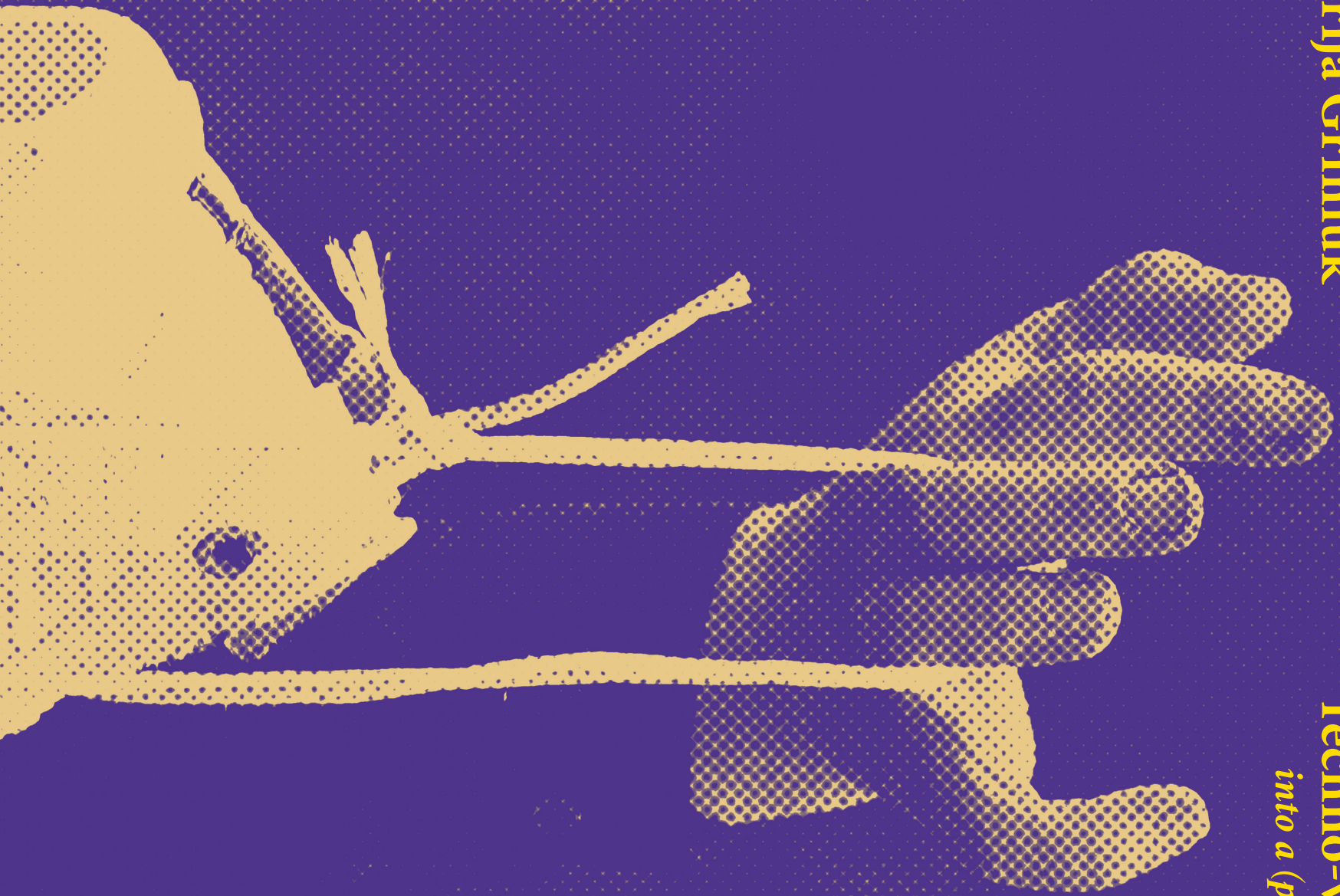




# Techno-voyeurism *into a (performing) body*

**Marija Griniuk**

**Techno-voyeurism  
*into a (performing) body***



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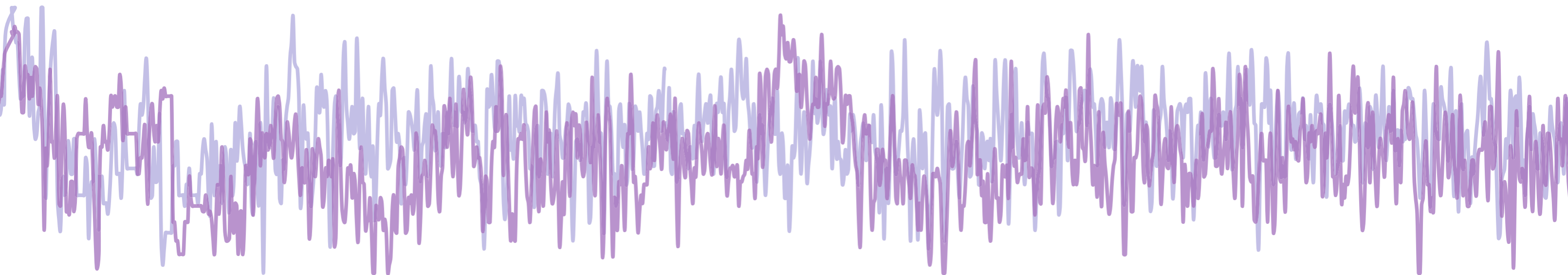


Marija Griniuk

University of Lapland, Finland

# Techno-voyeurism

*into a (performing) body*





☞ *Dedicated to Loki* ☞

Techno-voyeurism into a (performing) body

A DISSERTATION  
SUBMITTED TO THE FACULTY OF ART AND DESIGN  
OF UNIVERSITY OF LAPLAND, FINLAND  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF ARTS

Supervisors: Prof. Timo Jokela and Dr. Maria Huhmarniemi

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# Abstract

The purpose of my research is to explore the connections between performance art and the biometric data of a performer within a live artwork. My research project “*Techno-voyeurism into a (performing) body*” is a cross-disciplinary project investigating how to utilise the performer’s biometric data — brain activity, utilising electroencephalography (EEG) measurements — as a new tool within performance art. The work presents the possibility of utilising brain activity data to interact with the audience, enhance their aesthetic experience, and explore new methods to document performance artwork. Specific areas explored are empathic connections with audience members using technology and revealing the inner states of the performer; visual and verbal narratives by using the biometric data of the performer as a holistic aesthetic approach to the artwork; and documentation of performance artwork through the brain activity of the performer and the remediation of data into sound and visual outcomes.

The main objectives within my study were reached by realising the scientific part, containing eight peer-reviewed articles and two exhibitions. The starting points for the research were the following objectives: a) To identify how performance documentation methods can be innovated by integrating tools that can record biometric data (brain activity) from the performing body; b) To explore how such documentation can be remediated and made useful for the performance artist to enhance the aesthetic experience of audience members; c) To determine how interconnections with the audience members can be enhanced by revealing the inner states of the performing body.

The research question is: “*How to identify, determine and explore the possibilities of utilising EEG technology for performance documentation and performance practice?*” It is answered through the eight publications; each publication is focused on one sub-question, aimed to answer the overall research question. My research is developed as an article-based dissertation including two art exhibitions. The theoretical outline of the dissertation is based on the interconnectedness of the theories on performance, documentation,



aesthetics, empathy, biometric data, inhuman interconnections, transcorporeality and liminal space.

My research philosophy is interpretivism within the posthumanist arts-based action research (ABAR) methodology approach, in which the analysis was conducted through the hermeneutic perspective, as the data was analysed by the artist–researcher in the reflexive manner. The methods in the articles are reflexive research, autoethnography, A/R/Tography, arts-based research (ABR) and ABAR. This research compiles solutions involving biometric data in performance art practises of performance artists. The artistic parts of my research comprise two exhibitions, in which part of each of the exhibitions was a live performance. The first exhibition and performance was presented at the Gallery Kilo in Rovaniemi, Finland, in 2020, and the second exhibition and performance was at Supermarket Art Fair in Stockholm, Sweden, in 2021.

The main findings are as follows. It is possible to record the EEG biometric data from the live performer during the action of the performance and remediate such data into colours/graphics and sound. It is possible to use the data that has been remediated into colours and sound signals from one performing body as a score for the interpretation of a new performance artwork by another performer, which was tested in collaboration with the choreographer and performance artist Kaspar Aus. When performing in the installation, containing the documentation of the past performance, layering is constructed by the artist, which can enhance the range of interactions with the audiences, thus impacting the multileveledness of perception by the audience members. Revealing the inner conditions of the performing body becomes an active, empathic part of the narrative within performance. This innovative approach to involvement of biometric data in performance art documentation and live remediation of such documentation into the new artwork can offer art-based and research-based technological innovation in performance art education, in the sense of involving biometric data in performance artworks, and individual performance practises.

*Keywords: aesthetics, A/R/T, documentation, empathy, biometric data, inhuman interconnections, transcorporeality, liminal space, arts-based action research.*

## *Dear Reader,*

I welcome you to the journey! Or, more precisely, to the part of it that is concentrated into this dissertation which contains eight peer-reviewed publications and paints a holistic picture of the ways I worked towards both the entire dissertation and each of the fragments that made it a whole. If I were to explain my journey to you, I would translate what happened into words, but all the feelings attached to the steps within it would remain as the unnamed ghosts that made each of my writings go in one or another direction of style, mood and identity (if we agree that text, written in black on white, has an identity). This part of my journey encompasses three years of work towards my doctoral dissertation and is built upon a dream that drew me into the transnational context of being a human and an artist, and now also a researcher. The word “being” already indicates movement, so here I will explain to you my life, art and research for context. Since I was 18 years old, my major goal has been to pursue doctoral studies; at times it was my only goal, especially in the challenging moments. This goal pushed me out of Ukraine in 2006, after I finished my first BA in painting conservation at the Ukrainian National Academy of Fine Arts in Kiev. As a doctoral program did not exist there at that time, I moved to my second homeland of Lithuania, did my MA in painting conservation at Vilnius Academy of Arts between 2006–2008, and observed the first person to defend a doctoral dissertation in fine arts at the Vilnius Academy of Arts. Back then, at the age of 23, I was not destined to start on the doctoral path in Lithuania (nor was I later, as there it is still unusual, if not impossible, to do research through performance, my current professional field of interest). As I mentioned, I pursued painting conservation, which is different from what I do now, but maybe not too far off. During my studies as a conservator, I learned to love museums and archives (even more than the process of painting conservation itself). As I could not continue my studies as a conservator and my interest in creative processes seemed to be rapidly growing and taking over, I decided to start from the beginning, namely the first year at an art academy, studying performance, video and installation. A few years later, I found myself diving into the completely magical

path of being an art student in the art academies in Denmark (five years at The Jutland Art Academy and one year of exchange at the Danish Royal Academy of Arts), followed by two years at Malmö Academy of Arts and an incredibly inspiring two years of MFA studies at Konstfack, in Sweden. All in all, I fell in love with “being” and “becoming”, and this is why finally reaching my goal of pursuing doctoral studies was a joyful time for me, more than words can explain. It was also challenging in many ways, but the happiness of the writing process was, for me, most valuable, and could not be marred by any obstacles. So, dear reader, each and every page of this text comes from being and becoming in love with the process of research. I use the concept of love in one of my publications, which is not included in this dissertation (Griniuk, 2022b), but I seek sustainability within my research practice, as sustainability is needed for sustainable love, because no relationship can endure if based on occasional events. I am still trying to achieve sustainability within my research practice, so I am seeking new goals; for instance, my goal to write my dissertation has now resulted in this book.

I hope this explains my perspective as a cross-border artist — having two nationalities (Lithuanian and Ukrainian), living in Denmark and currently working in Finland, and navigating between all four languages and multiplicities of communities and cultures — and how the word “being” is what I do within my art and within the “whole person–artist–researcher”. In recent years, I have developed a strong interest in the connectedness between the artistic persona and artistic production of cross-border artists originating from Lithuania and Ukraine, and the postcolonial memory of this region, which is now intertwined with what I refer to as the imperialistic tendencies from Russia. But this is a story for another time, and, hopefully, the next research I will undertake. I am interested in how the issues of postcolonial memory, imperialism and border crossing are “translated” into the transnational context, which has greatly impacted the content of my performances since 2012 and the duality of my work as an artist, in which one aspect is the technology involved in the performances, while the other is a story, containing both a story about the technology and a story about the postcolonial and cross-border issues. This has led me, within the current research, to focus on the layering of narratives, methods of documentation, and story themes by the artist within performance artwork. And, of course, no performance, in the way I do them, can exist without the participants or

viewers. Thus my interest took the path of investigation into how the audiences perceive the layers within performance, containing documentation, technology, postcolonial memory and the many stories within.

As no journey can happen without those that show the way, neither could this dissertation. I am grateful to my supervisors Prof. Timo Jokela and Dr. Maria Huhmarniemi for teaching me how to become a researcher. I am thankful for every moment of collaboration with Prof. Satu Miettinen and Prof. Melanie Sarantou. And as any journey would be lonely without the ones you meet momentarily, the brightest moments during my research were the encounters with the scholars at Zurich Academy of Arts and Anja Mølle Lindelof at Roskilde University. Journeys can also be lonely without companions, those you go along with. My collaborators within this PhD were Tue Brisson Mosich and Kaspar Aus, as well as the co-authors Dr. Daria Akimenko, Prof. Satu Miettinen, Prof. Melanie Sarantou, Prof. Heidi Pietarinen, PhD Cand. Katja Juhola and Dr. Smaranda Moldovan. The dissertation was realised with the funding of a six-month Esko Rieppula Grant for finalising the dissertation, an Erasmus+ scholarship for one exchange semester at Roskilde University, and one-time grants for the realisation of my experimental projects and tests; the Lithuanian Council for Culture (special thanks for the yearly individual scholarship grants for the period two to three months during the years 2019, 2020, 2021, and 2022 and the support of my project “*The Nomadic Radical Academy*” in 2020; it is essential to feel needed in the home country while doing research abroad!), VISEK, the Nordic-Baltic Mobility Programme, TelePART, i-Portunus, Kulturfonden för Finland och Norge, Opstart Nordisk Kulturfond, Taike, and the Norwegian-Finnish Cultural Foundation. Thanks to Leif Hasles Fond in Denmark for providing the residency period in 2020 to develop my publications and for helping me once again in 2022 when the support was needed most of all! Support in the form of art venues and sites for performances were provided by: Gallery Meno Parkas (Lithuania), Supermarket Art Fair (Sweden), Art Academy of Latvia, Pärnu Art Week (Estonia), Zurich Academy of Arts (Switzerland), 8th Conference on Modern Art in Torun (Poland), and the project “Common Ground” at the invitation of the Lithuanian Artists’ Association.

Every traveller needs sunshine to light the way and feel the joy of daylight. Mine is Loki, my child, who shared with me every moment of writing each



publication within this research. I dedicate this dissertation to Loki, with the wish that you fall in love with the study process at some university, somewhere in the Peaceful World!

Dear reader, here I leave you and wish you a pleasant and interesting dive into performance, performance documentation and the traces of my research through performance. Though this is the first, I hope that it is far from being the last book in which we meet, as the process of research, writing and reading includes being and ongoing becoming. The articles are republished in this dissertation with the kind permission of the publishers.

*With love,*

*Marija Griniuk*

## List of Original Publications

1. Griniuk, M. (2020). Reflexive research on performance art documentation through EEG: A visual essay. *Research in Arts and Education, 2/2020*, 87-96.
2. Griniuk, M., & Mosich, T. B. (2021). Recorded bodily conditions as interpreted/remediated documentation and as a score for performed communication. In R. Vella & M. Sarantou (Eds.), *Documents of socially engaged art* (pp. 18-36). InSea.
3. Griniuk, M. (2021). Performance art using biometric data. *Art History & Criticism, 17(1)* 101-112. <https://doi.org/10.2478/mik-2021-0009>
4. Griniuk, M. (2021). Performing in an art fair: Inviting strangers into the artistic action; A visual essay. *Invisibilidades, 15*, 114-123. [https://www.apecv.pt/revista/invisibilidades/15/11A\\_114-123\\_2.pdf](https://www.apecv.pt/revista/invisibilidades/15/11A_114-123_2.pdf)
5. Griniuk, M. (2021). Arts-based action research on enhancing children's creativity through affect within participatory performance art and performance pedagogy. *Creativity Studies, 14(2)*, 577-592. <https://doi.org/10.3846/cs.2021.13775>
6. Griniuk, M., Akimenko, D., Miettinen, S., Sarantou, M., & Pietarinen, H. (2022). Multiperspective take on pluriversal agenda in artistic research. In S. Miettinen, E. Mikkonen, M. C. Loschiavo dos Santos, & M. Sarantou (Eds.), *Artistic cartographies and design explorations towards the pluriverse*. Routledge.
7. Juhola, K., Griniuk, M., Moldovan, S. (2022). Empathy in digital participatory artworks. In M. Sarantou & S. Miettinen (Eds.), *Empathy and business transformation*. Routledge. <https://doi.org/10.4324/9781003227557>
8. Griniuk, M. (2021) Participatory Site-Specific Performance to Discuss Climate Change and Water Pollution, in Leitão, R.M., Men, I., Noel, L-A., Lima, J., Meninato, T. (Eds.), *Pivot 2021: Dismantling/Re-assembling, 22-23 July*, Toronto, Canada. <https://doi.org/10.21606/pluriversal.2021.0043>

## List of Exhibitions

The artistic part of the dissertation comprises two exhibitions. Each of the exhibitions included live performances.

1. Gallery Kilo (2020). *Uncovering my start: Techno-voyeurism into a (performing) body*. Rovaniemi, Finland.
2. Supermarket Art Fair 2021 (2021). *Techno-diving into the liveness of the unbodied performed body of memory*. Stockholm, Sweden.

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# 1. Introduction

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## 1.1. Revisiting many chambers

I assume many contemporary art students have not experienced that moment of opening a paint box for a plein-air session: smelling the scent of the oil colours mixed with the fresh air; being there for all to see — curious individuals, children or a passer-by up for small talk; perhaps with a friend painting plein-air somewhere close by. I suppose too few have heard of the painter Vladas Eidukevičius, who left his apartment on the 22nd or 23rd of April 1941 and never came back. He lived near the Aleksotas airport and there are records of an air strike on the airport on those two days. He was admitted into the Munich Art Academy on his first attempt in 1914. After his studies, he came back to Lithuania. He died at the age of 50 leaving an oeuvre of 120 paintings. Though the exact location of his apartment is unknown, it was somewhere in a neighbouring district to Garliava in Lithuania, where I was raised in early childhood and afterwards spent each summer until my teens. I am interested in his leaving, his coming back and the smell of colours outdoors and the numerous strange conversations one can encounter while painting plein-air. The process of painting and the artistic persona of Eidukevičius, whose personal traces I previously attempted to uncover through studying the archive of his letters at the Lithuanian National Museum, spotlight for me that art is the document of a past process and that the creation of art is documentation.

As far as I remember, my work with art has always been an encounter of process and reflection of time and circumstances. In 2008, I was painting in the middle of the Maidan during the Orange Revolution in Ukraine, receiving a warm cup of coffee from a stranger, painting — remaking the flow of energy from the mass of people around me in colours. Between 2012 and 2015, I was video- and photo-documenting the Soviet-era buildings in Lithuania, which were demolished or redesigned simultaneously as my documentation unfolded. Through painting and through social and political awareness, all these encounters have brought me into performance and into the personal belief that emotionally heavy, politically and historically loaded themes can be discussed through art.



Painting is primarily the process of connecting to the encounters on the painting site, and the painter is an artistic persona out there open to the imprints from surrounding humans and non-humans, with those imprints developing the artistic persona's characteristics. For me, painting is a reflexive documentation of wherever my body can be, while performance is the most direct encounter with the audience; at this time, rather than having a plein-air colour box and canvas to start interactions with strangers, I use technology that reads and remediates my inner bodily conditions into colour and sound. My first BA and MA from the art academy were in painting, so the reference to the process of painting seems unavoidable. Further, performance was for me particularly in focus during my five-year education at The Jutland Art Academy in Denmark. My interest in bodily conditions comes from decades of self-observation of variations in my bodily reactions in different situations of performing the artistic persona in public or art contexts, from which I felt the necessity to track and record what happens inside the body during the action of performance. Since 2015, this interest has resulted in experimental performances in which EEG technology is used, along with software developed specifically for the performances.

When the involvement of the human body in art suggests a processual take on interaction with the audience, it is important to again look into the possibilities of documenting such art in a processual framework and to re-imagine new ways to use such documentation within the artist's practice. As such, I will outline this research gap, which inspired me to conduct this research and thus contribute to new knowledge production within performance and performance documentation. The research gap was outlined in the early phase of my research in 2019, and, during the development of my dissertation, I thematically followed the updates and the newest peer-reviewed materials regarding my research area, namely performance art and biometric data from the performing body.

The research gap is twofold: the lack of research is one component of the gap, and results are the other. Although technology to measure brain activity via EEG has been accessible at the consumer level for the last decade, this technology has been applied mostly for the purpose of enhancement of interaction in participatory artwork or within music research and practice. Peter Vuust is currently conducting research on the live brain activity of

<sup>1</sup> See projects by Viola Kus here: <https://www.funom.org/projects>.

jazz musicians as they improvise (Vuust, n.d.). Particularly within performance art, Viola Kus started to work with EEG experiments in 2015, at the same time as my very early experimental project, which in this dissertation I refer to as my autoethnographic cases. Despite the similarities, Kus' outcomes were primarily artistic, rather than focused on scientific peer-reviewed outcomes.<sup>1</sup>

With regards to interaction with the audience in performances involving biometric data, Hoby and Fagerberg Ranten (2019) have developed numerous projects in which electronic devices and biometric data measurement can extend the interactions with the audience. I identify the research gap in the following manner: biometric data is used in performance as an interaction design element yet is not considered as a new media or channel through which to document/add a new layer to documentation of the performance. As such, showing the inner states of the performer through biometric data could add one more layer to the currently used video, photo and sound documentation of performance.

The second aspect of the gap is as follows. As documentation of performance by biometric data was not addressed in prior research, there is no peer-reviewed material on the possible usability/applicability of such biometric data records within an artist's practice. This research only applies to performances using EEG devices, which can be used by a performer on different performance sites; therefore, the criteria for using a biometric data measuring device was narrowed to applying consumer-grade EEG devices to record the brain activity of the performer during the performance. Due to the research gap having two main layers, I address both aspects within my study: how to record the performance using EEG and how to use such documentation to create the new artwork and new experience for the audience. This take on my research, addressing both layers of the research gap, is crucial as the holistic approach to filling the research gap, and this is the reason for my focus on eight publications as the outcome of the research.

Using brain activity data, categorised as biometric data, it is currently impossible to identify the person it was taken from, unless the patterns of the same kind of activity have been systematically recorded (Curran et al., 2016). In my performances, which are the artistic part of this study, improvisational performance is always used as the approach. In improvisation,

pre-recorded tracks of activity are not possible, as the activity is unique every time. EEG data, while being concrete in that it shows the states of cognitive load and relaxation, is completely abstract in that it is impossible to identify the person behind the data. Another aspect of exploration takes an approach of interconnectedness with the audience. Here, investigation is also needed to uncover the ways in which the audience perceives such a performance artwork involving biometric data and technology.

The main aim of this research is to develop new tools for documenting performances, remediation, strengthening interactions, and enhancing empathic connections with audience members by using biometric data as records of the inner states of the performing body. The scope of the research is investigating how using technology that reads performers' inner states can assist artists. Within the topic of this research, the documentation of performance art by biometric data of the performing body and documentary aestheticisation of such biometric data to connect with the audience members, my position is that of the practitioner within the performance field. This position motivates me to take a developmental approach to creating new methods to be applied within performance practice by artists. It is important to enhance the spectrum of layers of performance documentation by adding to photo, video and sound records, as traditionally used layers, the new layer of inner bodily conditions recorded by EEG. This extra layer is needed in order to take the processual approach and connect the documented (performing) body, as the carrier of the process of performance, to the document, as the record of the past performance. This discussion suggests a new method of performance documentation and inclusion of such documentation into artwork as the developmental outcome of the research. This developmental approach, in combination with technology-based innovation, is within the philosophical framework of the second direction of posthumanist studies, originating from sciences and technology studies (Braidotti, 2013, p. 38). On one side, the performer is working towards layering within documentation and the performance artwork, while the audience, on the other side, is entering the documentation and artwork via the multileveledness of perception. This multileveledness overlaps partly with the concept of the pluriverse when considering the multiple levels in engaging with the artwork, built on the layering, as designed by the artist,

and the pluriverse of the previous sociocultural experiences of the audiences and participants.

I have selected some of my artistic work as materials, referred to as my autoethnographic data, while my performances from 2019–2022 form the artistic part of the research and experiments. They were selected in the following manner: the autoethnographic data are the materials from my previous performances, as I have been developing the method of inclusion of the inner bodily conditions, recorded by EEG, in my live performances since 2015. So the past artistic works (those developed between 2015 and 2019, as in 2019 I started my research within my DA) are addressed in this dissertation through the autoethnographic approach. The artistic works, conducted as the experimental projects developed during my DA research (henceforth addressed as the experimental projects), form the second part. All of my performance artworks realised between 2019 and 2022 have been involved in the DA research as experimental projects. In other words, all of my performance art production during this period of time (2019–2022) was the material for the research. The third, and the smallest, part is the research materials, namely one encounter with Viola Kus' art project, which I encountered as a viewer one year before the start of my DA research.

In sum, as the artistic data, accessed as the autoethnographic material within this research, I use my earlier works (2015–2019), my experimental projects within this dissertation (2019–2022), and one performance artwork by Viola Kus from the perspective of the audience. In this way, I examine the research field from the position of an artist conducting performances, from the position of the audience members (accessed in the format of one questionnaire with the audience, conducted for the visual essay and an interview with the audience conducted for the book chapter), and through my observations in the position of the audience member.

Performance art has a history of interconnectedness with biometric data from the performer or the audience members as a tool for enhancing interaction. However, there has not been much discussion about such biometric data becoming a new layer within performance documentation (Han, 2016). The chosen artistic works thus enhance the exploration of such documentation into a twinned perspective — that of the artist and the audi-

ences — further expanding how the data from the performing body could otherwise be useful, for example as a score or as part of a new performance.

The four main pillars upon which my research stands are the guidelines for the framework of its implementation. The first and most important pillar is especially related to my work as a performance artist. My own past experience and implementation of research through my artworks was what framed, in particular, the arts-based approach. My performance artworks between 2019 and 2022 (the experimental projects) all carried the objectives of my research. So the first part of my guidelines was implementing the research through my performances and my performing body. This approach merged with the ethical requirements, as all the biometric data retrieved was from my performing body only. This approach is extended by the few artistic works in which I either involve a collaborator to interpret my biometric data into his choreographic performance or I am in the role of an audience member. This first pillar is aimed at the artistic part — particularly the arts-based research (ABR), through my own art — within the umbrella methodology of arts-based action research (ABAR).

The second pillar of the framework of my study is technology-based innovation into performance, as outlined earlier, based on the philosophical framework of posthumanism, in which performance and technology connect to the innovation process. I utilise EEG technology, which only became available at the consumer level in the last decade. Thus I aim for technology-based innovation in performance practice, which is accessible to the performance artists at the consumer level and is easy to apply, to extend their intended layers of documentation of their performance artworks. This pillar is accessibility and involvement of the newest technology with the aim of impact on the experiences of the audiences who are viewing the performance, containing documentation of the past performances. Speculatively, such documentation could also be on its own, without the performer involved, but this particular aspect of removing the live performer from such artwork, containing the documentation, is not in the scope of this DA dissertation. All the experimental projects and the two exhibitions contain the performer within an installation, built from past performances. This pillar aims at technology-based innovation and contributes to the action-research part of ABAR, which is the umbrella methodology of this study.

*Figure 1a. Performance “Techno-voyeurism into a (performing) body”. Palanga, 2021. Photo: Andrius Grigalaitis.*



The third pillar framing my work is audiences and the pluriversal approach and the multiplicity of levels of connecting to the audiences, especially empathetically, within the site-specific context of performance artwork. The connectedness with the audiences in this particular context plays a crucial role, as in the participatory performance, the artwork can be complete only with audience involvement and participation. Therefore, the audiences are researched from the perspective of site-specificity within the location and the venue of the performance, such as an art fair, specifically the ways the audience can perceive the performance: multileveledness, pluriversality and liveness, which can occur at the proper levels of perception (proper proximity and distance to the social, political or cultural references within an artwork) within the meeting between the artist, the artwork and the participant.

The last and fourth pillar is the methodological pillar, building on the tradition of ABAR, within which this study has been developed, with specification towards posthumanist ABAR. This directly impacts the cyclic approach to the research as a whole, such that the artistic works are followed by a number of peer-reviewed publications, shaping the research cycles. ABAR builds the overall structure of how the research is conducted,



though the individual cycles, and, in this way, publications are approached through a variety of methods: A/R/Tography, ABR, ABAR (as a method), autoethnography and reflexive research.

My research is designed as an article-based dissertation containing the artistic works (which I divide into the earlier works of 2015–2019, addressed via autoethnography and experimental projects, and those implemented in 2019–2022 during my DA process [see Figure 1a & 1b]) and the two exhibitions for the artistic part. The synthesis of the theoretical outline within my research, in which the main principles built upon are performance, documentation, aesthetics, empathy, biometric data, inhuman interconnections, transcorporeality and liminal space (Friesem, 2016; Kim, 2015; Cohen, 2015; Alaimo, 2010, 2016). The performance documentation as the documentation separated from the live performer presenting/representing it for the audience is excluded from the context of this research. The research material, including technical EEG data and my own experience, is examined via the performance (Schechner, 1977; Bishop, 2012) and documentation theories (Auslander, 2006; Gorichanaz, 2017) interconnected with the core concepts within this study, which make up the theoretical outline for this research.

My study is mostly based, except for one artistic work, on different performance artworks, realised by me, either alone or in collaboration. What unites all these performances are the participatory approach and utilisation of EEG to record the inner bodily conditions of relaxation or cognitive load by the performer. Additionally, in some of the artistic works, the recorded EEG data is further utilised, either becoming part of a new artwork, realised by me, or becoming a tool for collaborative approach, in other words, communication within an artwork. In this case, the EEG data becomes a new media, a new channel for communication between the involved collaborating artists. This aspect of participation in all the artistic works within this dissertation goes further towards discussing performance as participatory. The specific focus on participation outlines the approach to the audience and the participants as the leading aspect within this research, therefore overall attention is brought to this part of the dissertation, resulting in the articles dealing with questions on empathic connection to the audience-participants, the pluriversal approach to the audiences, the impact of performance on the creativity of young audiences, and socio-cultural differ-

Figure 1b. Performance “Techno-voyeurism into a (performing) body”. Palanga, 2021. Photo: Andrius Grigalaitis.



ences in the different art venues that host performances, for example the art fairs in different countries that have different historical and artistic backgrounds. In other words, the participatory performance cannot happen without the audience/participants. For this reason, it is a logical step to dedicate a large amount of attention to the participatory aspect and the audience as well as what EEG data can do in this context in contrast to the traditionally (not involving EEG data) conducted performance.

The thematic approach to analysing the audience from the perspective of (my) artists' notes, observation, interviews and questionnaires form the

majority of the research. As performance is attached to the institutional contexts of the art academy, university education and art venues, a parallel investigation within this research is on shifting the norms of performance education and institutional spectatorship, which is highlighted in one article in this dissertation. The research into the artistic works, namely performances, encompasses each of these aspects: the process of recording EEG data; the usability of EEG data for further development of the artworks; the impact of EEG data recordings and their inclusion into the artwork on a variety of possible levels of participation for the audiences; the impact of the EEG data on the institutional aspects of performance, especially within art academy and university education. I have marked and grouped all the artistic works for clarity within the map below, identifying the number of the artworks involved in the articles; the artistic works are divided by their contribution to the named aspects of the research (see Figure 2).



Figure 2. A visual map of the cases as related to the research aspects: the process of recording EEG data, the usability of EEG data for further development of the artworks, the impact of EEG data recordings and their inclusion into the artwork on the levels of participation by the audiences, the impact of EEG data on the institutional aspects of performance and innovations (as will be explained in detail in 2.3.), especially within art academy and university education. Developed by Marija Griniuk.

The artistic part of my DA contains the two exhibitions: “*Uncovering my beginning: Techno–voyeurism into a (performing) body*” in 2020 at Gallery Kilo (Rovaniemi, Finland) and “*Techno–diving into the liveness of the unbodied performed body of memory*” at Supermarket Art Fair in 2021 (Stockholm, Sweden). In these exhibitions, the data and findings within my performances are arranged visually, in addition to the text–based scientific part of the research. In my performances, there is a dual narrative. One of the narrative angles deals with postcolonial memory in a Lithuanian context, which has been a leading theme in my artistic production since the early 2000s. The other angle is the newest available technology, applied to the performances to shift the norms of production and documentation of a performance artwork. Both these approaches are within each of my performances, as well as within the content of each of the exhibitions, thus the audience receives a wide spectrum of possibilities in how to be involved, depending on thematic interest. A commonality within these two angles is that the art and research both work towards dismantling of the norms and reifications within art/performance art production and documentation. In most contexts, institutional art, if we talk about the professional performance art field, the practising individuals have an academic background from an art academy or university education. Within the theme of postcolonial memory in my performance works, my approach is to find new ways of opening a dialogue about the themes of postcolonial history: the memory and eco–violence connected to colonial history, which are undesired and painful to talk about in a Lithuanian context and perhaps the entire Eastern European context.

With the application of new technology in my performances, which can access the inner states of the performing body, I develop technology–based innovation in performance practice. Both of these thematic approaches are aimed at dismantling and reassembling the current norms in performance. I have made a collaborative piece with the choreographer Kaspar Aus that tests the possibility to involve such new technology as a channel for communication between two performers involved in one artwork. Participatory performance art is the central media for me within this research and for the two exhibitions within this DA.

I work within the framework of posthumanism, as it is illustrated by Braidotti: “I take the posthuman predicament as an opportunity to empower the pursuit of alternative schemes of thought, knowledge and self-representation. The posthuman condition urges us to think critically and creatively about who and what we are actually in the process of becoming.” (Braidotti, 2013, p. 12). As my research aims at development and innovation, the goal is, as Braidotti describes, to dismantle and reassemble the existing structures of performance production and documentation.

My research philosophy within this dissertation is interpretivism, in which the umbrella methodology is posthumanist ABAR. ABAR builds on the ABR and action research (Jokela, 2019; Jokela & Huhmarniemi, 2018). ABR has an exploratory approach and is described as a data-collection method with art at its core (Barone & Eisner, 2012) and deals with a “cluster of purposes” within investigation of art-making processes (Greenwood, 2019). Similarly, in this dissertation, the focus is on the process of performance-making and documentation. The action approach is developed through the cycles of planning, realisation, evaluation and redefinition of the goals.

The analysis of the findings is realised through the hermeneutic perspective. This perspective allows for a reflexive way of understanding and interpreting the research process, which includes developmental objectives (Anttila, 2006, referenced in Jokela & Huhmarniemi, 2018). According to Anttila (2006, referenced in Jokela & Huhmarniemi, 2018), a positive-empirical paradigm allows for interpretations, understanding and meaning, which, in other words, is a reflexive take on analysis. This take is understood as a hermeneutic approach, especially suitable to apply within ABAR, in which interpretation of the aesthetic/artistic data is at the core. According to the double dichotomy within research approaches (Anttila, 2007; Anttila, 2006, referenced in Jokela & Huhmarniemi, 2018), such research merges theoretical and subjective approaches towards interpretational and hermeneutic ABAR, which, besides developmental objectives, as the steps within the research, has a developmental goal, as the final result.

There are six chapters in this dissertation, and they are organised as follows. Chapter 1 provides the introduction to the research theme, the position of the researcher and overview of the relevance and value of the dissertation. Within this chapter, research questions, aims, scope and contributions

are explained. The research gap is defined at the beginning of this chapter. Chapter 2 provides information about the theoretical background of this research and a summary of the related work. Chapter 3 explains the research methods applied and describes how the data was collected and analysed. Chapter 4 introduces the summary of the main findings within each of the research cycles and the separate papers: positioning of the researcher, scope of each case, research design, methodology and the main findings of each case study. Chapter 5 revisits the research questions, thereby extracting the value and relevance within the findings of each of the research cycles and the research papers. Chapter 6 is the conclusion of the dissertation, short- and long-term perspectives on implementation of findings, and my reflections on the process of the research.



## 1.2. Research questions, aim and scope

The four main pillars within this research are: personal past experience, technology-based innovation in performance, audiences and the multiplicity of levels of connecting to the audiences, and, lastly, the methodological pillar, namely ABAR, which has guided the framework of this research. Within this dissertation, I interconnect these four approaches. My performances and exhibitions open the possibility to trace the thematic frame of my own performances that are themed around postcolonial memory and that are intertwined with the approach to apply technology, thus adding a new layer to performance. All this is aimed at communication with the audiences, for which the methodological pillar provides the framework for extracting the results and redefining the goals for each research step, which is the new experiment/case-performance.

The objectives of the research, containing eight peer-reviewed articles and two exhibitions are as follows:

1. To identify how it is possible to add one more layer to performance documentation methods in order to innovate performance practice by integrating tools that can record biometric data (brain activity) from the performing body.
2. To explore how such EEG data records can be remediated and made useful for the performance artist, targeted at enhancing the aesthetic experience of audience members.
3. To determine how interconnections with the audience members can be enhanced by revealing the inner states of the performing body and thus how the levels of perception of the artwork can be expanded.
4. To outline how technology-based innovation into performance practice can impact performance art education and institutional presentation.

The overall research question of the DA research “*Techno-voyeurism into a (performing) body*” is: “*How to identify, determine and explore the possibilities of utilising EEG technology for performance documentation and performance practice?*” The sub-questions are:

1. *How can reflexive research be integrated into performance art documentation using EEG?*
2. *How can performance art be documented by recording the live brain activity of the performer?*
3. *How can documentation of the inner bodily states of the performer be an aesthetic communication channel between the performers during the implementation of socially engaged performance artwork?*
4. *What are the differences between wide-scope interactive art and design and performance art involving biometric data created through the application of recent developments in consumer technology for live events?*
5. *How can biometric data be an extension of the performer’s body, contributing to interaction and empathic connections with the audience members, as exemplified by cases from art fairs?*
6. *How can new tools for interaction design within performance be developed by utilising typically invisible biometric data in the site of live performance?*
7. *For whose benefit is artistic research and arts-based research conducted?*
8. *How can site-specific participatory performance be utilised as a means for decolonising knowledge?*
9. *How can empathic connections be achieved in digital participatory artworks?*

Each of the performances is either grouped thematically or researched as a separate artistic work within the research papers, which took different formats: three book chapters, two articles, two visual essays, and one conference proceeding. All these papers were targeted at different scientific platforms and publications in Europe (Finland, Portugal, UK and Lithuania) and North America (Canada). Each of my research papers are developed to answer one of the research sub-questions, which are based on different perspectives on the research theme: the process of recording EEG data, the usability of EEG data for further development of the artworks, the impact of EEG data recordings and inclusion into the artwork, expanding the levels of possible participation by the audiences, the impact on the institutional aspects of performance, especially within art academy and university

education. Applying the sub-questions to each of the eight publications, through the process of ABAR, has provided the possibility to construct a holistic approach to answer the overarching research question of the dissertation.

My research as a whole has been realised in the following timeline (see Figure 3). The image of the timeline is important to understanding the chronology of the findings and the overlapping processes of utilising the artworks as cases, addressing the earlier performances as the research cases and development of the scientific papers.

Figure 3 aims to illustrate the interconnectedness between the two levels of work for the dissertation: the artistic part and the scientific part. Along-

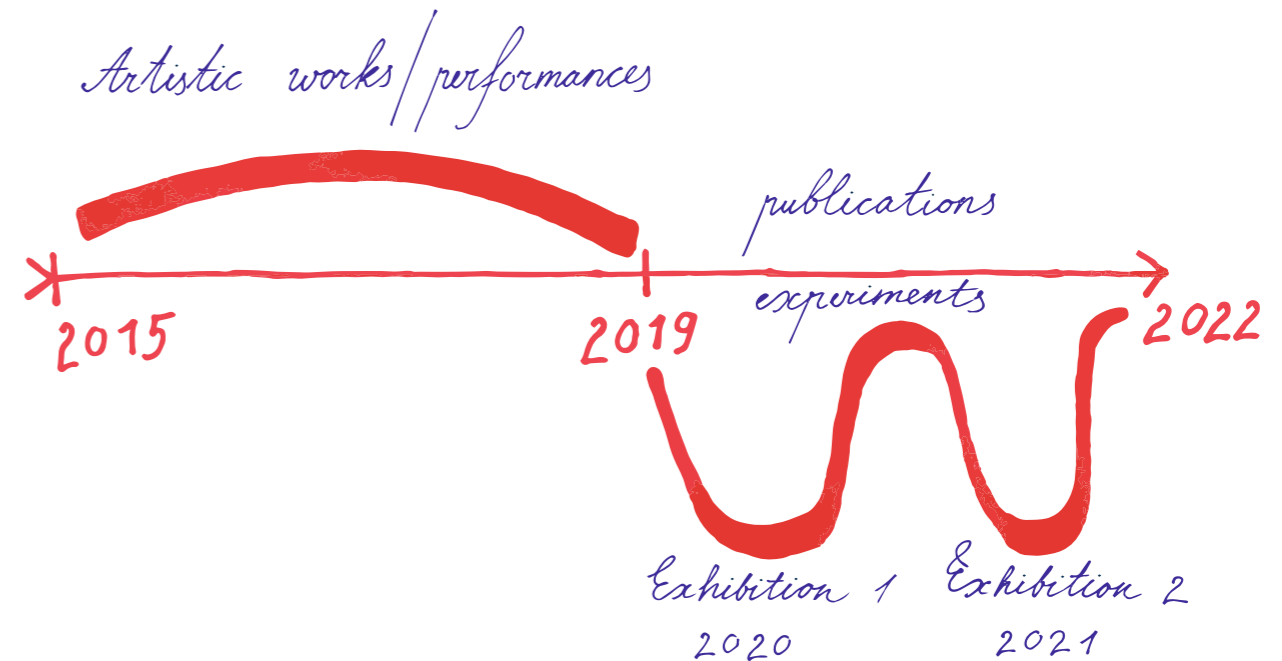


Figure 3. The timeline of the dissertation, including earlier works of 2015–2019 and the dissertation process in 2019–2022. Developed by Marija Griniuk.

side the experience of conducting research at the University of Lapland, the research progress was significantly impacted by the collaboration at Zurich Academy of Arts and the visiting researcher exchange at Roskilde University.

