understandings of six identified concepts in a performative context?" The primary findings are the analytical approaches *arts-based meaning interpretation* and *arts-based transformation*, as well as the *sonic extractions* summarized in the composition "Supro Nova". The findings establish a basis for further discussion through which to discover how the study may contribute to developing understandings relevant to other practices.

Keywords: arts-based research, philosophical hermeneutics, sonic extractions, music teacher education

Sonic Extractions

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Preface

A nova is a star that transforms from its normal state to illuminated and back to its normal state again, just as this composition's ABA form changes from minor to relative major and back to minor again. The nova star, often called a white dwarf, is a small star that can be "lit" because matter flows to it from a nearby red giant. Life's many meetings with power sources, such as other people and objects, can result in illuminated periods. A meeting with Daniel Lanois and a 50s Supro lap steel gave rise to creativity and provided me with an enlightened and productive period: therefore, I dubbed the resulting composition *Supro Nova.*

Introduction

Background and previous research on arts-based research

This study investigates how arts-based research (ABR) can contribute to developing understandings of six specific concepts in my own performative practice. ABR is a

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growing research movement that may strongly support comprehension of various complexities within educational settings, such as in arts education (Almqvist & Vist, 2019, p. 3). Leavy (2018, p. 3) suggests that research that taps into the power of the arts should do so to create new ways to see, think, and communicate. McNiff (2018, p. 22) reflects on the paradigm of tensions within the academic community by suggesting that artistic ways of knowing are contrary to prevailing institutional mindsets and values. He defines research in the arts as a transdisciplinary way of knowing and as an egalitarian and universally accessible process (p. 24). Freeman (2018) enters this discourse via the field of psychology by claiming that, through a more artful approach to inquiry, psychology might become more, rather than less, scientific (p. 125). He emphasizes that no one has a lock on the form science must take (p. 134) and that perhaps scholars are obliged to contribute to the continuous development of research domains by challenging conforming traditions.

Gergen and Gergen (2018) illuminate the role of the performative movement in the social sciences by placing it within the family of ABR (p. 54). They highlight the need to maximize ways to view the world by considering scientific progress a matter of increasing the potential for action, not as a march toward truth (p. 57). These authors further suggest that the addition of artistic expression into the sphere of scholarly study is significant "because it moves beyond the traditional paradigms of representation" (p. 57), a view that is supported by others. "Enormous riches are therefore offered as social scientists explore the ways social life can be understood through the lens of dance, painting, music, and so on" (Gergen & Gergen, 2018, p. 57). According to Gergen and Gergen, the performative movement and development of the performance studies represent a cultural transformation towards pluralism and confluence of domains within research paradigms (2018, p. 58).

In this study I find myself in an arts-based paradigm, where consciousness is developed within a performative framework of understanding that extends beyond

traditional models of representation. In a special academic journal issue on community arts and arts education, Østern and Rønningen (2019) contribute to discussions on the merging of scientific and artistic works. They observe that the Nordic countries, through their United Nations Educational, Scientific and Cultural Organization (UNESCO) memberships, have committed to following recommendations presented in policy documents regarding arts education. They note that these recommendations establish art as a core area in education and society and arrange for learning to take place in art, about art, and through art (Østern & Rønningen, 2019, p. 18), which I consider to be the case in this research context.

Muijen and Brohm (2017) argue that art evokes different senses by simultaneously generating new perspectives from which to communicate and create: "In other words, art does not provide just illustrations and subtitles for communication processes, but it does communicate in its own ways. It creates" (Muijen & Brohm, 2017, p. 2). ABR includes research "where topic and results may go beyond the arts, but where arts-based research processes constitute a major contribution to the project" (Almqvist & Vist, 2019, p. 5). The aesthetic attitude and participation strategies may be transferred to research in several areas, and validity in ABR "should be considered a matter of meaningfulness rather than measurability" (Holgersen, 2019, p. 50). In the research context of this study, all the senses are recognized as part of a holistic hermeneutic apparatus, which I elaborate on in the theory and method sections of the text.

Aim and research question

The overall aim of this study is to investigate how ABR can contribute to developing understandings of six specific concepts in a performative context. In other words, six terms, in this context referred to as concepts, are examined performatively to explore how ABR can help understand the concepts through my own performative practice.

From such a view, the study may develop insights with relevance in the fields of re-search, education, and performative practices.

Angelo et al. (2019) highlight changes in higher education regarding notions of mandate, knowledge, and research in a Norwegian context. Research on teacher education in Norway has placed increased focus on technology and pedagogies (Acta Didactica Norge, 2019; MusTed, 2019). Both researchers and politicians in the Nordic countries and internationally have devoted much attention to teacher education (Darling-Hammond et al., 2017). Although challenges in the field of teacher education differ across countries, a common significant issue is the gap between the education offered and the needs of the educational systems. From this perspective researchers argue for strengthening teacher education and teaching practices (Darling-Hammond et al., 2017; Forzani, 2014). An earlier study (Øien, 2020) that focused on foreground ensemble conducting through a single YouTube-based case study investigated what aspects of musical leadership relevant to conducting could be identified by applying the theory of practice architectures to an analysis of the practice of musician, songwriter, artist, and producer Daniel Lanois. A question that is not explored in that study is how such concepts can inform my own artistic practice. Therefore, to fully understand the potential of the concepts, I examine them in a performative perspective and context. The present study, thus, investigates six of the concepts examined in that research by foregrounding transformation through ABR (Leavy, 2018) in the form of arts-based transformation (ABT), using the performative approach as an analytical lens.