## 1.3. Ethics within this research

I conducted my research with approval from the ethical issues committee at the University of Lapland. The data collected from interviews with collaborators and members of the audience, along with photo and video documentation are gathered with the permission of the interviewees and photo- and video-documented people and are treated anonymously in all publications, unless the participants explicitly wished for the data to be public. All this data is accessible only to me, the collaborating computer scientist, who is also the co-author of the included book chapter, and the two supervisors of this research. Further, the biometric data — brain activity — that is involved in this research is gathered only from my body, even though currently EEG cannot identify a unique person (Curran et al., 2016).<sup>2</sup> To identify a unique person from EEG brain activity data, the baseline measurement of a specific task would be needed, then the repetition of such a task could be identified and then used for comparison when the same task is repeated and measured (Curran et al., 2016). In the present research process, there were no such task-specific baseline measurements, as each performance was unique and improvised in a live setting. Therefore, even though all brain activity data is from my body, it cannot be used to identify a unique person.

In the performances of “*The Nomadic Radical Academy*”, realised in 2019 and 2020, two groups of children were involved. When I work with children, my approach is based on the requirements by the European Union’s General Data Protection Regulation, in which any personal data must be processed transparently in compliance with the law (Regulation (EU) 2016/679). Prior to beginning work with a group of children, I obtain written consent from the parents, allowing me and the documenting person to photograph and video document the children, immersed in performative actions. This documentation is expressly to be used only by me for the purposes of communication of the projects, inclusion in my artistic portfolio and research purposes. Consent forms are an integral part of the performative action and are sent to the involved children and their parents by email, as part of the acceptance letters for “*The Nomadic Radical Academy*” (see Figure 4).

<sup>2</sup> *I should note that planned experiments with my EEG devices and software with other performance artists were aborted due to the complexities of getting recorded biometric data of others, even when anonymised, approved by ethical review.*



ACCEPTANCE LETTER

Dear \_\_\_\_\_ (fill in your name),  
We are pleased to inform you that you have been accepted as a student at  
The Radical Academy.

Please enrol at Rotušės a. 27, Kaunas 44279, Lithuania on the 8th of  
August at 11:30 AM. The Radical Academy closes on 14th of August at 17:00.

**Please read this letter carefully and bring a signed print-out when you  
arrive to verify your enrolment.**

You will be transported to a post-apocalyptic version of the future,  
where society as we know it no longer exists. The teachers at the acade-  
my will assist you in uncovering both the past and future paths of this  
world.

During your stay at The Radical Academy you might have encounters with  
children and grown-ups, creatures & spaces of sound and light. The world  
outside is dangerous, and you will not leave the facilities during your  
stay at the academy.

You will be part of a laboratory. As a student at The Radical Academy  
you are likely to be filmed or photographed (likely only as a group, not  
individually) and this documentation might later appear in the artists'  
portfolio and in different art exhibition spaces in Lithuania and abroad.

Cell phone towers are no longer functioning in this world, thus you can-  
not use your phone inside the academy, should you happen to bring one.  
Personal belongings such as telephones and cameras will be stored in The  
Archive, and they cannot be used for the duration of your stay. All things  
brought to The Radical Academy will be on one's own responsibility.

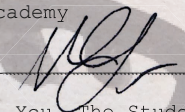
**What to wear when you arrive:** Comfortable, preferably old and worn, clo-  
thes. Comfortable shoes. **What to have when you arrive:** Water & healthy  
snacks. **Language of the performances and workshops:** Lithuanian, English

**Please consider and answer the following before your enrolment:**

- How do you feel right now?
- What senses are you aware of using in your everyday life?
- Is climate change a bad thing?
- What is your dream for the future of education?
- What is your dream for the future of humans?

Warm regards on behalf of The Radical Academy

Marija Griniuk, Headmaster

  
\_\_\_\_\_  
You, The Student

\_\_\_\_\_  
If you are under 18 y.o. Signature and tel. no.  
of your parents

Please note any dietary allergies or considerations here:  
\_\_\_\_\_

This chapter's purpose was to introduce the overall framework of this re-  
search and the position of the researcher by highlighting the main aims and  
objectives of the research. The posthumanist ABAR methodology was ex-  
plained as the umbrella methodology involving different methods within  
the research cycles: A/R/Tography, ABR, ABAR (as a method), autoethnog-  
raphy and reflexive research. Also introduced were the research ethics spe-  
cific to my work with biometric data from my body and the performative  
actions involving groups of children.

*Figure 4. Consent and ac-  
ceptance letter for the par-  
ticipants of "The Nomadic  
Radical Academy". Devel-  
oped by Marija Griniuk.*



## 2. Theoretical framework

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## 2.1. Examples from thematic literature sources on EEG technology entering participatory contexts

I explain the key concepts — aesthetics, empathy, documentation, biometric data, inhuman interconnections, transcorporeality and liminal space (Friesem, 2016; Kim, 2015; Cohen, 2015; Alaimo, 2010, 2016) — through the literature found on interactive art and performance and biometric data as a new field, which is important to understand and communicate for artists. The method of thematic literature review consisted of the following steps: defining the research question, finding keywords from the collected literature sources, defining the concepts outlined by the found keywords by literature type, and positioning the author's case study in regard to the reviewed literature, thus specifying the concepts. The literature search was performed applying different combinations of keywords in Boolean searches.

Richard Schechner (1977) describes a very wide spectrum of activities that can be called performance. Later, art historians and scholars Nato Thompson (2012) and Claire Bishop (2012) also investigated performance from a broad context, focusing on the participatory aspect. Their take on participatory performance contributed to destabilising the traditional ways that the artwork is perceived by audiences. In my interpretation, all performances that address the audience directly can be interpreted as participatory performances. Further, the context of participatory performance within this dissertation was intertwined with an investigation of the ways that biometric data was involved in participatory artworks in historical contexts and how the current research fills the gap left by the previous studies. Biometric technology in the context of this research is explained as technology-based innovation into artistic practice.

Within biometric technology-based innovation aimed at enhancing interactions/aestheticisation in performance, a significant number of examples, in the historical context of investigating this field, originate from choreography, such as in the artworks by Jang (2018a, 2018b), in which dance and biosensing wearables have sensors that transmit the movements and heart rate to generate sound by the software.

Building on this, I will now list the most relevant examples to my own research, which have an element of participation by audience members. Although from the position of the artists, they represent a wide spectrum of media, they all have the elements present in Schechner's definition of performance (1977), therefore all these artworks could be analysed from a performative perspective.

Naccarato and MacCallum (2016) work with heart rate during their choreographic performances. Their performances exemplify the interconnectedness of the biometric technology, which can be interpreted as part of the costumes during the dance. Lozano-Hemmer works with static biometric data or mixes static and dynamic biometrics in one work (Han, 2016). His interactive installations use biometric signatures, such as in the work *Pulse Index* (2010), and visualise them into looping flashing lights, music, rippling waves and animations/videos; this work recorded the audience's fingerprints and could read heart rate, and this data was displayed as projections in the installation (Hirshhorn Museum and Sculpture Garden, 2018).

The second example that illustrates interactive projects involving biometric data is the project *"The Heart Sounds"* (Howell, Niemeyer & Ryokai, 2019). When people sat on a bench, they heard the sound of their heartbeat, which was amplified and played through the installed sound system. This project is relevant to my research, as the approach of Howell, Niemeyer and Ryokai (2019) is on documenting and archiving the heartbeat sounds of people engaging with an object, namely the bench, which in remediation becomes a (new) artwork.

The other project is by the artist-researcher Mads Hoby. He created DIY devices in which the sound in the headphones is created by one participant while touching the other participant's skin (Hoby & Löwgren, 2011). Hoby (Hoby & Löwgren, 2011) explains that in his project, the interaction

between human bodies was involved, and the electronic sound was sent to the headphones. This project is similar to my previous performance pedagogy project *"The Electronic Carnival of the Eternal Touching"*, in which interaction took place between audience and performers based on DIY electronic instruments built into the performers' costumes, along with a screen in the performance space that transmitted data from an EEG device worn by the author during the performance. Maja Fagerberg has an approach that expands the combination of choreography and biometric data into an interactive aspect (Hoby & Fagerberg Ranten, 2019). Fagerberg created a glass heart that corresponded in real time to the pulse of a ballet dancer; the dancer's heartbeat was mediated to the audience by a physical object — a glass-blown heart — which changed its colour and vibrated (Hoby & Fagerberg Ranten, 2019).

All these examples represent the last decade of artistic production, which is, in a way, unveiling the fact that biometric technology became available at the consumer level only recently. The last ten years have outlined the possibility for such technology to step out of the medical and laboratory environment and enter artistic practises. This is why the area investigated in this dissertation is very new. I selected the above-mentioned examples during the process of the thematic literature review. The criterion for this particular selection was the thematic relevance to my current research project. These examples contribute to mapping the brief history of biometric technology-based innovation into creating connectedness between people and surroundings and enhancing interactivity within the artwork.

## 2.2. Technology within performance documentation

The next important angle to contextualise my current research is the historical aspect to interconnectedness between the newly available technology and documentation of performance. This contextualisation helps to understand taking a cyclic approach to technology-based innovation within performance and performance documentation; it also suggests the newly available biometric technology as the starting point of a new cycle, changing the ways we, the performance artists, can document and present our artwork: what we can do with such a new method of performance documentation by recording the inner states of a performing body.

The connection between performance documentation and using the newest available technology for these purposes has a long history, beginning with Fluxus participatory performance practices (Griniuk, 2020). I suggest localising the starting point for such interconnection within the early performance art festivals; a major example is The Festum Fluxorum, which took place in Copenhagen from 23–28 November 1962 (Griniuk, 2020). I was able to investigate the archive of documents related to this performance festival with the kind permission of Fluxus Movement artist Eric Andersen. I also had the chance to interview Eric Andersen to gain a wider understanding of the content and background of this festival. The methods of documentation of The Festum Fluxorum were written/typed sources — the scores of the performances — photo documentation, and sound documentation of the discussions and event-planning meetings of the organising group, which are currently part of the Statens Museum for Kunst (SMK) collection in Copenhagen, Denmark. Thus documentation by applying technology seems to have been important for artists from the very start of the performance art media, as is exemplified by the first Fluxus network events in Europe. Typed texts and art publications can also be defined as technology-based documentation of the performances, as technology is involved in the printing process. Later, the Fluxus network's performances were documented by professional and amateur video recordings.



When the video camera became widely available, video documentation of the performances became the norm, along with photo and sound documentation, as well as text-based documentation or documentation through the performance residues, as the traces of the past performance. This tendency has been observed up until today, so technology has always been involved as a tool for documentation processes, be it analogue or digital. Within the layers of documentation of performance artwork, sound, video and photo documentation still dominate. So in the last five decades, not much change has been observed. The core starting point for the use of certain technology is its availability for the user. The performance artists or artists' colleagues are often the ones involved in documentation of the performances. In this manner, we are bound to technology-based innovations, as exemplified by the time of transition from analogue photography to digital photography. As demonstrated earlier, during the last decade, biometric technology has become available at the consumer level and has been applied to different artworks as a tool for interaction with audiences. As performance artists work with their bodies, such technology can benefit from adding one more layer — the insight into the inner states of the body during the performance — which could provide a more processual take on the documentation of performance artwork.

The necessity of clarification on the historical development of performance documentation urged me, besides the thematic literature review, to make contact with Eric Andersen, to understand his strategies and the strategies of other artists, as narrated by him, on how performance festivals were documented from the early 60s onwards. Based on the thematic literature review and conversations with Eric Andersen, technology, in my interpretation, has always been present as a tool for performance documentation. The development of technology and its accessibility at the consumer level has allowed the development of methodologies for how performance can be documented and how such documentation can be presented to the audiences.

## 2.3. Innovations as research and development (R&D)

The last aspect that is important for situating my current research is that of innovation. My understanding of innovation is built through the combination of thematic literature review and my affiliation with Vilniaus Kolegija/University of Applied Sciences in Lithuania, where I was a full-time lecturer in innovations, among other disciplines, in 2020–2021. My experience as a lecturer in innovations particularly clarified for me the necessity of seeing and explaining my research through the framework of innovations in the field of performance.

Though the term innovation is most often heard in business contexts, it is also an important driver for rethinking and reimagining contemporary artistic production. Furthermore, innovations are an important aspect of art education and a benefit to dismantling and reassembling the norms of creative work. According to Trott (2017), innovations are based on research and the novelty of which is applied to the processes and products or, in the case of innovative companies, to their business models. In this research, I apply the term innovation outside of the field of business, specifying it within a process (of artistic production) in which technology-based innovation is applied to performance practice, thereby adding a new layer to documentation of performance art. Innovation, in this research, means implementation of newly available technology into the artist's practice of self-documentation by recording the biometric data from one's own performing body.

The innovation within my research can be classified as research and development (R&D) due to the developmental aspect of the software, which performance artists will be able to apply to their documentation of performances. In other words, the term innovation in the context of my research is the implementation of novel technology within the field of performance, which contributes to the change of norms, specifically how performance practice and performance documentation is done and understood.

The innovation within my research can be classified as radical innovation (Sharipov, 2015). Radical innovation here unites the elements that have not been practised together before: performance, documentation and biometric data. The biometric data measurement devices have traditionally been used as laboratory equipment in medical institutions. During the last decade and especially the last five years, this technology became widely available at the consumer level. Photo and video cameras followed a similar historical trajectory. The documentation of the bodily measurements of the performing body can catch moments of the performer shifting between different bodily conditions. The resulting artistic works, such as the cases within my research, have contributed insights into that layer of performance documentation, alongside documentation by video and sound, highlighting the performer's concentrated and relaxed conditions, along with the conditions that require physical effort.

Considering the above-described specifics of the term innovation and the process of my research, in my interpretation, the research that I have been conducting lies within the framework of R&D towards radical innovations in performance. R&D traditionally takes place within university environments (Trott, 2017) as does my DA research. The methodology I developed will hopefully enter the artistic production environment, but at a later phase, in other words, after the phase of R&D at the university level where it is now based.

## 2.4. Transcorporeality and inhuman interconnections within performance and documentation: Layered by the artist and perceived by the audiences

In contemporary performance, it is common to thematically connect the performing body to the site of performance and surroundings (Arlander, 2018). Within such connectedness, the site impacts the body and is in turn impacted by the performative presence of a body. Theories have been developed that address the overall connectedness between the body, the objects, nature and the audiences (Cohen, 2015; Alaimo, 2010, 2016), which, due to their interdisciplinary origin, needed to be specified in the context of my research. This specification of the cross-disciplinary terminology applied to performance art is explained in my article *“Performance Art Using Biometric Data”*. The aspect of interconnectedness was important, as was the holistic impact of the site, movements of the body, context and the audiences on the inner states of the performing body during performance. Furthermore, the technology involved to measure these states became objects within the performance and active components of the narrative of case-performances. The possibility to record the inner states suggests a new layer within performance documentation. Along with this, the new ways of applying this new documentation by the artist is discussed.

The concepts of inhuman interconnections and transcorporeality lead the entire dissertation, as they explain the connectedness between the body, the objects (including technological devices), the culture, the venues and the audiences. These concepts will first be explained theoretically, followed by the explanation of how they are specifically used in my research. This connection is at the core, as precisely these components at the site of performance can impact the inner bodily condition of the performer during the performance artwork implementation. Transcorporeality is the concept

that extends inhuman interconnections, as here the connection of the body to the objects is discussed in regard to various sociocultural contexts and transcorporeal exchanges between bodies, human and non-human, along with the material environments. The term inhuman appears in Braidotti's scholarship (2013, p. 105); she introduces it in reference to the film *L'inhumaine* by Marcel L'Herbier (1924), in which the inhuman is a super-human. Later, the reference addresses Jean François Lyotard's book *The Inhuman* (1989), in which the inhuman is defined as "the alienating and commodifying effect of advanced capitalism on the human" (Braidotti, 2013, p. 108). These two definitions are very far from the core of my work, therefore, although the term is crucial in my study, it is grounded in a different theory, which is also more recent work, namely that of Cohen (2015).

Inhuman is a term that proposes erasing the hierarchies or differences between human and non-human. Human and non-human as a trigger for interaction can be on an equal level, as the materials, technology and performer immerse the audience into the liminal space of the interactive art piece. The term inhuman, which I extended and specified within this research as inhuman interconnections, is primarily built upon Cohen's (2015) work. It contains the word "in", which indicates the "inside" (Cohen, 2015); thus, inhuman refers to the human and non-human triggers which build the "inner" liminality of the performer, the audience and the materiality of the art piece. Cohen (2015) explains the terms: human and inhuman, whereby human is understood as the biological human being and the concept of inhuman is the process of erasing the boundaries between human and non-human (Cohen, 2015). Thus, in the context of this research, the claim is that the performing body can cognitively and emotionally be impacted by the objects (as is interpreted in my artwork "*The Monument to the Present Moment*", in which I interact with my family photo archive) and by the various audiences (as it is explained in my research regarding performing in different art fair venues). Inhuman is explained by Cohen (2015) as a method of conceptualising human and non-human interconnections through frictions and viscous porosity. According to Cohen (2015), the term inhuman, in essence, erases the boundaries of hierarchical relations between human and non-human, for example a stone in a performance art situation could bear equal symbolic importance to the human performer. Inhuman interconnections as a theme leads this entire dissertation. Therefore, in this dissertation, inhuman interconnections refers to the impact

on the performing body (explained as the connections to the performing body) of the technological devices that read biometric data or that are the part of performer's costume, the objects utilised in the site of performance to contribute to the narrative, as told within performance, and people, who are taking the part in the performance.

Based on the theoretical explanation of the term inhuman, and its specification within this research, connecting the terms inhuman and interconnections to form the term inhuman interconnections, I will further specify how this term is used in my research. Firstly, when discussing the performance documentation, inhuman interconnections are important for describing the performer and the documentation set-up. Even in the historical context, the presence of a camera impacted the performance, for example, interference by the lighting set-up or by the cameraperson or camera coming closer to the performer than the rest of the audience. I argue that such interferences impact performance, and this argument comes from my practice as a performer. Particularly in my research, the documentation toolset extends the norms by introducing biometric technology on the site of the performance. I introduce all this technology as objects in this dissertation. So inhuman interconnections are specified here as the connection of the performer to these technology items and the impact of these items on the performing body. On the other hand, in my performances, I use different items, which in most cases are also technology items: DIY instruments on my body, a voice manipulator, a tablet. In some cases, I use non-technological items, such as berries; however, I argue that within my performances the surrounding technology makes up at least 90% of the objects involved. Therefore, the term inhuman interconnections is very specifically applied to explain the connections between the performer and the technology objects/items on the site of the performance. From my practice, especially when I began working with the artworks involving biometric technology, there were numerous moments of struggle with the technology in the live performance setting — being unhappy when the connection disappeared or when a wire broke in my DIY instrument when someone interacted with it live. These moments in particular urged me to develop a term for explaining the impact of the technology objects on the cognitive and emotional condition of the performer. The term inhuman interconnections is limited in that it does not address the issues of the socio-cultural-political contexts of the sites of performances. Therefore, as soon as

I talk about the sites, the venues and the audiences, another term is needed, namely transcorporeality.

The term transcorporeality adds a name to the impact of the humans and non-humans on the performing body, the impact from the site/place/venue, which adds the socio-cultural context to the performance. I admit that there is a huge difference in the range of the inner conditions and emotional states of the performer: for example, performing in a small artist-run space for friends and colleagues or in a large-scale event where one rarely sees a familiar face. Further — there is a difference in what country one performs, especially when working with politically and culturally loaded narratives. Transcorporeality is a concept that helps us to understand such complexities of varieties of performance sites. Transcorporeality is a posthumanist take on new materialism and material feminism, in which it is understood that all creatures, as embodied beings, are intertwined with the material world and its dynamics, which transforms reality and also is transformed by it (Alaimo, 2018, p. 2). The term transcorporeality, explained by Alaimo (2010, 2016) within feminist, queer and trans theory, means embodiment, which involves material interchanges between bodies, socio-political contexts and power networks; thus he is referring to the human, nature and culture. Arlander (2018) uses the term transcorporeality but writes it in a different manner, “trans-corporeality”, explicitly pointing to the term originating from several components. Arlander (2018) builds her definition concerning, in particular, performance art and the above-mentioned work by Alaimo (2010) and the notion of “interconnections, interchanges, and transits between human bodies and nonhuman natures” (Alaimo, 2010, p. 2, referenced in Arlander, 2018). Alaimo also writes “transcorporeality” as “trans-corporeality” and, by her understanding, the term means that all the embodied beings in the socio-material world cross and transform in the way of their being (Alaimo, 2018). Furthermore, Arlander explained that “trans-corporeality as a theoretical site is where corporeal theories, environmental theories and science studies meet and mingle”, while “the movement across human corporeality and non-human nature necessitates rich, complex modes of analysis that travel through the entangled territories of material and discursive, natural and cultural, biological and textual” (Alaimo, 2010, p. 3, referenced in Arlander, 2018, p. 17). Put another way, transcorporeality, as explained by Ingold (2021), is a meeting and interchanging point between humans and non-humans.

My interest in this concept of transcorporeality grew over the last year, specifically within my writing practice as I developed an article that is not directly linked as part of the dissertation. In this article, I introduce the method of transcorporeal writing, as a method involving AI-produced stimuli as part of the process of enhancing the creativity of a human writer (Griniuk & Mosich 2022b). Currently I experiment in the transcorporeal context of creating performance art in collaboration with AI: the creation of narrative/score, sound and installation to perform in. I hope to investigate this further after finalising my DA. Here, in my understanding, transcorporeality is a way of extending the norms of the current process of creative production by involving the newest available technology (AI GPT3), in a similar way to the core aim of this dissertation. Transcorporeality here enters the discussion of process innovation and the working tools and conditions of an artist. These parallel investigations have continuously impacted how my thinking developed within the process of this research. Springgay and Truman (2018, p. 13) talk about liveness in performance, produced in collaboration with non-humans. With the change of norms, new challenges arise — for example, how to reach liveness as the meeting point with the audiences, when creating a performance with AI; questions on the new skills that artists need to develop to be fluent in using such technology as AI GPT3 are crucial as well. My experiments with AI was undertaken in the projects I did outside of my DA. Even though, in this dissertation, I stress simplicity in the use biometric technology to self-record one’s performance, for any involvement of new technology, the procedure needs to be done correctly and a routine developed in its application. The next step is only possible with technological fluency, as manipulating technology into the performance narrative requires feeling comfortable with it. This level of comfort or discomfort while applying a new device impacts the performing body during the performance. In my experience, there is a connection to the object (a very direct connection in the case of technology that reads biometric data, as the device is mounted on the body), the connection is also emotional and very dependent on the duration of use of the object within one’s practice, even if the use itself is not complicated. So even though the presence of technology in performance itself could be categorised as inhuman interconnections, I categorise the skills/knowledge/level of comfort while using it under the concept of transcorporeality.



To summarise how transcorporeality is used in my research, firstly I will explain the necessity of changing the norms of performance production and performance documentation, for which I need to address the context of what the current norms are and how my experimental projects were different in this context. Transcorporeality here explains the cultural and political differences of different art venues, as well as different art (educational) institutions. These are innovative on a different scale in different contexts and in different countries. Transcorporeality is even a way to explain why my DA is being done in Finland rather than another country, because there is a long history of performance art and ABR in Finland, which allows me to be here and to talk to the community. I used the term transcorporeality when writing about different art fairs — one in Sweden and one in Lithuania — and when explaining how people were interacting with me, based on the history and culture of each of the venues. So the term transcorporeality allowed me to talk not only about the impact of technology on my emotional and cognitive state while I performed live, but also about the stress that the place and country where I perform adds to the performance. The context and the condition for being aware of the multiplicity of layers within the artwork are crucial to providing the possibility for a wide spectrum of reading the artwork from the position of such transnational audiences. Therefore, in my performances, improvisation is a crucial tool. Transcorporeality as the connection of the performer (me) with the venue, the site, and the audiences in real-time requires the precondition of the capability of the artwork to be adapted and reshaped in real-time during the performance. This is also the reason I have had only a few collaborative works (besides the reason that the biometric data needed to be measured only from my body) — I needed to be sure that the people I collaborate with are excellent in mastering the tools of improvisation. In the case of my collaboration with the artist Kaspar Aus, we had many years of previous collaborations, and, therefore, I trusted the artist completely, knowing that for him improvisation is as familiar and necessary an artistic tool as it is for me. Transcorporeality addresses the in-between time within the performance (between the start and the end of the performance), called liminal space. I would also argue that transcorporeality preconditions how the performance happens, how much interaction happens and in what particular way, although, of course, it is impossible to predict the score of an improvisational performance in detail. However, the term transcorporeality can also explain what allows me to contribute to change in the field of

performance art: in what countries/places my research is innovative and where it is too radical; in what countries/places I can contribute to change and where my research is more oriented towards the scenarios of art education in the undefined future. For example, during 2019–2022, I could not have done this research in my country of origin, Lithuania, due to the lack of tradition for performance as research and the lack of community of performance artists as scholars. At this moment, there is only one short/introductory course on performance art at the Vilnius Faculty of the Vilnius Academy of Arts. Another course at the Kaunas Faculty of the Vilnius Academy of Arts was shut down in 2021. I have developed one peer-reviewed article about this course — *The digital artistic cycle in performance art education* (Griniuk, 2022c), based on an interview with the lecturer and the artworks of the participating students. In my opinion, shutting down such a course is a huge loss for the art academy. Here, the explanation is that the socio-cultural context and tradition of the art academy and art pre-defines what is possible and what is not, and for some media, such as performance art, more time is needed to become part of the valuable academic milieu of Lithuania.

Both concepts of inhuman interconnections and transcorporeality are directly connected to the concepts of liminal space and liminoid space, both explained in detail in my publication *“Performance Art Using Biometric Data”*. To define the in-between space within performance artwork, I will address two different concepts: a liminal space as a transitory temporal phase, or space, within cultural action, or two states of the performing body, immersed in performative action as a ritual; and a liminoid space, resembling liminal space, but without being identical to the liminal (McKenzie, 2001). The meaning of the liminal space, as rites of passage, was first addressed by Arnold van Gennep (1909/1960), which discusses the rituals, such as marriage, in which a societal role transits from one person to another, containing the space in-between. Further, liminal space is addressed as the space betwixt and between by Turner (1970). If performance can be seen as constructed, liminal space is an interstructural situation (Turner, 1970). Transitional beings or liminal personas are culturally and symbolically bound (Turner, 1970). According to McKenzie (2001), liminoid refers to the cyber spatiality of the body, which is recorded and archived; in this way, it resembles liminal space, but is not identical to it.

Based on the explanation above, inhuman interconnections, transcorporeality, and liminal and liminoid spaces are the terms leading the discussion about performance and performance documentation in my research. These terms specifically underline the inseparability of the performing body and the site, venue, culture and surroundings where the performance takes place, which all, in my interpretation, impact the ways the body feels and is cognitively loaded during the performance.

## 2.5. Participation in performance and performance pedagogy through empathic connections and the pluriversal approach

The discussion about the relations between the performer and the audience is essential in this research, and it was done from two conceptual takes: empathic connections with the audiences and the pluriversal approach to the audiences. In 2.1., I specified the term performance, which is relevant for this research, and my practice as a performer can be interpreted as divided into two categories. The first category is participatory performance in large-scale venues. In other words, the performances in which I attempt to connect with the passers-by and involve unfamiliar audiences into my performances. In the other category are the performance projects with the concrete objective of knowledge sharing (or in some cases, scientific communication, which I address in one article not included in this dissertation — *Nomadic Radical Academy for Climate Change Awareness: Science communication through performance* (Griniuk & Mosich, 2022a)<sup>3</sup> — through the tool of performance, which is often done with groups of people who sign up for the activity and come to a predefined location. Such projects fall under the definition of performance pedagogy. One example is the project “*The Nomadic Radical Academy*”, which is used as the research material for two of my publications. I have also developed an artist-run initiative as a proposal for the new methodology of art education at the Vilnius Academy of Arts in Lithuania, titled “*The Temporary Department of Time, Space and Action*”, which is not included directly in this dissertation, but resulted in three peer-reviewed publications, written and published during my DA studies — Griniuk (2020), Griniuk (2022a), and Griniuk (2022b).<sup>4</sup> What connects both “*The Nomadic Radical Academy*” and “*The Temporary Department of Time, Space and Action*” is that I present them in my publications as performance pedagogy projects, though in the first case the participants are children and young people, and in the second case, the participants are art academy students.

<sup>3</sup> The project “*The Nomadic Radical Academy*” resulted in five peer-reviewed articles, the latest of which focusing specifically on performance as science communication.

<sup>4</sup> The central article here was Griniuk (2020).

Performance pedagogy within my research and work builds upon the tools of Fluxus pedagogy,<sup>5</sup> which are the basis for the development of the concept of the Hyper Performer (Griniuk, 2020), and the specification of the concepts of Human Semiotics and InterMedia (Griniuk, 2020) for the discussion of the possibilities of contemporary implementation of Fluxus pedagogies into performance pedagogies. These three concepts are the elements of performance pedagogy. In my article, I describe the Hyper Performer as the performer “in the performative situation involving all the members of the audience” (Griniuk, 2020, p. 155). The term Human Semiotics refers to when “collective attention is directed toward one activity” (Griniuk, 2020, p. 155). In my article, InterMedia is described as “the space between media, focused on the sensorial experience of the participants” (Griniuk, 2020, p. 155).

I argue that performance pedagogy is a method that can connect facilitators and participants in a non-hierarchical way, be it the connection between the facilitators-artists and the children or the connection between the facilitators-lecturers and the art academy students. This is why, when discussing performance pedagogy, empathic connections with the audiences/participants and the pluriversal approach to the audiences/participants are crucial. These two terms are also crucial when discussing performance as participatory performance in large-scale venues, as discussed above.

Due to the focus on participatory performance in my research and the fact that *“The Nomadic Radical Academy”* is only addressed in two articles, most of the examples provided below that attempt to specify empathic connections and the pluriversal approach are participatory performances. But performance pedagogy projects kept my attention in parallel with this research and, of course, within *“The Nomadic Radical Academy”*.

I classify empathy into digital empathy and kinaesthetic empathy. Digital empathy is important due to the fact that digitality is involved in my performances. Digital empathy (Friesem, 2016) is theoretically described as empathy in which the digital means are involved to mediate the inner states of the body during live action. Digital empathy can be divided into the following classifications: empathic concern, cognitive empathy, projective empathy, affective empathy, psychological empathy and aesthetic empathy (Friesem, 2016). Kinaesthetic empathy specifically connects to my artwork

<sup>5</sup> I develop three main concepts of performance pedagogy, based on Filliou (1970).

*“The Monument to the Present Moment”*, which was done in collaboration with the choreographer Kaspar Aus. Kinaesthetic empathy (Kim, 2015) is defined as the empathy in movement. Kinaesthetic empathy is a tool to lessen the communication barriers and enhance involvement of the audience by the intimate, subjective level of the immersive experience of a movement-based performance (Kim, 2015). I actively address the concepts of empathy within two of my publications in this dissertation. The other concept, which I approach the audience through, is pluriverse. In my research, the term empathy evolved from the scholarship of Friesem (2016) and Kim (2015), and what is of central importance for me is to specify this term in regard to performance. Therefore, my standpoint involves the classification of the precise types of performances that are involved as artworks within my dissertation. There are precisely three artworks: the performances *“Territory”*, *“The Monument to the Present Moment”*, and *“The Nomadic Radical Academy”* all explicitly contain movement. *“The Monument to the Present Moment”* is particularly movement based, as it was realised in collaboration with a choreographer. Therefore, when I write about empathy, I am specifically referring to the empathy within movement-based performance that contains connections to the audiences. I find the definition of kinaesthetic empathy by Kim (2015) useful and directly applicable to my research, but in my work, the specification of this term goes to the concrete connectedness with performance. I further connect empathy with the discussion on pluriversal thinking towards performance design for audiences.

Pluriverse and pluriversal thinking are both built upon Escobar’s (2017) explanation of pluriverse, as the multiplicity of experiences involved within diverse communities. The example that he provides are the Indigenous worlds existing within the modern world (Escobar, 2021). Pluriverse here is seen as multiple ontologies, or, in other words, the world, where many worlds can fit (Escobar, 2021). Pluriversal thinking can be achieved by dismantling and reassembling the structures within existing knowledge. Pluriverse, in this dissertation, is applied within the approach to the audiences, but also as an approach to art and educational institutions. According to the explanation that pluriversal thinking allows many worlds/truths to co-exist on an equal level (Escobar, 2021), the pluriverse is something the academic environment should work towards, to have a wider spectrum of knowledge, audiences and better collaborations. Pluriverse and pluriversal thinking, in this dissertation, are viewed from the perspective of de-

signing performance for a diverse audience and from the perspective of performance pedagogy at the art academies and universities, as one of the outcomes of this research is technology-based innovation that works towards dismantling and reassembling the norms within performance art, using the new technology available to the performance practitioners. In my research, I aim to specify pluriverse into the following three directions, which I call “tools” when I talk about performance and audiences: pluriversal canvases, explained as the bodies in the performance space that are impacted by actions in real-time, which urge them to take actions themselves; pluriversal sensorial experiences, as the very individual experience of each of the performance participants, which contributes to the holistic feeling of the artwork, which is performance; and a pluriverse within site-specificity, which I interpret as targeting local goals by the artworks’ narratives, while the local goals are part of the large-scale goals and discussions. Further, I address pluriverse within discussion on the institutional change within performance art education. In this case, pluriverse as a term is used as it is explained by Escobar (2021): as the aim for the vision of a better academic education and environment.

Empathic connections with the audiences/participants and the pluriversal approach to the audiences/participants are important concepts within this research. They are present in all the discussions regarding the performance and performance pedagogy projects within this study, though in the case of performances involving movement, empathic connections are specified through the lens of kinaesthetic empathy (Kim, 2015).

## 2.6. Diving into the concepts of documentation, aesthetics and aestheticisation, layering and multileveledness

Within performance documentation, including the layer of biometric data from the performing body that has been remediated into sound and image, alongside video and sound recordings, the concepts of documentation, aesthetics and aestheticisation, layering and multileveledness are discussed. Within this dissertation, documentation is seen in the processual aspect (Gorichanaz, 2017). This take on documentation builds upon Auslander’s (2006) analysis of documentation as consisting of documentary documentation and theatrical documentation. Documentary documentation is the record of the event of performance, which also serves as evidence that the performance event happened (Auslander, 2006). Theatrical documentation is done by creating a narrative about the performance, possibly from a fictional aspect. According to Auslander, both types of documentation are important signifiers of the performances: “the act of documenting an event as a performance is what constitutes it as such” (Auslander, 2006, p. 5).

Gorichanaz (2017) expands these thoughts into a neo-documentation perspective, in which the symbolism of the content within the documentation is bound to the circumstances of how and where this documentation (and performance) is done, thus the process of documentation. From this perspective, adding biometric data from the performing body performance documentation, as suggested by my research, could add a new layer to it (a processual take on performance and its documentation). Such documentation lies within the framework of radical innovation, as discussed above. Biometric data gives an accurate record of what was happening within the body of the performer and allows for the possibility for remediation and creation of a narrative line in which biometric data is actively included to achieve the liveness of such remediation (as the meeting point) towards the audience. Such a conceptual definition of documentation allows for further



development of the ways it can be utilised by artists, to whom the concepts of aesthetics and aestheticisation and layering are important.

In my research, I find Auslander's (2006) explanation to be useful, and my understanding of various documentation processes is based on his theoretical explanation. By merging his theory with that of Gorichanaz (2017), it becomes clear how the layer of biometric data measurements can add to performance documentation, namely the processual take on performance and connection of the image (even the moving image) of performance with the processes inside the performer's body during performance. Specifically, this processual aspect is what I aim to underline with the adaptation of the term "documentation" to my work. Further, I connect documentation with the aesthetic outcomes of this (documentation) process.

Aesthetics is the process in which things are perceived for their own sake, by interconnecting the senses and affect of the spectator (Welsch, 1996; Reckwitz, 2017). Aestheticisation is the transformation of objects from the state of being useful to the state of being desirable (Welsch, 1996). Within aestheticisation, the pre-aesthetic real takes on an aesthetic glaze as the virtualisation of a reality where the division between the real and the artificial becomes blurred and diffuse (Welsch, 1996). Aesthetics and aestheticisation are approached by the artist through biometric data, which becomes the active component of the new artwork and an active part of the narrative within the new performance. Such a new artwork contains records of past performances by video, sound and biometric data from the performer. This new element within performance documentation is an additional layer, unveiling the process of the inner cognitive conditions of the performer while performing. Therefore, in my research, aesthetics and aestheticisation are bound to the term documentation. Such aestheticised documentation becomes one more layer of the performance artwork, containing documentation of past performances.

The concept of layering, as defined by Cupchik and Gignac (2007), is the combination of different elements within an artwork aimed at stimulating the audience's creativity. In the current research, creativity is expanded to encompass different ways of participation in the performance artwork. Cupchik and Gignac (2007) specify that layering also impacts enhancing emotional and empathic connections between the artist and the audienc-

es. In my current research, layering also allows for a processual take on documentation and performance. Layering positively impacts the aesthetic experience for the audience, introducing a wider spectrum of the ways one can interact with the artist than traditionally represented media. This connects to the other concept: multileveledness. Multileveledness is theoretically defined as the potential of the artwork to be experienced and interpreted within several systems of connected potential meaning (Kreitler & Kreitler, 1972). This concept explains how the audiences perceive the artwork at a variety of levels. So the multiple layers introduced by the artist allow for a multileveledness of perception from the side of the audience. In my research, layering explains how biometric data can be applied by the artists within an artwork, and, due to the impossibility of participatory performance artwork to exist without audiences, the term layering is directly connected to multileveledness of perception by the audiences.

As biometric data is involved in one of the layers within performance and performance documentation, it is important to define it as a concept within my research. Han (2016) explains biometric data as the method of identifying and labelling people. However, within my research, biometric data from EEG cannot identify a unique person. Biometric data can include fingerprints, palm prints, palm veins, hand geometry, DNA, facial recognition, iris recognition, retina, odour/scent, and has recently expanded to the movement of a person, e.g., handwriting, gait, typing rhythm and voice (Han, 2016, p. 42). Biometric data can be static, as exemplified by DNA, skin patterns, irises, fingerprints, body contours, etc., or dynamic, as exemplified by facial expressions, body gestures, EEG, blood pressure or body temperature (Han, 2016, p. 42). Within my research, the focus is on EEG data, which is dynamic biometric data. In the current case, the EEG data provides no possibility of identifying a unique person, because I work with improvisational performance, in which the actions within each of the artworks are unique. To identify a person from EEG data, a baseline measurement of a specific action is needed, which, upon repetition of the specific task, allows for the identification of a person from their patterns in EEG data, as connected to the specific activity (Curran et al., 2016).

Within performance as research, the socio-materiality of the performance is the site where the knowledge is produced (Lewis & Tulk, 2016). This indicates that socio-materiality includes both aspects — inhuman intercon-

nections and transcorporeality — as a holistic take on all that impacts the performing body, which, as the performance unfolds and ends, gives the results: the data for the research.

This chapter aimed to explain theoretically how the terms used within this dissertation are grounded historically in regard to previous scholarship. After explaining the theoretical standpoint, I specified how these terms are interrelated and applied specifically within my dissertation; thus I adapted the terms to usability within performance art with biometric data. The thematic literature review addressed aesthetics, empathy, documentation, biometric data, inhuman interconnections, transcorporeality and liminal space (Friesem, 2016; Kim, 2015; Cohen, 2015; Alaimo, 2010, 2016). These all appear as major concepts in each of the publications included in the dissertation.