This study explores possibilities for transforming the concepts from terms to sound by investigating my own performative practice. As a researcher, music teacher educator, and musician, I seek to contribute to the field by bringing the performative and qualitative paradigms into dialogue. This is attempted by recognizing ABR as a possible methodological and analytical context and perspective for interpretation

based on an understanding of philosophical hermeneutics in a broad sense. From such a perspective, it is important to emphasize that I recognize embodied interpretation through music as a possible approach to developing an increased understanding. As such, I argue that the study offers understandings that may be relevant to other practices, such as within research, teaching, learning, and performative contexts.

The six concepts I investigate, on which I later elaborate, are *sonic ambience, master station, operating by limitation, locations, preparing,* and *black dubs*. A theoretical analysis (Øien, 2020) offers, as I experience it, only certain aspects of the perspectives needed to develop understandings in the context of Lanois's practice. I, therefore, explore the six concepts noted through an embodied approach to gaining nuanced insights into the converging of research paradigms. The knowledge contribution such a triangulation can help develop on a methodological level may also be relevant to others who seek to operate at the intersection of the performative and qualitative paradigms. This potential is investigated further in the discussion section, which is intended to encourage further discourse. This study is guided by the following research question: "How can arts-based research contribute to developing understandings of six identified concepts in a performative context?"

Theory

Epistemologically and ontologically, this study is informed by Crotty's (1998) concept of constructionism; consequently, this article is written from a constructionist perspective, wherein the researchers take as their point of departure the philosophy that meaning is a socially formed phenomenon; that is, meaning is not something we discover, but rather something we construct in meeting with other human beings, objects, and the world around us. The same applies to the concept of understanding, which implies that meaning and understanding are neither purely objective nor purely subjective (Crotty, 1998, p. 43) but are created at the intersection of the

two perspectives. One way to understand constructionism is that the terms epistemology (what it means to know) and ontology (what is) are nearly synonymous:

> Ontological issues and epistemological issues tend to emerge together. As our terminology has already indicated, to talk of the construction of meaning is to talk of the construction of meaningful reality. Because of this confluence, writers in the research literature have trouble keeping ontology and epistemology apart conceptually (Crotty, 1998, p. 10).

In this manner, constructionism invites a pluralistic perspective considering all stages of a research design. Rethinking how music is constructed and articulated with reflections about epistemological and ontological juxtapositions rooted in the recognition of pluralism can suggest that music may be something other than an *object* about which one thinks or can think. Bearing this in mind, this pluralistic position and understanding offers a suitable supplement for a framework through which to understand the music in this study as a *subject*, in that it contributes to placing me, as a researcher, at play with the material being analyzed.

Because I recognize the inherent power of art both inside and outside a research context, the philosophical hermeneutics serves the study well as a philosophy of science framework. This choice is further informed by Gadamer's (2008) philosophical development in his contribution to aesthetics and art:

> But I hope to have placed it on a new and much broader footing linguistically, ontologically, and aesthetically; for the experience of art can answer the prevailing presumption of historical alienation in the humanistic disciplines, I believe, with its own overriding and victorious claim to contemporaneousness, a claim that lies in its very essence. (Gadamer, 2008, p. 18)

Positioning an ABR study in philosophical hermeneutics is not a matter of course, and some researchers find other frameworks more appropriate, such as, for example,

Rosiek (2018) endorsing a post-human perspective by referring to Barad's (2007) agential realism. Other researchers challenge this view, arguing that such a claim is irrelevant (Almqvist & Vist, 2019, p. 10). The understanding framework of this study is based on what philosophical hermeneutics may offer in light of Gadamer's thoughts on its potential in the face of art:

> As universal as the hermeneutical idea is that corresponds to Goethe's words, in an eminent sense it is fulfilled only by the experience of art. For the distinctive mark of the language of art is that the individual art work gathers into itself and expresses the symbolic character that, hermeneutically regarded, belongs to all beings. (Gadamer, 2008, pp. 103-104)

The idea that the experience of art can answer the prevailing presumption of historical alienation in the humanistic disciplines is largely based on the recognition of art's demands for contemporaneity, about which: "contemporaneousness and this linguistically point to a truth that goes questioningly behind all knowledge and anticipatingly before it" (Gadamer, 2008, p. 19). This view of interpretation, as it is built of art and philosophical hermeneutics constitutes a framework that unhinges the hermeneutical tradition through emancipatory reflection, as it takes as its task the opening up of the expository dimension in its full scope (Gadamer, 2008, p. 18).

Daniel Lanois is a musician and producer with a professional resume that includes producing records for artists such as U2, Bob Dylan, and Peter Gabriel, among others (Massey, 2009, p. 14). By using the theory of practice architectures (Kemmis et al., 2014, p. 31) to analyze Lanois's practice through a single YouTube-based case study, nine concepts of musical leadership potentially relevant to conducting were revealed (Øien, 2020). The present study investigates six of those concepts and aims for the findings to feed a discussion on how ABR can contribute to developing insights relevant to other practices.

As noted, six concepts (Øien, 2020) are explored through this study. *Sonic ambience* (Los Angeles College of Music, 2016) is a concept that encompasses atmospheric sounds and various kinds of sound manipulation that form part of the basis of what is also referred to as the "Lanois sound." The concept of *master station* (Reserve Channel, 2013) involves developing a sound station that may consist of an instrument, microphones, cables, pre-amps, and other relevant recording equipment; when a sound station qualifies as a master station, it is left untouched such that the sound remains the same throughout the whole production process. *Operating by limitation* (Louisiana Channel, 2015) refers to exploiting the creative potential provided by limitations, which may be economic, technological, or time-related. *Locations* (Reserve Channel, 2013), or choosing suitable recording locations (the studio, the basement, the library, the barn, the castle, the kitchen), is a strategic aspect of leadership that further affects both process and product. *Preparing* is highlighted as one of the most important concepts in Lanois's practice, where preparations are essentially his "whole thing" and his "best friend" (Reserve Channel, 2013) and, as Lanois emphasizes, symbolize engagement and commitment. The sixth concept, creating audio samples by manipulating previously recorded material, is termed *black dubs* (Neilyoungchannel, 2010).

Method

Methodology

At times one must step into the unknown and travel what Steinsholt and Juul (2018) refer to as the *necessary path* (p. 10). In this study, the necessary path for developing and presenting understandings follows a methodologically ABR (Leavy, 2018) direction. Leavy uses ABR as an umbrella category that encompasses all artistic approaches to research—she lists 29 different terms within this multifaceted field

(Leavy, 2018, p. 5). These likely are just some of the approaches that deal with re-search on, about, and with the arts. In this study I focus on the transformation pro-cess; consequently, I offer the lens of ABT as a possible way to explore concepts in a performative context.

Kara (2015) recognizes creative research practices yet also emphasizes that arts-based methods are subject to criticism (pp. 22, 154). Despite the criticism, however, some researchers choose the risk of negative reactions and implement arts-based methods. In this study the choice of the arts-based methodology is not motivated by a lack of respect for scientific traditions but, instead, can be perceived as a contribu-tion to the development of the qualitative research paradigm. This *performative movement* (Gergen & Gergen, 2018, p. 54) may possibly represent a third research paradigm or a methodological shift (Leavy, 2018, p. 4), or it may be the qualitative paradigm that expands its own framework. It is not certain that researchers can or should agree on understandings of the performative movement's position within this discourse. Bearing this in mind, I do not seek to identify static truths, although I con-sider it appropriate that understandings and insights be developed and articulated as a contribution to further critical and creative reflection. Perhaps the concept "maybe" could also be recognized with regard to the paradigmatic discourse within research fields in constant and continuous motion, in which prejudices are put both into play and at stake.

Analysis

The arts offer several perspectives that may enrich the analytic process regarding both experience (Gadamer, 2008, p. 18) and creativity (Kara, 2015, p. 117). In this study I in-vestigate how an ABR perspective can contribute to developing understandings of six specific concepts through arts-based meaning interpretation (ABMI), through an ABT analysis, and finally, through the arts-based presentation of the composi-

tion "Supro Nova" (Øien, 2019), in which the performative approach serves as the analytical lens. ABMI is a term developed through this study, which deals with an analysis process at the intersection of ABR and philosophical hermeneutics. In other words, I explore the six concepts by expanding the interpretive perspective to embrace both a performative embodied and cognitive approach to how concepts can be understood. ABT is another term developed through this study, which relates to the concrete exploration of the concepts, where terms are transformed into music/sound in the form of sonic extractions. Considering this, "Supro Nova" is both a work of art and a result of a research process. By interpreting and transforming concepts through ABMI and ABT, this arts-based (Leavy, 2018) practice-oriented self-study (Bleijenbergh et al., 2011, p. 147; Cochran-Smith & Lytle, 2009, p. 154) explores the aesthetic potential within theoretical concepts by examining them through a performative approach that aims to contribute to the research field by renegotiating possible frames of developing understandings within research practices.

Research ethics and challenges

In this study I investigate my earlier findings (Øien, 2020) through an ABR approach by entering a research process at the meeting point, in an extended sense, of two practices: Lanois's and mine. Thus, the concepts are mainly extracted without Lanois's participation but also without the intention to impose my understandings and prejudices upon his work. Instead, I allow my interpretation of his practice to guide me along the ABR process that follows. In this way, I aim to treat Lanois respectfully to understand what the concepts can accommodate from a performative perspective. As a researcher, music teacher educator, and musician, I seek not to criticize Lanois's practice but, rather, to examine how understandings can develop over the course of converging his practices with mine; as a result, I am in danger of claiming that I know Lanois better than he knows himself. Here openness becomes relevant; openness in this research context means I agree with what Lanois says by recognizing his practice

as an opportunity that can inform my understandings, and I explain various ethical challenges that emerge throughout the research process to equip the study with a necessary transparency. Leavy discusses this issue according to ethical practices and value systems within ABR regarding the potential of advanced caring and democratic participation in the research experience and the outcomes of research (Leavy, 2018, p. 11). In a study like this, it is not possible for me to achieve complete objectivity and totally avoid bias regarding how my interpretations are shaped by my gender, my cultural, historical, and socioeconomic origin, and other background factors, nor is it my intention to do so. Instead of trying to distance myself from my own prejudices, it is more important that I acknowledge my own understandings and make them visible in a transparent way. My background as a white male musician and music teacher, combined with my role as a researcher, creates bias in interpretations at all stages in this study. Furthermore, I stand by the ethical choice not to anonymize Lanois or the video sources. Generating data material from an open access channel with no restrictions (YouTube) does not infringe on his privacy since access to the source is open to the public, and I consider it more ethical that I announce both his name and the video sources in order to create transparency and verifiability.