### 3. Methodological choices

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### 3.1. Posthumanist art-based action research

Within my research, I worked towards a developmental perspective, aimed at technology-based radical innovation in performance and performance documentation. Therefore, the umbrella methodology within my research was ABAR, specifically posthumanist ABAR. The standpoint for my research was interpretivism, in which the data analysis was realised through a hermeneutic approach.

Hermeneutics is freed from the “scientific concept of objectivity” (Gadamer, 2004, p. 268), through the technique of interpretive understanding. Such interpretive understanding can be exemplified by interaction with the text and projecting one’s own expectations of it as a prism for interpreting the text, what Gadamer calls “fore-conception” (Gadamer, 2004, p. 269), meaning the first step towards interpretation. This is an interconnection of openness to the author’s meaning of the text and other’s interpretation of it, building meaning through a fluid multiplicity of possibilities (Gadamer, 2004, p. 271). The questioning of things and interpretations and the awareness of one’s own biases within interpretation are at the core of the hermeneutic technique.

Hermeneutic experience moves away from the understanding of experience in the natural sciences, in which it is possible to repeat the same procedures to get the same result (Gadamer, 2004). Hermeneutics suggest a different way of understanding the concept of experience, as a palimpsest (in my interpretation) of knowledge, which is non-static, built on a reflective relationship between subjectivity, historicity and tradition — experience as becoming. The journey of conversation and translation, or, in my interpretation, of making meaning out of transforming visual data into words/language, is seen not as conducted but rather as a flow leading those involved into the data analysis. Here, from the hermeneutic approach, translation is always the adaptation and interpretation of words/content into new circumstances of existence (Gadamer, 2004). Questioning and understanding



shape a depth of hermeneutic experience (Gadamer, 2004), thus, in my interpretation, they are seen as a circular process of becoming.

Though Gadamer (2004) explains the concept of conversation and translation in the framework of different languages, and thus different contexts, I adapt both the concept of conversation and the concept of translation into my reflexive analysis of the collected data. As in Gadamer's (2004) explanation of the gap that occurs in translation and can never be completely filled, I suggest that the translation of visual data into meaning-making words forms a gap as well, as aesthetic embodied sensual experience cannot, in my interpretation, be completely translated into verbal explanation. Gadamer (2004) also speaks about artistic reproduction as a form of translation. I will discuss this idea in the fifth chapter, using different theories, diving into the discussion about the impossibility of recreation/reproduction of the same performance, as the gap in translation in the new places and time-ness appears and thus it is never the same performance again.

The hermeneutic approach to understanding artistic/aesthetic data is built upon the framework of translation and interpretation from the position of the researcher, as interpretation aiming towards the identification of truth. The hermeneutic approach is taken in this research and applied to a wide range of image and text-based qualitative data. Gadamer (2004) explains that the medium of language, interrelated with interpretation and understanding, is explained as the action of beginning to own what has been said by interpreting/assimilating it from one's own position. So from this standpoint, interpreting the data becomes equivalent to "owning" the data to explain the context of the research and the position of the researcher, as the researcher's voice and experience is present within the interpretation. "Verbal interpretation is the form of all interpretation, even when what is to be interpreted is not linguistic in nature — i.e., is not a text but a statue or a musical composition" (Gadamer, 2004, p. 400). Thus the translation occurs from the symbols and key concepts extracted from the images and sounds in performance in verbal interpretation. Here the sign (Gadamer, 2004), as the symbolic meaning within the documented image, communicates its processual take: the circumstances of its creation, the social and the spatial contexts.

During 2019–2022 I was involved in a large number of projects that all dealt with technology-based innovation (EEG and AI) in performance production with postcolonial memory as the art and performance theme. Therefore, there is a need to expand the clarification of the philosophical framework within my work methodology as a holistic practice. My research addresses the interconnectedness between the human body and technology, which I underline as transcorporeality and inhuman interconnections, and my interest as a researcher is within posthumanism as a methodological approach. I have been investigating possible collaborations between humans and non-humans, and this resulted in a particular focus on biometric technology, specified as EEG technology, measuring data within performance and performance production in collaboration with AI (which is a parallel investigation and not part of this dissertation).

I work within a posthumanist philosophical frame of methodology (Ulmer, 2017), in which one of the examples of my publications is a joint paper on artistic research and ABR methodology within technology-based innovation in performance (as in the article "*Multiperspective take on pluriversal agenda in artistic research*"). The other example is my paper on the writing process in collaboration with AI, in which I developed the method of enhancing the writer's creativity in the collaborative writing process involving human writers and AI (Griniuk & Mosich, 2022b). My theoretical background is based on the scholarship of Rosi Braidotti (2013), extended into the understanding of posthumanism as methodology (Ulmer, 2017); in my practice, I work towards posthumanist ABR as the holistic methodology for my study. The notion of posthuman addresses the shift within our thinking system about what can be referred to as the basic unit of common reference to "our species, our polity and our relationship to the other inhabitants of this planet" Braidotti (2013, p. 2). Braidotti (2013) claims that the condition of posthumanism is a non-naturalistic structure of living matter. This can be understood in how the extended human body interconnects with the socio-political (techno-social, constructed) structures of environments. Here, the discussion is close to that of transcorporeality in that the body is seen as interconnected with and extended into the contexts and environments of performances. In my work as an artist-researcher, posthumanism matches Braidotti's definition exactly, which is relevant when I question the ways that liveness is achieved within performance created by humans and AI and how the authorship is defined in this case. Posthumanism as a phil-

osophical framework is relevant to my work as a whole–artist–researcher. For me, nature and culture regarding performance sites intertwines with technology–based innovations.

In my emphasis, the posthumanist research methodology approach (Ulmer, 2017) builds on the discussion of what posthumanism is and how it historically defines the end of the philosophical contradiction of humanism and anti–humanism by drawing the outlines of new alternatives. This can be explained as taking three directions. The first is connected to “moral philosophy and connects to the reactive form of the posthuman” (Braidotti, 2013, p. 38). The second direction originates from the science and technology studies (Braidotti, 2013). In the case of my work as an artist–researcher, in the broader context of my work including that which is not involved in my DA, I clearly position my research methodology within this second direction, in that transcorporeality and inhuman interconnections are in focus when addressing the site of performance containing humans and non–humans (technology). The third direction is based on the “anti–humanist philosophies of subjectivities” (Braidotti, 2013, p. 38). In my interpretation of the discussion by Braidotti (2013) on science and technology and subjectivity, the researcher addresses it as the problematic sphere. Here my questions about, for example, authorship, while collaborating with AI and the new range of responsibilities from the side of the artist, who now is in the role of an editor and decision–maker, fall within the discussion on technology, subjectivity and morality. It is important to note that the research I use as the basis for communicating the framework of posthumanism originates from nine years before my dissertation, but I argue that the questions posed are still as relevant today as they were in 2013, when Braidotti’s scholarship was published. Another term proposed by Braidotti is becoming a machine, which “indicates and actualizes the relational powers of a subject which is no longer cast in a dualistic frame but bears the privileged bond with multiple others and merges with one’s technologically mediated planetary environment” (Braidotti, 2013, p. 92). This definition is very relevant to my earlier works, namely the videoworks which I produced from 2012–2014, such as “*The Edge*” (2013) and “*The City of Things*” (2012). Becoming a machine is something that I reflect on artistically and this leaves me with questions for further investigation. I have not addressed this term in the current research, but it goes hand in hand with my works, addressing non–human and nonpersonal life, created precisely at the time when Braidotti’s

study (2012–2014) was published. The posthumanist methodology is, in my interpretation, linked to actor–network theory (ANT), as this theory does not “limit itself to human individual actors but extends the word actor — or actant — to non–human, non–individual entities” (Latour, 1990, p. 48).

The research strategy of this study was developed such that the holistic approach within the entire dissertation is posthumanist ABAR, while the research cycles, containing the artworks and the articles based on data retrieved from the artwork, have been developed through the following research methods: reflexive research, autoethnography, ABR, A/R/Tography and ABAR. My take on the research was within university tradition, in that each of my artworks was utilised for data collection, which led to the peer–reviewed publications.

## 3.2. Methods applied to the two categories of artworks in the dissertation

The artworks involved in my study fall under two categories: the older works and those undertaken prior to the dissertation versus the experiments conducted during the DA. I used the autoethnography method when I worked with my own material from previous years, but discussed them from my present perspective as a researcher. This approach contributed to clarifying the specifics of transcorporeality and inhuman interconnections within performance and the understanding of empathy and the pluriverse within the artist's perspective of working with audiences. Before I started my DA in 2019, I realised a number of performances and artworks during 2015–2018. These artworks were not originally intended as research, however they involved similar themes and dealt with questions on the norms of art educational institutions or in discussing new technology and new ways to address postcolonial memory. In 2020, I collected all the materials that I had on those performances, as I decided to relook into this older material to see if it contained anything relevant to the research. I had a large amount of visual and text-based material, as I routinely wrote reflexive notes after my performances in which I met the audiences and took photo and video documentation of them. This revisiting of the older materials resulted in my publications. I categorise this research as autoethnographic. In the artistic works and performances involving autoethnographic data, parallel with the real-time events (by which I mean the performances that I conducted during the DA process, which are referred to in this research as the experimental projects), the research took a reflexive approach at times; the period for analysing the data was quite short and the data processing tool of the reflexive path was used to analyse the data. The experimental performances of 2019–2022, explored by the A/R/Tographic, ABR and ABAR methods, contributed to clarifying the conceptual outline of aesthetics, empathy, documentation, biometric data and liminal space.

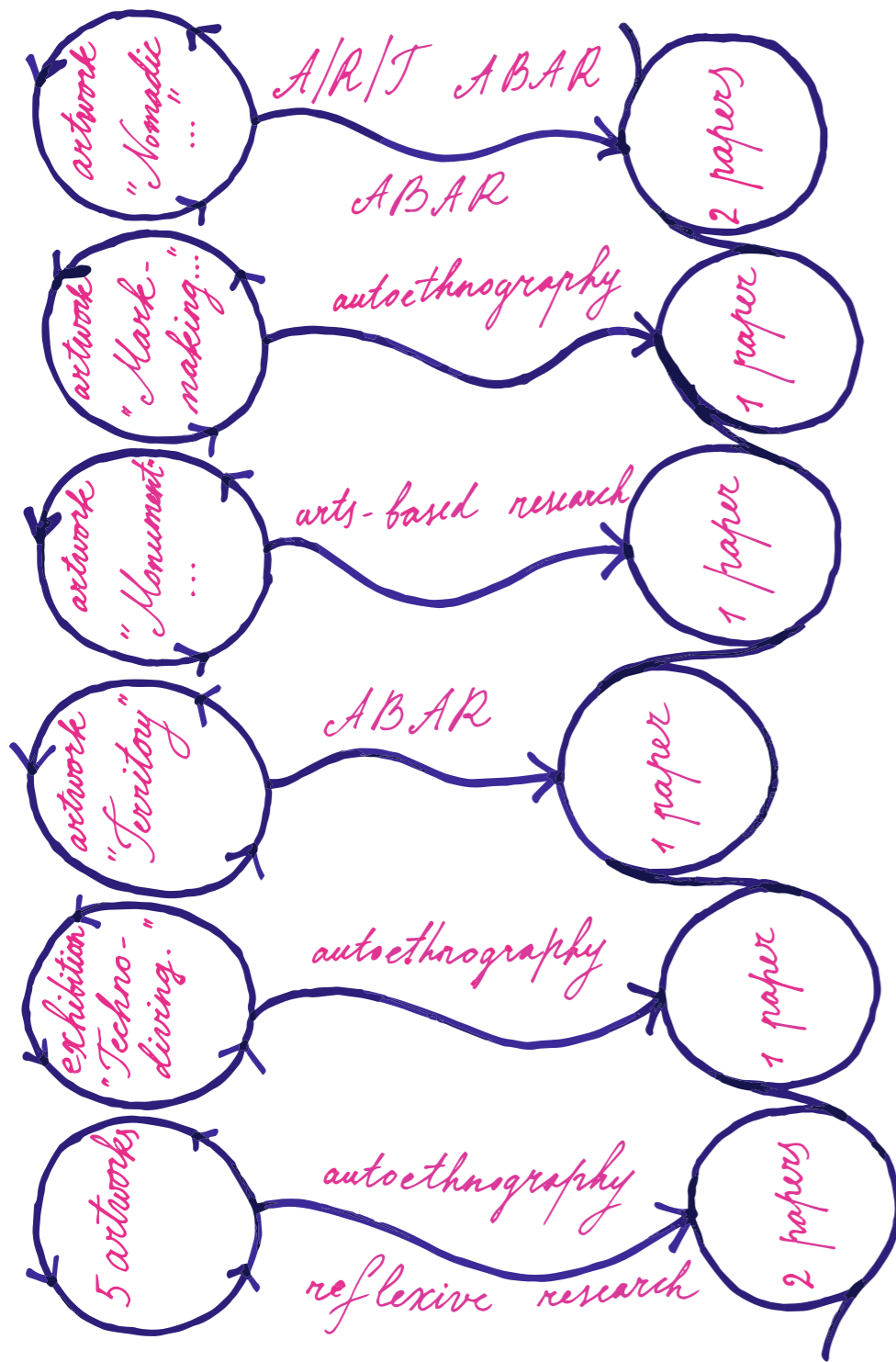


Figure 5. The scheme illustrates my research cycles. Developed by Marija Griniuk.

According to these two categories of artworks, the larger picture of the research data can be divided chronologically into two parts: one part based on the experimental projects, designed specifically for the research; the other part was the previous works, addressed by me retrospectively and referred to as artistic works in the dissertation. Part of the data was collected during 2019–2021 as the research unfolded. Due to my work within the researched field, uniting performance and brain activity data measured by EEG, starting in 2015, there was the necessity to revisit the earlier performances from the perspective of my current position of the researcher, looking into the older data from the visuals and notes, which were taken in the context of the earlier artworks. This necessity arose in connection with the previous performances at art fairs, due to the very specific context of interactions with the passers-by, connecting empathically with them and inviting them into the performance. The art fair as a format has a very different tradition from the usual performance set-up and full involvement of the visitors is especially difficult there, although inviting by revealing and remediating the aestheticised biometric data of the performer was helpful in creating interconnections. This particular interest became the reason for arranging the second exhibition at the Supermarket Art Fair in October 2021, which became part of the evaluation of the DA progress.

Each of the research cycles contained one artwork, or grouped artworks, which served as the research cases to retrieve data for analysis and development of peer-reviewed publications. The cases are referred to as artistic works and performances for my art conducted from 2015–2019 (as I began my DA research in 2019), in which I created performances with biometric data without continuously addressing them as part of my research. Further, the artworks created during 2019–2022 are referred to by the term experimental projects. Traditionally, research cycles are developed around actions or cases. In my research cycles, instead of actions or cases, artworks/performances are used. There was a total of six research cycles. Five of the research cycles centre on one artwork, resulting in one or two research papers: the performance “The Monument to the Present Moment” resulted in one research paper; the performance “Mark-Making”, expanded into the performance “Mark-Making with Robots”, resulted in one research paper; “The Nomadic Radical Academy” resulted in two research papers; the performance “Territory” resulted in one research paper; and the exhibition “Techno-diving into the liveness of the unbodied performed body of memory” resulted in one



research paper. The sixth research cycle contains four of my artworks and the project by Viola Kus, which I attended as an audience member, and resulted in two research papers. In each of the cycles where more than one research paper was developed, the collected data was used to approach different research questions, which each contributed to the research findings from different angles.

This research can be seen as implemented in two phases: in the first phase, the data from my previous performances was studied, in which remediated biometric data was used as a tool for interaction with audience members, and autoethnography was the major tool for data processing. All the retrospectively accessed data is referred to as autoethnographic data. In the second phase, the focus was interaction with the audience and forming empathic connections with them by revealing my — the performer's — inner states, remediated into a site-specific performance. The important aspect here was the documentation of the performance by recording my — the performer's — brain activity during the performative action and remediation of it live. Here the method used to access data within the cases, realised during the research years, was reflexive research, ABR, ABAR and A/R/Tography (see Figure 5).

### 3.3. Explaining the methods of the research cycles

In this section, I will explain each of the methods (see Figure 6 below) applied within my research cycles. Each cycle contains artworks and the research papers developed from data connected to them from a theoretical perspective. The working procedure of applying these methods will be discussed from the perspective of my implementation of them within each cycle.

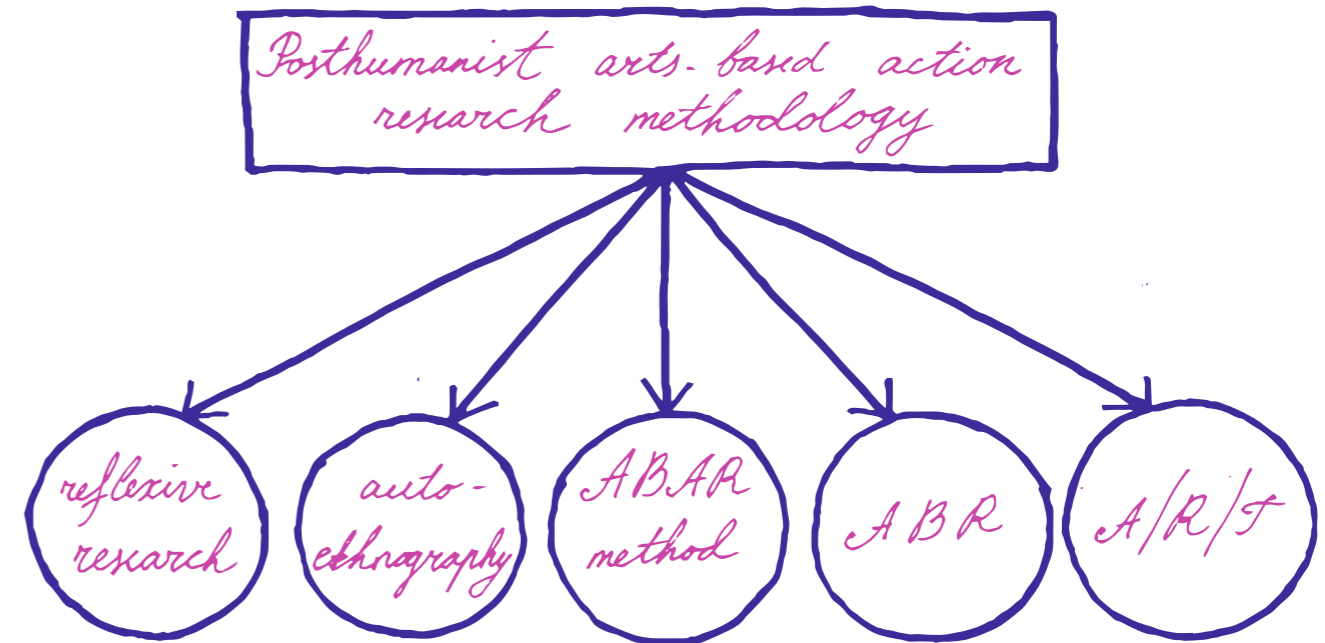


Figure 6. Methodology within the research and methods within research cycles. Developed by Marija Griniuk.

The united framework of the entire dissertation is ABAR (Jokela, 2019; Jokela & Huhmarniemi, 2018), specified in my research as posthumanist ABAR, which, as a method that builds on ABR and action research, unites the artistic and sociological approach. In my research, this method is applied towards promoting change in the field of performance through technology-based innovation in the process of performance artwork creation

and documentation. ABAR consists of research cycles because of its action–research element.

My research is categorised as project–based action, as through the artworks, used as the research cases, I attempt to change the norms within the performance field on a larger scale, namely to change the ways that performance documentation is conducted and used by the artists and taught in the art academy and university environments. ABAR was developed in academic milieus (Jokela, 2019; Jokela & Huhmarniemi, 2018) and is often applied in research uniting art, sociology and pedagogy. These three elements make up the content of my work in the framework, which corresponds as well to the method of A/R/T, as I am focusing on performance pedagogy projects along with research and the wider scope of artistic production. In this dissertation, the cyclic approach is applied to producing and utilising the artistic data to develop the publications. After each of the research cycles, ending with publication, the results are the materials for resetting further goals and developing further research questions. In this way, the dissertation can be seen as a journey through each of the cycles, resulting in the publications containing each of the eight sub–questions, which in the end provide the results and findings for the entire dissertation.

Even though it is stated that “autobiographism of the researcher is usually emphasised more in a/r/tography than in arts based action research” (Jokela & Huhmarniemi, 2018, p. 13), I argue that, specifically in my case, “autobiographism”, here referred to as autoethnography, is as close to ABAR as it is to A/R/Tography. I have developed two peer–reviewed papers (which include a book chapter and conference proceedings, published as a book chapter), in which I discuss the similarity of both methods within my work and expand the framework of A/R/T by further proposing a novel take on it, in which the curatorial aspect would also be included, thus shaping the framework of A/C/E/R (artist–curator–educator–researcher) (Griniuk, 2022a; Griniuk, 2022b).<sup>6</sup> These two articles are not directly included in the dissertation, because they discuss the wider scope of my practice, but these two papers are important in understanding my methodological approach towards my practice. Both methods, ABAR and A/R/Tography, stress the wide scope of tools approached within the research and the position of the researchers dealing with interrelations between the disciplines of art, education, innovation and creativity (Springgay, Irwin, & Wilson

<sup>6</sup> *To explain similarities between A/R/T and ABAR and explore the further horizontality of these methods, I developed two publications: Griniuk (2022a) and Griniuk (2022b).*

<sup>7</sup> *Research poster presented at Cumulus Conference 2021 and the case “Touch-Buddy”, to which I contributed to the visual development of the speculative design case.*

Kind, 2005). An especially vivid highlight of these interdisciplinary interrelations is marked in A/R/Tography by the symbol “/”, which stands for the space in–between, used by the researcher (Springgay, Irwin, & Wilson Kind, 2005). “Art–based action research also shares similarities with the processes of service design” (Jokela & Huhmarniemi, 2018, p. 13), which also contributes to my interest in my practice and resulted in a number of parallel projects and collaborations conducted during my DA, resulting in the research papers Griniuk et al. (2021) and Mosich & Griniuk & (2022)<sup>7</sup>. The interdisciplinarity explains my holistic take on artistic production and my envisioning of the future of art education. This holistic approach has also driven my DA research and choice of methods.

The methods within my research cycles will be discussed chronologically, as they were applied within the development of the publications. Reflexive research was used within my study to address the artworks of the past performances along with two experimental projects, in the comparative scale of extracting how the research developed. Here the data was produced simultaneously with the implementation of the two experimental projects and accessed within a short time after finalising it, sometimes united/in parallel with the data from previous performances for comparative reasons. Reflexive research is often applied within the studies containing meta–theories, theories, research methods and interpretive acts; within such research, the choices are made clear (Weber, 2003, p. 7). I used myself as the case study subject within the research cycle by collecting data from my performances and conference presentations implemented in the period of fall 2019 to February 2020. This data was analysed shortly after completing performances and the conference presentation and was developed into the research paper, published in June 2020. Reflexive research builds upon the experience of the researcher, with systematic reflexion at its core, often in the form of a reflexive diary and notes (Etherington, 2004). I, as a performer, produced data, and the reflexive diary, which I used to write down the immediate effect of the event, was one of the core sources of this data, which I analysed as a researcher.

Within reflexive research, the “whole–person–researcher” is built upon previous professional work, interests and explorations, while embodying a becoming approach to being a researcher, as is explained by Attia and Edge (2017, p. 38). “Being ... always involves a process of becoming” (Bar-

nett, 2004, cited in Attia & Edge 2017, p. 34). Qualitative research involves reflexivity and empathy in the researcher, and these are built upon the previous modes of interactions in performative spaces and navigation between the absolute autonomy and improvised contacts in the performances. Reflexivity and empathic connections are expanded by Attia and Edge (2017) Qualitative research necessitates the ability to empathize with other people's social and psychological circumstances, and it necessitates both the humility to recognize that the researcher always has a certain point of view and the readiness to risk having that point of view shifted (Attia & Edge, 2017). Within the current research, prospective and retrospective reflexivity were involved (Edge, 2010). In the example of my research, the prospective reflexivity in regard to the experimental projects was produced between fall 2019 and February 2020, as the data was produced immediately after each of the projects, or during each of the projects, thus each of the experiences combined into a holistic approach.

Retrospective reflexivity is the narrative behind the current standpoint in the process of becoming (Attia & Edge, 2017, p. 35). In the example of my research, the previous artistic works from 2015–2019 are addressed from the viewpoint of retrospective reflexivity. Prospective reflexivity is seen as all the past narratives that make the current “whole–person–researcher” and how this impacts the research (Attia & Edge, 2017, p. 35). Thus the researcher affects the research. At the same time, the researcher is affected in the moment of becoming, or in other words, implementing the research. The ecosystem of reflexive research is connected to self-awareness within the researcher's experience (Attia & Edge, 2017, p. 36). According to Etherington (2004, p. 47), reflexivity is a complex system informed by previous experiences, decisions, actions and interpretations.

Awareness can be utilised to create new (and better) approaches to practice that are more in keeping with a person's underlying value system and is sensitive to the social milieu in which they practice (Fook, 2011). Reflexivity as self-awareness is a complex approach. “We have to step outside ourselves and look on ourselves as another person might. We have to try to understand ourselves as sentient, social beings and to come to grips with the ways we construct our understanding of the world. The quality of our reflection will depend on the breadth and depth of the knowledge we possess. Absent knowledge, we cannot reflect” (Weber, 2003, p. 5). Reflexivity

is used in the durational research processes (Weber, 2003). In the example of my publication (the visual essay) within the first research cycle, the data collection started in September 2019 and was finalised in February 2020. The reflection on the collected data took four months and resulted in the publication. As reflexive researchers, we strive to gain a thorough grasp of the various components of our research, such as our theories, research techniques and interpretations (Weber, 2003). Then we try to comprehend our research as a whole, determining how the many components fit together and whether the individual components make sense in the context of the whole (Weber, 2003).

Attia and Edge (2017) write about reflection–in–action and reflection–on–action, as making a decision during the flow of the performance, or as deleting a part of the documentation due to determining it as not useful. The role of reflexivity described here entails increasing awareness of its processes with the dual goals of enriching one's lived experience and then articulating this awareness as a contribution to the field's developing understanding (Attia & Edge, 2017).

Reflexive research can be at risk of being influenced by researchers' biases (Weber 2003), and this is something that needs to be addressed each time the data is being processed. The interpretation of data should aim for independence from the experiences of data collection, although, when talking about wholeness, it is difficult to be entirely objective, as previous experiences influence the collected data, and this data influences the ways it is interpreted. In my first publication, I attempted to do a visual comparison of all the material showing the outside of the body and surroundings, with the data from the inner experience of the performer.

As my research is conducted within the university milieu, my art steps into the existing tradition of academic research. The artistic works carry clear objectives and are created specifically for data collection purposes, as was the case in my research throughout 2019–2022.

I will explain in more detail the background of ABR as a method, as it is theoretically described by the literature sources and applied by me. ABR is a qualitative research method (Eisner, 1997). In ABR, the product is needed to help to answer the research questions. The product can be seen as

the artistic artefacts of the performative action (Barone & Eisner, 2012; Leavy, 2018), such as photo and video materials, along with interviews and questionnaires done with collaborators and the audience members, and the notes of the artist–researcher. Leavy (2009, p. 14) states that arts–based practices can enhance dialogue and conversation and connect people to empathy.

ABR originates from the 1970s mainly in connection with the work of practitioners and researchers within art therapy as a discipline, and in the 1990s, it constituted a new genre within research methodology (Leavy, 2009, p. 9). ABR is described as a method that deals with a “cluster of purposes” within the investigation of art–making processes (Greenwood, 2019). Within my study, ABR is used for the following reasons. Firstly, I work towards innovations within the art–making process: I investigate what the technology–based opportunities are and how to apply them within performance. Secondly, the research is realised not in the art academy milieu, but at the university. ABR is traditionally applied within the university setting and is the meeting point between scientific work and aesthetic output. ABR traditionally deals with aesthetic understandings as well as discursive explanations of research data (Greenwood, 2019). Artwork that contains an objective is an example of ABR (Greenwood, 2019). ABR connects the purpose and selected tools within artistic production to research itself and its research objectives (Greenwood, 2019). It was particularly important within this dissertation, as it allowed me to merge my “scholar–self with (my) artist–self” (Leavy, 2009, p. 2). This enabled me to entirely relook at my artistic creations from 2019–2022. All the performances that I conducted in this period were specifically designed to provide answers to the research questions: the scores of the performances, the venues and even the collaborations were carefully chosen to be realised within the scope and framework of the research; for example, the criteria that all of the performances needed to be a part of large–scale events to ensure that I, as the artist–researcher, was meeting with unfamiliar audiences.

One exception to this can be seen in the project “*The Nomadic Radical Academy*”, which in itself was one project/event, but was on a large scale in terms of the Nordic–Baltic collaborators, the artists and scholars who came to be the part of the event, as well as the young audiences, who were the unfamiliar to me and my practice audiences. So even such an event can be

categorised as a large–scale event but realised in a different way than the other artworks. I made this decision in regard to realisation of the performances due to my interest in interconnectedness with the audiences, so obviously the audiences needed to not be familiar with me or my work from previous encounters. Leavy (2009) describes ABR and qualitative research in the holistic research approach: “Both artistic practice and the practice of qualitative research can be viewed as crafts. Qualitative researchers do not simply gather and write; they compose, orchestrate, and weave” (Leavy, 2009, p. 10).

I use autoethnography when I work with my previous artworks, realised before the start of my DA. The argument for this is that before 2019 I did not have any tools and skills to work as a researcher, so all the works were produced, documented and reflected on in the written manner, but did not directly associate with the process of the research. So at this moment, when I access this “older” data from my archive of previous works, research is done through autoethnographic tools. Within the autoethnographic research, insider knowledge of cultural experience (Adams et al., 2017) was retrieved as I performed, for example, in the art fairs; the articulation of this knowledge then happened a few years later, in 2020, when I was relooking at the collected materials in the format of photos and notes and articulating the analysis from my current perspective, in which the researcher is (still) the insider of the researched field. Autoethnography is often used by artists when working with the archives of their previous artworks, as explained by Aydin Çelikcan and Aksoy (2020). The working protocol with my autoethnographic data was based on the advice from the protocol developed by Duncan (2004).



### 3.4. Steps within the data collection from a trifold perspective on performance

To define my data collection strategies, I will briefly introduce some of the theories by Erving Goffman (1959/1990). Goffman outlines performance in a broader societal context in which a large scope of interactions can be viewed as performance within the environment and with the audiences (1959/1990), which is close to Schechner's (1977) definition of performance as a broad area of activity; I have used these concepts of performance within this research. Goffman addresses the divisions of societal establishments and the formation of teams of performers who collaborate towards presenting a given definition of the situation to an audience (Goffman, 1959/1990). The framework of teams introduced here is referring to the relationships of the performers and the audiences. Goffman thus specifies that the term teams can be applied to performance and audience and introduces the concept of "region" as differentiation of the settings and actions taken by individuals. He suggests a division into the back region, which identifies the processes or routine of performance preparation, and the front region, which identifies the performance presentation (Goffman, 1959/1990). Further, he specifies the "front", "back" and "outside" of the stage regions (Goffman, 1959/1990).

Inspired by the concepts of frontstage and backstage, and the concept of teams, I constructed a strategy for dividing my data collection from a trifold perspective: myself (the performer), the collaborating co-performer, and the audience — thus giving insights into the perspective of teams and the front- and backstage.

The data was collected in such a way that it would be capable of unfolding the trifold perspective on performance with biometric data and performance documentation with biometric data within new performance artwork. Further, I will explain each of these three directions and the ways

that the data was specifically collected to contribute to a holistic picture of performances.

The data included visual and text-based data, which stretched from the study of the earlier materials, namely the artworks of 2015–2018, to the experimental projects within my research during 2019–2021. My performances from 2015–2018 were documented by various photographers, and my self-installed video cameras. The video material from my own cameras was the most helpful, despite being technically quite low quality (people from the audience would from time to time be standing in front of camera), they gave me a processual picture of how my performances were from an autoethnographic perspective. Each of my performances had such video documentation, as I always needed to look over the artwork again from the other side of the camera after the performance was done. This material was then accessed in 2019 as the autoethnographic research data; fragments of it also came into some of my articles in the form of screenshots/images. The other part of the image-based data were the photos from the photographers, which had a much higher aesthetical and representational value, but, as images, they were highly aesthetically presented moments of my past works. The other category is the few video recordings of my collaborators, which were “cleaner” than my self-installed cameras, as they focused mostly on me while I performed, and the audience was not in the images. All this image-based data were from the performances where I used the live remediation of EEG data during the performances, so the EEG data itself in all the examples of performances was never saved. As I accessed the images from the autoethnographic perspective, my greatest support was the text-based notes, which helped me to reconstruct what actually happened during the performances and what the content of conversations with the audiences was. This was all addressed as the reconstruction, from my perspective as the performer. Further, within my performances that were realised during my research, the strategy of data collection was focused on the visual data in the form of video recordings and photographs; sound-based data in the format of audio self-recordings by a Zoom recording device; the self-recorded EEG data, in the form of the numeric values, which at a later phase was possible to reconstruct into sound and image; and the text-based data, namely my notes. In 2019, I started my research and the project in this way was lifted up to the next level. The software that I used for EEG data was developed continuously, and, since the start of my research, has gained

new features, such as the capability to record and reconstruct the EEG data from the recordings, remediation of EEG data into sound, and remediation of EEG data into animation. The main difference from the earlier performances was that after 2019 I began to hire professional video documentation specialists and professional photographers to document each of my experimental projects, with the exception of the conference presentation. So all the data was of the highest quality, and my awareness of the necessity of having such high-quality data was heightened. All this data was used to understand the first perspective, my perspective as the performer, and it represents the largest amount of data within this research.

The second perspective, in this case that of the collaborating performer, was accessed within one performance, namely “*The Monument to the Present Moment*”. This perspective was accessed via an in-depth semi-structured interview with Kaspar Aus, which was sound recorded one day after the performance was realised and transcribed at a later time. This data was accompanied by the videorecording of the performance by the collaborator. Due to the collaborator’s wishes, the interview was not anonymous, and the images that contributed to the performance were also attributed to the artist within the publication, which was the result of this data collection. Unfortunately, the very limited funding within this research work did not allow me to involve more collaborations. This is the main reason why the perspective of the collaborator is presented within one performance and one publication only.

The third perspective, that of the audiences, was accessed on two occasions, namely the performance that I conducted in Riga in 2019 and in Pärnu in 2021: in the first case, the audience members filled in the print-outs of the questionnaire immediately after experiencing the performance; and in the second case, I conducted interviews with the audience members, also done immediately after their experience of the performance. In both cases, the immediate approach to the audiences was needed, first of all to have their fresh impression of what had happened within their encounter of the artwork. In both cases, it was me who worked with this kind of data collection. This perspective was used in two of my publications. In both cases it was important for me to be able to quickly step out of my identity as the performer and into that of researcher in the phase of data collection from the audiences, which, truly, was quite challenging in terms of time and con-

centration, from the side of the audience, but also from my side. The scope of such data collection was decided to be two performances.

All this data was the basis for the eight publications and helped to answer the eight research sub-questions within them, which uncovered the holistic answer to the main research question. The collection phase of each of the data sets was followed by data analysis, which will be explained in the following section.

<sup>8</sup> Here Thomas (2006) refers to Bryman & Burgess (1994), Bryman, A., & Burgess, R. G. (Eds.). (1994). *Analyzing qualitative data* (Vol. 11). Routledge.

## 3.5. Directions within data analysis

In this section, I will explain the hermeneutic approach to qualitative data analysis, as explained by Thomas (2006), which was the theoretical source underlined in my publications in the parts that dealt with the data analysis procedure. Thomas (2006) stresses that not all qualitative data can fit into the procedure of the traditionally well-recognised research strategies, such as grounded theory, phenomenology, discourse analysis and narrative analysis, therefore he suggests a new method for data analysis, based on a few authors who had already been slightly promoting this method prior his discussion,<sup>8</sup> which, in my interpretation, can be applied to the artistic data collected during the implementation of the artwork — the method of general inductive analysis. In my interpretation, general inductive analysis is framed within the philosophical approach of hermeneutics and is suitable for analysing data based on artistic work. “The inductive approach is a systematic procedure for analysing qualitative data in which the analysis is likely to be guided by specific evaluation objectives” (Thomas, 2006, p. 238). So the artistic data, in the format of image-based data, the sound recordings, the EEG data and the notes, along with interviews with the collaborator and the audience members and questionnaires with the audience members are the raw data, which is the material from which to derive concepts, themes and the model for a new way to document performance and include such documentation in new artwork. Strauss and Corbin (1998), found in Thomas (2006) explains this approach to data analysis: “This understanding of inductive analysis is consistent with Strauss and Corbin’s (1998) description: ‘The researcher begins with an area of study and allows the theory to emerge from the data’ (p. 12) ... The primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data, without the restraints imposed by structured methodologies” (p. 238). Thomas (2006) explains the general inductive analysis approach within the context of social sciences; while many of the research methods that I use, such as ABAR and ABR, are traditionally applied to art, they are also applied to other dis-

ciplines, among them social sciences. I see a distinct relevance in conducting the analysis phase within the general inductive analysis method.

Within the data analysis process, I apply the guidelines suggested by Thomas (2006). In the case of my research, data analysis was guided by the research objectives, thus each of the eight publications had a separate objective. In some publications, the same artwork was used, for example the project “*The Nomadic Radical Academy*”, so the data set was the same. But in the data analysis phase, the procedure was different, as it was based on different research questions and different objectives. The findings were developed from raw research data, not from “a priori expectations or models” (Thomas, 2006, p. 240). So the raw data in the analysis phase directs the evolution of the concepts and development of the new method of performance documentation and presentation of such new documentation to the audiences. I developed the categories from the data and models, which helped me to define the research findings. The interpretation of the data in all of the examples of my co-authored articles was conducted from the different perspectives of each contributing author, resulting in multiple interpretations based on the raw data sets. According to Thomas (2006), it is possible for different contributors to have non-identical and non-overlapping findings from the raw data analysis. In my research, this enriched the findings and allowed new perspectives within the next research cycle, after the previous one was completed. For the other articles, of which I am the only author, the data analysis was conducted in the same manner, but only from one perspective, mine.

In sum, the findings were derived from the raw data analysis from the perspective of each of the research questions and the objectives of the eight separate studies, which resulted in eight research papers. This was done within the framework of hermeneutics and according to the data analysis guidelines defined by the theoretical perspective of Gadamer (2004) and Thomas (2006).

This chapter explained my methodological choice to work within the frameworks of interpretivism and hermeneutics. I introduced the umbrella method of my research, ABAR, through the literature sources and specified the ways it was applied in my research. This research consisted of six research cycles, each based on performance artworks, as actions/cases, which

resulted in eight peer-reviewed publications. The research cycles were developed using the following methods: reflexive research, autoethnography, ABR, A/R/Tography and ABAR. In this chapter, I introduced the theory behind each of these methods and specified how they were approached in my research. I explained the theoretical guidelines and processes of the data collection and data analysis. In the next chapter, I will introduce each of the publications separately, focusing on the positioning of the researcher, the scope of the case, the research design and the main findings.



## 4. Implementation

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## 4.1. Entering the journey at the crossroads of eight paths

My research was built upon four main pillars: my work as a performance artist and my past performance artworks; technology-based innovation in performance and performance documentation; empathic connections to the audiences, the pluriversal approach and the multiplicity of levels of connecting to the audiences; and ABAR as the method. I investigated how the newest consumer-grade EEG-data-measuring technology could contribute to the field of performance and performance documentation. Each of the peer-reviewed publications were built upon the performance artworks, here used as the research cases, which led to findings through which the research question and the sub-questions were answered. The research cycles were shaped around the performance artworks, resulting in the publications. The performances from 2019–2022 are referred to as experimental projects in this dissertation; in the performances I tested the interconnectedness with the audiences and the collaborative processes within the specific performance artworks in which biometric data — the data from the brain activity — was involved. The other performances that were conducted from 2015–2019 are referred to as artistic works and performances and accessed as autoethnographic material in this dissertation. The two exhibitions aimed to visually present the research data and progress, and, after their implementation, they became data for the development of the publications.

In this chapter, the performances used as the research cases will be discussed with the aim to spotlight my position within each artwork, the format or scope of each of the artworks, the research design and method involved, and the findings/what I learned from each of the artworks that resulted in publication. The total list of the artworks/performances is presented in the table below (see Table 1). I will present the articles thematically as the research builds on each of the publications in a cyclic manner, along with the artworks/performances involved in each of the articles, book chapters or visual essays.

Artworks/performances	Publication
<ol style="list-style-type: none"> <li>1. “Mark–Making” performances (2015–2019)</li> <li>2. Test–performance “The Test 1: Techno–voyeurism into a (performing) body” at Paradox Fine Art European Forum Biennial Conference Riga as part of Art Future/Future Signs 2019</li> <li>3. Conference on Modern Art in Torun, Poland</li> <li>4. Case “Uncovering my start: Techno–voyeurism into a (performing) body Gallery Kilo exhibition</li> </ol>	Griniuk, M. (2020). Reflexive research on performance art documentation through EEG. <i>Research in Arts and Education</i> , 2/2020, 87–96.
Performance “The Monument to the Present Moment”	Griniuk, M., & Mosich, T. B. (2021). Recorded bodily conditions as interpreted/remediated documentation and as a score for performed communication. In R. Vella & M. Sarantou (Eds.), <i>Documents of Socially Engaged Art</i> (pp. 19–36). InSea.
<ol style="list-style-type: none"> <li>1. The Tests: “Techno–voyeurism into a (performing) body” (2019–present)</li> <li>2. “Mark–Making” performances (2015–2019)</li> <li>3. “The Neurophysiology of an Artist in a Performance_experiment_e1/2015–2017”, attended by the author as an audience member in 2018</li> </ol>	Griniuk, M. (2021). Performance art using biometric data. <i>Art History &amp; Criticism</i> , 17(1), 101–112. <a href="https://doi.org/10.2478/mik-2021-0009">https://doi.org/10.2478/mik-2021-0009</a>
<ol style="list-style-type: none"> <li>1. “Mark–Making with the Robots”, realised at the Supermarket Art Fair in Stockholm, Sweden, in 2017</li> <li>2. “Mark–Making”, realised in the art fair ArtVilnius in 2018 in Vilnius, Lithuania</li> </ol>	Griniuk, M. (2021). Performing in an art fair: Inviting strangers into the artistic action. <i>Invisibilidades</i> , 15, 114–123. <a href="https://www.apecv.pt/revista/invisibilidades/15/11A_114-123_2.pdf">https://www.apecv.pt/revista/invisibilidades/15/11A_114-123_2.pdf</a>
“The Nomadic Radical Academy”	Griniuk, M. (2021). Arts–based action research on enhancing children’s creativity through affect within participatory performance art and performance pedagogy. <i>Creativity Studies</i> , 14(2), 577–592.
<ol style="list-style-type: none"> <li>1. “Transcorporeal Writing” and</li> <li>2. “Techno–diving into the liveness of the unbodied performed body of memory”, with the latter being the focus within this dissertation</li> </ol>	Griniuk, M., Akimenko, D., Miettinen, S., Sarantou, M., & Pietarinen, H. (2022). Multiperspective take on pluriversal agenda in artistic research. In S. Miettinen, E. Mikkonen, M. C. Loschiavo dos Santos, & M. Sarantou (Eds.), <i>Artistic cartographies and design explorations towards the pluriverse</i> . Routledge.
Performance “Territory”	Juhola, K., Griniuk, M., Moldovan, S. (2022). Empathy in digital participatory artworks. In M. Sarantou & S. Miettinen (Eds.), <i>Empathy and business transformation</i> . Routledge.
“The Nomadic Radical Academy”	Griniuk, M. (2021) Participatory Site–Specific Performance to Discuss Climate Change and Water Pollution, in Leit, o, R.M., Men, I., Noel, L–A., Lima, J., Meninato, T. (Eds.), <i>Pivot 2021: Dismantling/Reassembling</i> , 22–23 July, Toronto, Canada. <a href="https://doi.org/10.21606/pluriversal.2021.0043">https://doi.org/10.21606/pluriversal.2021.0043</a>

Table 1. Artworks used as cases and articles within this research. Developed by Marija Griniuk.

The performances used as the research cases will be described individually or grouped for clarity. The performances were considered from different angles in order to answer each of the research sub–questions: through the aspect of connectedness to the audiences, the performance artwork implementation or performance artwork documentation. The common ground for all the publications is performance in which biometric data is utilised and the approach to the audiences is discussed. I have carefully selected the publishing platforms, aimed at a variety of research publishing channels: book chapters, articles, conference proceedings and visual essays. I have presented my research data visually/aesthetically in two exhibitions.

### 1. Exhibition “Uncovering my start: Techno–voyeurism into a (performing) body”

The exhibition in Gallery Kilo in Rovaniemi was titled “Uncovering my start: Techno–voyeurism into a (performing) body” and was presented to the viewer as an annotated installation–portfolio–presentation in the gallery space. In this context, I introduced the artistic projects that were realised during the first semester of my doctoral studies. The first part of this portfolio was the recorded excerpts of my participatory performances, which I conducted during the period of September–November 2019, and in which I used EEG data as a method of documenting my performing body. The second part of the portfolio contained the prints, presenting different methods of visualisation of such collected data. In the third part were the two performance events, which took place during the opening of the exhibition and an additional event, which was the basis for evaluation/examination of this exhibition. The performance was narrative–based and the ways that EEG data was recorded from the performing body were demonstrated live. The process of this recording and simultaneous remediation of EEG data into sound, graphics and colour was visible live for the audience through a TV screen.

### 2. Exhibition “Techno–diving into the liveness of the unbodied performed body of memory”

The second exhibition was an ongoing performative intervention in the exhibition booth at Supermarket Art Fair 2021, “Techno–diving into the liveness of the unbodied performed body of memory”. This exhibition reveals a multisens-

sory perspective on remediated EEG (electroencephalogram) data and its impact on performative communication/immersive storytelling through performed memory. The exhibition takes the collected data of past events into present performative intervention. The goal of the performative intervention was to uncover the possibilities of an improvisational durational multichannel experience, such as sound, images, live action and objects, and the remediation of the research data, brought back to one of the sites of its collection — the Supermarket Art Fair. This format questions and tests the directions such interventions can take in the environment of an art fair. The data, the performer and the audience are intertwined within the site of performative intervention in the exhibition booth. The performative intervention featured documentary audiovisual recordings, remediated EEG data, narration and performative actions, all within a holistic aesthetic experience — a new artwork, which contains the layers of the past artworks. These two exhibitions were the background for the evaluation of the progress of my DA research. After each of the evaluations, my next steps were focused on answering the questions addressed by the evaluator.

## 4.2. The eight publications and findings within them

The publications contribute to answering the research question from three angles; each of the publications focuses on one sub-question, with the exception of one publication, which focuses on two sub-questions. First, the research provides the performance artists with important insight and new tools for performance documentation by recording the bodily conditions of the performer, which adds one more layer of documentary documentation along with video and sound recordings. Second, new knowledge is created in regard to utilising such documentation to create an artwork and new experiences for the audience members. Third, the method of such documentation and data remediation contributes to innovations in university pedagogy within performance, as the students could include such layers of documentation in their work and further explore the possibilities of creating new artworks of performance documentation containing images of video recordings of the performance, sound recordings and performer brain activity data that has been remediated into image and sound. The publications are thematically bound to the dissertation in the following manner.

### I. *Visual essay: “Reflexive research on performance art documentation through EEG”*

The first publication, which is a visual essay, seeks to answer the following two questions: How can reflexive research be integrated into performance art documentation using EEG? How to document performance art by recording the live brain activity of the performer? The data is sound and video recordings, along with the visualised data from EEG. After the performance, the EEG data were remediated into video, image and sound and presented as an artistic work. The exhibition at the Gallery Kilo was organised to present the research data collected from September 2019 and January 2020. This exhibition was one of the artistic works, presented as the cases within this publication.



The artworks and artistic events used as the research cases were the performances within my artistic work before beginning my DA and the experimental projects during the first semester of my DA studies, which led to a deepening of my interest and knowledge in the area of performance art with biometric data. The visual essay chronologically maps my research journey, from my very first acquaintance with EEG technology and its use during performances in 2015, until the most recent, while working on the publication, the experimental projects conducted in the fall of 2019 and winter of 2020.

Artworks and artistic events within the first publication:

### 1. “*Mark-Making*” performances (2015–2019)

The performances, which, in the context of this dissertation, are grouped under the label “*Mark-Making*” performances (2015–2019), were the improvisational performances conducted in venues in Denmark, Sweden and Lithuania, and in which the EEG data was involved as a live visualisation, usually as part of my narrative-based performances. These experiments started from a curiosity about how technology works in the gallery setting and how it can influence the holistic impression of the performance from the positions of the performer and the audience members, accessed during conversations after the performative actions. At the time of implementation of these performances, I was looking only at the immediate aesthetic outcome of such intervention into my works, as the content of the performances was not dependent on EEG technology. The main theme of my performances was postcolonial memory, which resulted in one article (Griniuk, 2021), published in parallel with the articles involved in the dissertation. At that time, these performances did not have the pre-planned intentionality of becoming a data source for the DA project, but all of them were photo and video documented regardless. The EEG data, having only an immediate effect, was never saved after the performances. However, my diary was kept, in which I recorded the most valuable fragments of performances and interactions with the audience members at the affective moment. Later, in 2019, as the DA project started, this photo and video material, along with the diary notes, shifted its meaning for me — from the documentation of past performances to autoethnographic data — becoming the autoethnographic material for the research. It is called autoethno-

graphic data because I revisit my past diary notes and visual material, thus studying my own past work from the present position of the researcher. My own position within the performance projects, involved in the dissertation as cases, evolved from 2015–2019; at this time, I had the role of the artist exploring the potential value of EEG technology within performance, driven by aesthetic curiosity, which morphed into that of the researcher, who since 2019, utilised these materials as autoethnographic material for analysis.

As these artistic works and events were evolving into my two articles, my position as researcher shifted as well. During the first article, I looked at the material from the perspective of reflexive research, reflecting on the experience of being within those performances, and how this experience impacted later projects and my current DA project. During the second article, “*Performance art using biometric data*”, I looked through the autoethnographic lens at this same material, while searching for the terminology in literature and my artworks to describe performance art with biometric data. Here the lived experience were in a secondary role, while remembering and situating the components of the past performances into the discourse about biometric data; performance was of the greatest importance. So the artworks, used as research cases, serve as the material to clarify the terminology, which later is used throughout the dissertation.

The scope of these performances underlines the longitudinal aspect of my study and my longitudinal interest in involvement of biometric data into my performances. Used as the autoethnographic and reflexive material, the performances implemented prior the start of my DA are now accessed with the expertise and knowledge of the researcher.

Research design is the overall strategy used within the performances, grouped into the research case, in which the main focus is how the performances were realised and why they were realised in the presented manner. “*Mark-Making*” performances (2015–2019) started from the expectation that it is possible to use EEG devices in performance venues and that the visual outcome of such remediated data could become a part of the performance. The research has an explorative approach. The collaborative aspect of it was the co-development of the software with performance designer and computer scientist Tue Brisson Mosich. Although in the first perfor-

manes the visualisation was in the form of graphs, later it was developed further into animation or digital painting. Although the software developed was an early prototype, the devices were mounted and activated by the artist alone in each of the performance venues, so another aspect was the usability/clarity of how to use the software and how to connect with the technology, so that it all worked well during performance, without the artist having any additional assistance. The EEG data was never saved after these performances, so for the autoethnographic and reflexive analysis, the performances could be accessed only from the video and photo records, along with my diary notes. The first “*Mark-Making*” performance was conducted in 2015 at PerformanceRum in Aarhus, Denmark, during my studies at The Jutland Art Academy. Further, the variation of performances enlarged as I started to utilise the participatory aspect more actively or approached performances as collaborative collective actions with other artists. This can be exemplified by the performances, such as “*Territory*” and “*The Electronic Carnival of the Eternal Touching*”, which are used as cases in other publications. The performances were accessed via photo and video material as autoethnographic data. Thus the past performances are analysed from my current perspective as a researcher.

The main findings are that it is possible to utilize consumer-grade EEG technology in different venues within a performance artist’s work in a cross-border context. The technology can be connected via laptop and Bluetooth connection and projected at a large scale on the wall. In this way, the brain activity data, presented as graphs or animation, becomes an integral part of the performance. The major finding is that it is possible to have an undisturbed connection to the device during the performance, which usually was from 20 to 30 minutes. The other important aspect of the findings is that the audience was engaging in discussions about performance fragments, showing images of biometric data, which here are interpreted as curiosity from the side of the audiences and better interconnectedness between the artist and the audience than was observed in the performative situations before I started to involve this technology. Also, though not mentioned in the publications, while working in different countries, it was quite easy to travel with hand luggage, into which I was able to fit all of the equipment for the performances. In other words, the finding of this case is that the EEG technology works during the performances!

## 2. Experimental project “*The Test 1: Techno-voyeurism into a (performing) body*” at Paradox Fine Art European Forum Biennial Conference Riga as part of Art Future/Future Signs 2019

Conducted in September 2019, “*The Test 1: Techno-voyeurism into a (performing) body*” was my first experimental project within the framework of my research since the official start of my DA studies. This performance was realised through the invitation from the Art Academy of Latvia in the context of a large-scale event, the biennial “Art Future/Future Signs”. My position within this artwork was dual, as a practitioner and as a researcher. In this performance, the EEG data was saved for the first time and reconstructed at a later phase. I was interested in the ways that it was possible to add one more layer to the commonly used methods of performance documentation, such as photo and video recordings, along with sound recording. At a later phase, all these records, including video documentation, sound recordings and EEG data, remediated into an animation and a graph, were combined into one video work containing all these layers, synchronised in the timeline. So the video showed the performance set-up and the performer, along with one audience member at a time, and the inner states of the performer (me). The narrative of the performance, which took the shape of one-on-one interactions, was bound to the artist book *BiteArchive* (Griniuk, 2019). This artist book was the result of my investigations into the visual archive of the first performance art festival in Lithuania, AN88 (1988), and AN89 (1989) a year later, and the artist-run culture in the historical context of Vilnius Academy of Arts.

The research case involves one performance within a large-scale event with the art academy as the venue, to which I was invited as an international researcher. This performance, used for the research case, led to two important findings — firstly, that it is possible to reconstruct the data and, secondly, that having the documentation set-up, involving the camera person and all the EEG equipment, becomes a performance in itself for the viewer. These findings were a milestone and accelerated the research process towards understanding the relevance of doing and utilising documentation in a new way, and the change that it brings to the experience of performance for the audiences (accessed through questionnaires, which I distributed during the performance). These findings were the link between the two directions of the research: documentation and aestheticisation for the audience.

The study took an exploratory approach and is the first of the series of experimental projects conducted during the DA research. Besides the performance recordings, the qualitative data also contained questionnaires with five audience members to spotlight the experience of the performance from the perspective of the interacting viewers. During the reflexive analysis, this data helped to create a holistic scene of the performance situation and gave me the opportunity to reflect on the provided answers, combining them with my own experience from the perspective of the performer. The research materials were accessed through reflexive analysis from the following materials: video, sound, EEG data, my notes, and questionnaires with the audience members.

The main findings are as follows: it's possible to reconstruct the recorded data; although the colours have the same amount of black, red, white, etc., the pattern of the animation in the reconstructed video might differ. It is possible to construct the video, containing all the three layers within the documentation — video, sound and the animated patterns and graphs representing the EEG data — all synchronised within one timeline. From contact with the audience, it is known that the content transmitted on the screens, representing real-time brain activity data, was understandable from the audience members' perspective, but only after explanation by the artist. The images on the screen, showing live EEG data, were more dominant than the narrative of the performance itself and were interpreted by the audience members as the central part of the performance. So the documentation setup, including camera person, video and sound recorder, the EEG equipment and the screen, became the performance for the participants. The narrative of the performance itself became the background for storytelling.

### **3. Conference on Modern Art in Torun, Poland**

The Conference on Modern Art in Torun took place in October 2019 in Torun, Poland, where I presented a paper. My position within this event, used for the case study, was as a researcher presenting one of the contributions to the conference; the contribution, which is live communication of the content, also became an experiment on the possibility to record my bodily states as a presenter via EEG. I interpret my presentation as a performative

action. During my presentation, the EEG data of the measured bodily states were not shown to the audience, but, instead, the recording of brain activity took place on my computer, which was placed between the conference hall seating rows. The EEG technology was mounted on my head, but the EEG data was accessed only by me after the presentation was completed — during my presentation, I could not see my EEG data. So in this way, the conference, presented as a case, is very different from the one in Riga, where the documentation set-up appeared to be dominating the content. Here, in the conference, the content of the presentation needed to be at the centre. The conference took place in October 2019, just one month after the first experimental project in Riga. After learning from the first project that the technology and EEG data, brain activity visuals, can make it difficult for the audience to follow the narrative, my approach to involve EEG in the conference presentation needed to be designed in a different way. This shift allowed me to test what happens if I only briefly mention that the presentation is being recorded by an EEG device, which is recording my brain waves, and a sound recording, for which I asked the audience members for their consent. My conference presentation was themed on the influence of the Fluxus network on the first Lithuanian festivals of happenings and actions, AN88 (1988) and AN89 (89), and the later use of these examples in the pedagogical exploration by the researcher at Vilnius Academy of Arts. This was all done in the context of my presentation of the artist book *Bite-Archive* (Griniuk, 2019).

The scope of this part of the study is one experimental project/experiment to test the findings of the first experimental project by completely redefining the setting of the performative situation: while in the first experimental project in Riga, the setting was a large-scale event and the documentation by EEG was showcased during the performance on a screen showing real-time EEG data remediated into animation, in the current example, the EEG data was never visible to the audience members and the setting was a conference, themed around art history and pedagogy issues.

The investigation had an exploratory approach, built upon the findings of the previous experimental project. The expectation was that, although the narrative content was similar to the one that I conducted in Riga, the reactions and interactions from the audience members would be very different, due to the different context of the presentation. This expectation was con-

firmed, based on the collected data, containing my notes and observations and the sound recording data.

The method was reflexive autoethnographic data gathering, in the format of notes, observations and sound recordings, which were processed by means of reflexive analysis. During my conference presentation, only the EEG technology mounted on my head was visible to the audience, but not the data from EEG. The audience seemed not to pay any attention to the process of recording the brain activity. All the focus of the audience stayed on the content of the presentation, during the presentation and during the Q&A session, as well during the informal interactions in the breaks between the presentations and after the conference day. So the main finding from this investigation was that the audience experience was completely different than in the experimental project in Riga, by EEG becoming a secondary aspect of the performative situation. This could be influenced either by the cultural context of the conference setting or by the fact that EEG data was never shown to the audience members and was accessed only by me after the conference presentation.

#### 4. Gallery Kilo exhibition

The exhibition “*Uncovering my beginning: Techno-voyeurism into a (performing) body*” at Gallery Kilo (Rovaniemi, Finland) in 2020 was the first artistic part of my research and was evaluated by Dr Pilvi Porkola. This exhibition was conducted seven months after the beginning of my DA and contained all the materials from the experimental projects from the first semester of the DA and the beginning of the second semester, brought together into one space. The exhibition was described as a portfolio, aiming to present to the evaluator and university community the experiments that took place in Latvia, Poland, Lithuania, Sweden, and Denmark. Within this exhibition, I also had live performances/demonstrations aimed to introduce how EEG data remediated in real-time would look and sound during narrative-based live performances. My position within this part of the study was that of a researcher and presenter. This was the first presentation/evaluation set up in the process of my DA, which at a later phase became the case-study, due to the recorded materials of these events.

The exhibition contained the collected remediated visual, sound and EEG data in the video works, which consisted of images, sounds and visualised and sonified EEG data; the sounds, which were sonified EEG data, were available through headphones, the printed EEG graphs and the printed EEG data from explorative investigations, organised into yellow folders, were placed horizontally along the floor. Two live events were part of the exhibition, demonstrating how EEG technology works during live performances. One of those live events and the exhibition were the material for the first evaluation of the DA.

The method of reflexive analysis was applied to the data collected during the exhibition. The data included photo, video and sound recordings, along with EEG data from the live performances and my notes as the autoethnographic data for reflexive analysis.

All the artworks in the exhibition were presented as separate components of the installation (presented as the elements of the portfolio to the audience): the printed images of EEG graphs, the printed collection of graphs from EEG recordings, conducted during different tests, for example, while painting, reading, writing or drinking coffee. The main finding was that it is possible to create a narrative, based on all these experiments and to present the items from the experimental projects visually. This exhibition was different from the second artistic component/exhibition, as here the exhibition components were separate items, while in the second exhibition, all the components make one artwork. As this exhibition was conducted in the very beginning of the DA, the approach was still quite broad. At later phases of the research, the focus narrowed to documentation via EEG and usability of such documentation in creation of a new experience for the audience.

#### II. Book chapter: “*Recorded bodily conditions as interpreted/remediated documentation and as a score for performed communication*”

In this publication, which is a book chapter, I am the first author and was responsible for the methodology and terminology explanation, case implementation and description, along with analysis and development of the results. The second author contributed to the technical description and analysis of the interview with collaborator Kaspar Aus, due to ethical reasons (I



have over five years of ongoing collaboration with Aus) and contributed to the results. *“Recorded bodily conditions as interpreted/remediated documentation and as a score for performed communication”* extends the findings of *“Reflexive research on performance art documentation through EEG”* by investigating the performance, which was realised in July 2021. During this performance, documentation from the narrative-based performance via live brain activity of the performer was remediated live into sound and images, which became a live score for the choreographic performance. The research question within this publication was: *“How can documentation of the inner bodily states of the performer be an aesthetic communication channel between the performers during the implementation of socially engaged performance artwork?”* The concept documentary aestheticisation was developed from the materials of the studied performance. This publication connects to my second exhibition as the artistic part of the dissertation.

The second publication builds on the findings of the first publication, as it addresses once again the issue of possibility to document performance by EEG and extends the discussion on how such documentation could be useful to the artist, as the channel for communication with collaborators, and interesting to the audience members. The article pertains to one performance *“The Monument to the Present Moment”* at Pärnu Art Week in Estonia in 2021, which was done collaboratively with Kaspar Aus.

Artwork within the book chapter:

### 1. *“The Monument for the Present Moment”* performance

Within this performance, my position is that of an artist-researcher, artist practitioner and network builder/collaborator within performance as socially engaged art at a large-scale art event. Prior to the performance, the planning took three months of online communication, involving not only me as the artist, but the hosting event (Pärnu Art Week in Estonia), the hosting venue (Tex Mex Gallery in Pärnu), the collaborating Tallinn-based artist Kaspar Aus, and a computer scientist. My role as network builder dominated the other roles, as the performance was planned to take place in an unfamiliar venue, and the audience was also completely unfamiliar. As I found out in the process, my collaborator Kaspar Aus knew the venue and the hosts from previous projects. I had the full responsibility of fundrais-

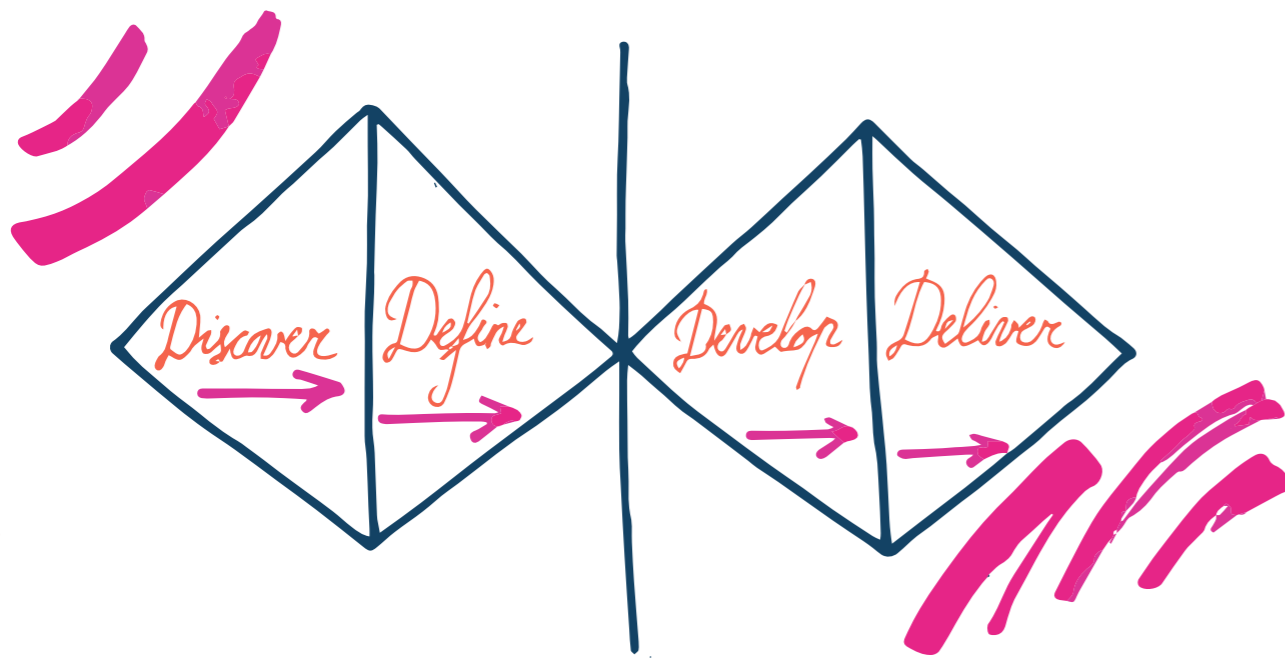
ing and evaluation, along with reporting after the event. So this position was different from the previous events, as previously I was responsible only for myself as one artist within my artwork. In this event, the collaborative aspect was crucial, and the responsibility load was also experienced to a much greater extent, as the voluntary work in the large-scale test-project involving collaborations was not an option for me while involving another collaborating artists, and this work could not have been completed without involving co-producers. The performance was, from the start, intended to result in a peer-reviewed paper, co-authored with the collaborating computer scientist, who was also co-developing the software for live brain activity readings for this and the previous performances since 2015.

The scope of this performance is one case, which builds on the findings from the first publication, containing four artworks, used as cases. The performance within this article extends the first article’s findings, particularly the framework of documentary aestheticisation, which means that documentation of the performance artwork via EEG becomes part of a new artwork, all having an aesthetic approach towards the audience members.

The research design within this study is Double Diamond (see Figure 7), as I build on the materials/findings from the first article: that it is possible to have live remediation of EEG data, that it is possible to record this data from EEG, and that it is possible to reconstruct such data. The expectation here was that it is possible to record the data and transmit it live to the co-performer in another venue/room and that such transmitted data can become the score for the performance. This expectation was tested by the experimental performance. Further, the method of transmitting EEG data as a possible score for the performance was refined, based on the interview-feedback from the collaborating performer.

The method used within this study was the qualitative method ABR (Barone & Eisner, 2012; Leavy, 2018). The qualitative data contained questionnaires completed by five audience members, two interviews with audience members and an interview with collaborator Kaspar Aus, the photo and video material from the performance, EEG data records and my notes. The data was processed as qualitative ABR data (Leavy, 2018) and led to refining how EEG data could be used as a score for movement-based performance

and further led to the second artistic part of the DA, the exhibition, as science communication, at Supermarket Art Fair in 2021.



The two parts of the performance — my part, based on the narrative and my autoethnographic photo archive, and the part of my collaborator as the movement and vocal-based performance — became an aesthetic experience for the audience. Neither audience members nor the choreographer/collaborator were familiar with how EEG technology worked but wanted to be immersed into this aesthetic experience. For the audience, the two parts of the performance became connected into one experience.

The main finding from this study is the framework of documentary aestheticisation, which, in a way, answers the question of what EEG documentation of performance can be used for. EEG data is the accurate, documentary documentation of the inner states of the performer, registering the conditions of relaxation or cognitive load. However, without synchronisation with video documentation, this kind of data cannot reveal what the narrative or content of the performance was. Therefore, this particular performance reveals how such documentation could be utilised by the artist, while creating the score or a new artwork, containing the EEG data

remediated into sound and visuals as an aesthetic layer of experience. This EEG data is the data from past performances, which becomes the aesthetic content of a new encounter with the audiences, thus becoming documentary aestheticisation. Thus, the audiences, in their turn, choose how to interact with such an aesthetic encounter.

### III. Article: “Performance Art Using Biometric Data”

This publication, which is an article, has the major role in explaining the key concepts of this dissertation by introducing performance, biometric data, inhuman interconnections and transcorporeality as concepts. These are widely used in the included publications and my scientific and artistic work, therefore the presentation of the concepts has been designed through the autoethnographic material and the thematic review of the literature sources. The research question within this publication is: “What are the differences between wide-scope interactive art and design and performance art involving biometric data created through the application of recent developments in consumer technology for live events?” The data for this article contains multiple artworks, as explained below.

Artworks and artistic events within the article:

#### 1. The Tests: “Techno-voyeurism into a (performing) body” (2019–present) and “Mark-Making” performances

The two performances are united under one category, “Mark-Making” performances, in this part, as they both were presented separately in the context of the first publication, but here, used in the third publication, these performances serve as the contribution to define the main key terms of the entire dissertation. In the first publication, the performances, used as cases, were accessed as reflexive research data. In this publication, I access the data from these performances as autoethnographic data. These performances are studied with the aim of clarifying the terms and themes, which can be applied to performance art with biometric data. The performances were accessed as cases to clarify how the terms and themes can be applied to describe the performances with biometric data. The exploratory approach was utilised within the study and within the publication, and the materials from the performances are accessed as autoethnographic data.

Figure 7. The Double Diamond scheme. Developed by Marija Griniuk.

The key terms performance art, biometric data, inhuman interconnections, and transcorporeality were specified and applied to the artwork, used as cases, while analysing them. I analyse the photo and video material from the past performances by using an autoethnographic method.

This particular article was created with the aim to define and clarify the terminology that is applied throughout the entire dissertation in the other publications. Here, the artworks, along with the thematic literature review, serve as an outline the thematic framework in which the dissertation and the other publications are situated. Through the thematic literature review, which, besides the third article, was extended in the introduction, the research gap is clarified — as the lack of knowledge on how to document performance by recording the inner states of the performer and the purpose such documentation serves the artist and how it is perceived by the audiences. The main finding is that performance art, biometric data, inhuman interconnections, and transcorporeality can be applied to analyse performance art with biometric data. The definition of inhuman interconnections within performance art is the interaction of human and non-human, uniting the performing body and the technology, which is interpreted as the objects. Apart from the performing body and technology/objects, transcorporeality extends this term by containing the sociopolitics of the site of performance.

## 2. **The Neurophysiology of an Artist in a Performance\_experiment\_e1/2015–2017**

My position within the performance *The Neurophysiology of an Artist in a Performance\_experiment\_e1/2015–2017* is that of a member of the audience. I attended the performance in 2018 in Torun, Poland, at the invitation of the project author Viola Kus in collaboration with Ola Sojak-Borodo. The event was in two isolated spaces: in one space was the audience and in the other space, in a magnetic resonance angiogram (MRA) laboratory, was the artist. This is the only performance, involved in the publications, in which the artwork is analysed from my perspective in the position of the viewer experiencing a performance. My position here is of the viewer and of the practitioner, who, by that time, had been working with performance art with biometric EEG data for three years (2015–2018), and of the visitor to the other artist's practice, who works within a similar thematic frame-

work. The autoethnographic data, particularly travel notes from the visit to the performance as an audience member, were accessed from the position of my current perspective of researcher, along with themes and key terms to analyse the artwork: performance art, biometric data, inhuman interconnections and transcorporeality, accessed via thematic literature.

I analyse my notes, written after encountering the performance in Torun in 2018 by using an autoethnographic method. The main perspective of the performance was greatly influenced by the fact that I, as a researcher, have been working with similar media, so my encounter was very much influenced by the goal of seeing how Viola Kus' work is similar or different to my own research. The main findings of this study are the applicability of the themes of performance art, biometric data, inhuman interconnections and transcorporeality to analyse the content of the performance from the perspective of an audience member. For example, the transcorporeal body is seen by the audience as the very particular sociocultural setting of the performance — the laboratory environment, the MRA technology and the performer, which significantly impacts the ways the viewer behaves, interacts or interprets the artwork. The medical personnel and MRA equipment become a prominent part of the performative space and experience of the audience.

These findings are important, as they underline the wider scope of performance art, beyond my own artworks and the thematic literature findings, and they exemplify that the defined terminology can be useful for the performance artists and practitioners within the interconnectedness of performance and biometric data. The findings also spotlight the use of terminology while describing the artwork from the perspective of the audience member.

## IV. **Visual essay: “Performing in an art fair: Inviting strangers into the artistic action”**

The publication is a visual essay that aims to answer the research question: “How can biometric data be an extension of the performer's body, contributing to interaction and empathic connections with the audience members, as exemplified by cases from art fairs?” The data is autoethnographic, as while conducting the performances in 2017 and 2018, I collected video and photographic

data from my own static pre-installed cameras, from the photographers involved in the documentation of the events, and from reflective notes written after the performances. The publication is connected to my second exhibition *“Techno-diving into the liveness of the unbodied performed body of memory”*, as it was realised in the same venue — Supermarket Art Fair

The fourth publication is built on the data from the two performances, which took place at different times at two art fairs, one in Sweden and one in Lithuania. My interest is in how the different art venue contexts, and their tradition for spectatorship of art pre-defines interactions of the audiences within performance.

The artworks within this visual essay are:

### 1. *“Mark Making with the Robots” and “Mark-Making”*

Within the fourth publication, the autoethnographic material contained the photo documentation and my notes from the performances *“Mark Making with the Robots”*, realised at the Supermarket Art Fair in Stockholm, Sweden, in 2017 and *“Mark-Making”*, realised at the art fair ArtVilnius in 2018 in Vilnius, Lithuania. These two performances, in a way, represent the entire material segment of the earlier publications entitled *“Mark-Making”* performances 2015–2019, but here these two performances were investigated due to my interest in the audience’s interaction and performance in an art fair as a venue. While going through all the autoethnographic material, in connection to the development of the previous articles, I noticed that the interactions at the art fair are clearly different from interactions in a small gallery venue, due to the difference of context. At the gallery venue performances, most of the audience is made up of people the artist knows, but in the art fair context, it is rare for the artist to meet someone they know during the performance. Working with an unfamiliar, large audience gave me further insights into the pluriversal approach to the audiences, later revisited in the eighth publication within this dissertation. But in this publication the similarities between the two performances, used as the cases, were that the performance contained DIY electronic sound instruments, attached to the performer’s body as part of the costume, technology in the format of robots, laptops and sound devices, and biometric EEG measurement technology with a screen from which the audience members could

monitor the visualised bodily data from the performer. For the researcher, the greatest interest was in how the audiences interact in the different cultural contexts of the art fairs: one performance was at an artist-run art fair in Stockholm and the other was in a more commercially oriented art fair in Vilnius. This genuine interest arose over the years and during the second exhibition, as the artistic contribution for the DA, I used Supermarket Art Fair as the venue for my exhibition and performance. During the same timeframe as this event, I participated in the Affordable Art Fair in Stockholm, which gave me the opportunity to participate several times in the role of a presenter of my artworks (which were, in the case of Affordable Art Fair, paintings). Differences in the sociocultural context, or transcorporeality within the art fairs, came up only within this one publication, but continues to drive my interest in questioning the role of the artists and the process of art production and consumption. Exploring this interest in this dissertation, even after this publication was completed, has only half-filled the knowledge gap and it will hopefully be investigated more in the future from the aspect of pluriversal cultural production and the artistic persona of the artist.

The study spotlights the *“Mark-Making”* performances (2015–2019), due to my specific interest in the pluriversality of the audiences and social contexts of the art fairs. Pluriversality of the audiences as a concept is later discussed in the eighth publication. Within these examples, the scope is autoethnographic reflection based on two performances carried out at two art fairs in two countries, on how revealing the inner states of the performer can impact the interactions with the viewers. The pluriverse does not apply in this study yet, as a concept, but it is important in this introduction to the discussion to grant a larger perspective on what precisely is interesting for me as a researcher in regard to the audiences, as this aspect is discussed in the later publications.

The autoethnographic material was used for the following reasons: firstly, the culture of art fair visitors is of particular interest to the researcher; after performing at the art fairs yearly, since 2017, I carefully documented these performances by inviting photographers, placing my own photo and video cameras, and systematically taking notes after each performance. In 2020, I processed all this autoethnographic data through a reflexive approach, which resulted in this article.



The method is autoethnographic, as I tell the story of my performances at the art fairs by investigating my visual and text-based material from my current perspective.

The main findings of these two performances, used as the research cases, combined in one description for clarity, are as follows: the performer extends her body by attaching technology as part of her costume or part of the site of performance. The assisting person/performer needed to approach the audiences and explain to them what is going on within the performance. At that point, it was challenging to plan the narration within improvisation and how to balance the didactics and the aesthetic experience. This aspect was further developed and changed in the context of the second exhibition, in which the performance was part of the exhibition, but the only person in the space was the performer herself. This discussion will be unfolded further in the upcoming chapter. The audience was approached from the following perspectives: emergent responsivity within interaction; inhuman interconnections, in which the impact on the audience is from the side of the performer and the side of technology, as the non-humans in the space of performance; and transcorporeality as the analysis of the differences between the audience interactions, depending on the culture of an art fair, be it an artist-run art fair or commercial art fair.

#### V. Article: *“Arts-based action research on enhancing children’s creativity by affect within participatory performance art and performance pedagogy”*

The publication, which is an article, explains the role of performance pedagogy in enhancing participants’ creativity in performance artworks, thus contributing to the theoretical framework of A/R/T and A/R/Tography, which I apply in my work, connecting art, research and teaching. The research question is: *“How can performance art involving the participation of children have a social and creative impact in real-time?”* Most of my test performances were participatory performances, in which most of the performances were performance pedagogy projects. The article dives slightly into testing the possibility of tracking a performer’s creative moments, interpreted as the moments of cognitive concentration, by tracing the live brain activity of the performer. The findings of this article are based on the

performance *“The Nomadic Radical Academy”*, which is used, from different perspectives, in two peer-reviewed publications within this dissertation.

The artwork within the article:

#### 1. *“The Nomadic Radical Academy”*

Within this dissertation, the performance *“The Nomadic Radical Academy”* discusses my practice within A/R/Tography as interconnectedness between artistic, research and teaching practices and how, in this kind of practice, EEG technology can benefit the self-analysis of the cognitive states of the performer during the performance. This performance also serves as the source to analyse the pluriversal approach to the audiences within participatory performance. The performer’s cognitive states are impacted directly by the content of the performative action — be it reading or storytelling or a relaxed activity, such as sitting with eyes closed or lying down on the floor. The impact on these conditions is also dependent on the audience interactions, in other words, how cognitively loaded these interactions are. This is the reason why, besides the discussion in the present paper, it was of great importance to also uncover the pluriversal thinking about designing the performance for the audiences.

*“The Nomadic Radical Academy”* is one performance, used as the case, which manifested in two editions, the first in 2019 and the second in 2020. Performance pedagogy is here used to exemplify my work within the framework of A/R/Tography.

ABAR was the method applied to the exploratory approach of this study. The performance *“The Nomadic Radical Academy”* was approached in a cyclic way, one edition in 2019, followed by the second edition in 2020, and resulted in one article and three conference proceedings. The data within this case was gathered and processed through affective ethnography.

Within the performance pedagogy context, I used EEG to analyse my performance from the following aspects: which moments were cognitively loaded and which were not during the performative actions. Here EEG is used only for self-analysis of the performance pedagogy moments, as I was interested in how my bodily conditions change throughout the per-

formance. The concepts, such as actor, action, artefact, audience, and affordances, contribute to understanding the creativity loop, involving affect from the space of performance, collaborators and audiences, and the performative actions and bodily conditions within the performer/researcher. The perspective within the article touches on the aspect of EEG technology as a way to provide the possibility for the researcher to track the bodily conditions from synchronised documentation, involving video material with the EEG data remediated into visuals. The focus of this article is on the audiences, which were made up of children and young people, and their variations on the creativity expressions within the durational performance along with the ways that creativity is addressed by the contributing artists.

#### **VI. Book Chapter: “Multiperspective take on pluriversal agenda in artistic research”**

In this publication, which is a book chapter, I am the first author and was responsible for the explanation of terms and method, one of the case descriptions and findings, and finalising the paper. The second author contributed to the conceptual framework of the article, the case, findings and conclusion. The third, fourth and fifth authors contributed to the cases and the conceptual framework of the article. This publication maps the value of the research “*Techno-voyeurism into a (performing) body*” in regard to performance pedagogy in the universities and art academies and shows the photo documentation in the format of a collage from the second exhibition (the artistic part) of this research. This publication contributes to the answer to the question: “*For whose benefit is arts-based research and artistic research conducted?*” My art exhibition/performance is one of the contributions to the data for the analysis.

My contribution to the book chapter is one art exhibition/performance:

##### **1. “Techno-diving into the liveness of the unbodied performed body of memory”**

“*Techno-diving into the liveness of the unbodied performed body of memory*” is the second artistic part, containing an exhibition and a performance, accessed within the paper from photo and video material, EEG data and notes. The performance was accessed within a very short timeframe from its imple-

mentation: the framework for data analysis was exactly one month after the performance took place. The artwork exemplifies the method and purpose of such art-based research, but to whose benefit is it conducted? My position as the researcher is from the side of one contribution of a case-study to a study containing four cases by five collaborators, in which I was involved in the paper development. Each of the collaborators provided their case as an example of its position within artistic research and ABR. The performance is one of the two cases that I provided in the paper. Both cases have human and technology collaboration aspects within ABR in common. The research was conducted as reflexive analysis of the autoethnographic material. The five collaborators involved in the paper discussed the cases and the findings via online meetings while developing the paper. The paper is based on conference presentation materials.