Findings of the study

Arts-based meaning interpretation (ABMI) and arts-based transformation (ABT)

In my previous study (Øien, 2020), I did not fully understand the scope of Lanois's concepts. There was, therefore, a need to explore them in a complementary context. I developed ABMI as a possible approach to researching and interpreting six of the concepts musically. ABMI is, thus, an analytical approach that was developed to interpret the concepts performatively. Hence, I argue that ABMI is one of the findings

of this study, even though it has served as an analytical lens. The same applies to ABT, which deals with the transformation process from concept to sound in the analytical phase of the study. ABMI can then be understood as an abstract interpretive analytical approach through which the concepts are interpreted at the intersection of ABR and philosophical hermeneutics, while ABT is a concrete operationalization of the understandings developed through the performative analysis. Consequently, transformation through ABT is at the core of this study. The possibility of transformation can clearly be debated, but the principle of transforming text into another artistic expression is nothing new in the arts, exemplified by, for example, Bleken's transformation of Kafka's (2012) literary work "The Trial" in the form of the charcoal drawings "Prosessen (Triptykon)" (Hansen, 2011, pp. 148–150). In this way, the study is informed by ABR, which develops into the analytical lenses of ABMI and ABT. Furthermore, the findings are disseminated in the form of sonic extractions as both works of art and results of a research process.

Sonic extractions

In this section, I elucidate the findings extracted by interpreting and transforming concepts into sonic extractions summarized in the composition "Supro Nova" (Øien, 2019). Through ABMI and ABT, the six concepts, which are *sonic ambience, master station, operating by limitation, locations, preparing*, and *black dubs*, are interpreted and further transformed into *sonic extractions*. These six concepts comprise a random selection of findings from a previous study (Øien, 2020). The aim of this study is to investigate how ABR can contribute to developing understandings of the concepts in a performative context; therefore, I do not consider it decisive which of the previous findings/concepts I focus on in this study, so I will not elaborate on this further. The *sonic extractions* are presented using quick response codes (QR codes). The use of QR codes is becoming a common way to disseminate multimedia information

in research articles, as Knudsen, for example, does in his study on performative learning spaces on digital scenes (Knudsen, 2017, p. 6).

Sonic ambience is a comprehensive concept that contains elements such as sound, timbre, atmosphere, and creative experimentation (Øien, 2020). I especially experienced the exploration of the Boss RC-300 loop station as a key tool in this context, which I return to later in this section. In my performative interpretation and understanding of the concept, I encountered several other terms that relate to it, one of which is *sound station*, about which Lanois stated the following:

> Yeah, I'm very neat with my tools. This is a beautiful, upright Steinway piano that I love the sound of ... So, that's a very beautiful, reliable piece, and great for songwriting, and just an all-round good instrument to have in the studio. If I find a piece like this and nurture it and it becomes a sound station, then I cherish it and respect it. (Reserve Channel, 2013)

A sound station can be developed into a *master station*, which represents the point at which the sound is considered optimal. At this stage in the production process, all involved instruments, as well as the recording and production equipment and conditions, are solidified such that the sound remains the same throughout the duration of the production process. Lanois explains it as follows:

> And I would never change it, don't change the cable, don't change the preamp, nothing. It's a living, breathing station, and once it has reached that state where it's the finest that it can be, then it's never touched again...when something qualifies as a master station, then it exists, and then it is never touched again. (Shure, 2014)

By experimenting with numerous instruments over time and trying to understand the concepts by interpreting and applying them in my own performative practice, I have been searching for sound stations and master stations as a strategy for creating a

starting point from which concepts can be transformed into sonic extractions. Lanois talks about the importance of the pedal steel guitar in his work: "I always keep my steel guitar handy because it's very liquid sounding and can provide me with a certain kind of direction for a day" (Reserve Channel, 2013). According to Lanois, the melancholy that occurs when playing the steel guitar may have as much to do with him as with the instrument itself, but he emphasizes the way the nature of the pedal steel guitar allows the notes to sustain (Shure, 2014). I have experienced the lap steel as a manageable compromise between the electric guitar and the pedal steel guitar. For this reason, I bought an early 1950s upright Supro lap steel with six strings. Its simplicity opened an easy and understandable entrance to a fretless slide instrument. For me, this guitar enables creative approaches for exploring sound, timbre, melodies, and harmonies. The setup with the lap steel, Boss RC-300 loop station, a limited pedal board, and Magnatone guitar amplifier (see Figure 1) has become a master station of mine.


Figure 1: Master Station Created by Researcher

Exploring *sonic ambience* through the sound station and master station principles is an example of how I have developed a performative understanding by allowing the earlier identified concepts to inform my artistic practice.