The article addresses multiple perspectives on the pluriversal approach to artistic research and ABR. While addressing the question of to whose benefit the ABR was conducted, the findings led to the following insights. The research was conducted within the university environment and the value of the research is primarily to make a change within the current norms in the field of performance art and performance art documentation at the art academies and universities. In particular, collaboration with technology and the use of EEG to add one more layer to performance documentation can benefit the modality of performance documentation, which, recreated into a new experience for the audience, can become an active component of the storytelling/narration within the artwork. This paper contributed to expanding the spectrum of envisioned possible value and impact of the research, which, beyond the individual artistic practices, can impact the ways performance is theorised, practised and taught at the educational institutions. The valuable aspect is that this performance, used as the research case, provided along with other researchers’ perspectives and in the holistic approach aims to uncover the researchers’ ways of working with the methods of artistic research and ABR.

#### **VII. Book chapter: “Empathy in digital participatory artworks”**

In this publication, which is a book chapter, I am the second author and was responsible for the following parts: introduction to the key terms and method in regard to my artwork, which was used as one of the two cases

in the paper, my artwork description, findings and conclusions specifically in regard to my artwork (case). The publication is united within its content with the eighth publication in the following way: the technology-based performance is analysed from the aspect of empathic connections, achieved by involvement of technology, as objects, in performance.

The artwork within the book chapter is:

### 1. *“Territory” performance*

The performance *“Territory”* was realised in 2018 in Torun, Poland, in the context of a performance art festival to which I was invited. My position in the context of utilising the performance *“Territory”* is that of the practitioner realising the performance artwork, which is the source for the data collection. My position within the co-authored publication, in which this performance is included as a case, is that of the provider of the case for analysing how empathic connections with the audience members can be achieved by utilising technology in the context of an international art event, at which the artist is unfamiliar to the audience.

The scope of this performance is one of the two cases in the publication, with the aim to extract new knowledge on how technology, involved in the performance as interactive objects, can enhance empathic connections with audiences that are unfamiliar to the author. Here the role of technology is more generic, not just EEG technology, but technology that is mounted into the costume of the performer, which is attached to the body and can make sounds as the viewers touch the performer. Although the direct reference to EEG does not dominate this particular study, the concept that technology can trigger empathic connections is important for the entire dissertation, as well as within my practice; I always involve technology in my work, be it DIY instruments on the body, EEG technology, or both.

ABAR was the method used, uniting two cases by the two authors of this article. Both cases dealt with the issue of empathy in digital participatory artwork, although the approach of both authors was different. My aspect was technology in the live performance, while performing for the audiences, and in which a language barrier might occur. This becomes an important issue within narrative-based verbal improvisational performance. The

co-author’s take was online presence within a socially engaged art symposium, which is the research case for her dissertation.

The main finding of this study suggests that technology can impact empathic connections with the audiences in a positive way and that involvement of international artists in the organisational context (such as performance festivals) can benefit empathy-based creativity flow and feedback loops involving the artist and the audiences. Although the performance involves DIY instruments and not specifically EEG, these findings can be applied to the context of all performances, in which technology is involved as objects to enhance curiosity and the willingness of the audience members to connect emphatically and interact.

### VIII. Article in conference proceedings: *“Participatory site-specific performance to discuss climate change and water pollution”*

In this publication, which is a conference proceedings article, pluriversal thinking within work that has diverse audiences in performance art projects is explored. Here the research question is: *“How can site-specific participatory performance be utilised as a means for decolonising knowledge about care towards nature and the environment among children and young people?”* Here the audiences are analysed through the prism of pluriverse and pluriversal thinking. This theme is connected to and expanded into the context of empathy within this dissertation. The article is based on the performance *“The Nomadic Radical Academy”*, which is analysed from the perspective of defining the audiences and artists’ work in collaboration with them.

The artwork within the article is:

### 1. *“The Nomadic Radical Academy”*

*“The Nomadic Radical academy”* appears in this dissertation in two publications; this one is from the Pivot 2021 conference proceedings. Although the data is the same in both of the publications, I approach it from two different angles of investigation. In this publication, the focus is on how pluriversal thinking is applied within A/R/Tography and performance pedagogy. I am interested in how it is possible to apply a pluriversal approach — meaning many worlds/truths fitting into one world — in projects in which multiple

artists are involved and to which audiences are invited. My position is of the researcher and the author of the project, while I was also an observer of the other artists' contributions.

This performance was realised in 2019 and 2020 as two editions and approached in a cyclic manner, resulting in one peer-reviewed article, discussed earlier, and two conference proceedings, including this paper. The method of this study is ABAR, due to its cyclic approach, which was in the format of ongoing exploration throughout the two editions of this project. Only part of the developed papers that are based on this artwork are included directly in the dissertation. The dialogical and artistic elements within this performance are at its core, and the artwork is capable of providing answers regarding the inner states of the performer within immersiveness into longitudinal performance pedagogy action, which can be a helpful material, along with video documentation, for self-analysis by the performer, and the pluriversality of the audiences and possible impact towards the creativity loop within the duration of the performance artwork.

The findings of this study are focused on pluriversal thinking about the artists and the audiences involved in the project. Three major tools are defined, to be used while planning and implementing the participatory performance through the lens of pluriversal thinking: pluriversal canvases (as the bodies in the space, impacted by the actions), pluriversal sensorial experiences as a multiplicity of "selves" (sensorial experience as individual experience, based on the memories and lived events brought into the common space of performance), and a pluriverse within site-specificity (interpreted as targeting local goals, which are a part of the larger discussion). All these findings are helpful to understanding how the performance can be designed for the audiences.

In my DA work, these insights became especially useful in the second exhibition, used as the artistic part, and in the publication: During the performance, the audience members stay in the format that they choose for the duration, meaning they take from the performance either only the aesthetic part, the scientific part, or both. As a durational performance, which was conducted daily for four days during the opening hours of Supermarket Art Fair in Stockholm in October 2021, the space of the second exhibition needed to take the accessibility and performance design into consideration

from the approach of the pluriversal spectator, the members of the audience. This impacts the ways that performers improvise and the cognitive load that such improvisation takes in that moment, which is observed in the EEG data and remediated at some phase into a new artwork. So, although this particular paper does not refer directly to the aspect of performance documentation, remediation and the aestheticisation within this remediation, generated by the EEG device, it is still important to include, as this aspect of working with the audiences is the core of performance in general and the way performance is discussed in this dissertation.

The artworks/performances described in this chapter are included in eight publications. Each of the artworks in this chapter was presented separately, with the key aspects of position of the researcher, scope and method applied, and the findings connected to each study. Thus, each article aimed to answer a sub-question, which each contributed to the findings that answer the research question of this dissertation.



## 5. Impact

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## 5.1. Impact of each finding on the results and answer to the research question

This study was approached from the perspective of the eight sub-questions, addressed in each of the publications separately, giving a holistic answer to the main research question. The key findings are conceptualised in regard to how the research aim was reached and presented in Table 2 and each research sub-question within each of the publications is further explained in specific.

1 & 2	Functionality of software and method of documenting performance by EEG
3	Documentary aestheticisation
4	Inhuman interconnections and transcorporeality inscribed into performance as a research field
5	Empathic connections and variety of art fair culture
6	Useful EEG data: Analysing one's own conditions of relaxation and concentration during the performance
7	EEG technology-based innovation in performance: towards dismantling and reassembling of institutional norms
8 & 9	Pluriversality of the audiences: towards empathic connections between the artist and the audiences

*Table 2. Conceptualisation of each of the findings within each of the research sub-questions. Developed by Marija Griniuk.*

The first publication addressed the sub-questions 1 and 2 (*“How can reflexive research be integrated into performance art documentation using EEG?”* and *“How can performance art be documented by recording the live brain activity of the performer?”*). The findings contribute in the following ways. Possible ways to use consumer-grade EEG technology in the gallery or art venue site were tested and confirmed to be useful as a channel of communication of aesthetic experience to the audiences during the performance, which was engaging for the audiences. The EEG monitoring did not experience any

dropouts during the entire 20–30 minute performance sessions and it was possible to record and reconstruct the data into new visual forms. Such reconstructed data can be interesting for the artists, as, along with sound– or video–recording, it provides the opportunity to analyse which parts of the performance spiked the cognitive load, and which caused more a relaxed condition. The interactions of the audience and discussion content depend on the context and differ greatly depending on where the performance is realised. The main value of these findings is a technical and contextual confirmation that it is possible to use an EEG device during performances, potentially for a few purposes: to record bodily states or to show remediated EEG data live, which adds a layer to the experience of the audiences.

The second publication seeks the answer to the question *“How can documentation of the inner bodily states of the performer be an aesthetic communication channel between the performers during the implementation of socially engaged performance artwork?”* The following demonstrate the value of the findings in regard to the research question. The concept of documentary aestheticisation allows EEG documentation to become a new artwork for the audiences: the EEG data is the accurate documentation of the cognitive states of the performer during the performance, which, while remediated into sound and visuals/animation and shown to the audience, become a new aesthetic experience. This concept, as a framework, is further used in the second artistic part of the dissertation, and also leads to the development of the concepts of layering and multileveledness. The audiences can choose which aspects of documentation to see — documentary, aesthetic or both, as a documentary–aestheticisation space.

The third publication is focused on the question *“What are the differences between wide–scope interactive art and design and performance art involving biometric data created through the application of recent developments in consumer technology for live events?”* The findings aim to crystallise the terminology around performance art with biometric data. The publication exemplifies the different ways to involve performer’s biometric data into the performance, in the art venue environment, or in the medical institution laboratory environment. Both performances have these terms in common: performance art, biometric data, inhuman interconnections and transcorporeality, which explain the socio–materiality of the sites of the performances. These four terms were defined as useful within performance art

with biometric data and are utilised further in the dissertation. The value of these findings is within clarifying the terminology by the performances, referred to as cases, and the thematic literature review.

The fourth publication asks *“How can biometric data be an extension of the performer’s body, contributing to interaction and empathic connections with the audience members, as exemplified by cases from art fairs?”* The findings are contextualised in the specific venues — the art fairs, which were also chosen to be a venue for the second artistic part of the dissertation. For my tests, in which I extended my body by attaching technology as part of my costume, adding an EEG device as one of the technological devices, which was also connected to the site via the screens on which live EEG data was visible. The value of the findings is in the analysis of impact on connectedness to the audiences in different art fair cultural contexts. The findings show that not only does the involvement of DIY technology and EEG technology in the narrative of performance have an impact on how the audiences interact, but so does the context of the art fair, whether it is an artist–run or commercial art fair. These findings show that the institutional context of a performance is as crucial as the components of the performance itself, although DIY instruments and EEG technology help to connect to the audiences empathically.

The fifth publication focuses on the question *“How can new tools for interaction design within performance be developed by utilising typically invisible biometric data in the site of live performance?”* The value of the findings is in the scope of opening discussion towards A/R/Tography within a performance pedagogy context and how such activity can be self–analysed by looking at the video or sound documentation, along with the documentation from EEG. This self–analysis can be done from the perspective of tracking the moments of greatest cognitive load during a past performance and being aware of which moments required the greatest concentration from the side of the performer. These findings help to answer the question of how EEG data can otherwise be useful for the performance artist, besides documentary aestheticisation.

The sixth publication, answering the question *“For whose benefit is artistic research and arts–based research conducted?”*, exemplified by the exhibition *“Techno–diving into the liveness of the unbodied performed body of memory”*, that

is the second artistic part of the research, focuses on the value of ABR. The value is explained as targeted at changing the norms within performance education at art academies and universities by highlighting new possibilities in documentation and remediation of performance using the performer's biometric data, as measured and recorded by the newest technology available on the site of performance.

The findings of the seventh and eighth publications, focusing on the questions “*How can site-specific participatory performance be utilised as a means for decolonising knowledge?*” and “*How can empathic connections be achieved in digital participatory artworks?*”, contribute these key points: pluriversal thinking and empathic connections are valuable in regard to the performer's approach to the audiences when working with performances containing DIY instruments and EEG technology and the biometric data of the performer. Addressing my work within the research as a whole, I combine the existent performance milieu and tradition with technology-based innovation, thus, as Braidotti (2013) describes as a condition for posthumanism — a combination of the natural and non-naturalistic structure of living matter. In my case, within the dissertation, this is the combination of the performer and EEG data, and, in the broader context of my work, the combination of the performer and technology (EEG, DIY and AI). I use the philosophical framework of Braidotti (2013) when discussing the ways liveness is achieved within a performance in which a performer and collaborator are involved, and the performance is based on EEG data as a channel for their communication. Nature, culture and technology is what makes my performances into a whole artwork.

EEG enters the documentation of performance as both an aestheticised form and also as the identifier of the bodily conditions that fluctuate while the performance takes place. Though insight into EEG data in my study is from the artistic point of view only, it can be interpreted for the self-evaluation of past performances, because, in the case of my research, artists can read and understand the data in connection to the cognitively loaded or relaxed state. Addressing the research overall and the developed method of documenting performance artwork by involving traditionally accepted tools — such as sound, video or photography — and the EEG data, in the perspective of performance documentation for the artist — in this case my-

self, as the research is based on my artworks as the cases — provided the following insight into the value of this data:

- a. Value as EEG becoming new media — EEG data, remediated into digital painting, animation or sound adds one more layer of modality within communication of the artwork. Furthermore, I suggest that, in the future, such remediated biometric data could be seen as media in itself. So EEG biometric data, along with the traditionally accepted data, enriches the experience of the artist, allows for one more layer within the narrative, and one more way to connect with the audience when presenting such documentation of the performance artwork to the viewers.
- b. Value as EEG data for evaluation of own performance — Even though the research was done without involving a neuroscientist, and thus the EEG data is only made useful from the aspects of aesthetics and enhancement of the experience, the data can give the artist some insight into the phase of looking back and evaluating the artwork. In dialogue with the audience, I could trace what themes or questions posed were most cognitively loaded, or, in other words, required effort to find the correct words and expressions to answer. What I noticed, by watching the video recordings of the EEG data, remediated into visual graphs or moving and interchanging colours, is that generally I am cognitively relaxed when interacting with the audience. Also, I often received comments from the audience that in their monitoring of the EEG data, I am very calm when I perform. However, I noticed that the cognitively demanding moments for me are at the beginning of public speech for a wide audience, such as in the conference setting, or while interchanging languages, such as in situations in which I am aware that the audiences come from different countries and speak different languages. This was especially true in the recent case in July 2022, when performing at Altan Klamovka in Prague for international audiences and a Ukrainian audience — I used two languages during the performance, interchanging them as I told the story.
- c. Value of EEG data as tracking physically loaded moments — interestingly, while relooking over the documentation, I noticed that the moments that are interpreted as cognitively loaded moments are also



connected to the physically demanding moments in my performances. So EEG data can also show the level of physical effort used to perform the movement-based sequences. This processual take on documentation for me as the artist was interesting as self-evaluation material. In the future, it would be interesting to see what physical shape my body was in during each of the performances. So far, in the last three years I have been actively working towards shaping my body before each performance through physical training, thus very consciously preparing for each of them. It would be interesting to see what activities demand effort while performing, in the perspective of ageing of the body: comparing the earlier and later performances in one's career. But this is, of course, speculation towards the further use and development of my research area.

- d. Value of EEG data as media in a future perspective — due to the experiments conducted during this research, the next steps within the study are to interconnect the EEG data as part of documentation to the spatial experience of the audiences: for example, along with displaying video documentation of performance artwork, to have moving objects in the space, connected to the data of, for example, the cognitive load. In this way, the viewer would look at the video and feel the moving object in the space when the performer experienced cognitive load during the performance. In this way, speculatively, the documentation would be a bodily-spatial-multisensory experience for the audience.

Finally, the potential of EEG as a recorded or live form of documentation circles back to the core of documentation itself: to make a claim that something has happened. Here, EEG data takes a unique position among other common forms of documentation (as mentioned before), in that it has the possibility of making claims about the internal state of a being, a state that is not necessarily reflected in movement, sound or other physical manifestation. In other words, EEG has the possibility of making the invisible work and strain happening in the brain (of the performer) visible to others.

In the present phase of my study, the methodology of documenting performance art by involving the sound, video and photo documentation and the EEG data, is oriented only on the usefulness of this method to performance artists, not institutions or curators, representing past performances to the

audiences. The discussed insights are from my perspective as the artist, also setting the present insights into the perspective of what can be further developed.

The main findings within this research, based on the eight publications and two exhibitions, answering the main research question, are: the cyclic aspect of layering; the interconnectedness and gap between the physical body and the documented body; biometric data as allowing for one more layer within performance documentation thus enabling the processual take on documentation; and multileveledness of access to the content of performance by the audiences. These findings propose how artists can use EEG technology and how these can impact performance design strategies. The key points are built upon the theoretical framework of layering and multileveledness, in which documentation is seen from the cyclic approach (the documentation becomes part of a new artwork, which becomes the documentation, and so on); the gap between the performing and documented body is lessened due to application of the new layer to the performance documentation (the EEG measurements from the performing body); the audience has a wide range of ways to interact with and interpret the performance (multileveledness of perception of the performance).

So, the findings of each of the publications can be conceptualised as: functionality of software and EEG technology during performance; documentary aestheticisation; inhuman interconnections and transcorporeality within performance; empathic connections within art fair cultures; usefulness of EEG data for self-analysis; EEG technology-based innovation within performance; pluriversality of the audiences and empathic connections between the artist and the audiences. These findings, especially documentary aestheticisation, upon which the second exhibition within this dissertation was built, lead to the conclusion that the cyclic aspect of layering by the artist impacts the multileveledness of access to the content of performance by the pluriversal audiences.

The ways that EEG biometric data, in the context of performance documentation, as a recording that gives access to the experience of a performance that one has never seen, can be useful is addressed in the publication *“Recorded bodily conditions as interpreted/remediated documentation and as a score for performed communication”*, which is included in this dissertation. Collab-

orating with the choreographer and co-performing in different rooms of the gallery space, the collaborating performer accessed my performance through the biometric EEG data that was remediated into sound and images. Recording identifies the cognitively loaded moments; in our collaborative experience, this was the only data that was accessible for my collaborator to interpret. This serves as an aesthetic experience and as a signifier of a live person behind the wall (in our case). The access of a past performance by EEG data for the audiences is similar. In the case of the performance *“The Monument to the Present Moment”*, the audience can go from room to room and visually observe only one performance at a time; the EEG data, transmitted to another room, signifies that the performer is there and the bodily conditions of the performer change as the different sequences of the performance unfold. In most of my artworks, I have presented EEG data along with video and sound recordings within a new performance artwork, incorporating past performances. In these cases, the changing EEG values remediated into images and sound, can trace the moments of concentration, excitement or difficult physical tasks — all indicating that physical conditions within the body change while performance happens. In regard to the usefulness of EEG data to the recreation of performance, I would like to clarify two perspectives on recreation of past performances. Firstly, from the perspective of Phelan (1996, p. 146): “Performance’s only life is in the present. Performance cannot be saved, recorded, documented, or otherwise participate in the circulation of representations of representations: once it does so, it becomes something other than performance.” On the other hand, I would argue that recreated or repeated performance is still performance in its media, but something other than the original performance. Another perspective is the concept of performance residue, used, for example, in my project *“The Nomadic Radical Academy”*. This means that after the performance ends, it leaves artefacts that can explain what happened during the performance action. This standpoint is developed by the scholars Schneider (2008), in regard to performance and photography, and Auslander (2006). These two takes on performance recreation can be considered as stating that a unique performance cannot be repeated as an exact copy. So in regard to performance recreation, the performance artwork cannot be accurately recreated, as each performance has a new time and perspective of its situatedness, as well as new audiences. The question of the value of EEG data as the material for performance recreation is directly connected to the current norms and infrastructure of what is considered

as valuable. If EEG data in the norms of performance documentation is considered as valuable data, it will enter the performance recreation as a material that can identify when the performer was concentrating and when the performer was relaxed during a performance artwork.

## 6. Conclusion

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## 6.1. Concluding remarks

The DA research project “*Techno–voyeurism into a (performing) body*” was aimed at developing a method for using EEG technology within performance and performance documentation. This aim was reached through the following objectives: firstly, by identifying how EEG technology can be involved in performance and performance documentation; secondly, by exploring how documentation by EEG technology can be used by the artist and in communication with the audiences and collaborators; lastly, by determining how to enhance interconnections with the audiences by revealing the inner conditions of the performing body.

The research philosophy within this study was interpretivism with hermeneutic perspective on data analysis, while the applied methodology was posthumanist ABAR. The publications were developed through the following methods: ABAR, reflexive research, autoethnography, A/R/Tography and ABR.

The research consisted of the multi–perspective of investigation into the research question “*How to identify, determine, and explore the possibilities of utilising EEG technology for performance documentation and performance practice?*” The eight sub–questions were addressed from the perspective of investigation into past artworks, referred to as the autoethnographic material, and from the experimental project investigations, into the possibilities of using EEG as a layer of documentation and recreation of this data into a new artwork by the researcher alone and in collaborations. Layering by the artist within performance art, performance documentation, and multi–leveledness of perception by the audience members was explored. The position of A/R/Tography combined the edges of artistic production, research and teaching under one ABR practice. Lastly, the perspective of the value of such research to universities, art academies, and beyond, was addressed and the design of performance for pluriversal audiences was underlined as important to have in mind when planning a performance.



A variety of perspectives gave an insight that EEG data could be used with two major purposes by the performance artists: firstly, the purpose to add one more layer to the documentation of the performance, and the performance artwork itself (in the case of performance art containing documentation of the past performances) and, possibly to use this documentation as the score for new art in collaborative contexts, as was done in the performance *“The Monument to the Present Moment”*. EEG technology for documentation allows for mobility while being used, whether the performance is indoor or outdoor, as long as a Bluetooth connection is available. EEG data does not necessarily need to be presented in a technical way for the audiences and can contain only an aesthetic component, if the audience chooses this position to experience the performance through (based on the theory regarding multileveledness of perception). EEG documentation is accurate, but the medical aspect cannot be interpreted by the layperson. My decision within this research was to address only the aesthetic approach of this documentation, therefore there was no collaboration with neuroscientists involved. The EEG data can explain to the audience (and the artist) the interpretation of the cognitively loaded and relaxed states of the performance artist during the performance, based on two predefined EEG data value sets. These two sets of EEG data, for the cognitively loaded and relaxed conditions, are predefined by the NeuroSky company, and were chosen arbitrarily amongst others for this particular research. This data is important in the cases in which the artist approached the EEG data for self-analysis, as it was done during the experimental projects involving conference presentations and performance pedagogy projects, as for me it was interesting to trace which moments of the live artwork were most cognitively loaded/challenging during my performance. If the artist takes only the aesthetic approach, by using this data, either as an additional layer in the video, documenting performance or remediating these EEG documentations into a completely new artwork, it would have made no difference what set of brainwaves was used — alpha, beta, gamma or other waves. Even without the artist knowing how to interpret the numeric values of the brain activity data from the neurological aspect, this data is still an accurate (documentary) documentation of the performance, though it is, in a way, abstract to the artist owing to its numeric content. However, it remains useful as the source material for the creation of aesthetic material to approach the audiences with. The inaccessibility of medical interpretation of the brain wave data to the artist does not matter, as the artist’s field

of expertise is interconnectedness with the audiences in an aesthetic way. The performance can be live for the artist and the audiences as soon as this aesthetic aim of connection is reached. If the method developed in this dissertation is to be used widely by artists, no additional assistance from the side of the neurologist is needed, unless the artist specifically decides to expand the materiality of the data in this direction. The value of this method of performance documentation, including EEG data, can be a step forward in performance pedagogy contexts in the art academy and university environments, as it triggers the creative loop towards new possible aesthetic interpretations of such documentation by the artists and by expanding the levels of perception of the artwork by the audiences. In this way, the impact on performance art education at the universities and art academies could be generated for promoting art and science collaborations, innovations, as well as theorisation. The impact can also be on the tools for enhancing creativity of the participants of a performance artwork as the research introduces technology as a tool for the audience to transgress the norms of touch or other formats for performative interaction and involve themselves in the connectedness with the performer, which, under other conditions, would be difficult. The EEG documentation is precise, but, at the same time, abstract for anyone who accesses this documentation outside of the neurosciences field. Therefore, what artists can do with this data is to take a broad aesthetic approach, including visual, spatial or sonic remediations of the recorded EEG data of the performance. The value is within the technology-based innovation, which brings the consumer-grade medical technology into the artistic and aesthetic contexts of performance art, and the artists can approach it as the channel of a new modality.

The audiences are approached within this dissertation via pluriversal thinking, and here the technology is seen as the collaborator towards expanding the narrative-based performance into sensory experiences for the audiences. This can be beneficial in enhancing the empathic connections between the members of the audience, who are unfamiliar to the artist and the artist’s collaborators. The audiences in this dissertation are exemplified by the performances, used as cases, addressing the audiences that are unfamiliar to the performing artist in the art fair context, the audiences of the international art events in an environment and venue that are unfamiliar to the artist, and the audiences consisting of young people and children. These specific audiences are different from the friends and colleagues coming to

see the performances in smaller artist-run galleries and project spaces; therefore, while the smaller performance spaces as sites were addressed, they were not investigated in depth. Instead, I wanted to focus on large-scale events, where performance is presented as one of the artworks within an event. Each of the segments of audiences within the large-scale events are approached via pluriversal thinking and the performance artwork is designed to serve the wide scope of interests of the audiences: be it interest in the scientific, research-based aspect of the involvement of EEG and DIY instruments mounted on the body of the performer during live action, or the aesthetic aspect of the holistic approach to spectating the encountered artwork or participating in it. The audience is encouraged to define what aspects of the performance involving EEG and DIY instruments are most appealing to them individually and find their own creative ways to perform as the viewers and participants of the performance.

The process of the researcher, besides the experimental project implemented by me during my DA process, addressed the autoethnographic data, based on my work as an artist using EEG data since 2015 and my encounters with the audience members within these performances, and later as an audience member within one art event by Viola Kus, who uses EEG within her art projects as well. This approach to involvement of the autoethnographic data, in a way, expanded the process, and allowed me to trace the development of my investigations into performing with EEG and recording this data, to self-analyse the artwork and remediate it into new art, exhibitions, or performances in the longitudinal perspective.

The conclusion of the entire dissertation fills the research gap from the two perspectives. A twofold approach for development of the research was taken, which firstly focused on clarifying the method of how the brain activity of the performer can be recorded by EEG during a live performance. For this purpose, the software was developed on an ongoing basis, and two models of EEG equipment were tested within my performances in the period from 2015 to 2022. As the research results clarified the possibility of having the EEG equipment on site during performance as functional for measuring the live brain activity and remediating the EEG data as an aesthetic outcome during the live performance; this resulted in the research papers, which filled part of the research gap, namely the lack of research on performance art with biometric data, containing, among other aspects, the

terminology for the researched field. In the beginning of the dissertation, it was identified that the peer-reviewed publications from the previous scholarship dealt mostly with choreography, and the terminology for the field was not clear — new terminology for the field of performance with biometric data was specifically my focus in one of the research papers. The second aspect of the research gap was usability/applicability of the EEG data for the performance artists. Here I set most of the focus on clarifying the ways that EEG data can benefit performance art documentation and be involved live in performances. My findings suggest expanding the existing scholarship on interaction design by applying EEG into expanding the current discussion (on enhancing interaction by involving biometric data into choreographic, art or design work), namely that EEG data can add one more layer to performance documentation, thus suggesting the processual take on documentation of performance, in which such documentation is part of the new performance artwork. In my research, documentation by EEG and remediation within performance are aligned, and therefore my main interest is in identifying the ways that documentation of the past performances can become part of the new performance artwork. So, as in the previous scholarship, I address interaction, but from the aspect of interaction of the viewers with the documentation of performance, specifying this particularly to the performance field. Therefore, in my research, the performer is always present within the set-up of performance artwork, containing documentation of the past performances. My research, in this way, expands the discussion on biometric data and interaction design, by adding the angle of performance documentation.

The short-term perspectives of implementation of the results of this research are in providing the software developed during the DA process for wide use of performance artists, introducing the software and the developed method in the performance courses at universities and art academies, and the further development of the ways of remediation of the EEG data into spatial experiences for pluriversal audiences. The long-term perspective is to work towards changing the norms of how performance documentation is seen by the artists and institutions and experimenting with different bodily measurements of the performing body in order to define new ways that performance can be recorded and what purposes such recordings can serve, along with the new possibilities that come with the development of new consumer-grade technology. Current research was done using only

EEG measurements. It would be interesting to develop this research further along the development and availability of new biometric data measurement technology, not only EEG.

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## Articles

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## Peer-reviewed articles

This section is comprised of articles of original, peer-reviewed research produced during my work on this dissertation. The versions presented here are the published versions with the exception of *Multiperspective take on pluriversal agenda in artistic research* and *Empathy in digital participatory artworks*, which appear here in special preprint versions. All articles are (re-)printed here with kind permission from the original publishers and co-authors.

**Reflexive research on performance art documentation through EEG**

# Reflexive research on performance art documentation through EEG

*A visual essay*

**Bio:** Marija Griniuk is a Lithuanian artist and a PhD student at the University of Lapland, Finland. Her research concerns new channels of performance documentation derived from usually invisible biometric data, such as brain activity.

## **Abstract.**

The normatives of performance documentation through writing, photography, audio, and video have not changed since the very beginning of performance art (Griniuk, 2019). The states of relaxation or attention of the performer during live action are not easily captured through photo, video, or sound documentation. Technological developments that have made EEG available on a consumer level within the reflexive research in this paper provide very intimate yet abstract information for the viewer regarding the bodily and mental states of the performance artist during live events. This data can be saved. Documentation provides a detailed record of text- and narrative-based performance art events. This paper presents three cases within the reflexive research on the documentation of performance through photography, video, sound recording, and the live brain activity of a performing body recorded and visualised by an EEG device via a program in processing. The aim of the research is to investigate the process of documentation via recording visual images and sounds of the performance art event setup, along with the recording of the performer's live brain activity. I also explore how this data can be reconstructed after the performance. The reconstruction of data related to a performer's brain activity for each case-performance is synchronised with the sound and the video footage. The results of this reflexive research can be useful for performance artists who wish to self-document their performances.

## **Keywords.**

Performance art, text-based performance, reflexive research, documentation, EEG.

### **Background.**

This study concerns documentation processes where performance is recorded combining photo, video, and sound documentation and is combined with data from the live brain activity of a performer immersed in text- and narrative-based performance art events. The brain activity data was restored into animated images, graphs, and sounds after the performances. This documentation method can reveal the performative setup and the brain activity of the performer during the event and can be used by performance artists to document their performances. This paper presents three reflexive research cases in which I use myself as the performer who is immersed in their performance is documenting the art event. During each of the cases, data are collected in the format of documentation material and material that helps me to unveil the viewer's perception of this documentation process. The three cases demonstrate how documentation can be obtained live, as well as how the performance event can be remediated from photo, video, and sound data, as well as the live brain activity of the performer.

The first case is *The Tests. Techno-voyeurism into a performing body*, performed in Riga, Latvia (Art Future/Future Signs 2019, September 11). This case is an investigation into the documentation process in the large-scale art biennial format. I collect data to study the viewer's perception of the performance and documentation setup. In the second case, I practised documenting live events using sound and EEG data at the 8th Conference on Modern Art in Torun, Poland, in 2019 (October 10). The aim was to learn if documentation through sound and data from live brain activity could be useful for documenting a conference presentation. The third case is again *The Tests. Techno-voyeurism into a performing body*, this time performed at the Gallery Kilo in Rovaniemi, Finland. I gave two performances (on January 27 and February 10, 2020) as part of my solo show. These performances—along with the exhibition, which was an annotated portfolio of my previous performance and presentation in Riga, Latvia and Torun, Poland—gave the audience an overview of how the software works to perform EEG documentation during the live events.

### **Aims.**

The primary aim of this work is to explore how reflexive research can be integrated into performance art documentation using EEG based on the three of my text- and narrative-based performances. I also explore how these case-performances can be reconstructed via remediation into video, image, sound, and animated data from EEG. *The Tests. Techno-voyeurism into a performing body* follows my previous five years of field test work performances (*Mark Making*).

### **Methods and analysis.**

Art-based research, according to Leavy (2009), is produced and explained by images, sounds, or performance. My project *The Tests. Techno-voyeurism into a performing body* is an ongoing art-based research project in which the three cases presented in this article are conducted as reflexive research. As a performance artist, I use myself as the case study for this research; as such, I produce reflexive research (Etherington, 2019, p. 47). Reflexive research is a term describing research that builds upon the experience of the researcher (Etherington, 2019, p. 47). Reflexive research not only provides knowledge about a topic, but it also explains how that knowledge was acquired (Etherington, 2019, p. 47). For me, reflexive research is a means of bridging my research on performance documentation and my practice as a performance artist. As explained by Etherington, reflexive research is “constructing a bridge between research and practice” (2019, p. 47). So, I use myself as the performer within my performance events, produce data, and analyse it as a researcher. Etherington (2019, p. 47) describes reflexivity as more than self-awareness. Reflexivity can create the dynamics of informing decisions, actions, and interpretations based on data from interactions between the researcher-facilitator and the participants.

I work with text- and narrative-based performances, and I document my performances using biometric data from the live brain activity that is recorded while I perform. This is done using a consumer EEG device and a program specifically developed for my research. Furthermore, sound, photo, and video documentation are being recorded. The video documentation is done in the space of the performance by an assistant. Sound documentation is done by the sound recorder from the performance area and is used for ensuring the highest quality of sound. During the performances, surveys and interviews from the audience are collected, and participant/facilitator observations, along with my diary, are produced.

A reflexive analysis of this data is conducted by examining each of the cases in order to understand the audience's perception of the documentation process through sound and video recording, along with the visualised data from EEG. Each subsequent session was slightly redesigned based on the feedback of the previous one to explore how EEG data recordings can be integrated into performance artwork in a way that is best for the audience. For example, in the first performance session at the Gallery Kilo in Rovaniemi, I introduced the technology within the documentation of the performance at the end of the session. Based on the feedback from the audience members, for the next performance, I moved this part to the beginning of the session. Art-based research involves artistic work as part of the data analysis and interpretation (Jokela & Huhmarniemi, 2018, p. 17). The video, sound, and EEG data recordings were labelled according to the case-events. After the performance, the EEG data were remediated into video, image, and sound and presented as artistic work (in the exhibitions and annotated portfolio), as was done at the Gallery Kilo, Rovaniemi (2020) in the format of a solo exhibition. The next presentation is planned at the Supermarket Art Fair in Stockholm in the fall of 2020.

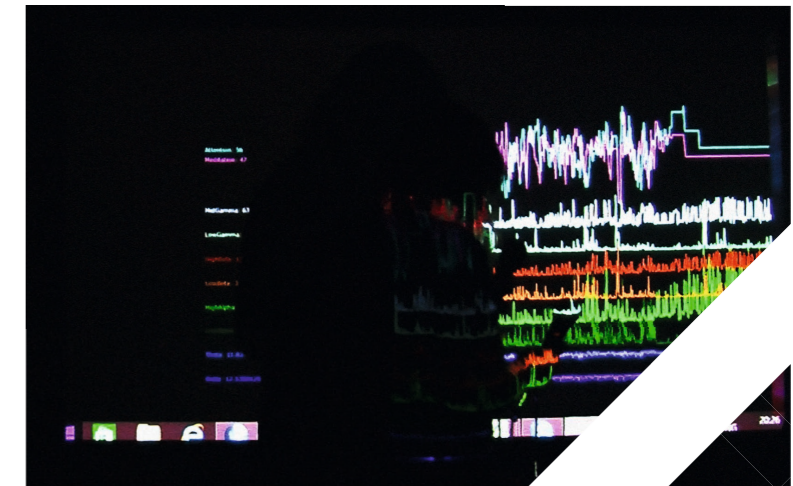
### **Terms.**

Performance refers to the live activity of a performing body and involves the audience and contains restored behaviour (Schechner, 2013, p. 34). My performances combine art writing with critical and political content, sound, and interactions with the audience, and they are inspired by spoken-word tradition (Price-Styles, 2015).

In this paper, the term *documentation* stands for *documentary documentation* (Auslander, 2006, p. 1); it provides a record of the performance with an audience and serves evidence that the performance event took place (in the public space).

### **Mark Making performances.**

*Mark Making* performances involve live brain activity visualisations as a part of the live text- and narrative-based performance. This is either facilitated as a one-on-one interaction with an audience member or performed on a stage.



*Image 1. Marija Griniuk “Mark Making” (2015), Performance-Rum in Århus, Denmark. Photo: Marija Griniuk*



Image 2. Marija Griniuk "Mark Making" (2017), Gallery Meno Parkas, Kaunas, Lithuania. Photo: Antanas Untidy.

**The Tests.** *Techno-voyeurism into a performing body* (2019–present) builds on my *Mark Making* performances (2015–2019). *Mark Making* was a performance project designed as a collaboration with performance designer and computer scientist Tue Brisson Mosich to visualise the embodied state of the performer during live text- and narrative-based performances. In my *Mark Making* performances, I would speak or read text, either to one participant at a time or to all audience members as a group, and I would wear an EEG device on my head while I performed. The EEG device and software utilised during these live performances showed the audience members my internal state, in an animated way (i.e., via a graph), as I performed.

I performed *Mark Making* for the first time in 2015 at PerformanceRum in Århus, Denmark. This was followed by several other performances, including *Territory* and *The Electronic Carnival of the Eternal Touching*. These performances were done within the context of showing my states of mental relaxation and focus via a screen. In all performances, due to ethical considerations, the EEG device was worn only by me. The performances were successful in the sense that the software was operational throughout the performances, and the audience members were curious about the image and engaged in conversations after the performances.

Showing the inner state of the performer during the performance seems to be a daring element of the performance design, and propels the format of performing further, beyond the body of the performer into their state of mental inactivity or focus. The ambivalence of the surface of the performance, which can easily be documented by photo or video, and the inner condition of the performing body urged me to conduct the research *The Tests. Techno-voyeurism into a performing body*. Since September 2019, I have been testing the possibility of documenting my text- and narrative-based performances using my performing body as the case study subject. The software used for *Mark Making* is now being developed further within my research project on performance documentation via EEG.

### **Brain activity and EEG.**

Using EEG, it is possible to read data showing, for example, whether the performance artist is relaxed or concentrated. EEG is a method of measuring electrical activity in the brain. As explained by Vuust (2007, p. 187), when many brain neurons activate at the same time, the result is a small electrical charge, which can be measured using EEG by placing electrodes on the skull. When using EEG, brain activity is divided into frequencies, such as delta, theta, alpha, beta, and gamma. Alpha waves reflect a state of physical relaxation and mental inactivity (Noachtar et al., 1999). Beta waves reflect a focused mental state (Krugman & Hartley, 1970, p. 187). Gamma waves reflect the performance of cognitive tasks (Jokeit & Makeig, 1994, p. 6339). In the case of my study, I currently use data labelled as "attention" and "meditation," which are algorithmically interpreted from the alpha, beta, and gamma channels by the NeuroSky device. It is technically possible to write your own algorithms to interpret the EEG data, but the built-in algorithm provides an easy entry point. EEG is normally associated with clinical tests. However, Mostow et al. (2011) describe the successful (in the terms of its accuracy) use of EEG data retrieved from a school classroom setup (i.e., outside of a clinical environment). I also use EEG outside of a clinical environment—in the art event spaces.

### **Description of the software.**

I use a custom prototype application designed to assist in visualising EEG data. Its purpose is twofold: to extract and save data from the EEG device for later use and to provide a mediated output of this data. The output can be live or can be acquired by playing back saved data. The initial design was informed by the notions of visceral, behavioural, and reflective design, as described by Norman (2004, pp. 65–96).



### Exploring through The Tests. Techno-voyeurism into a performing body.

Case 1: Riga, Latvia (Art Future / Future Signs, 2019).

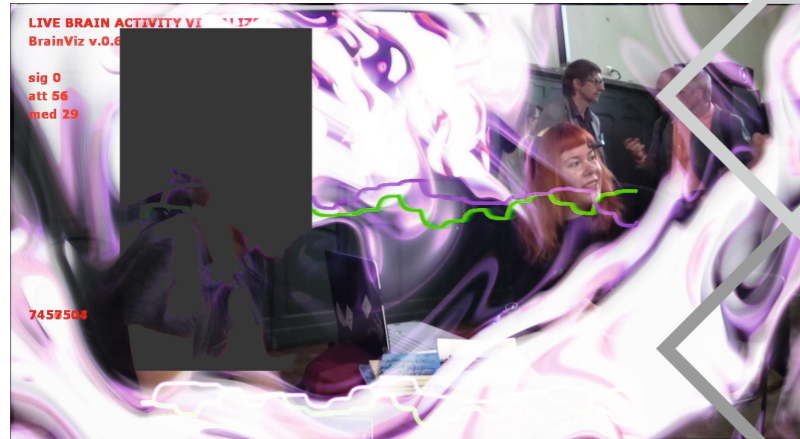


Image 3. Marija Griniuk. Case 1. Still from the documentation in the format of video, containing video and sound recording and data from EEG. Filmed by: Nikita Aleksejev. Edited by: Marija Griniuk.

In case one, my performance took place at the Paradox Fine Art European Forum Biennial Conference Riga as part of Art Future/Future Signs 2019. The book *BiteArchive* was my then-newly published research on the photo archive of the first Lithuanian festivals of happenings and actions, AN 88 (1988) and AN 89 (1989), preserved by artist Arvydas Baltrūnas (Griniuk, 2019). I introduced the book in one-on-one performative sessions during the event opening.

In addition to the performative part and the book itself (which later became part of the exhibition), I documented my performance using an EEG device that measured my live brain activity. The connectedness of the EEG device was perfect throughout the session. The computer was situated approximately 80 cm from me and the EEG device. The documentation process was visible to the audience, as it was displayed on a large TV screen, which served as a background for my performance. Furthermore, a camera and sound recorder were set up by the camera operator in front of the performance area to complement the documentation process. People who wanted to interact with me entered this setup (which, to me, seemed to reflect the performer's "obsession" with documentation), and the documentation process seemed to dominate the performance itself (note from my diary).

The primary purpose for collecting data during this performance was to explore whether what was being transmitted on the screens was understandable from the audience members' perspective and whether the projected images disturb the narrative of the performance itself. Self-evidently, visually encountering such a performance already sets a lot of visual signs. Therefore, most likely, only people with a particular mindset would want to participate. Those who entered the performance area expressed their consent to be anonymised in the edited video and sound material. (I edited the data to produce a short five-minute excerpt from the event that was presented in two later exhibitions.

One of these took place at the Meno Parkas Gallery in Kaunas, Lithuania (2019), and the other took place at the Gallery Kilo in Rovaniemi, Finland (2020) (note from my diary).

I prepared the survey for the participants of one-on-one sessions in an attempt to investigate whether the image distracted them from the performance. Due to this format and the rush put on participants to fill out the questionnaires immediately after the performance, only five completed questionnaires were obtained. Based on the answers, I concluded that the image was dominant and was understood as the central part of the performance. As such, in this space, the documentation setup became the performance for the participants while the narrative content and its meaning faded into the background.

Case 2: Torun, Poland (8th Conference on Modern Art in Torun, 2019).

My presentation for the second case took place at the Conference on Modern Art in Torun, Poland.

The event revolved around historical art content. My presentation dealt with the influence of the Fluxus network performance documentation (Griniuk, 2015) on the first Lithuanian festivals of happenings and actions, AN 88 (1988) and AN 89 (1989). While giving a conventional presentation on the stage using PowerPoint, I wore the EEG device, and my computer and sound recorder were situated approximately four metres away. I stated that I would be documenting the session for my research using sound recording and EEG data. The EEG device connection was perfect throughout the session. The audience seemed to pay no attention to the fact that I was documenting the presentation; any interactions they had with me were focused on the research that I had done my presentation on (note from my diary).



Image 4. Marija Griniuk. Case 3. Photo: Kaisa Vuolo.

**Case 3: Rovaniemi, Finland (Gallery Kilo, 2020).**

The third case comprises two performances that took place during an exhibition at the Gallery Kilo in Rovaniemi, Finland. Both were documented using an EEG device, and the viewer could observe the live recording process. These events were organised primarily to demonstrate how the software works in real time during a performance. Photo, video, and sound recordings were taken during these performances, along with EEG documentation. The EEG was positioned one to two meters away from the computer during each performance. During both performances, the EEG connection was fragmental.

The nature of text- and narrative-based performance art, which involves a facilitator and a participant, contains elements of improvisation (Bishop, 2012). The behavioural, visceral, and reflective design (Norman, 2004, pp. 65–96) of the four layers of documentation (photography, video, sound recording, and the live brain activity of a performing body) unveil the changes between the relaxed and focused states of the performer during these moments of spontaneity. In the first two cases, I succeeded in saving the attention and meditation data of the EEG device of the entire sessions. In case three, the documentation of the performance session is fragmented. During data analysis and data processing, it was possible to remediate the collected visual, sound, and EEG data into the video works, which contained images, sounds, and visualised and sonified EEG data.

**Conclusion.**

In this essay, I have presented three cases within my reflexive research on the documentation of performance using photography, videos, sound recordings, and data from live brain activity. Each case is part of my ongoing art-based research project on performance art documentation through biometric data from the performing body. All cases were presented in this reflexive research article, which aimed to investigate the process of documentation by recording visual images and the sounds of the performance art event setup while representing the inner states of the performer by recording the performer's live brain activity.

It is possible to record data during a live performance using an EEG device and to later remediate it into animated images and sounds. However, the EEG's connection during recording must be constant. Furthermore, the audience must be told the details of the process (what the performer will be doing, how the technology works, etc.) before the performance begins.

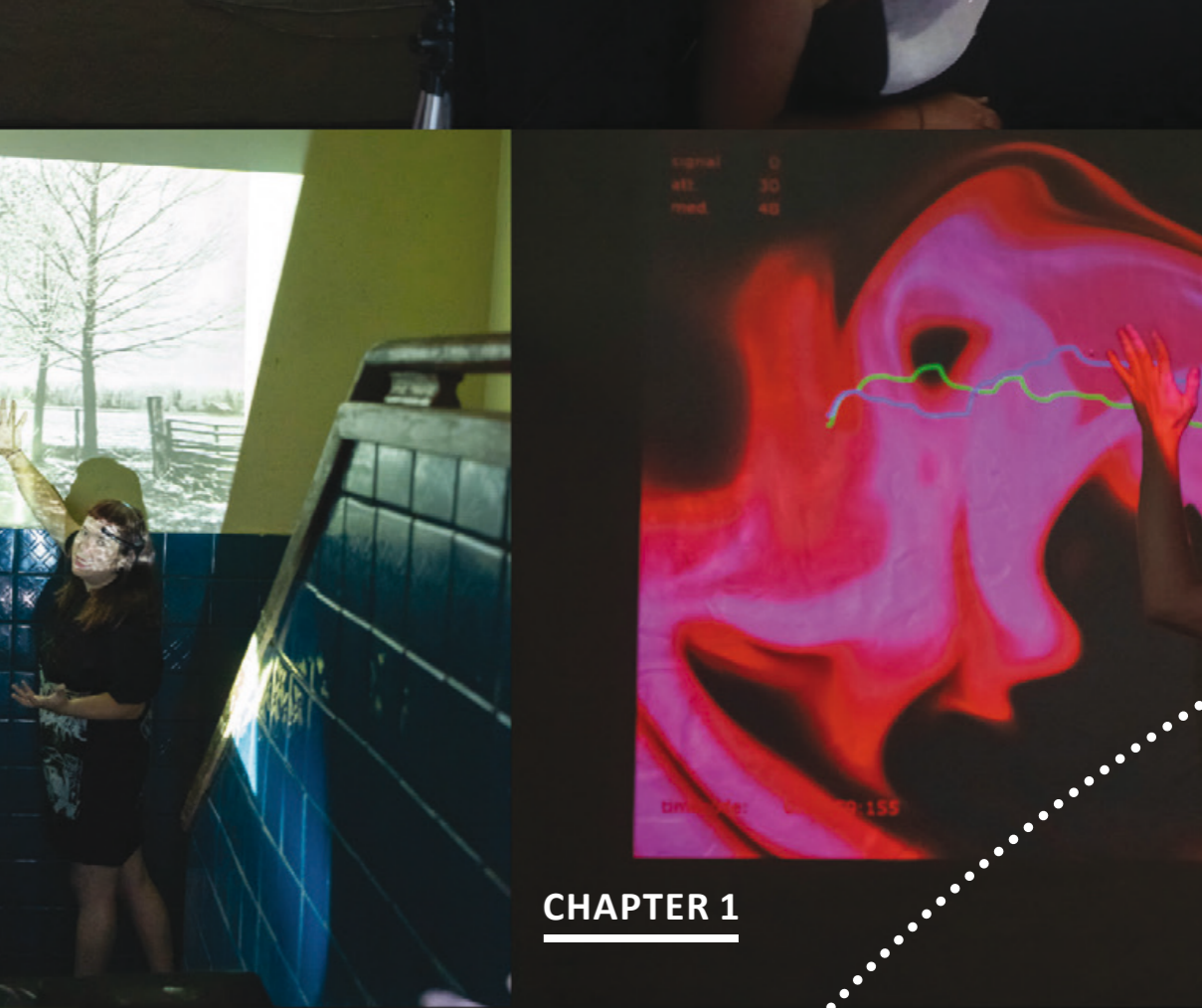
Documenting performances through EEG data provides a possibility to put the experiments conducted during **Mark Making** to practical use. For instance, they can be used for self-documenting performances (as in the present reflexive research), thus uncovering new documentation possibilities based on the conditions of physical and mental relaxation and the focused mental states of the performer.

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**Recorded bodily conditions as  
interpreted/remediated doc-  
umentation and as a score for  
performed communication**





CHAPTER 1



## Recorded Bodily Conditions as Interpreted/ Remediated Documentation and as a Score for Performed Communication

*Marija Griniuk, The University of Lapland  
and Tue Brisson Mosich, Independent*

### Abstract

A performance artist and a choreographer cocreated and documented a socially engaged performance utilising electroencephalography (EEG) measurements. A remediated form of these measurements was sent to the choreographer, who reinterpreted these data through movement. EEG and video recordings and interviews were used to analyse possible forms of documentation through abstract remediations of bodily states.

**Key words:** performance documentation, biometric data, remediation, aestheticisation

This paper explores the documentation of performance as socially engaged art, here based on biometric data collected from the performing body and utilised to track the mental conditions of the performer. The current technology within consumer devices can track biometric data, such as live brain activity, allowing for another layer of documentation to be added beyond the traditionally accepted categories of performance documentation by photography and video and sound recordings. A new method for documenting performance—that is, by recording the inner states of the performing body—could allow artists to self-analyse and develop their performance artworks by exploring their own reactions while communicating with the audience or connecting to the sites and objects present during the performance.

This approach is new and has been slightly touched on from the interaction design side in recent years (Griniuk, 2021). The research problem relates to the lack of discussion around applying new technology to the performance documentation field, going beyond photography and moving images (Woolley, 2014). The aim of the present research is to analyse a case performance to develop a methodology that brings biometric data into the normatives of performance documentation. This research also explores the possibility of extending this type of documentation into an aesthetic form of communication between the performers and the audience during a live performance.

The specific objectives are (i) to uncover the theory underlying the concepts of aesthetics, documentation of performance and data remediation and documentary-aestheticisation of performance as socially engaged art; (ii) to identify the critical points within the case study; (iii) to conduct a case analysis; and (iv) to develop the research results. The research question addressed in is as follows: ‘How can documentation of the bodily inner states of the performer be an aesthetic communication channel between the performers during the implementation of socially engaged performance artwork?’ The chapter consists of the following: a description of the theoretical framework for the key concepts and methodology, a case description and case analysis, the results and concluding remarks.

### Terms

#### Aesthetics and Aestheticisation

Aesthetics can be defined as the process by which we perceive things for their own sake, as the essence or an end in and of itself (Welsch, 1996; Reckwitz, 2017); this happens in the interconnection between the senses and



affect (Reckwitz, 2017). Here, aestheticisation is the process through which objects are transformed from being useful or necessary to being simply desirable (Welsch, 1996).

In aestheticisation, the earlier unaestheticised, preaesthetic reality takes on an aesthetic glaze—the increasing virtualisation of reality, its progressive dematerialisation, the transfer of substance into form, of reality into the ‘aesthetic’, the phase in which the barrier between the real and artificial becomes blurred and diffuse (Welsch, 1996).

### Performance as Socially Engaged Art

According to art historians and scholars Nato Thompson (2012) and Claire Bishop (2006), the broad spectrum of socially engaged art has destabilised the fundamentals of how art has been understood over the past 40 years; they showed this destabilisation by highlighting interhuman connectedness as a core prerequisite for art to happen. In the current paper, performance with a variable scale of audience participation is aligned with socially engaged art because of the involvement of audience members with the site and kinaesthetic empathy connections (Kim, 2015) between the performer and audience members. This connectedness is mainly found at the core of the movement-based case performance. The social aspect of the performance is vital for the case performance as the audience moves between the two spaces and feels the site and connects with the artist(s).

### Performance Documentation

Performance scholar Philip Auslander (2006) addressed performance documentation from two perspectives: as documentary documentation and theatrical documentation. Documentary documentation is concerned with

documenting the event itself by providing a document that can be used to reconstruct the performance in some way, while also providing evidence that the performance took place (Auslander, 2006). Theatrical documentation can be described as the creation of a narrative about the event itself or the construction of a fictionalised account of what happened. In other words, theatrical performance documentation becomes the performance without necessarily being a record of a factual event. Auslander suggested that for both of these documentation types, the framing of performance is essentially what makes it a performance: *‘the act of documenting an event as a performance is what constitutes it as such’* (italics in the original) (2006, p. 5).

### Remediation

Bolter and Grusin (2000) defined remediation as the transfer of a specific set of signs (e.g., words, sounds or images) from one medium into another. The signs of older media that are transferred to newer media result in similarities between the two. No new medium is exactly like the last, but elements of the old are transferred to the new. Remediation is used to explain why some new media have connections to previous forms. Thus, remediation is a combination of both continuity and breaks.

In the present paper, we use the word *remediation* to denote the change in form of the raw, numeric values extracted by the EEG device into visuals and sounds. Of note, the EEG device also remediates the tiny electrical currents of the brain into what is termed EEG.

### Materials and Methods

The method used for the study was arts-based research (Barone & Eisner, 2012; Leavy, 2017), here falling within the principal investigator's doctoral research under the umbrella of arts-based action research (Jokela & Huhmarniemi, 2018). Arts-based action research builds on arts-based research and action research. Arts-based research was employed because the study was realised as an art project and the interviews were carried out after the cop performer and the audience members had aesthetically experienced the artwork.

Artist-researcher Melanie Sarantou (2020) stressed the improvisational aspect of arts-based research, which is particularly relevant for the present case. Within the arts-based method, as within the present case study, performance artwork is at the core of data gathering, both as the trigger for the experience and as the documented content, which can unveil the performer's bodily conditions, which are experienced live while performing.

Arts-based research calls for data analysis and science communication by aesthetic means. This was done by working towards an exhibition at Supermarket Art Fair in October 2021 in Stockholm, Sweden. This exhibition extended this paper in a visual way. The science communication occurred via visual and auditory means within performative interventions in the exhibition both towards an aesthetic empathy connection and experience of liveness (Reason & Lindelof, 2016) within the remediation of the documentation for the audience. Here, *liveness* means the encounter with the performative action, which triggers an empathic connectedness between the performer and the audience—thus, both experience a change within them while immersed in performance (Reason & Lindelof, 2016).

The materials from the case project '*The Monument for the Present Moment*' constitute qualitative data containing questionnaires completed by five audience members, two interviews with audience members and an interview with collaborator and cop performer Kaspar Aus. The performance was documented by photo, video and recordings of Griniuk's mental conditions via EEG measurements of her brain activity. The data have been analysed as qualitative arts-based research data (Leavy, 2017) in the process of extended preparation for the exhibition and as science communication at Supermarket Art Fair.

### Case

The performance '*The Monument for the Present Moment*', which was realised during Pärnu Art Week 2021 in Estonia at the gallery Tex Mex, was used for the case described within the current study. This case builds on six years of self-analysis experiments based on performances involving the recording of mental states with EEG during performative actions, along with photo and video documentation. All of these experiments have been small-scale pilot projects for Griniuk in different Nordic and Baltic venues.

'*The Monument for the Present Moment*' is an experiment of embodied action that was made possible by EEG, which reads, records, remediates and transmits the live brain activity of the performer. The case performance involved this remediated transmission as a script for part of the performance—here as the signals from the live brain activity of artist Marija Griniuk, who performed in an isolated area of the gallery—becoming the score, or call for choreographic actions, for the movement-based performance by Kaspar Aus, who performed in the main part of the gallery.

Audience members could move between the rooms and watch or interact with both performers. The artists did not see each other, and the vocal narrative of one part was not accessible to the other individual. The brain activity data, purely remediated into sounds, moving graphs and a moving digital painting, Griniuk's brain activity became the trigger, either directly or indirectly, for Aus's movement and vocals (see Figures 1–8).



Figures 1-8. Marija Griniuk, *The Monument for the Present Moment* in collaboration with Kaspar Aus. Numbers in the lineal order. Photo 2 by Tue Brisson Mosich. Photos 1, 3–8 by Pärnu Art Week.

### Technological Aspect of the Case

NeuroSky Mindwave Mobile 2, a consumer-level device, was used to read data via EEG. The device offers a wireless Bluetooth connection to, in our case, a laptop running a prototype application that has been in development since

2015 (Griniuk, 2020). The prototype records and remediates the EEG data into abstract sounds and visuals. It is possible to use the prototype to record and store the EEG data and later play back the same remediated output.

The remediation into sounds and visuals are arbitrarily chosen for the current prototype. Other kinds of remediation can be imagined, including more physical ones, such as a spinning wheel, a dancing robot, simulated facial expressions and so forth.

As an aside, it should be mentioned that this form of biometric data cannot currently be used to identify a unique person. Research has explored the use of EEG measurements as a form of authentication (e.g., Curran et al., 2016), but this requires the baseline measurement of a specific task that is then used for comparison when the same task is repeated and measured. Because no such task-specific baseline measurements were performed in this case and only the raw numeric values of the EEG measurements are stored along with a relative timecode (i.e., video documentation or similar would be needed to identify the said task and its timecode in the data), identification based on these data alone is assumed to be close to impossible.

### Analysis

The technology, which was initially available in labs and but later became available to consumers, makes it possible to monitor the bodily states of a human (Griniuk, 2021). In the case of performance art, this means it is possible to add layers to the conventional documentation of live art. There has been a widespread discussion about the involvement of biometric data into art production and interaction design, but the literature is lacking regarding the possibilities of applying this technology to document, reconstruct or preserve the

performance artwork (Griniuk, 2020). Because EEG can be applied in any location where the use of an EEG device and a computer is possible, indoor or outdoor performances could use this new layer of documentation, which we suggest could serve several purposes.

First, it could be developed to extend communication (e.g., score construction and nonverbal communication) between performers and audiences based on recorded bodily states, here remediated as an aesthetic experience. In turn, this can become the trigger for an improvisational sequence within a performance. Second, it could be used for self-analysis by the performer after the performance, where one could track the variables of the mental conditions on stage, along with the recorded video material, to observe the range from a relaxed to a concentrated mental condition, for example, during the physical effort required to perform certain movements. Finally, it can be an additional layer, along with video recordings of the performance, thus enhancing the aesthetic experience of the viewer as they engage with the documentation as a new artwork.

The case analysis presented in the current paper will investigate the connectedness of the documentation of the bodily conditions combined with the experience given aesthetically to the viewer to create liveness (Reason & Lindelof, 2016) of the remediated documentation into a new artwork. Liveness might or might not happen. Regardless, when the remediated documentation becomes an aesthetic space of the live action, both the performer and audience could encounter liveness.

### **Performance Documentation and Documentary Aestheticisation**

Viewing documentary and theatrical documentation (Auslander, 2006) through the lens of aesthetics and

aestheticisation, we find that we can view performance documentation along an aesthetic continuum that always revolves around documentation. On the one hand, the documentation is deaestheticised of performativity in itself, that is, factual. On the other hand, the performance is intertwined with and cannot be separated from the documentation. The whole continuum, however, can be considered an aestheticisation of documentation or the documentary act because it always revolves explicitly around documentation or the process of documentation itself. If documenting a performance solidifies it as a type of performance, then documentation becomes a linchpin of performance, without which its existence becomes questionable.

The EEG measurements in the case described in the current article can be analysed on several levels; the EEG measurements are documentary in the sense that they document the brain waves of the performer during a specific time. In this way, they function as evidence and a type of recreation of the event when they are played back. The measurements can also be said to be theatrical because the measurements themselves can be considered meaningless without interpretation or, in this case, remediation. The remediation of the EEG data in the form of visuals and audio can be said to constitute a performance in and of itself that does not necessarily rely on an earlier performative event.

Finally, the remediated visualisations and sounds are used live in the original performance event as a part of the event. Therefore, these remediated data are subject to documentary practices, such as audio-visual recordings for example, to provide evidence that these data were actually recorded at this event.

Thus, the remediated EEG data can be said to fall on both ends of the continuum described earlier. These data can be factual and evidentiary in that the data are based on measured, physical facts about brain states. The abstract way these data are presented could further be argued as being de-aestheticised from the performance because such presentation does not create anything new that did not exist at the time of the performance. However, this abstract nature of the presentation also means that the factual characteristics of it can recede into obscurity, leaving behind a highly aestheticised form of documentation that is no longer connected to the original performance but that instead carries its own performativity.

#### **Analysis of the Interview with Collaborator Kaspar Aus**

An interview was conducted with Kaspar Aus, one of the artists who was part of the performance, about his experience with the remediated EEG and his general views on documentation and performance. Aus did not document his performances, but the visitors did. The answers are analysed using the following themes: technology, performance and aesthetics<sup>1</sup>.

#### **Technology**

For Aus, technology (i.e., the remediated EEG data) was not the main focus of the performance: 'For me, technology is a tool, a channel to use to connect performers. It's not the meaning of the performance'. Further, he stated, 'Meaning is something you convey when you observe the whole thing – technology is only part of it'. This could mean that although technology can play a part in binding elements of a performance together, it does not by itself communicate (much) meaning.

<sup>1</sup>The analysis of the interview was approved by Aus.

Given that a new or a new or unknown technology might carry meaning that requires an explanation to decode, is a clarification of the technology and/or the connecting channel it opens important to the viewer? For Aus, the answer was no:

*If you have a painting in the museum, you don't ask how it is done, you just get a big impulse, and you start to interpret it. [...] You don't know [how the painting came to be]. You don't need to know that actually, as the audience.*

This relates to performance as a holistic, subjective experience, where the immediate subjective impression of the performance is the only impression necessary. Performance, then, can be considered an aestheticised experience—it can be *aesthetically* about technology, but any communication carried by the technology becomes secondary or unimportant.

#### **The performance**

Aus described his use of the sounds and visuals derived from the EEG remediation in a similar way, as he would 'avoid [using them as a] score' (i.e., refrain from trying to extract meaning from them). Instead, he connected and reacted to the more physical aspects of the sound: 'If you use the body, you react to sound first, [before] visual information. Sound was the first thing I connected to'. This more immediate connection with the physicality of the soundwaves can again be described as being aesthetically about the sound, not the meaning of the sound.

The visuals were projected at a large scale on the wall behind Aus. This allowed him to engage in some physical



interaction with the visuals: 'As the person who moves his body, it is more real to interpret if it is more physical—like the sound first of all [and] that the picture was big, so you could go into it'. Thus, the changing visuals become aesthetic cues as opposed to documentary or communicative cues.

Aus further stressed connecting to the audience as the starting point for his choreography. Here, the social aspect of the performance played a crucial role because the performance would not happen without this connectedness. This can be interpreted as a kinaesthetic connection to the audience because of the way Aus approached the space, which contained the audience members, the room and the technology.

### Aesthetics

Although it is clear that Aus did not think the communicative or documentary aspects of the remediated EEG—or indeed other types of documentation—were very meaningful when it came to performance, they can qualify as theatrical documentation, as argued earlier. In this case, this documentation could be considered aesthetically about not only the inner states of the performer, but also the documentation itself. This is true regardless of whether the documentation carries information or what exactly the aesthetic experience concerns regarding documenting and documentation.

Of note, although Aus had knowledge about how the remediation was produced and what potential information it contained, he perceived it as only a highly aestheticised form of documentation, one devoid of factual clues from the other performer. Thus, he ignored the documentary (as described by Auslander (2006)) aspect of the remediation and focused only on the performative aspects of it.

### Results – How Documentation by Biometric Data Can Be Interpreted and Performed

The results extracted from the interview with the audience members and the collaborating performer drew from the immediate experience of the remediated documentation of the bodily states of the performer, who was immersed in the aesthetics of performative action. The results are summarised by the following key points: (i) kinaesthetic empathy with the audience as participation/involvement, (ii) feeling the story by aesthetic means and (iii) connecting with the physicality of the remediation.

Based on these points, documentary-aestheticisation could be a term used to unfold the interconnectedness between the documents of a past performance as socially engaged art and the present encounters with audiences. This could be done by addressing the remediated bodily conditions of the performing body. Also, unveiling the inner states becomes the active component of the performative actions that are narrated to the audience. Furthermore, the social aspect of the performance is central because the performing body is affected and evokes the possibility of encountering liveness during the performative action. This possibility also applies to the audience. This is the reason behind the elaboration of the performance as socially engaged art.

We further argue that the term *documentary-aestheticisation* can be generalised and distanced from the realm of performance. An example is the sometimes apparently paradoxical nature of documentation, for example of news photos that sometimes appear far-removed from the reality they ostensibly try to depict (e.g., Carlson, 2009).

## Conclusion

The aestheticisation of documentation can be generalised away from the performance perspective, and this could be termed documentary-aestheticisation. This could provide a way to analyse documentation on a continuum of the content factual in—and emergent from—it. When the documentation of a previous performance containing bodily conditions (along with sound, photo and video recordings) are remediated into the site of a new performance by documentary-aestheticisation, it can be done with at least two goals or interpretations. The first is as a new artwork containing an aesthetic experience; the second is as documentation of the past performance, thereby making it possible for the audience to encounter liveness within the present site. This choice is made either consciously or subconsciously by the audience members as they encounter the performance. Similarly, within the collaboration between performers, they choose how to interpret the remediated data within their live performance. The findings of the current paper are useful for performance practitioners and performance scholars.

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## Performance art using biometric data

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## PERFORMANCE ART USING BIOMETRIC DATA

**Summary.** This research analyzes performance art that uses biometric data, based on two concept perspectives – inhuman interconnections and transcorporeality – applied to examples of European performance art from Lithuania, Finland, Poland, and Denmark. The term performance art theoretically refers to all art that involves the human body, human biometric data, inhuman interconnections, transcorporeality, and liminal space. This study examines the differences between wide-scope interactive art and design and performance art involving biometric data created through the application of recent developments in consumer technology for live events. This research examined three case projects through the method of autoethnography. The data presented in the article was either collected during the author's performance art events or at performances the author was attending as a visitor. The cases are analyzed by means of qualitative data analysis, utilizing terms representing human biometric data and interactivity adopted from research within the fields of interactive art and interactive design. The study examines the combination of biometric data and art to explain the phenomenon of humans meeting technology, revealed through data collected from a body and transmitted to an audience during a performance art event. The conclusion revisits the key terms – performance art, biometric data, inhuman interconnections and transcorporeality – as applied to artistic practices, where performance art and biometric data meet.

**Keywords:** performance art, biometric data, inhuman interconnections, transcorporeality.

### INTRODUCTION

This article builds upon three cases of contemporary European performance art with biometric data, analyzed using terminology from peer-reviewed literature on the theme of interactive art and design, and performance with biometric data. The cases were selected using an autoethnographic approach, in which the author collected data for analysis during 2015–20 from performance events, which were either self-realized or were attended as a visitor. These performance art cases are: *The Tests: Techno-Voyeurism into a Performing Body* (2019–present), realized in Finland, and *Mark Making* (2015–2019), realized in Denmark and Lithuania, by the author Marija Griniuk; and *The Neurophysiology of an Artist in a Performance Experiment\_e1/2015–2017* (FUNom 2020), realized in Poland by Viola Kus. This article is written from the perspective of a performance artist, who in her artistic work combines performance with biometric data from the

performing body. The aim of this research is to investigate how this performance art with biometric data cases can be analyzed utilizing key terms, adapted from the interactive art and design literature. The research is related to Griniuk's ongoing doctoral studies, in which she focuses on developing a new methodology to document performance art through biometric data, targeted as process innovation<sup>1</sup> within documentation practices by performance artists.

Utilizing an autoethnography methodology,<sup>2</sup> the author analyzes photo and video material of past self-realized performances (in the first and the second cases) or visited performances (in the third case), along with the author's notes and interviews with the audience members. In the first and second cases, the source materials are recorded data from the live brain activity of the performer. The data was organized according to the place and date of the performance, and further classified as self-realized or as visited performances. The data was analyzed using

qualitative data analysis<sup>3</sup> and thematic literature sources were examined to determine and describe the terms utilized for analyzing performance cases.

This article comprises three parts. In the first, entitled *Cases*, the author presents three cases of European performance art with biometric data. In the second, *Terms*, the author provides the key terms from the thematic literature review sources, which are utilized in the third part, *Discussion*, in which the author analyzes and discusses the presented cases.

### CASES

This article examines three cases of performance art events. The first and second are projects realized by Marija Griniuk in Finland – *The Tests: Techno-Voyeurism into a Performing Body* (2019–present), along with an earlier independent artistic research project realized in Lithuania and Denmark (2015–2019) called *Mark Making*.<sup>4</sup> *Mark Making* (figures 1 and 2) was a performance during which the live brain activity of the performer was visualized for the viewers through software, developed in collaboration with computer scientist Tue Brisson Mosich; the data was projected as the performance background.<sup>5</sup> The running graph visualized the states of attention and meditation of the performer. Later, this artistic research project developed into *The Tests: Techno-Voyeurism into a Performing Body*, for which the performance art events and conference presentations by the author were documented using EEG (electroencephalography) data, which is used for monitoring brain activity.<sup>6</sup>



Fig. 1. Marija Griniuk, “Mark Making”, 2018, ArtVilnius Art Fair, Lithuania. Photo: Airida Rekštytė, Gallery Meno Parkas

*The Neurophysiology of an Artist in a Performance\_ Experiment\_e1/2015-2017*, the third case within this study, was attended by the author as an audience member in 2018. The data for this study includes the field notes and online project description materials. In this project, the performance artists were sometimes taken into a laboratory environment, where they performed without the viewers present – the viewers could only see the data from their biometric measurements. Other performances were conducted in a gallery environment. The project was initiated by the artist Viola Kus, acting as the experiment and research coordinator.<sup>7</sup> The project was presented as a “Case study – a natural experiment ... (involving) performers, recipients, researchers (measuring cognitive states and recording sounds), researchers/observers (interviews with artists and audience) and documenting the experiment (videos, photos)”.<sup>8</sup> The author visited the performance event entitled *Session 2\_e1/reperformance Ola Sojak-Borodo*<sup>9</sup> in 2018, where the event took place in two spaces. In the first space, the performer was interacting with the text on a phone screen, while in a magnetic resonance angiogram (MRA) test laboratory environment. In



Fig. 2. Marija Griniuk, “Mark Making”, 2015, PerformanceRum, Aarhus, Denmark. Photo: Still from the video documentation

the second space, the audience was seated and could observe the ongoing changing data on the computer screen. Unfortunately, the author had limited access to real-time information during this performance, as the presentation was in Polish, which the author does not speak fluently. Most of the publicly available written materials about this project are also in Polish. Therefore, the author communicated briefly with the artist to clarify the project’s process. In the performance art event as experienced by the author, inhuman interconnections were generated by the human body of the performance artist, connected to medical equipment in a laboratory (*Session 2\_e1/reperformance Ola Sojak-Borodo*).

The terminology has been studied in the thematic literature under the following keywords: “biometric data,” “interactive art,” “interactive design,” and “performance”. This terminology was applied to understand the case examples of performance art.

### BIO MATERIALITY, INHUMAN INTERCONNECTIONS, AND TRANSCORPOREALITY

The interaction between a performer, performance props, and space, together with audience engagement via recent technological developments, can be measured using the *biometric data* of the performer and/or the audience members;<sup>10</sup> however,

appropriate and stable terminology for this phenomenon lacks in academic discourse. Biometric data can be retrieved from a performing artist who is interacting with his or her surroundings and the audience,<sup>11</sup> or from audience members who are involved in participation.<sup>12</sup>

In this section, specific terms, including *bio materiality*, *bio art*, and *non-human*, will be defined. In an artistic context, *bio materiality*<sup>13</sup> involves the fusing of material from living organisms with artwork, reflecting a collaboration between artists and scientists. *Bio art* refers to art media involving *bio materiality*<sup>14</sup> and is based on data from living tissues, bacterial media, genetic sciences, and biological processes, retrieved from humans, animals, or plants. According to the manifesto *What Bio Art Is*, which specifies the criteria for *bio art*, *interactive art*, *design*, and *performance art* that use *biometric data* can be categorized as *bio art*.<sup>15</sup>

*Non-human*, as explained by the scholar Jeffrey Jerome Cohen,<sup>16</sup> refers to inanimate objects from the natural world that surround humans and animals (e.g., stones). The term *non-human* is more narrow than *inhuman*. *Inhuman* conceptualizes the interconnectedness between human and inanimate objects and technology. *Inhuman* is a term used to erase hierarchies or differences between the human and *non-human*.<sup>17</sup> In this paper, the term *inhuman*,

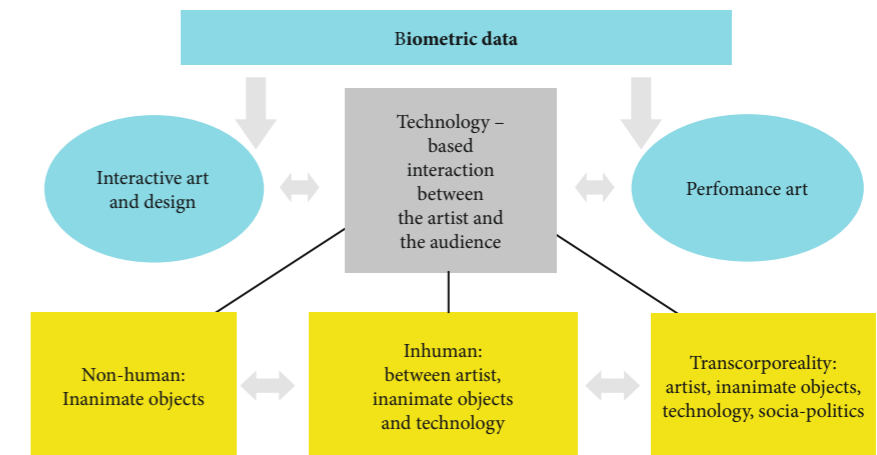


Fig. 3. Interactive art and design and performance art with biometric data. Created by Marija Griniuk



in relation to performance using biometric data, is used to describe a performing human body and the technology attached to it, along with the objects used in the performance, as one entity, one body. This entity exists within the liminal space of a performance, which determines the data collected during it. If, for example, during a performance, the headgear for an EEG is mounted in such a way that it causes pain to the performer, this can influence the data retrieved. The term inhuman, extended by the author to include inhuman interconnections, is derived from Cohen's work, which defines a human as a biological human being.<sup>18</sup> Sociomateriality triggers interaction, which depends on human and non-human interconnections. The term inhuman has been applied to the process of erasing the boundaries between human and non-human objects, exemplified by a stone in Cohen's work.<sup>19</sup> Inhuman is a way of conceptualizing human and non-human interconnections through frictions and viscous porosity.<sup>20</sup>

*Transcorporeality*, as explained by Alaimo,<sup>21</sup> is the connection of human beings to the natural world, which contains plants, stones, earth, and other surrounding objects. Within this study, transcorporeality is expanded into the sphere of performance art, and refers to the inseparability of a performer from the objects and space involved in the performance and from the audience and sociopolitics of the site. Transcorporeality is similar to the term inhuman interconnectedness, since it involves material interchanges between bodies and objects in a space, but it goes beyond this definition to include interchanges between humans and non-humans, along with sociopolitical contexts and power networks, as explained by Alaimo.<sup>22</sup> Transcorporeality, according to another definition, is a meeting and interchange point between humans and non-humans.<sup>23</sup> Transcorporeality<sup>24</sup> can also be written as trans-corporeality.<sup>25</sup> Within this paper, transcorporeality expands on the concept behind inhuman interconnections by emphasizing not only connections between humans and technology, but also the social, cultural, and/or political context of a performance using biometric data, which is achieved in the moment of perception of the performance by a

spectator. The transcorporeal performing body is seen herein as a body meeting an audience at the site of a performance and being influenced by a sociomateriality of action, which is recorded as biometric data. The term transcorporeality can just as well be applied to performance art, in the manner of a camera or with the participation of an audience. The performance artist and scholar Annette Arlander defined transcorporeality,<sup>26</sup> based on Alaimo's definition,<sup>27</sup> as interconnections and interchanges involving the body and (nonhuman) nature. She explained the term transcorporeality in relation to her performance works in natural surroundings. The social science scholars Julie Livingston and Jasbir K. Puar define humans/animals/plants as biosocial species and examine the political effects that shape interspecies relations.<sup>28</sup> This explanation of transcorporeality seems to be built upon descriptions in the book *When Species Meet* by Donna Haraway, which included her "Cyborg Manifesto".<sup>29</sup>

A cyborg is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction. Social reality is lived social relations, our most important political construction, a world-changing fiction... This experience is a fiction and fact of the most crucial, political kind.<sup>30</sup>

Haraway's approach to transcorporeality drew on feminist posthumanism, positing a concept of the human as a single entity free of dualisms, hierarchies, and exceptionalism.<sup>31</sup> This posthuman entity, underpinned by transcorporeality, embodies multi-layered horizontal crossings and transformations.<sup>32</sup> Livingstone and Puar used the term "interspecies"<sup>33</sup> – defined similarly to transcorporeality.

The choice to examine performance art that uses biometric data through inhuman interconnections and transcorporeality was based on a type of performance art that involves the human body moving in a space of interactions with the audience and props or objects supporting the interactions, which together influence the inner state of the body in performance situations.<sup>34</sup> Performance using biometric data is a very narrow and new field of study, resulting in a lack of appropriate terminology. In addition, very

few current European performers are working with biometric data. This is why the study is undertaken to develop the terminology for performance art with biometric data.

#### PERFORMANCE ART, LIMINAL SPACE, AND LIMINOID SPACE

##### *Performance as a Term to Describe Phenomena.*

There is a difference between the definitions of performance and what can be analyzed as the manifestations of performance. The term performance has been applied to a wide spectrum of human activities and, in recent years, has gained prominence in business, where performance means "doing a job efficiently with maximum productivity. In the corporate world, people, machines, systems, departments, and organizations are required to perform".<sup>35</sup> Performance as art, according to performance studies researcher Richard Schechner, has restored performance as a core behavior, meaning "out there," "separated from 'me,'"<sup>36</sup> Schechner explained:

Performances can be generalized at the theoretical level of restoration of behavior, but as embodied practices, each and every performance is specific and different from every other. The differences enact the conventions and traditions of a genre, the personal choices made by the performers, directors, and authors, various cultural patterns, historical circumstances, and the particularities of reception.<sup>37</sup>

This definition highlights the importance of context in defining what performance is and expands on his previous work,<sup>38</sup> in which performance is explained as a very wide spectrum of activities, consisting of the space, the body, and interactions with the audience. Many classical theater professionals are critical of Schechner, claiming that his approach to performance is too broad.<sup>39</sup> The researcher Jon McKenzie explains the intertwining of cultural, organizational, and technological performances and, building upon the ideas of liminality and liminal, introduces the term *liminoid*.<sup>40</sup>

In this paper, performance involves a human body, human biometric data, inhuman interconnections, and transcorporeality, defined according to Schechner's theory<sup>41</sup> and expanded upon specifically in

relation to performance artworks that involve biometrics. This paper argues that performance using biometric data is inseparable from its site, since biometric data is produced at the site of a performance<sup>42</sup> and, thus, is either influenced by the site or activates it, as the trigger for the creation of a liminal space. The size of the room, whether the performance is indoors or outdoors, whether the room is dark or light, whether the (performing) body has a tired mind or not, the distances between objects, the number of audience members, their reactions during the performance, and the distance from them all influence the performing body and the biometric data collected from it. When using biometric data, the site<sup>43</sup> is always at the core of the performance, since all kinds of materiality influence the body. Performance is used in this paper to describe a performance at a site,<sup>44</sup> which consists of a ritual, and where a liminal space is created in order for transformation to occur.<sup>45</sup>

Pearson wrote about site-specific performance,<sup>46</sup> which is too narrow a concept for this paper, but the work introduces the concept of a site as revealing the "placeness" of performance and its impact on the performing body. In other words, in this paper performance is an embodied, time-defined activity on a site by a performance artist, and biometric data for this activity is produced by the body (in the liminal space of the performance), or influences the body while it is in the liminal space. Knowledge is rendered and communicated to the viewer through biometric data that is retrieved from the performing body in the liminal space of the performance. When transformation, as the result of this biometric-database performative activity, ends, the artwork ends.

***Liminal and Liminoid Spaces.*** A liminal space is a space with the biometric data of performance art at its core, because biometric data is either produced in the liminal space of the performance or itself creates the liminal space. The definition of the term *liminal space* is based on Schechner's definition of performative activity,<sup>47</sup> which fundamentally constitutes a meeting between facilitators and participants as a liminal space. During live activities, *sociomateriality* is central to the liminal space, either between the facilitating performance artists or between the

artists and the participating audience.<sup>48</sup> In the definition posited by the scholar Claire Bishop, in relation to participatory art projects, a liminal space is the space and time of an action, which directs attention towards one activity – what can be called the liminal space of collective co-creation;<sup>49</sup> in other words, the sharing of a single goal with others.

The terms liminality and liminal describe the embodied work of a performer in a space on the threshold between multiple culture-based objects, props, and cultural sites.<sup>50</sup> Explaining technology-based innovation<sup>51</sup> within performance art practices, McKenzie describes techno-performance, using *digital limen* and *liminoid* as terms to refer to the cyberspatiality of a body whose actions are digitally recorded; in other words, living bodies are recorded, archived, and recombined through multimedia communication networks,<sup>52</sup> and the spatiality of the body becomes the cyberspatiality of the recorded performance. A liminoid space is a transitional space for the performing body and, in this context, is attached to a technological presence in the space and moment; a performing body is influenced by its context-specific environment.