Operating by limitation is another key concept for Lanois (Louisiana Channel, 2015), who focuses on the enabling factors that various forms of limitations can represent. According to Lanois, the artistic product is not a result of available equipment and resources but, rather, a product of the competence of the one who produces the work. If one operates by economic, technological, or other limiting factors, the limitation(s) may free up creativity such that the potential of what is available becomes more fully utilized than it may otherwise have been. After thirty years as a musician in a rather wealthy European country, I have had both time for and access to a comprehensive technological palette. Nevertheless, I wanted to test the idea of how a small selection of effects might free creativity to more fully exploit the potential of some of my equipment. I scaled down my pedal board from twenty guitar effects to a smaller board comprising four effects; I used to take a dozen electric guitars, guitar amps, and pedals to concerts or to the studio. After examining the principle of operating by limitation, I altered my solo rig to include only a lap steel, a baritone guitar, and a guitar amp in combination with the scaled-down pedal board and Boss RC-300 loop station. This can be perceived as a dogmatic and unnuanced approach, wherein minimalism becomes a point in itself, a point that could have been carried even further, as Lanois, during his career, has experimented with countless instruments and instrument groups. Nevertheless, in this context, it was necessary that I investigate the concept to see what creative possibilities the principle of operating by limitation enabled. Due to the interactions made possible through the concept, creativity was released in the encounter with the performative context. I argue that my understanding of the concept expanded as a result of the performative interpretations that I ex-

plored throughout this study, an acknowledgment that may be relevant to others as well. Furthermore, I explored numerous variations of equipment and setups. Other limitations I explored were related to *locations*. I wanted to fully pursue the principles of operating by limitation and locations by establishing a master station at my 8 m2 office (see Figure 2). This constitutes some of the frames for investigating the concept of operating by limitation in this study.
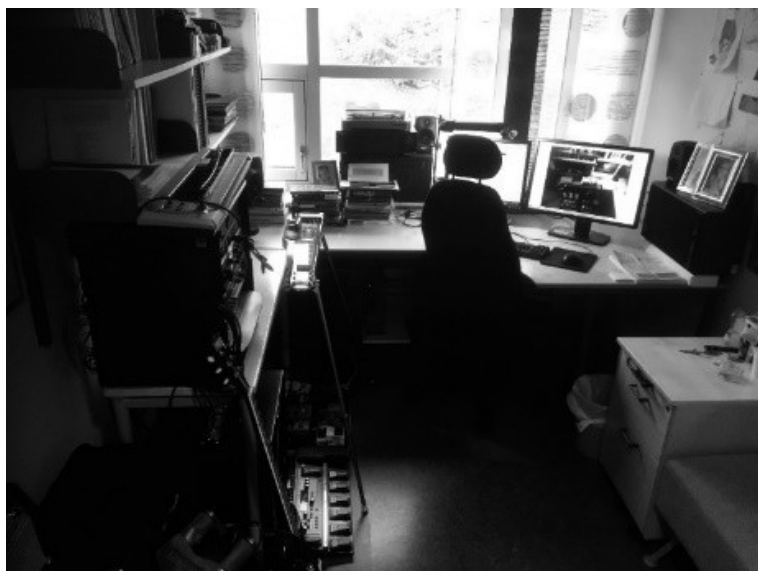
Figure 2: "The Researcher's Laboratory" Consisting of a Master Station and Writing Room in 8 m² office

Lanois's philosophy of minimalism encouraged me to limit myself compositionally as well. Lanois described his fascination with the steel guitar as a liquid-sounding instrument, noting that the atmosphere created by playing very few notes on the steel guitar promotes a certain kind of melodic journey by responding to the harmonic interplay (Shure, 2014). Based on this, I wrote two chord progressions. The first progression became the basis of my composition's A-theme, while the second became the basis of the B-theme, as illustrated in Figures 3 and 4.
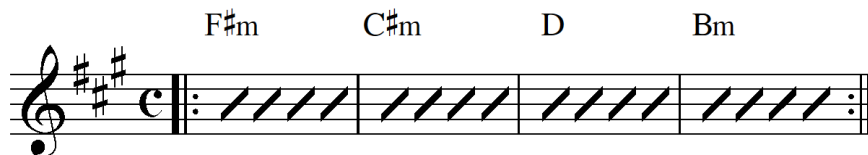
Figure 3: First Chord Progression: A-Theme in the Key of F# Minor

Figure 4: Second Chord Progression: B-Theme in the Key of A Major

These chord progressions developed into different harmonies that ultimately laid the groundwork for a melody based on the chords' top notes, here presented through sonic extractions as the A1-theme and the B1-theme, which can be heard by scanning the QR codes in Figures 5 and 6 or by clicking on the hyperlinks below the codes.

Figure 5: Sonic Extraction: A1-Theme of the Composition:

https://mediasite.nord.no/Mediasite/Play/1ff3172d0422493cb9b9c59ab7b5d34d1d

Figure 6: Sonic Extraction: B1-Theme of the Composition

https://mediasite.nord.no/Mediasite/Play/6f02c2d8c4ca47be807ad0e1ac3601e11d

Preparing seems to be the core of Lanois's practice: "So, the preparation is pretty much my whole thing" (Reserve Channel, 2013). This principle symbolizes both engagement with and commitment to those with whom he works (Reserve Channel, 2013). He explained that preparation is his best friend and that he prepares the re-