#### INTERACTIVE ART AND DESIGN

The core differences between interactive art and design and performance art will be discussed in this section. Interactivity is explained by the scholar and artist Joan Soler-Adillon as an artificial situation in which one or more agents carry out a series of actions in order to gain responses to their specific behavior, which is synchronized with their previous actions in a space.<sup>53</sup> Interactivity itself might not be seen as performance, but could be said to facilitate performance when it interacts with one or more bodies.

Interactive design, as defined by Graham, is a user-oriented design that involves users in the design process and is accessible to the users through communication of this process.<sup>54</sup> It is oriented towards cycles of collaboration between a designer and users.<sup>55</sup> The goal of interactive design is the co-development of a design product.<sup>56</sup>

Han describes interactive art as art that allows interconnections between artworks, artists, and

the audience.<sup>57</sup> This interconnection can become dynamic and “the feedback between the interactors and the system can create the highest degree of indeterminacy and subjectivity, which leads to a higher level of user engagement.”<sup>58</sup> Interactive art, as defined by Soler-Adillon, is art that involves one or more agents (viewers) in order to make the artwork complete and meaningful<sup>59</sup> – for example, when viewers become the artwork or viewers activate the installed artwork through their specific behavior. There is a certain fluidity in definitions of performance art and interactive art, regarding viewers becoming the artwork. This is exemplified by artist Eric Andersen’s *Achilleus* (1988), which activated the viewers in a space by creating casts of their feet, as artefacts, which in a later phase, after the interaction, became an installation. Andersen called the artwork performance, but according to Soler-Adillon, it could just as well have fit the definition of interactive art.<sup>60</sup>

In this paper, what distinguishes the term performance<sup>61</sup> from interactive art<sup>62</sup> and interactive design<sup>63</sup> is that in performance there is no product involved and the performance artwork is complete after the transformation within the live action involving biometric data has happened, as explained by Schechner.<sup>64</sup>

#### BIOMETRIC DATA

The artist and researcher Yoon Chung Han defines biometric data within art and design projects as an index used to identify and verify individual responses from measured parts of the body.<sup>65</sup>

When matching biometric data with real identities, the relationship between one’s biometric data and identity can be indexical. In linguistics and the philosophy of language, indexicality refers to an indexical behavior or utterance which points to some state of affairs ... “Index” means that the physical vehicle is a trace left by the referent, and the best example of an index is the fingerprint. A fingerprint is an identifier and an index written by genetics and nature that corresponds to each living creature.<sup>66</sup>

The term biometrics, defined in the works of Jain, Hong, and Pankanti<sup>67</sup> and Jain, Bolle, and Pankanti,<sup>68</sup>

is a method of identifying people and their *behavioral characteristics*. In this paper, the term biometric data specifically means human biometric data, with a performance artist producing the data within a performance. Biometric data can include finger- or palm prints, palm veins, hand geometry, facial or iris recognition data, retinal scans, DNA, and odors, and it has recently expanded to include a person’s movements (e.g., handwriting, gait, typing rhythm, and voice).<sup>69</sup> Biometric data can be static, as exemplified by DNA, skin patterns, irises, fingerprints, body contours, etc., or dynamic, such as facial expressions, body gestures, electroencephalography (EEG), blood pressure, or body temperature.<sup>70</sup> The gathering of biometric data requires interaction with an interfacing body in some way. The execution of the interaction could be said to be performative; thus, part of the performance is the interaction and another part is the mediated data.

#### DISCUSSION

The performance cases by Marija Griniuk and Viola Kus are examples of art combined with bio materiality,<sup>71</sup> which involves collaboration between artists and scientists. As described in the manifesto *What Bio Art Is*, bio art projects involve direct biological intervention and political, social, cultural, and ethical implications.<sup>72</sup> They challenge the boundaries between the human and the nonhuman, the living and the nonliving, the natural and the artificial.<sup>73</sup>

The inner states of performing bodies are often hidden from the audience. In the described cases, performances using biometric data gave the viewers access to new knowledge of the inner states of a human body immersed in a live performance. *Mark Making* involved visualization of the performer’s live brain activity, which made states of extreme concentration or relaxation visible while the performer was immersed in the performance. This new knowledge informed the spectators about the effect of interaction input on the bodily condition of the performer. In *The Tests: Techno-Voyeurism into a Performing Body*, this information was saved and it was possible to recreate it as documentation of the performance. In these two examples, technology connected to

the body in order to visualize or document its inner state resulted in inhuman interconnections; transcorporeality fell within the sociomateriality of a performing body in the site-specific environment of a performative action. The 2015 performance of *Mark Making* took place in the project space PerformanceRum in Aarhus, Denmark and was attended by around twenty-five visitors, the majority of whom were the author’s colleagues, which created the very particular sociomateriality and experience of the site of the performance. The 2018 *Mark Making* performance was during the art fair ArtVilnius in Lithuania, where the author was presented as one of the Gallery Meno Parkas artists. Looking at these two particular performances, the transcorporeal body is a vastly different body; in the first case, the artist belongs to the artist-run environment, and in the second case, is officially represented by the gallery at the art fair. The two ways of presenting the artist and the two different performance sites each have an impact on the artist’s emotional condition, feelings, and empathic connections during the performances, which is reflected in the biometric data generated during them.<sup>74</sup>

In both *Mark Making* and *The Tests: Techno-Voyeurism into a Performing Body*, Griniuk utilizes technology-based means to read her biometric data in order to empathetically connect with the audience and, through these means, to non-verbally invite the audience members to co-perform in real time; they can influence the unfolding performative action and see these outcomes, as the performing body reacts to the audience’s triggers and the triggers of the objects surrounding the performer. These empathic connections, witnessed by the audience in the real time of performance are caused by transcorporeality, as the union of objects, space, audience and performer, and placeness, as the narrative within the site of the performance. The performance is dependent upon real time, as it is through real time that the bodily changes within the performer unfold to the viewers; as such it is intimately tied to inhuman interconnections, as interconnections with the objects and technology, along with transcorporeality as the sociomaterial space and the narrative of the site of the performance.

In the projects by Viola Kus, the inner states of the involved participating artists were visible to the audience in real time; for example, knowledge about the performer's brain activity and pulse was retrieved, rendered, and communicated to the audience in real time during the live art events. In this case, as encountered by the author of this paper, the transcorporeal body was a combination of the human body, the technology, and the very particular sociomateriality of the medical environment, in which the performance artist could not see or sense the audience, but was surrounded only by medical personnel and MRA equipment while performing. The transcorporeal body was immersed in the performative activity, but it was only seen as raw biometric data by the audience outside the laboratory, which was completely accessible and understandable only to a neuroscientist. In other words, the transcorporeal body transmits the novel space for spectating performance, in which the body is interpreted from the data seen by the audience at large, but remains abstract for the common viewer and can only be accurately understood by the medical specialists in the laboratory environment. In this case, the norms of spectating performance artwork have been altered through the innovation of technology-based rendering of the body in interactions with the materiality of the placeness of performance.

In performance art, human and non-human elements influence the performing body at the site of a performance to an equal degree, since the materials, technology, and performer immerse the audience in the liminal space of the performance artwork. As outlined in this paper, inhuman refers to the human and non-human triggers within interactive art that build the "inner" liminality of the facilitating performer, the audience, and the materiality of the art piece. Performance using biometric data gathered through inhuman interconnections means that both human and non-human (material and technology) objects at the site of a performance can influence the values of the resulting biometric data. According to the scholar Jeffrey Jerome Cohen, the term inhuman, in essence, erases the boundaries of hierarchical relations between the human and non-human;<sup>75</sup> for example, a stone in a performance art situation

could represent both symbolic importance to the human performer and input to the biometric data produced during the performance. If this stone has a particular value to the performer, such as connection to a certain narrative or coming from a certain location, it could have an emotional impact on an artist during the performance, which could also influence the data.

The term transcorporeality is relevant in performance with biometric data, as the body, technology, and sociocultural context of the performance are key. Transcorporeality is built upon inhuman interconnections and expands the concept behind this term, since it means not only the connections between a performing body and the objects within performance, but also the dynamics between the performer, the environment, the surroundings, the context of the performance, and the audience. In particular, transcorporeality as a term could be applied to performance as activism, in that such artworks carry a critical message regarding society, education, or politics and involve biometric data. "Transcorporeality means that all creatures, as embodied beings, are intermeshed with the dynamic, material world, which crosses through them, transforms them, and is transformed by them."<sup>76</sup> Within a performance art event, the transcorporeal body is the body of the performer, immersed in the liminal space of the performance, intermeshed with the technological devices attached to the body in order to collect biometric data, the software that transmits and interprets the live data, the context of the performance, the sociocultural or pedagogical message of the performance, and the reactions of the audience members. As in Haraway's "Cyborg Manifesto,"<sup>77</sup> the transcorporeal body becomes "more-than-human" by having inhuman interconnections between the body and technology, alongside the body being influenced by sociomateriality and the message within the performance.

#### CONCLUSION

The key terms – performance art, biometric data, inhuman interconnections, and transcorporeality – have been utilized to analyze three European performance art cases. Performance with biometric

data, communicated in real time, provided new knowledge to the viewers regarding the inner states of the performing bodies in the liminal space in the described cases; one exception is the case of *The Tests: Techno-Voyeurism into a Performing Body*, in which the biometric data became the data through which the performance art event was documented. Within the provided cases, inhuman interconnections were human and non-human triggers of interactions within the performance art, uniting the performing body, the technology, and the objects within the performance with the biometric data. Transcorporeality within the three cases referred to the unity of the body, the technology, the objects, and the sociopolitics of the site of performance, social aspects of interactions, involving the context and the audience's reactions to the artwork performed in real time. This research can be used by performance artists and performance art researchers, as the study establishes and clarifies the terminology relating to performance art that uses biometric data. Further investigation should be directed toward the ethical issues of working with bio art, particularly with regard to performances involving human biometric data.

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## PERFORMANSO MENAS, KURIAME NAUDOJAMI BIOMETRINIAI DUOMENYS

## Santrauka

Tyrime analizuojamas performanso menas, kuriame naudojami biometriniai duomenys, remiantis dviem koncepcijoms perspektyvomis – *inhuman* sąsajomis ir transkorporalumu – paremtomis Europos performanso meno pavėzdžiais iš Lietuvos, Suomijos, Lenkijos ir Danijos. Terminas „performanso menas“ teoriškai reiškia visą meną, apimančią žmogaus kūną, jo biometrinius duomenis, *inhuman* sąsajas, transkorporalumą ir liminalią erdvę. Šiame tyrime nagrinėjami interaktyvaus meno ir dizaino bei performanso meno su biometriniais duomenimis skirtumai. Taikant autoetnografinį metodą, buvo tiriami projektai.

Straipsnyje pateikti duomenys buvo surinkti per autoriaus performanso meno renginius arba renginiuose, kuriuose jis lankėsi. Atvejai nagrinėti analizuojant kokybinius duomenis, naudojant terminus, apibūdinančius žmogaus

biometrinius duomenis ir interaktyvumą bei pritaikytus interaktyvaus meno ir interaktyvaus dizaino srityse. Tyrimė nagrinėjamas biometrinių duomenų ir meno derinys, siekiant paaiškinti žmonių susitikimo su technologija fenomeną, atskleistą naudojant duomenis, surinktus iš kūno renginio metu. Išvadosė apžvelgiami pagrindiniai terminai – performanso menas, biimetriniai duomenys, *inhuman* sąsajos ir transkorporalumas – taikomi meninėms praktikoms, kur susitinka performanso menas ir biimetriniai duomenys.

**Reikšminiai žodžiai:** performanso menas, biimetriniai duomenys, *inhuman* sąsajos, transkorporalumas.

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## Performing in an Art Fair: Inviting Strangers into the Artistic Action



# Performing in an Art Fair: Inviting Strangers into the Artistic Action.

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## Abstract

The phenomenon researched in this essay is performance art with a particular focus on interactive performance at large-scale events, such as art fairs. This research focuses on two performance art cases performed at the *Supermarket Art Fair* in Sweden in 2017 and at the *ArtVilnius Art Fair*, in Lithuania in 2018. The cases are analyzed by the author from an autoethnographic approach. The data collected during 2017–2018 include video and photo documentation, notes and interviews, and EEG (electroencephalography) data. The cases are analyzed from the following perspectives – emergent responsivity, inhuman interconnections and transcorporeality – as recommended by the author to integrate the performance design when the artwork is created as a social sculpture in a large-scale venue, such as an art fair. This research can be useful for performance artists and designers as well as interaction designers.

**Research Question:** How can passers-by be invited into an interactive performance with biometric data at an art fair?

## Introduction

The art fair as a venue for the performer is very site specific due to the nature of the events that take place for large art-interested audiences. Art fairs usually consist of a large number of booths that have traditionally focused primarily on art objects, which are sold to individuals or collections. Yet during the past decade, more and more art fairs invite artists to present live events and performances. The challenge within the art fair format is to establish a connection between the performer and the visitors who might not be familiar with performance art and may not quite know what to expect from the interactive elements or that they could be invited to co-perform with the artist.

The author of this essay is a performance artist and researcher working with interactive performances involving the performer's biometric data, such as EEG (electroencephalography). She explores the art fair format as an interactive environment where the invitation to visitors to interact is supplemented by monitors that project the bodily conditions of the performer so that the viewers can see what happens as the performer moves among them talking and inviting them to touch her. In a custom-designed program, the monitors show the performer's remediated conditions of concentration and relaxation as a colored running graph on the black background. This digital mediation of the bodily states of the performer aims to create maximum transparency of what happens in the moment of performance and provide an interpersonal connection between the performer and audience members. When connections happen, it impacts the bodily state of the performer, which is immediately visible on the monitor for the audience to see.

## Aim

The aim of this essay is to explore how technology-based visualization of the inner state of a performing body (the artist) can be extracted, remediated, and shown live on a screen to reflect the changing inner conditions of concentration and relaxation when the artist interacts with visitors. This interaction produces a visual co-creation, a social sculpture, at the art fair venue, which has traditionally focused on static art objects on sale.

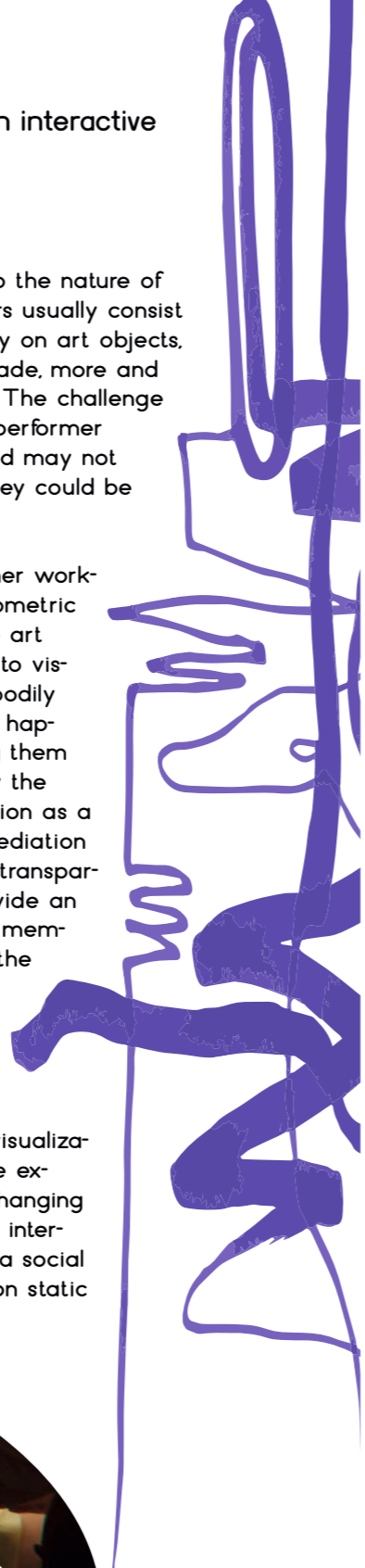


Fig. 1.

## Methodology

### Theory

Participatory performance is seen here as a work of art consisting of space, time, performing body, and audience (Schechner, 1977) and is built upon interhuman connections as a trigger for interaction (Bishop, 2014). In the present case studies, this interaction is illustrated using digital technology that tracks the bodily condition of the performer in real time and remediates it onto a monitor. The theories within this case study analysis are inhuman interconnections and trans-corporeality (Cohen, 2015; Alaimo 2010; Griniuk, 2021), where the performer's body is extended by technology and projected onto a screen as an additional visual layer that invites the visitors into the interaction. The performer becomes a trans-corporeal body with the involved audience at the art fair.

The site-specificity of the performance (Pearson, 2010) in the art fair venue is, in its own way, trans-corporeality because it is incorporated into a large-scale event, and the visitors, who are the primary audience of the entire art fair event, become the co-creators and/or participants in the performance. Site-specific performance (Pearson, 2010) is a performance developed according to the specific site or place. The case performances for this research were developed specifically for the context of each of the two events; what they have in common is the screens that show the audience the remediated bodily states of the performer.

### Materials and Methods

The two cases of performance art with biometric data within this research are analyzed through auto-ethnographic means (Ellis & Bochner, 2000). In the auto-ethnographic method the researcher is engaged in telling her own story (Russett, 1999) and the value is in her inner knowing of the research field (Duncan, 2004). In auto-ethnography the self is used as a data source (Holt, 2003). The data of this study is auto-ethnographic, as the author, while conducting the performances in 2017 and 2018, took reflective notes and collected video and photographic data from her own static pre-installed cameras, from the photographers involved in the documentation of the events, and from reflective notes written after the performances. In developing this essay, the author is re-narrating the cases from today's perspective on the past two events while continuing to interact with the material. The research is ongoing, and the author is planning to expand it into new horizons after participation at the *Supermarket Art Fair* and *Affordable Art Fair* in Sweden in 2021.

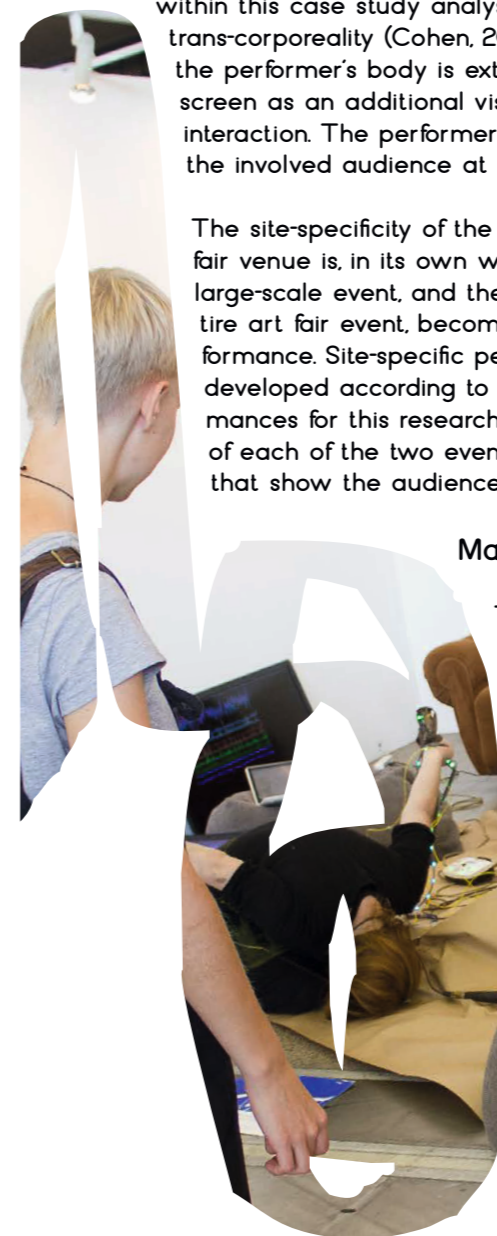


Fig. 2.



## Cases

The first case, "Mark Making with the Robots," consists of performances realized at the Supermarket Art Fair in Stockholm, Sweden in 2017 (Fig. 3 & 4). The performances were scheduled as daily sessions of one-hour duration and were situated near the entrance of the art fair; the performance was literally the first artwork the visitors encountered after entering the art fair venue. The artwork was

about the extension of the performer's body and art practice into a digital reflection uniting the audience, the performer's body, objects, and surroundings into one work of art. The artist integrated technology to make visible not only the performative acts, but the inner bodily states of the performer; the space consisted of the floor covered with paper and moving and drawing DIY (do-it-yourself) robots made from recycled materials, such as an old shoe and old toys. Five DIY electronic instruments were mounted on the performer's body; these were made from the recycled materials that made sounds when the members of the audience touched the performers skin. The performer had an EEG device on her head and the screen, placed on the floor, showed a running graph. The performance was assisted by one person, who was photo documenting the interactions, talking to the audience, and introducing the technology behind the artwork. The walls behind the performance were covered by silkscreen print posters, picturing the performer wearing the technological devices that were the same as what the visitors saw during the live action. Piles of posters were also lying on the floor, and the visitors could take a poster with them.



Fig. 3.



Fig. 4.



Top: Fig. 5.  
Middle: Fig. 6.  
Left: Fig. 7.



The second case performance, "Mark-Making" (Fig. 1, 2, 5, 6, 7, 8 & 9) was realized in the context of the art fair, ArtVilnius, in 2018 in Vilnius, Lithuania. The performance was realized during a scheduled time and lasted one hour on the last day of the art fair in the booth of the Meno Parkas Gallery (Kaunas, Lithuania), which represents the artist. The performance was documented and communicated to the audience members by a representative of the gallery. The site of performance in the gallery booth included brown large-size paper, which covered the floor and was littered with pieces of coal, manuscripts and two computers; a large TV screen was placed vertically by the wall. A large brown retro-style sofa was placed in the space for the visitors and the performer to sit on if they wanted to interact. Silkscreen posters picturing the performer were placed on the floor and the visitors could take those home. The performer wore a silkscreen print dress similar to those on the posters. She had an EEG device mounted on her head. The performance consisted of several sequences where the performer read a text, moved in the space, or talked to the visitors and invited them into the space of the booth. As the performer moved, traces of the coal were left on the brown paper and the visitors, by stepping into the space, left their coal footprints as well. Some of the visitors sat on the sofa and participated in the space. The visitors could see the running graph on the screen that represented the performer's moments of concentration, for example when she was reading the text, or moment of relaxation, for example, when she was sitting on sofa or lying on the floor in her movement sequences. The goal of the performance was to invite the visitors to step into the space with the performer inside the gallery booth, create footprints on the paper together, and witness the digitized co-performance.

## Discussion

The two performances took place in large-scale art fair venues, where the invitation of the audience unfamiliar to the performance and the artist was designed by the following means: the involvement of the screens/monitors, where the inner states of the performer were visible, an assistant or representative of the gallery, who communicated the performance to the audience in real time, and the bodily and verbal communication of the performer. The screens incorporated in both performances utilized EEG as a means to transmit to the audience moments when the artist was relaxed or concentrating.



Fig. 8.

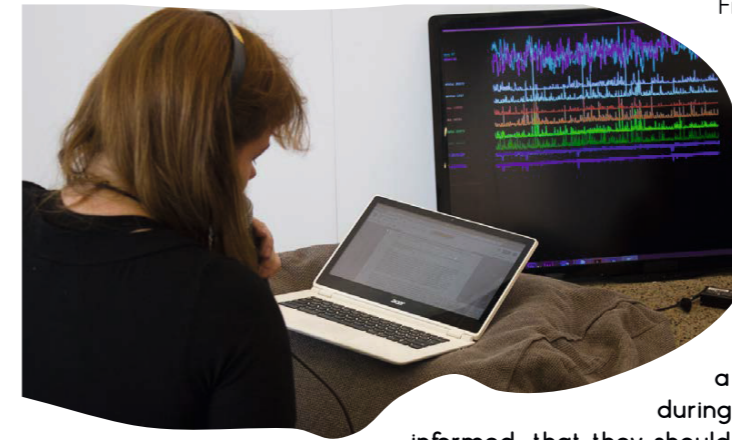


Fig. 9.

EEG, as explained by the scholar and medical scientist, Vuust (2007), reads the small electrical charges from the activated neurons divided into delta, theta, alpha, beta, and gamma frequencies (waves), which each appear as a separate color on a graph projected onto a black screen during the performances. The audience is informed that they should track alpha and beta waves in particular, as alpha waves show the states of physical relaxation and mental non-activity (Noachtar et al, 1999), and the beta waves show the concentrating inner state of the performer (Krugman & Hartley, 1970). The performer in both cases used the NeuroSky device mounted on her head, along with up to five devices mounted on her body, which made sounds when touched by the audience members.

This technological complexity of the performance situation, where the spectators are passers-by at a large-scale event, needed assisting individuals to explain to the audience what was shown on the screen and how the technology works. These individuals acted as the primary voice of the performer; the impact of the participatory experience was, in these cases, supplemented with a didactic approach from the position of the external co-facilitator, who explained how to understand the technology involved in the performance and the frameworks of the interactions.

To answer the research question regarding how to invite passers-by into an interaction with a performance artist with biometric data at an art fair, the cases are analyzed from three perspectives. The first perspective is connecting performance on site and video with focus on emergent responsivity when interaction occurs. The second perspective is inviting the audience to transgress the normative spectatorship by making an empathic digital connection to the performer through props (objects/technology) mounted on the performer's body that read and transmit biometric data or make sounds at the moment of interaction, when the visitor of the art fair touches the skin of the performer. This perspective is conceptualized as "inhuman interconnections" (Griniuk, 2021), in other words, the equal impact of the performance itself and of the objects and video projection, visualizing the performer's inner state on the experience of spectatorship and participation. In this way, technology (interpreted as the objects mounted on the body) impacts the visitors' experience in the same way as the performer, that is, as live subjects within a performance.

Due to the objects and technology involved, the performance becomes a social play where the participating viewers can test their own and the performer's boundaries and see changes in the performer's inner state immediately on the screen. The viewer can speculate about their own inner state in the moment of interaction. In other words, the remediated information, for example, the real-time exploration of the performative situation as a liminal space, results in transformation (Schechner, 1977). Performance and the building of performative interactions can be likened to the process of sculpting; here producing a *social sculpture* which, according to Beuys, is an artwork within the social realm, which requires social engagement and participation (Moore, 2021). The performance thus becomes a social sculpture that emerges as the audience members begin to interact.

The third perspective is transcorporeality (Cohen, 2015; Alaimo 2010, Griniuk, 2021) and in the case of performances, it is connected to the socio-cultural context. This needed to be taken into consideration as the performances were designed site-specifically for each of the two art fairs, which have quite different contexts and histories. Not only the performer and the mounted objects, which invite social play, but also each of the art fair venues, as every event in every country has its own background, which attracts a unique audience. Transcorporeality within the *Supermarket Art Fair* is within its tradition as an art fair for artist-run initiatives and artists. In this case, the transcorporeal approach is within the culture and context of readiness to join the artistic interaction to a higher degree than in the other case. The artist experiences moments when the strangers would touch her face or nose to activate the technology mounted on her body. In contrast, the *ArtVilnius Art Fair* has a more traditional format where the artist successfully involves young representatives of the audience, children, while the majority of the audience remains spectators.

A major difference between the two cases is that in the first case, the artist represented herself and her artistic practice, and in the second case, the artist was represented by the art gallery. All this impacts how the interaction happens, especially in the second case, the performer is facing an audience largely unfamiliar with the performance media within the format of an art fair.

### Conclusion

In this research, the author discussed the peculiarity of performing in art fair venues in Sweden and Lithuania. The spectators come to the art fair to see large scale art galleries and venues, represented in the booths, but not single performance art. Therefore, invitation into the active co-creation requires certain tools. Those unfamiliar to the performer, and sometimes to performance as media, were invited into the co-creation of the performative space, as the social sculpture by the following means.

First, the performer extended her body by using technological devices that remediated her inner bodily conditions onto the screens, lying on the floor or standing by the wall of the exhibition space. The up to five electronic devices, mounted on her body, produced sounds as the audience interacted with her by touching her skin. Second, the viewer experience was supplemented by the didactic approach of an assisting person who explained to the audience members how the technology worked and photo-documented the live performance.

The design of the invitation to interact within the performance can be discussed from three perspectives: emergent responsivity to the art of interaction; inhuman interconnections as the equal impact on the audience experience from the performer as the living body and the objects mounted on the body; and transcorporeality as the particular socio-cultural context of each of the art fairs. The author recommends that these three perspectives be actively incorporated into performance design when working in a large-scale venue, such as an art fair, with an audience unfamiliar to the performer who are accustomed to being passive spectators. This research can be interesting and useful for the performance artist, performance and interaction designers as well as curators of art fairs and similar events.

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## Images

Fig 3 & 4. Supermarket Art Fair 2017. Video documentation. Stills. Credits: Marija Griniuk

Fig 1, 2, 5, 6, 7, 8 & 9. ArtVilnius Art Fair 2018. Photo documentation. Credits: Airida Rekštytė

Sketches for the silkscreen prints, used for the performance costumes 2017 – ongoing. Marija Griniuk.



# Arts-based action research on enhancing children's creativity through affect within participatory performance art and performance pedagogy.

## ARTS-BASED ACTION RESEARCH ON ENHANCING CHILDREN'S CREATIVITY THROUGH AFFECT WITHIN PARTICIPATORY PERFORMANCE ART AND PERFORMANCE PEDAGOGY

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**Abstract.** This article presents arts-based action research on enhancing children's creativity through affect within participatory performance art and performance pedagogy. The study hypothesis was that children's creativity can be enhanced by affect experienced at a performance site. The purpose of the study was to investigate the impact of children's involvement in artistic performance on their creativity at a performance site. The impact of interactions at the site, the co-participating children, and the involved artists were monitored on a daily basis to collect qualitative data, which were analyzed using a general inductive approach. Objective themes relating to the variables were retrieved from the collected data and assigned codes, concepts, and keywords extracted from photographs, video recordings, and observation notes. The case under investigation was the "Nomadic Radical Academy 2020: The Good, the Bad, and the Art", which built on a pilot event held in 2019. This research concluded that performance art can have a social and creative impact during an art event through children's participation and can be used by performance artists and educators.

**Keywords:** affective ethnography, arts-based action research, children, creativity, participatory performance art, performance pedagogy.

### Introduction

Participatory performance art as social sculpture has been used as a tool for developing the creative potential of participants in art educational contexts since the early 1970s (Moore, 2009). In recent years, arts-based action research (ABAR) has been defined as a method of studying the impact of participatory performance art on the communities involved in art projects (Coghlan & Brydon-Miller, 2014). ABAR is immersive, and participatory performance art acts as a trigger for dialogical artwork to evolve on site in real time, with the aim of enhancing creativity, creative expression, and interconnectedness between the participants in projects for children and young people. However, tools are lacking to support artists and educators working with performance pedagogy and art education to engage young audiences in projects to enhance their creativity (Cropley, 2014; Chishti & Jehangir, 2014; Duffy, 2006).

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The research question was as follows: How can performance art involving the participation of children have a social and creative impact in real time? This research was significant as a component of the author's work toward her doctoral dissertation and highlighted performance as social and creative sculpture, based on interconnectedness and interactions between artists and children during performative manifestations. The aims of the research were to explore and discuss the connections between affect and creativity during two case-study pilot projects. The objectives of the study were to analyze the two cases of performative manifestations in the pilot projects with participating children and young people and to discuss how performance, co-participants, artists, and the site impacted the involved children and young people in real time.

The object of this study was the traveling education center entitled the "Nomadic Radical Academy" (2019 and 2020), realized as two ABAR pilot projects, based on affective ethnography, hosted by the gallery *Meno Parkas* in Kaunas, Lithuania. This article is part of an ongoing study on the social impact and interaction design of participatory performance art.

### 1. Literature review: creativity

There is a direct connection between art teaching pedagogies at the elementary school level for children and the capability of children to engage in creative problem-solving in adult life (Chishti & Jehangir, 2014). Research has shown that individuals who receive art education as children are better at creative problem-solving when they become adults (Chishti & Jehangir, 2014). It is therefore important to expose children to art practices, as exemplified by the performance art investigated in this research. A paper by Cropley (2014) noted that there is currently little focus on the arts in schools, although performance art not only has a longitudinal impact on a person's creativity, but, during a performance, changes bodily conditions that can be tracked by electroencephalograms (EEGs), which record immediate bodily responses registered as brain waves (Griniuk, 2020b; Gruzelier, 2014). The impact of performance art practices on children's creativity can be of huge pedagogical significance in an educational milieu. Changes within a performing body can be measured by EEGs, and performers can be trained to control certain brain waves (which help enhance creativity) during a performance (Egner & Gruzelier, 2001, 2003). Bodily conditions have a direct connection to creativity (Egner & Gruzelier, 2001, 2003); for example, creativity barriers, such as performance anxiety or social anxiety, can be overcome in the process of performing, and EEGs show these changes as a relaxed condition of the body (Gruzelier, 2014). This phenomenon was of huge importance for this research, since the author worked with an EEG to track her bodily conditions during performance art practices (see Figure 1), focusing on the conditions of relaxation and creative immersion in interactions with the audience members (Griniuk, 2020b). In this way, during the "Nomadic Radical Academy 2019" performances, she tracked her creative moments during interactions with the audience members by periodically applying the EEG to record her concentration and relaxation.

The concept of children's creativity for this research was built on Byrge's (2020, p. 9) study, which stated that all children have creative potential. Creativity is inseparable from imagination and, thus, allows people to express themselves through creative actions to change the



Figure 1. Relaxed condition, tracked by an electroencephalogram (source: Airida Reškšytė, 2019)

environment (Runco & Albert, 2010, p. 16). Creativity, for some reason, decreases before we reach adulthood (Byrge, 2020, p. 9), perhaps due to institutional power dynamics and children's desire to solve tasks in a specific manner:

"Children's creativity can be encouraged by exposing them to a wide variety of stimulation, providing them opportunities to acquire information and materials and to combine and arrange them, giving children the freedom to ask questions, disagree, experiment, and do things that adults may regard as mistakes, and allocating sufficient time to maintain children's spontaneity" (Majid et al., 2003, p. 68).

Byrge (2020, p. 9) argued that creative potential is partly determined by heredity, early childhood experiences, and education, but it can also be taught; therefore, according to Chishti and Jehangir (2014) and Gruzelier (2014), performance art can be a method for enhancing children's creativity that can have both longitudinal and immediate impacts. The "Nomadic Radical Academy 2019" emphasized vocal and movement-based performance, along with the production of art items from recycled materials. Verbal creativity is at the core of vocal performance, as defined by Gowan (1964). In movement-based performance or during children's interactions with their materials and surroundings, the focus is on motor skills, coordination, and visual and auditory acuity (Gowan, 1964). Sternberg (2020) developed a model called a "straight-A" model to investigate creative processes, which consisted of five variables that influence the creative process in different phases: activators, abilities, amplifiers, audience appeal, and assessment by the audience. As interpreted by Glăveanu (2013), this process involves an actor, action, artifact, audience, and affordances. These five

concepts were used as themes to analyze the qualitative data gathered during the “Nomadic Radical Academy 2019”. This article expands on existing theories and practices regarding performance art as a tool for enhancing children's creativity by discussing the observations of immediate changes within creative performative interactions between the children involved in the nine-day project.

A direct connection between creativity and affect is caused by temporal factors that trigger neurocognitive mechanisms at the site of performance (Eisenberg & James, 2005). The concept of affect was applied to the participating children in the manner described below. Affect, as described by Katila et al. (2020) and according to Deleuze and Guattari (1987), is experienced by humans when they encounter other (human or non-human) bodies. In participatory performances, affect is experienced when the facilitator encounters the socio-materiality of the performative situation: the participating children, the co-facilitators, the installation in the gallery space, the gallery space, and the materials for activities. Katila et al. (2020) defined affect as changes in bodily conditions during contact with both humans and non-humans, based on the work of Deleuze and Guattari (1987) and Massumi (2002). Katila et al. (2020) described affect as a combination of sensation and energy, which operates in and through relations between bodies.

## 2. Methodology: research design

In the project the “Nomadic Radical Academy 2019”, ABAR (Jokela, 2019; Jokela & Huhmar-niemi, 2018) was used to trace the changes in the participating children's creative interactions with each other and with the performance site. ABAR builds on arts-based research (ABR) (Leavy, 2018) and action research; the action research element consists of a series of cycles (Arslan-Ari et al., 2021). ABR was developed in academic contexts and is often applied in research to unite art, sociology, and pedagogy. This interdisciplinary field emerged in the 1970s and aimed to incorporate the value of aesthetics into the research process (Eisner, 1997). It was further developed into exploratory research, involving creative interpretation and creativity exercises, such as creative writing or visual communication, reflexive drawing and painting, and performativity, among other media. Eisner described the emergence of ABR within pedagogy as follows:

“In the early seventies, when I turned to the arts and humanities as sources of research methods and my students and I started to do research using educational connoisseurship and educational criticism, we were expected by most of my colleagues to write extensive justifications for such a personal approach” (1997, p. 5).

ABAR takes an exploratory and developmental approach that facilitated cycles of research, in the case of the “Nomadic Radical Academy”, from the idea of the pilot project to the artifacts of the performance and the evaluation (Jokela, 2019). A cyclic view of research allows for the possibility of reshaping the research approach, evaluating and developing the research objectives in the process (Jokela, 2019); for example, the study of the “Nomadic Radical Academy” consisted of three cycles: the first cycle focused on research regarding network-building strategies during performance pedagogy projects with children (Griniuk, 2021); the second cycle focused on children's interactive design within art; and the third cycle

focused on the performance aims of the article, particularly on how to enhance children's creativity through participatory performance. Knowledge is gained through pilot projects (in this case, during the “Nomadic Radical Academy”), and ABAR facilitated an exploratory approach to the study using data gathered through affective ethnography.

Affective ethnography was used as the data collection method (Gherardi, 2019, p. 2), particularly regarding facilitator observation notes compiled when the author was involved as both performer and observer, encountering facilitation and performances by the other contributing artists. The research was conducted from the perspective of the researcher and organizer of the pilot projects within the “Nomadic Radical Academy 2020: The Good, the Bad, and the Art”. Gherardi explained affective ethnography as “a style of performative ethnographic process that relies on the researcher's capacity to affect and be affected to produce interpretations that may transform the things that they interpret” (2019, p. 2). As an affective ethnographer within the participatory performance, the author was the facilitator and sometimes a participant (participating in activity sessions led by the project's co-facilitators). Praxeology (Long, 2005), as the study of the artistic interaction practices of the co-facilitators of the “Nomadic Radical Academy 2020: The Good, the Bad, and the Art”, was conducted by the author. The data for the segments of the praxeology research were observations, notes written in the space of the performance, and reflections after each day's activities, along with detailed photographic and video documentation produced by the author and invited photographers. These data were processed by organizing the data into folders, each of which was labeled with the date and session of the event. A general inductive approach was used to analyze the data gathered during the affective ethnography and praxeology (Thomas, 2006). This approach meant that the raw data were analyzed and evaluated through themes, keywords, and concepts by the researcher (Thomas, 2006). This method of analysis aligned with the ABAR approach and its cyclic structure, with goals being refined and reshaped in each cycle (Thomas, 2006). Based on the structural framework of the study, the data were categorized after each day of the children's creative performance according to the following keywords: actor, action, artifact, audience, and affordances. Further coding was also carried out within each of these five categories.

Regarding research ethics, according to the European Union's General Data Protection Regulation, any personal data must be processed transparently in compliance with the law (Regulations, 2016). Written consent was obtained from parents to photograph and video-record the involved children for the purposes of this project. The use of an EEG to measure live brain activity during the performance was only used to monitor the performing body of the author as part of the researcher's ongoing PhD studies at the University of Lapland, Rovaniemi, Finland.

## 3. Case study: the “Nomadic Radical Academy” (2019 and 2020)

The research was based on data concerning children, collected in the form of observation notes and photographs by the author. Other photographic and video material was collected by invited photographers. The ages of the children involved in the two the “Nomadic Radical Academy” projects ranged from 6–13 years. In 2019, the performances lasted on average





Figure 2. The “Nomadic Radical Academy 2019” (source: Antanas Untidy, 2019)

for 5 hours per day, but in 2020, the duration was 9.5 hours per day. In 2019, 12 children participated (with their family members), and in 2020, 20 children participated without their family members. The children participated voluntarily, and the parents applied for them to attend the event one month before it began. All the involved children and their parents gave consent for the children to be video and photographically recorded during the event.

The “Nomadic Radical Academy 2020: The Good, the Bad, and the Art” built upon the “Nomadic Radical Academy 2019”. The international artists involved in the first session of the “Nomadic Radical Academy 2019” were Marija Griniuk, Tue Brisson Mosich, Nanna Ylönen, Marta Gil, Sanna Blennow, Rikke Goldbeck, Anne-Louise Knudsen, Anders Werdelin, Adomas Danusevičius, Evelina Šimkutė, and Raimondas Binkauskas, among others. The “Nomadic Radical Academy 2020: The Good, the Bad, and the Art” involved contributions by the international artists Griniuk, Julia Kurek, Šimkutė, Rait Rosin, Mosich, Julija Rukanskaitė, Linda Teikmane, and Kaspar Aus, among others. Both the 2019 and 2020 events were participatory performance events held at gallery *Meno Parkas*, and they consisted of three days of performances and a two-week exhibition of video documentation after the event in 2019 and nine days of performances in 2020 without the exhibition after the event.