cording room, programs beats, and makes sound collages, along with performing other preparatory tasks, such that when the band or artist arrives, they never enter what he describes as "thin air" (Reserve Channel, 2013). Although the first phase of the recording process for this study was conducted in my office absent any collaboration other than with Lanois's concepts and the musical exploration I conducted, I largely relate to the preparation principle in several ways. Initially, I prepared for half a year by experimenting technically (technical skills on the instrument, such as the slide technique) and technologically (equipment/gear/tools) with the instruments and effects. To challenge my own understandings and prejudices, I examined unknown instruments, technological gear, and possible constraining limitations to discover and acknowledge their advancing potential through an ABR perspective. While it may be an exaggerated claim that this led to a fusion of horizons, I argue that my horizon has expanded as a result of new understandings that I developed through a performative exploration of the concepts. The same principle applies to the actual recording situation: I can easily relate to being constrained in the recording phase due to poor preparation. Therefore, I have challenged my recording practice, wherein the entire composition is recorded on different tracks on the loop station before I visit a studio. By doing so, I have time to refine all parts of the composition within frames that provide space for handling time-consuming technical, technological, creative, and reflective challenges. In this way, the limitations involved in the project initiate creativity. Preparing goes along with planning the recordings; in view of this, the *locations* concept serves as a key principle in choosing a recording room (Reserve Channel, 2013), a principle that also influenced the "Supro Nova" composition. Lanois has experimented with sound and different locations by recording in such settings as a basement, library, barn, castle, and kitchen, as well as in traditional recording studios. In the process of recording "Supro Nova," combining use of my office and the recording studio became an important factor for the resulting sound. The loop station itself may operate as a limitational recording factor to create an intermediate link that

sonically adds a unique compression, overdrive, and frequency response. Plugging in and playing the loop station back from a guitar amplifier produces a sound different than does connecting the lap steel directly to the amplifier. The sound quality is affected by the technological detour the loop station represents in a way I find pleasing. This limitational aspect, among others, equips the "Supro Nova" composition with the necessary elements to achieve a sonic result. In addition, the loop station emerges as an important element in the process of transforming theoretical concepts into sonic extractions in terms of both sound and technical experimentation.

Black dubs deal with the manipulation of previously recorded audio instead of recording over dubs (Neilyoungchannel, 2010). After a recording, new instrument tracks do not need to be recorded if further nuances are required. Instead, Lanois manipulates extractions of previously recorded tracks and puts them back in:

> I put days and days…of work into that song building what I call my black dubs. He hits a certain chord, you think, how did that sound ever happen from a guitar? It happened that way because I extracted, I manipulated and put back in. I did not over dub, I didn't put a piano on or another guitar or add a bass or anything like that. No, I took what was already there … It's not an addition, it's an expansion. (Neilyoungchannel, 2010)

I experienced the concept of building black dubs during the mixing phase for "Supro Nova." The composition is recorded using a Supro lap steel, a Fender Jaguar six-string baritone guitar, and a Boss RC-300 loop station. The baritone is tuned in a string range from "A3" (220 Hz) to "A5" (880 Hz) and the six-string lap steel from "E4" (329.63 Hz) to "E6" (1318.51 Hz). This means the lowest available tone is "A3" (220 Hz), which is located between the lowest pitch on a four-string bass guitar ("E3" / 164.81 Hz) and the lowest tone of a six-string electric guitar ("E4" / 329.63 Hz) based on an equal-tempered scale (Physics of Music, 2018). To create a sound, I recorded an underlying drone using a double bass bow on the baritone guitar's lowest A-

string (220 Hz), which can be heard by scanning the QR code in Figure 7 or by click-ing the hyperlink below the code.

Figure 7: Sonic Extraction: The First Drone (220Hz)

https://mediasite.nord.no/Mediasite/Play/8563f89b443a410dbeec5fd4a7c7ecf31d

The mixing phase of "Supro Nova" revealed a low frequency lack. I could have re-re-corded the drone using an octave effect and lowered the lowest string on the baritone guitar by one octave to "A2" (110 Hz) to address this. Instead, black dubbing the bari-tone track became the solution; this was accomplished by copying the track and lowering the drone a whole octave using a pitch scaling plug-in effect in Pro Tools (music software by Avid) and then pasting the copied lowered track into a new track. The tracks were then played together, creating a sound more complex than the sounds they produced individually. The sound produced by playing the tracks to-gether can be heard by scanning the QR code in Figure 8 or by clicking the hyperlink below the code.

Figure 8: Sonic Extraction: The Second Drone (220 Hz and 110 Hz)

https://mediasite.nord.no/Mediasite/Play/d44f1ccee4fe4c5182ceaa4e249662a11d

Lowering the frequency added a depth of sound. An additional black dub example in this context is the use of the reverse effect. The drone, originally recorded on the loop station, was played from the loop through the guitar amp and recorded on a third track in the studio, but this time in reverse. The reverse function is a built-in effect in the loop station that can be activated or deactivated before or after a track has been recorded. As a result, both possibilities are available during playback. The reverse

track was additionally pitch scaled down to "A2" (110 Hz). Together, these tracks make up a three-dimensional timbre that creates a low frequency atmosphere, which can be heard by scanning the QR code in Figure 9 or by clicking the hyperlink below the code.

Figure 9: Sonic Extraction: The Third Drone (220 Hz, 110 Hz, and 110 Hz in reverse).
https://mediasite.nord.no/Mediasite/Play/b82ba91e90b045bba8c39b85b69732f61d

Figure 10 shows the waveforms of the three recorded baritone tracks. The green waveform is the original track (220 Hz), the blue is pitch scaled an octave down (110 Hz), and the red waveform is an octave down in reverse (110 Hz in reverse). In this context, black dubs affect timbre, volume, intensity, and dynamics. It was interesting to experience how the process of exploring the concept of black dubs gradually expanded my understanding of the term.
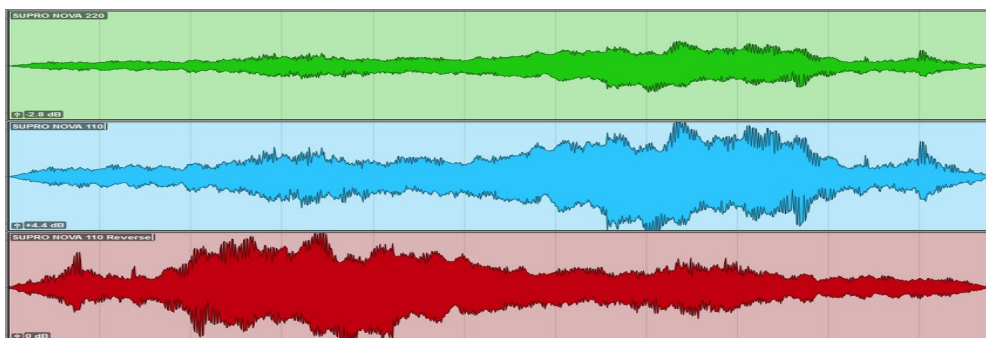

Figure 10: Waveforms of the Three Recorded Baritone Tracks

For this study I chose to relate to the six concepts of *sonic ambience, master station, operating by limitation, locations, preparing,* and *black dubs.* This process expanded my understandings of the concepts by exploring my performative practice through ABR in the form of ABMI and ABT. Examples of this are as follows: (a) creating black dubs by pitch scaling and reversing the recorded tracks of the baritone guitar to

a low frequency drone; (b) investigating the principle of operating by limitation using the Boss RC-300 loop station as a central part of the recording of "Supro Nova"; (c) exploring sonic ambience by creating overtones played by flageolets on a lap steel guitar combined with reverse effect; (d) string scratching with my fingernails, combined with delay and wah-wah effects; and (e) palm strokes against strings, combined with chorus, reverb, wah-wah effects, and the sound from playing with the baritone guitar's double bass bow between the saddle bridge and the stopbar tailpiece. These examples additionally address the principle of developing understandings of the concepts in focus in this study in a performative context, exemplified by the introduction of "Supro Nova" sonic extraction, which can be heard by scanning the QR code in Figure 11 or by clicking the hyperlink below the code.

Figure 11: Sonic Extraction: Introduction of "Supro Nova"

https://mediasite.nord.no/Mediasite/Play/f24b2966907044e8a86648d38b9c23b71d

This study investigates how ABR can contribute to developing understandings of six specific concepts in a performative context, where the concepts are investigated and explored through ABMI and ABT and presented in the form of *sonic extractions*. Contextual frameworks are offered by ABMI and ABT for both analysis and presentation, allowing further triangulation of and nuanced insights into the concepts developed along the way from a performative perspective. By developing and implementing ABMI and ABT as analytical lenses, the findings of this study are further constructed as *sonic extractions* summarized in the form of the composition "Supro Nova," presented in its entirety in the "Supro Nova" *sonic extraction*, which can be heard by scanning the QR code in Figure 12 or by clicking the hyperlink below the code.

Figure 12: Sonic Extraction: "Supro Nova"

https://mediasite.nord.no/Mediasite/Play/2c0e300091364795b98617a649213bcd1d

Discussion

ABR as a philosophical hermeneutical impetus for developing understandings

In this study I examine how ABR can contribute to developing understandings of six identified concepts in my own performative practice. By applying a philosophical hermeneutical perspective, I explore the six concepts through ABMI and ABT, both in the study's analysis and through the construction and dissemination of the research findings. This approach, thus, also affects how understandings of my performative practice are developed. In this way, both my research practice and my performative practice are challenged through a hermeneutical and arts-based learning process that has broadened my horizon both as a researcher, musician, and music teacher educator. The study also shed light on how the findings can contribute to developing understandings relevant to other practices: in other words, how the practice of my own learning through an arts-based practice-based self-study can inform other practices, such as teaching and learning. Furthermore, this study can offer knowledge that informs cross-disciplinary intersubjective spaces at the junction of performative and pedagogical perspectives, which seems to be an under-researched field. From such a view the study may develop insights by emphasizing the performative approach as a possible inspiration for creating practical and creative learning processes. By examining how ABR can help to develop understandings of the six concepts discussed in this study in a performative context, knowledge developed can also be relevant for

teaching and learning in general and music education in particular. The purpose is not motivated by a desire to adapt or copy Lanois's thinking and practice but, rather, to investigate how understandings can be developed through ABR; in this investigation, my perceptions and prejudices are challenged. Here, I do not focus on how my understandings can be merged with Lanois's; instead, I focus on how his thinking can inform my practice. Although developing understandings in this context occurs on a micro level between Lanois's practice as manifested in YouTube clips and me, it may also occur on a macro level in the meeting between art and theory by investigating how ABR can help to develop understandings of both my research practice and my performative practice. Thus, I argue that this study offers understandings on how horizons can be expanded, such as how my horizon has expanded by developing understandings new to me through a performative exploration of the six identified concepts. This study's employment of ABR may be viewed as an academization of the arts, which, according to Angelo et al. (2019, p. 96), seems to challenge attitudes, hierarchies, positions, disciplines, and profiles in performing programs. However, it can also be understood as a tentative impetus to bring performative and academic traditions into dialogue by recognizing a potential for knowledge development when put into play by and with each other.

Implications of applying ABR to this study

ABR does not necessarily strengthen the artistic or performative results by articulating the research process, and artistic performance practice is not always research. The purpose of this study is to develop understandings on how concepts can be transformed into a performative practice using an ABMI and ABT analysis and through an arts-based presentation of the sonic extractions in the form of the composition "Supro Nova." While the theoretical dissemination of knowledge risks providing purely cognitive-based understandings, an arts-based approach opens the communication of multi-dimensional understandings by challenging affective and cognitive as-

pects. Muijen and Brohm (2017) argue that art is about evoking different senses by simultaneously generating new perspectives to communicate and create: "Art addresses qualitative nuances in (social) situations; evokes empathy and compassion; generates new perspectives on old patterns of interaction and routines; helps create awareness of our feelings rather than cognition" (p. 2).

In this view the essence of art may contribute a perspective for developing understandings in the interaction between cognition and affectation through its creative, reflexive potential. This recognition, along with the findings, may be the implications of applying ABR to this study. Some examples of how the findings of this study can contribute to developing insights relevant to other practices follow.

Contribution and relevance of the study

In this study *ABR* serves as a creative impulse that offers different perspectives for developing understandings of concepts and disseminating *research* than is possible using numbers and words alone. This approach is not presented as an alternative but as a supplementary perspective to more traditional research domains. Some examples of how arts-based research can contribute to developing understandings of six identified concepts in a performative context follow. (a) *Sonic ambience* relates to sound, timbre, atmosphere, and creative experimentation that can be relevant as an aesthetic approach that becomes a practice for *teaching* and *learning* techniques. This can, for example, be operationalized by challenging students' understandings of possibilities that lie in unexplored approaches and the use of instruments, recording methods, and creative experimentation with musical styles. (b) The *master station*, which can serve as a relevant approach for exploring potentials within instrumental *teaching* and *learning*, is a principle that may contribute to developing student identity regarding sound and artistic expression. Students' understandings of their own instruments can be challenged by exploring playing styles and technology with which they are not

familiar. For example, applying guitar amplifiers and effects may be a new approach to some who play wind instruments and strings. (c) *Operating by limitation* can inspire a creative impetus in the face of economic, technological, or other limiting factors in educational contexts that may free up creativity such that the potential of what is available regarding *teaching* and *learning* becomes fully utilized. A limitation in the form of a four bar ostinato can be an example of such a limitation in a teaching context, where student creativity can be challenged within a limited musical context. (d) *Locations* are considered in the context of this study related to the selection of suitable recording rooms. As a principle of challenging conventional perceptions, this concept may be relevant to other practices as well. What happens when children practice musical interaction at a mall or in a church? How does an open environment affect a professional ensemble recording? Conventional understandings of what locations are suitable can be challenged in different contexts in light of this concept, which is likely to affect both process and product. (e) *Preparing* can inform different stages of planning associated with practices of *teaching* and *researching* that symbolize both engagement with and commitment to those with whom one works. How a teacher prepares a classroom for teaching, or a conductor prepares a concert hall before rehearsal, may affect the group participating and, thus, also the outcome of the session. (f) Finally, *black dubs* deal with the manipulation of previously recorded audio. This is a principle that may represent a philosophical approach to developing creative *researching, teaching,* and *learning* environments in educational contexts, such as in music education. The principle of exploring existing material may contribute to offering understandings relevant to other practices and contexts. An example is exploring the principle of manipulating existing sound/music combined with recording a new part, such as when rap artists manipulate original recordings and combine them with new textual/harmonic/rhythmic/melodic elements. These examples are presented as opportunities and starting points for exploring further possibilities.

Final reflections

In this study, understandings on transforming concepts into sonic extractions through ABR are developed in a performative practice, thus constituting a basis for further examining how ABR can develop understandings relevant to other practices. In light of cross-disciplinary research paradigms wherein different perspectives can offer nuanced and multi-faceted understandings, practices can be investigated and challenged as a further contribution to engage ABR in the ongoing research discourse. By involving the whole sense apparatus, ABR may offer a unique space for developing understandings in a philosophical hermeneutic perspective, something I experienced throughout this study. Hopefully, the articulation of these understandings can serve as a contribution to methodology and analysis as well in the ongoing research discourse. In addition, ABR can potentially open the path from dissemination and communication to understandings in the sense that it affects those aspects in another way through an embodied approach of developing understandings. Gadamer (2017) claims that the essence of the question involves opening opportunities and keeping them open (p. 43), while Steinsholt and Juul (2018) assert that through new experiences, our expectations are tested by unrest and uncertainty (p. 6). Considering these reflections, I choose to keep the question open to encourage further discourse on art's own premises by presenting the composition "Supro Nova" at the study's digital starting point YouTube, which can be accessed by clicking (Ctrl + click) on the image in Figure 13 to follow the YouTube link or clicking on the hyperlink (Ctrl + click) below it.

Figure 13: Cover art (Sand, 2018): "Supro Nova"

https://www.youtube.com/watch?v=s3kH5VHx_eE

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