In 2019 (“The Nomadic Radical Academy for Climate Change Awareness at *Meno Parkas* Gallery” (Echo Gone Wrong, 2020)), the event was split across two of the gallery’s floors. The first floor was filled with erected tents (see Figure 3), and the second floor contained a mixed-media installation of used and recycled items (see Figure 2). The gallery space was used to host the invited artists, their artwork, and their performances. In 2019, the participating children attended with their parents. Upon entering the space, the children occupied the tents built from the recycled material and used them during breaks. The performative actions were divided into sessions, and the children and involved grown-ups participated in one- to two-hour sessions with the facilitators (the artists). The themes throughout the entire project were climate change and responsible behavior in nature and one’s surroundings.



Figure 3. The “Nomadic Radical Academy 2019” (source: Marija Griniuk, 2019)

The case project the “Nomadic Radical Academy 2020: The Good, the Bad, and the Art” was conducted in August, 2020 during the children’s summer holidays in the form of a nine-day camp. This time, the gallery was entirely taken over by the project. The ground floor and the second floor had been devoted to video documentation and painting and the first floor had been reserved for performative activities. Additionally, performances took place in outdoor areas near the gallery and in the inner yard of the gallery. The performance art program consisted of short-duration performance exercises and live activities. The project was developed for this case study and involved the host facilitator, who performed with the children over the nine days of the event from 8.30 a.m. to 5.00 p.m. Meanwhile, the invited co-facilitators held workshops or involved the children in their own performances, with these activities lasting from 20 minutes to 1.5 hours each (with breaks during the sessions). The children were encouraged to think about the relationship between humans and nature, as well as relationships between humans. They used the gallery space to interact with the facilitators, with each other, with colored paints, and with different materials.

#### 4. Results

The results of the ABAR regarding affect and creativity in performance art involving children, as well as their impact on the socio-materiality of the performance site, were based on the following categories: actor, action, artifact, audience, and affordances. Each of these categories was divided according to keywords to facilitate a general inductive approach to the qualitative data analysis.

The main facilitator worked with children solely on the first day of the project and half of the second day to investigate the children’s preferences for artistic interactions and to observe the dynamics between the children. Based on these observations, guest co-facilitators were introduced verbally to the group and were given advice on the duration and expected dynamics of the work. The photographic and video materials under the keyword “actor” were



defined according to subcategories: facilitators, young children aged 6–8 years, children aged 9–13 years, and parents of the children (for the event in 2019).

During the first day, the children seemed unable to concentrate on one activity for more than 30 minutes at a time, and this was the starting point for planning the duration of sessions. They seemed to enjoy longer breaks for social interactions, which was also taken into consideration and appeared to have highly successful outcomes, especially toward the end of the project (after 7 to 9 days), when the children started to use their breaks for their self-organized performative and artistic activities. They occupied the gallery space by self-building tents, roads, and traffic signs, or working in groups of four to five children to fix someone's body to the wall or floor with tape. They made sculptures by applying tape or tape and paper to each other's bodies. The children were divided according to roles, with one child being used as a model and two to three children working with tape or tape and paper.

Some of the participants were creative with their costumes, regularly applying new elements to them as the performance unfolded. Some costumes became usable for the entire project; for example, one participant applied painted silk to enhance her dragon costume with a multi-colored tail, and she used this costume every day during the project. The photographic and video materials under the keyword "action" were categorized according to the following keywords: workshops, performances, and self-organized performances.

These keywords reflected how artifacts from the 2019 performance affected the activities of the participants in 2020, as well as the effects of the artifacts on the performances of the invited artists. The first day of the 2020 event started, among other short performative segments, with the facilitator suggesting that the children create their own costumes, inspired by the video of the 2019 event, during which the children were given a similar task.

The self-built town of tents expanded the idea behind the installation used in the 2019 project. The difference was that in 2019, the artists built the tents before the performances and only occupied them during the performances. In 2020, the children self-initiated building their town inside the gallery upon the existing installation (see Figure 4).



Figure 4. The "Nomadic Radical Academy 2020: The Good, the Bad, and the Art"  
(source: Raminta Jodikaitytė, 2020)

The children developed their activities based on inspiration from performances or workshops conducted by the artists. A vivid example of such a case was the performance of the artist and scholar Rosin: "Swerve with the good taste food". The artist built a large-sized object (a banana) and interacted with the public spaces by walking in the city of Kaunas with this object. The children were involved in some parts of the artist's performance in the public spaces, following the artist, co-performing, or running and pulling the object along, either alone or in small groups of two to three children. In the days after this performance, the children started to build their own objects with wheels, which they used in their installation in the gallery, sometimes even taking these objects with them to the cafe where they spent their lunch breaks.

The experiments, which were conducted while the author of this paper measured her live brain activity during performances with an EEG device, were also categorized as artifacts. Based on these data, the author was able to reflect on her own bodily condition while engaging in creative performances with the children. Here, "artifacts" referred to the following sub-categories: artifacts from 2019 inspiring children, artifacts from other performances inspiring children, artifacts from children's performances, and artifacts from the artists' interactions with the children.

The exposures of the children's performances to various audiences were at the core of these categories, with a specific focus on the impact of enabling children to perform in a public space. The children's creative actions as interventions in the public space were designed to take place within Aus' movement-based three-day performance (multidimensional dance "The Blacksmith Mozart"), for two hours per day (see Figures 4–6). On the first day, the artist focused on determining the children's interest areas, such as by observing their great excitement during movement in a circle where the involved bodies reshaped the form of the circle while moving. This desire for collective embodiment was greater the next day, when, besides movement, the children chose different objects and built structures from them, such as chairs, paper, a ladder, and coal. After observing the children's interest in building chairs



Figure 5. The "Nomadic Radical Academy 2020: The Good, the Bad, and the Art"  
(source: Raminta Jodikaitytė)



Figure 6. The “Nomadic Radical Academy 2020: The Good, the Bad, and the Art”  
(source: Raminta Jodikaitytė)

and moving between these constructions, Aus carried out the final session by taking the activity into a public space, with the children taking the chairs outside, forming a large circle, and then moving between and around the chairs. Later, the activity expanded to involve the children in creating different shapes from the chairs in the public space and interacting with them. The chairs were left in place for a further half-hour to allow passersby to observe them and the children to observe the passersby from a distance. This was followed by a discussion about the performative intervention.

The author of this paper gave the children the opportunity to perform in the gallery for a large audience. For the final performance, the children were given gloves, brushes, and colored paint. The gallery floor was covered with plastic, and the facilitator sat on the floor of the gallery, giving the children the opportunity to interact with her at their own height. The facilitator wore a white T-shirt and pants to make the colors more visible. The children interacted with high energy, motivation, and involvement. The facilitator protected her eyes, nose, and mouth with a blindfold. She spoke in a calm tone, explaining how she felt at each moment when the colors were applied. This dialogue seemed to be comforting for the children, and they freely revealed who was applying what color, for example, to an arm or leg. The performance lasted around 20 minutes. Under the category “audiences”, the subcategories were outdoor public space, indoor public space, and children as internal audiences.

“Affordances” referred to the materials, surroundings, and objects that acted as triggers for creative action, including photographs, video recordings, and observation notes relating to the children’s interaction and co-creation with the objects. This was exemplified by a vignette from the performance by the scholar and artist Kurek observed by Griniuk:

“I call the kids, and we go up to the second floor of the gallery. The sound of the sea and darkness meet us at the entrance to the exhibition hall. The children occupy the chairs, prepared for the audience and the floor. The artist is covered by a fisherman’s net, which covers the entire floor of the performance area. A movie of seawater is projected onto the performance area. Plastic bottles are placed under the fisherman’s net. The artist starts to move. The movements express the desire to break free of the

net, and the bottles start to make cracking sounds as the artist’s body makes contact with them. I glance at the children, trying to see their reactions in the darkness. A few of us are sitting on the floor, and one girl asks if she can bring up her phone and take a film. The boy moves closer and closer to the net. He puts one of his legs under the net and looks back at me. I smile. In my thoughts, I start to speculate about what will happen if he crawls entirely under the net and starts to co-perform. The artist moves with great intensity, and the cracking sounds from the bottles increase. The boy keeps his leg under the net and touches the net. The projection of the sea touches his leg and hand. The artist breaks free from the net and, after a cycle of interactions with grown-up spectators, invites all the children to join in and step on each of the bottles to make them flat. The kids rush in. Now the cracking sounds fill the entire space for a moment. In the next performance sequence, they take the net and all the bottles downstairs together. They leave them as an item in the exhibition space under the stairs. All the children are helping, and now I am observing the action from behind – all grown-ups are passive observers of this collective action. When the net and the bottles are installed in their permanent location, the boy hugs the artist. He tells me later, when we discuss the artwork, that he really wanted to get under the net but was not sure if he was allowed, so he kept only his leg under the projection and the net”.

The children seemed to be more open to experimentation and interactions with the materials when they initiated the activity, as described in the following vignette:

“I place long pieces of brown paper on the floor, from one side of the gallery to the other, and the colored paints in bottles. The activity will begin with the children painting with their feet or their hands if they choose to do so. Seven children are taking off their socks and getting ready to start. They make puddles of colors, step into them, and start walking. Someone starts sliding in the puddle of color. More puddles appear, and now a few more children decide to slide. I see that this won’t work with only one sheet of paper, so three more pieces appear to allow the children to expand. One participant falls down while sliding, and now his clothes are covered in colors. He is a little worried about his clothes, but I encourage him to continue running around and simply be more careful not to fall, because the floor is wood. Anyway, all who are involved now have colored feet and legs. Someone paints their entire leg on purpose. There are a few places with water provided for cleaning up, and someone starts to wash their legs. Three children remain, sliding and running in the colors. The action continues for more than one hour until all the children are ready to clean themselves”.

The materials in the category “affordances” were further separated into the following subcategories: performances, materials, interactions between children, and interactions with the performance site. All the described categories and subcategories provided the opportunity to examine the patterns of the children’s creative behaviors and to trace transformations between the first and last days of the “Nomadic Radical Academy” project. Here, transformation refers, as described by Schechner (1977), to a change in the behavioral and creative pattern of the involved children’s performance.

## Discussion

The “Nomadic Radical Academy” project can be defined as performance pedagogy, involving an educator as an actor or a performer, as is usual within pedagogical studies (Lamm Pineau, 1994). The definition of performance pedagogy is based on *Fluxus* pedagogy and focuses

on playfulness, a flat structure of interactions, and the active involvement of participating children in decision-making (Griniuk, 2020a), which creates a non-evaluative environment for them (Treffinger et al., 1983). During the workshop sessions of the event, performance pedagogy was used by all the facilitators.

The performance pedagogy project the “Nomadic Radical Academy” can be seen as participatory performance. The children were encouraged to participate in the project, and the events were open for casual gallery audiences to observe. Participatory performance can communicate to participants on one level and to spectators on another level (Bishop, 2011, p. 10). The “Nomadic Radical Academy” constituted a performance according to Schechner's (1977) definition, since it involved a wide spectrum of activities. The participatory performance involved the performing facilitator, the participants, the audience, and the space and time of the performance; the artwork was complete after the transformation within the performance had occurred, as explained by Schechner (1977). The “Nomadic Radical Academy” emphasized this notion of completed artwork by using the last hour of the nine-day event for collective de-installation of the objects in the gallery space by the facilitator and the children.

The facilitator, being involved in the participatory performance in the case of the “Nomadic Radical Academy 2020: The Good, the Bad, and the Art”, which involved 95 hours of performance, experienced affect as both an activity and as flux, directly reflecting the ethnographic data collected during the event in real time.

Inviting children into the performance event the “Nomadic Radical Academy” gave them an alternative to their regular school space that focused on affect derived from their surroundings, facilitators, and each other. This space differed from the usual power relations and structures that they were familiar with in school and at home. The adults (*i.e.*, the facilitators) did not focus on direction but instead played along and engaged in the activities with the same spontaneity as the children (Majid et al., 2003). Enhancing children's creativity was aligned with disrupting the power dynamics the children typically experienced. Non-hierarchical relations were gradually achieved as the children adapted to the new space, the facilitators, and the rules of interactions. The “Nomadic Radical Academy” utilized performance and performance pedagogy as tools to facilitate a creative experience for children through affect, enabling them to gradually move from performing in a closed group to performing in public outdoor and indoor spaces (Kozbelt et al., 2010, p. 23). Performance within an art installation in a gallery created a permissive environment that supported imaginative play, whereby creative ideas evolved from the relaxation and enjoyment inherent in play (Kozbelt et al., 2010, p. 26). It also proved possible to gradually achieve this in public spaces with a wider audience present.

The autonomy of the participants, as explained by Kozbelt et al. (2010, p. 20), increased the children's creativity, but the children could only focus on creative action for up to 30 minutes. The facilitators needed to moderate the sessions and shift the children's attention from one activity to another or allow them to take breaks when they lost concentration. The children needed ongoing shifts of focus and affect in the dynamics of the activities, which ranged from vocal to movement-based performance and involved the creation of objects from available materials. The constantly changing activities stimulated the children's interest and involvement.

This autonomy and shift in power relations were effective in expanding the children's creativity in most cases. The focus was only on inner motivation (E. M. Skaalvik & S. Skaalvik, 2002) as the key to the autonomy of imagination (Kozbelt et al., 2010). The transformations and role changes over the course of the project were the main interests of the facilitator, since they triggered the creative flow of new ideas and erasure and take-over of the installation space, which made the space dynamic. Performance theories and creativity theories were combined by using performance as a tool to enhance creativity. Liminal spaces, which is where the transformation happens according to Schechner (1977), are spaces of affect that impact creativity (Eisenberg & James, 2005). In this case, ongoing stimulation and changing performance activities were at the core of maintaining the creative flow and motivation of the group of children (Kozbelt et al., 2010). The product (the installation) was the aesthetic outcome of the children's creative actions, but the performative situation during the creative actions was the focus of the research. While they were carrying out these actions, the children were affected by the materials, each other, and the facilitators, which changed their behavioral and creative patterns; in other words, transformation occurred in a liminal space (Schechner, 1977).

The author of this paper used a *NeuroSky* EEG device to trace the alpha, beta, and theta waves of her live brain activity (Griniuk, 2020a, 2021) and analyze moments of relaxation and concentration during her interactions with the children. The data were gathered periodically during the performance in 2019 and are part of ongoing research at the University of Lapland (Griniuk, 2020b, 2021).

The transformations of the participating children's creative and behavioral patterns were as follows: During the first two days of their performance, the children were only moderate users of the materials; they had short interactions with each other and needed guidelines and support from the facilitators. From the third to the sixth day, the children were affected by their daily interactions with the invited artists, and they were inspired by the artifacts introduced into the performance space. The children voluntarily took their creative items into a public space and performed with them. The children used the provided materials to extend the scope of their creative actions. From the sixth to the ninth day of the performance, the children, together with the artists, performed in public outdoor and indoor spaces for wider audiences. They self-organized and extended the installation by building large-scale elements inside it. The children extended the facilitated activities both indoors and outdoors and constructed their own creative verbal and visual narratives to support their installations and their performative actions.

## Conclusions

This research defined the major aspects of participatory performance art that enhanced the children's and young people's creativity in the project. The visual and text-based data, analyzed using the categories of actor, action, artifact, audience, and affordances, revealed that the socio-materiality and site of the performance, along with the involved artists and co-participants, impacted the children's creative expressions and affect, transforming the scope of interactions and creative interventions of the children during the performance. The research



indicates that participation in performance art can strengthen children's inner motivation to be involved in collaborative creative actions. Affect through the impact of the real-time performance was also experienced by the facilitating performance artist, and the artistic manifestation can thus be interpreted as a dialogical affective approach to expanding creative interactions at the site of the performance. It proved possible to foster children's creative actions, thus changing the roles and dynamics in the participant group through participatory performance art. The provided autonomy expanded the children's imagination, the traces and artifacts of which were observed in the gallery space as a reflection of the creative process. The findings of this research are useful for performance artists who are involved in creativity-enhancing pedagogical practices with children in institutional contexts.

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## Multiperspective Take on Pluriversal Agenda in Artistic Research

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### Abstract

Rigid structures and differences in socio-cultural contexts of art academies and universities across the world can limit cross-disciplinary collaborations and network building. Artistic and arts-based research bear a potential to unfold the transition in art and design fields, merging them into a cross-disciplinary arena that summons radical innovation. Basing itself on the concept of pluriverse, this chapter explores speculative scenarios of envisioning the future of artistic research by analysing the four case studies of the five authors. These cases apply similar methods in engagement with diverse audiences to disseminate multiple themes or concerns (social, environmental, cultural) and to represent different medialities/medial situations and scales of collaboration, contributing to the concept of pluriverse within the arts-based research and artistic research projects.

This chapter addresses the following four questions the authors find fundamental for practising artistic and arts-based research: *For whose benefit is artistic research initiated? Who is doing artistic research? With and by whom is artistic research conducted? Why is artistic research conducted?* Hence, social aspects of artistic research are explored in order to better understand the relationship between collaborative practices and research. The “social” in the scope of this chapter includes a wider group of agents including non-human contributors.

After an overview of the theory behind the key themes — artistic research, arts-based research and pluriverse — the authors proceed with an autoethnographic analysis of the above-mentioned questions through the prism of their personal experiences and specific case studies from their respective artistic research practices. Further application of these autoethnographies within the discussion of the pluriversal agenda results in an outline of a profile of a contemporary researcher and the social aspects of her research, both in and beyond institutional settings.

## 1. Introduction

This chapter addresses the multiplicity in academic voices, personalities, and personal histories of artist-researchers practising arts-based and artistic research in a cross-disciplinary context, and within the disciplines of art and design. The position of the contributing researchers is that of active practitioners within the aforementioned fields. All authors have a connection to the University of Lapland (Finland) and work with arts-based and artistic research in a variety of cultural contexts from those in the global north, such as Russia, Finnish Lapland, Lithuania, and Australia, to those in the global south — Namibia, Chile, and South Africa, to name a few. Their work involves collaborations between educational and art institutions, as well as multiple non-academic groups and creative individuals.

The aim of this chapter is to propose a profile of an artist-researcher within and beyond university context. The objectives of the discussion are the following: a) to define the key themes using a thematic literature review; b) to unfold the case studies brought by each contributing author through autoethnographic exploration; and c) to conduct a reflexive analysis of the researcher’s position within the institutional, non-institutional, post-artistic and social aspects of research.

The authors propose four questions to build on: *For whose benefit is artistic research initiated? Who is doing artistic research? With and by whom is artistic research conducted? Why is artistic research conducted?* While exploring possible answers to these questions the authors aim to respond to the pluriversal agenda that conceives “a world where many worlds fit”, an idea borrowed from the Zapatista of Chiapas (Escobar, 2017). Social aspects of artistic research are explored in order to better understand the relationship between

collaborative practices and research. The “social” in the scope of this chapter includes a wider group of agents and contributors, employing “more-than-human” (Noorani & Brigstocke, 2018) and “anthrodecentric” (Gaietto, 2019) approaches to the social worlds of artistic practice and research, thus pushing the normatives within reified structures of institutional/academic research.

The methodology of this study is based on autoethnographic analysis and collective reflection by the five authors within a pluriversal approach to research practice. This research is a tapestry of realities and/or truths attuned to the interconnected relations between the humans and non-humans, which contributes to a deeper knowledge of the researched area from the position of all agents. Further, the radical interdependence between the place/space and the audience/reader/viewer is brought forward. Research outcomes can communicate to broad audiences on multiple levels, whereby the audiences are encouraged to choose their roles in interacting with the text-based or visual research outputs. Within such practices the trajectory is that of decolonising knowledge through arts-based methods, “rejection of violent and unidirectional ways of knowledge production” (Lorenz, 2017), and embracing pluriversality within the audience experiences.

## 2. Thematic Reflection on Artistic Research, Arts-Based Research and Pluriverse

The key themes within this study — *artistic research*, *arts-based research*, and *pluriverse* — construct the framework and introduce the necessity for spotlighting pluriversal thinking, experiences, and personalities of researchers within and beyond institutional contexts. Themes, such as *diversity*, *plurality* and *pluriverse* (Table 1), all contribute to the framework of thinking beyond homogeneity and towards multiplicity (Escobar, 2021).

*Table 1. Diversity, plurality, pluralism, and pluriverse explained according to literature sources. Developed by the authors of this paper.*

Diversity	Plurality and pluralism	Pluriverse
Diversity means multiplicity of cultures and cultural relativism within one world, which corresponds to the term multiculturalism (Beachum, 2020)	Plurality and pluralism explain systems of beliefs, values and attitudes (Geir, 2006), which are often, but not exclusively, used in regards to religion.	Pluriverse, according to Mingolo (2018), allows many worlds and truths to co-exist on an equal level at the same time.

### 3. Arts-based research and artistic research

*Artistic research* can be described as research relying on art in its process of investigation (Jones, 2009). The ability of artistic research to develop new ways and methods to deal with the issues that are unknown, fuzzy, sensitive, fragile, radical, or otherwise unique is one of its core characteristics. Artistic research can become a vehicle, a methodology, a way for reaching for new information and creating new outcomes (Busch, 2009). Artistic research can bring forward new understandings about the art itself, artistic practice, intentions and philosophies. Artistic research is based on critical thinking and evaluation of meaning and contents (Henke et al, 2020). Being a critical investigative practice it can serve as a productive driver of change in shaping art, society, and reality (Rouhiainen, 2017).

*Arts-based research* implies a system of research methods with art and an aesthetic approach to data collection, analysis, and research dissemination at its core (Barone & Eisner, 2012). It is a qualitative research that has an exploratory approach and is used within and beyond the fields of art and design (Barone & Eisner, 2012). In arts-based research an aesthetic output, an artwork, helps to answer research questions. In contrast to artistic research, which mainly stems from the art academy perspective and that of artistic studio based education, arts-based research is broader in the sense of containing art and aesthetics at its core within a wide scope of art and design practices, and can be applied within other disciplines, such as sociology, anthropology, psychology and pedagogy (Rolling, 2010; Cahnmann-Taylor & Siegesmund, 2017; Gullion & Schaefer, 2018; MacDonald & Hunter, 2018).

In this chapter the two types of research are referred to side by side and sometimes interchangeably due to the multifaceted nature of the explored cases that both generate knowledge and understandings about artistic practices themselves and address wider issues relying on the artistic practices as a vehicle.

### 4. Pluriverse and pluriversal thinking

Escobar (2017) explains the *pluriverse* as multiplicities of practices and experiences of representatives of diverse communities and diverse back-

grounds, similarly to the study presented in this chapter. Within pluriversality all the worlds are interconnected and interrelated, for example, the way that indigenous worlds exist within the modern world (Escobar, 2021). Thus, the pluriverse is the interconnectedness of multiple ontologies, and the world where many worlds can fit, which is a different framework of thinking than that of inclusion or assimilation (Escobar, 2021). *Pluriversal thinking* is the way to decolonise knowledge by dismantling and reassembling the structures within the institutions of knowledge production. It is crucial to discuss artistic and arts-based research within the concept of pluriverse: both play a part in framing the institutional milieu in art academies and universities, and both are interdependent in developing possible scenarios of future education.

### 5. Methodology

The method used in this study is collective autoethnographic reflection. The authors use their experiences to reflect on the role of an artist-researcher and artistic research within and outside of the institution(s). Therefore, autoethnography as a method allows them to be representatives of the researched field and to reflect on it.

Within autoethnographic practice personal experiences of a researcher are infused with socio-politics and reflexivity of her research context where the self is a part of the researched area (Adams et al., 2017). According to Wall, the moving forces of autoethnographic inquiry are “the freedom of a researcher to speak as a player in a research project and to mingle his or her experience with the experience of those studied” (2006). Autoethnography can be viewed as action research for an individual (Wall, 2006), as well as a method built on narrative construction from the personal narrative of the researcher who represents the field of study (Ellis & Bochner, 2000). According to Muncey, autoethnography is “as personally and socially constructed as any form of research, but at least the author can say ‘I’ with authority and can respond immediately to any questions that arise from the story” (2005). Autoethnography in this study does not have a linear approach, but rather is a complex tapestry of experiences and narrations of several authors, therefore it has an open-endedness in the process (Wall, 2006).



The data were collected in the form of notes taken during the meetings between the authors that took place online periodically from June to October 2021, alongside autoethnographic notes of each author. The meetings were held for the sake of this research, which resulted firstly in a conference presentation in October 2021 (Akimenko et al, 2021), and secondly — in this chapter. This meant that the data were processed and analysed collaboratively, gradually and iteratively. The limitations of this study is that the data are bound to the four cases. The analysis of the autoethnographic data is approached through extracting individual narratives and situating them within a collective reflection on the four cases in question (see Table 2).

“Transcorporeal Writing” and “Techno-voyeurism into the Performing Body”, themed around technology within artistic production	Methodological framework relies on transcorporeality and inhuman connections within arts-based research.
BioARTech, Future Bio Arctic Design (F.BAD) and High-Altitude Bioprospecting (HAB), themed around interdisciplinarity connecting natural sciences, technology and textile design	Methodological framework connects arts-based research and bioart, uniting a human creator and a living medium — bacteria.
The exhibition “Have you met my sister”, themed around reflection on interpersonal relationships	Methodological framework unites community-based, narrative and arts-based research projects across national borders.
The artwork “Placemaking through Performance”, themed around the idea of placemaking	Methodological framework is artistic research into placemaking within a specific cultural landscape.

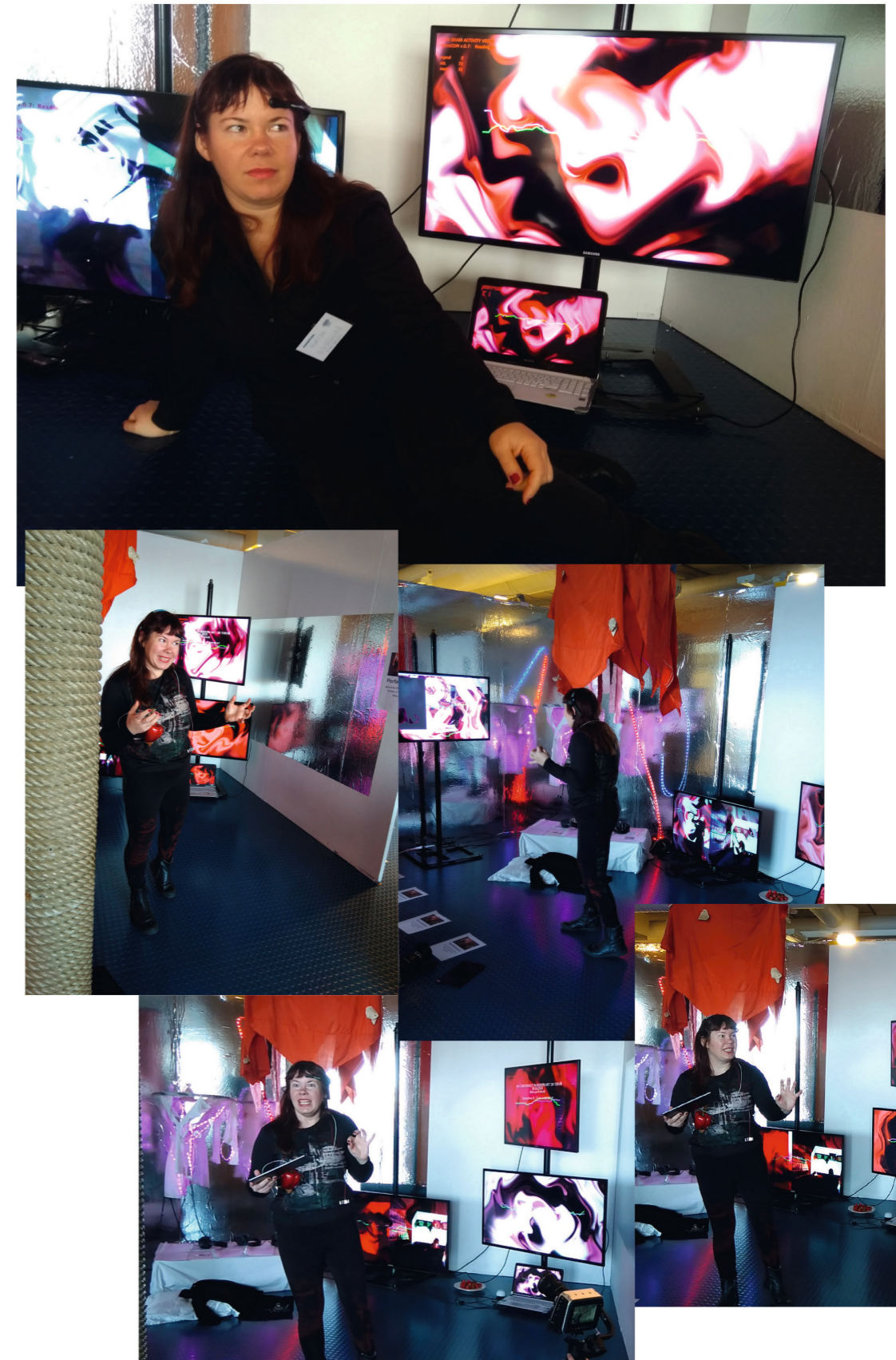
## 6. Autoethnographic Reflection: Multiplicity of Research Paths

i. For whose benefit is artistic research and arts-based research initiated?

“Transcorporeal Writing” and “Techno-voyeurism into the Performing Body” are recent arts-based research projects by Griniuk where she attempts, through the means of pilot-projects and peer-reviewed articles/reflections, to promote innovations within art academy and university milieus within the artistic process involving technology, in particular AI and technology remediating biometric data. Within these projects the newest technology is added as a possibility for enhancing creativity within writing or documentation practices.

Table 2. The four cases within the project. Developed by the authors of this paper.

Figure 1. Collage. The research PhD project “Techno-voyeurism into the Performing Body” presented at Supermarket Art Fair, Stockholm, 2021. Photos: Mosich, T.B.





In the project “Transcorporeal Writing” a method of creativity training within academic writing is developed. It involves a creativity loop containing an input by a human writer and an output by OpenAI’s GPT-3, which triggers creativity flow within the human and thus resolves the creativity block (Griniuk & Mosich, 2021). Such approach is different from some currently practised methods, for example, Creative Platform or Pomodoro sessions (Byrge, 2020; Griniuk & Mosich, 2021), as it requires neither work in a group nor facilitation. Creativity training in this case involves only a human and an AI, with a possibility of using the method in multiple creative spots of the writer, be it a garden, a camping site or a studio, with access to a computer and internet. Such innovation can significantly benefit the ways creativity is perceived within academic writing, and creative writing generally.

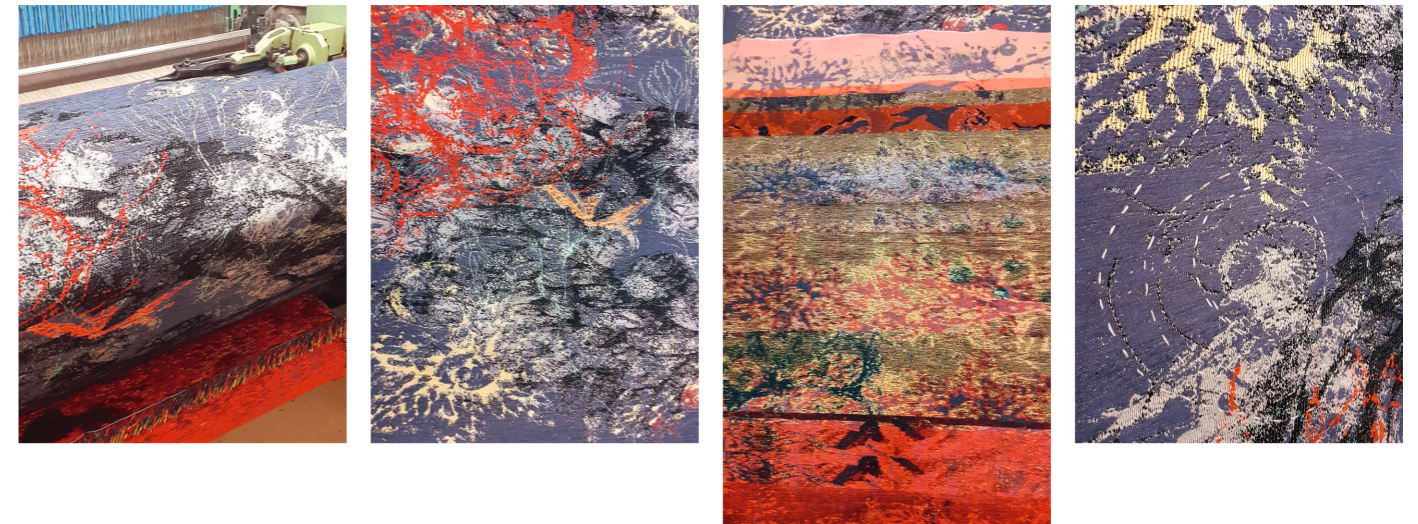
In the research project “Techno-voyeurism into the Performing Body” (Griniuk, 2020; 2021) biometric data, namely, the brain activity of the performer, are read by an EEG device to add an additional layer of performance documentation to the commonly used documentation by video and sound recordings (Figure 1). Such innovation of performance documentation can reveal the inner states of cognitive load or relaxation by the artist during her performance.

The pilot projects and scientific outcomes have a potential to contribute to the change of the current normatives within art academies and universities on creativity and performance art documentation. Pluriversal thinking translates here into an expansion of ways of collaborating with technology, as radical interconnections between humans and non-humans within research practices.

ii. *Who is doing artistic research?*

BioARTech, Future Bio Arctic Design (F.BAD) and High-Altitude Bioprospecting (HAB) are innovative combinations of natural sciences, technology and textile design of the Arctic Finnish Lapland area. They allow for participation in multidisciplinary working groups that include a variety of expertises from biochemists to artists, including Pietarinen, one of this chapter’s authors. All of these projects combine bioart, which can encompass activities from creating smart, natural, and non-toxic textile materials

*Figure 2. A jacquard woven “Kangas” (2021) fabric is designed by Heidi Pietarinen, Noora Sandgren, Anne Yuncha and Melissa Grant. Woven by Annala Weaving Mill, Finland. Photo Noora Sandgren 2021.*



by using Arctic raw materials to investigating the invisible microbial life in the air or in the vegetation. The microbial life can be viewed either as a co-existing benign presence or as a potential threat, the latter exemplified by the Coronavirus pandemic. The working groups share interests in (textile) art, environment and bioart, the study of living organisms that are too small to be visible. For example, the Finnish idea of “kangas” – a word that translates as both “fabric” and “forest type” – describes the intricate meshing of species, human, non-human, aerial, and terrestrial (Future Bio Arctic Design 2022; High Altitude Bioprospecting 2022; Grant et al 2021; Grant et al 2019.).

After collecting and identifying the microbial “collaborators” in an expedition to Kilpisjärvi (Northern Finnish Lapland), jacquard weaving technique created layers and stitched together images from drawings, photographs and microscopic slides and attempted to get to know these other-than-human materials (Figure 2). The artists ponder: What are the abilities of these microbes? What are the bridges between us (humans and microbes)? This ongoing process of understanding involves several layers of fabric and translations, such as moving from two-dimensional hand drawn sketches (analogue), through digital design, and to the physical implementation of jacquard woven fabric.



Bioart is a pluralistic practice bringing the artist-researcher to consider her/his ethical standing. This means that designing is not only about producing an object, a jacquard woven fabric in this case. From the very beginning the process showed the relationship between human experience and a living design medium — the bacteria — that has its own agency. In line with contemporary trends in bioart, it offers the possibilities of shared experiences, collaborative practices, cooperation and shared authorship. Both HAB and F.BAD working group approach life and living beings both as a medium and as subject matter (for example, in designing the perceptions of symmetrical and mirror repeated patterns) involving them in the creation of artistic acceptance for these bioartech developments and processes.

iii. *With and by whom is artistic research conducted?*

The exhibition “Have you met my sister” (Sarantou, 2019) took place at Port Pirie Regional Art Gallery in South Australia and displayed works of seven women from Australia, Finland, Russia and Namibia, among whom two of this chapter’s authors, Sarantou and Akimenko.

The artworks were created specifically for the exhibition with certain topics in mind. Exhibition making in this case served for “setting up frameworks for experimentation” (Krysa, 2017) which enabled the artists to both experiment with their making and to reflect on interpersonal relationships, such as family ties, friendships, intergenerational mother-daughter succession and knowledge transfer, and sisterhood between women.

The artists met in person over the years on several occasions. Continuing relationships emerged around community-based and arts-based research projects across national borders with a focus on peripheral communities, those defined by conditions of migration, social and geographical isolation (Miettinen et al., 2016; Akimenko et al., 2017).

Identities that constitute the notion of fluid family ties were explored through applied techniques, such as textiles, collages and projected images (Figure 3). The layers of meanings often connected to textile art express the identities connected to intimate spaces, including bodies and homes (Pöllänen & Ruotsalainen, 2017). The exhibition works evolved into dialogues and shared processes amongst the artists. As a result, it expressed the processing of the artists’ memories of the past, hopes for the future and the current dynamics that continue to nurture their relationships.

Figure 3. Collage of artworks by Sherrie Jones, Sanna Sillgren, Vera Tessmer, and Laura Pokela displayed at the exhibition “Have you met my sister”. Photos: Melanie Sarantou.



There can be, of course, multiple answers to the question: *With and by whom is artistic research conducted?* This case study offers a gaze into a place of artistic research and practice where “with” and “by” nearly merge. The research data — the artworks themselves, the documented processes of making and the ongoing conversations — are being generated and collected in a completely horizontal group setting where the artist-researcher herself acts as a research participant and vice versa (Miettinen et al., 2016; Akimenko et al., 2017). Every inner component (memories, beliefs, identity work) and outer input (shared art-making, interaction with the others, the surroundings) is taken into account. Everyone and everything is an agent, as places too become contributors to the research process due to significant place-bound identity work carried out by the researcher-participants and translated both in artwork and in narratives (Akimenko, 2018). Such setting, together with a very patient timeline of long term relationship work between researchers and research-participants, enables a pluriversal approach to the research process.

iv. *Why is artistic research conducted?*

In a recent artistic research work titled “Placemaking through Performance” by one of this chapter’s authors, Miettinen, the key topic is the idea of placemaking (Miettinen, 2021). The meaning of placemaking is connected to the tradition of cultural geography (Lew, 2017) and is associated with the sense of place (Othman et al., 2013). Different cultural groups can imprint values, perceptions, memories, and traditions on a landscape and give meaning to a geographic space (Rose-Redwood & Alderman, 2011). Artistic research can help in proposing new means of placemaking for people who are newcomers to a place and its cultural context. For example,



artistic practices have been used as means of placemaking in the context of recovery from catastrophic events (Puleo, 2014). People choose to move more and more or find themselves displaced for different reasons and often have no means to access mouth-to-mouth or traditional knowledge linked to the sense of place. The artistic research process in “Placemaking through Performance” (Figure 4, 5 & 6) was carried out utilising photography, video and performance as means to develop, test and iterate both artistic new ways and meanings for placemaking, as well as to create artistic performances in natural environments. In this case both reasons “why” are equally important. Both motivations — that to offer tools for shared good and that of developing further individual and collective artistic practices — bare significant value to the process of artistic research.



*Figure 4. Placemaking with a drone camera in Vuontisjärvi. Photo: Satu Miettinen.*



*Figure 5. Placemaking through Performance at Vänö island. Photo: Satu Miettinen.*

Further, the elements of playfulness, intuition and improvisation that are present in the act of performance and placemaking (Glover & Sharpe, 2020) create new affordances for performing in a natural environment. Affordances are the opportunities that objects, processes or environments can offer for users or generally for people. It is a possibility for an action with the object. In placemaking performances the environment itself offers affordances on how to use natural elements in the landscape for performance or how to pick up some objects and use them as elements in the performance. The opportunity for affordances could be one of the key motivations to conduct artistic research. It employs one’s creativity, sense of discovery and exploration when doing research.





*Figure 6. Placemaking through Performance on the banks of the Kemijoki (Kemi River). Photo: Satu Miettinen.*

Arts-based research enters the academic field within universities by including an artistic and aesthetic approach to the process of data gathering and presentation within development of the academic research with the aim to produce more plural ways of knowing (Barone & Eisner, 2012; Leavy, 2017). Where, conversely, artistic research can be explained as academic research entering the art academy milieu. Both contribute to the shifts in the reified structures and norms of how research and art are conducted and perceived, where research contributes to the new knowledge production and art – to the aesthetic outcome of this process. Artistic research is seen as being junior to “more academic” research and its emancipation from the university regime is proposed (Henke et al., 2020, p. 5). These could be the arguments in favour of a more pluriversal outlook or agenda in artistic research. In artistic research there are opportunities for new viewpoints such as the opportunity for affordances that can create open-ended outcomes rather than focused end results many times described in rigid and detailed research plans. Could artistic research agenda challenge academic research convention with its open-endedness?

## 7. Findings

The case studies in the fields of arts-based and artistic research presented in this chapter respond to both a set of key research questions and the current pluriversal agenda brought forward in academia and beyond. Based on the autoethnographic analysis of these case studies, the authors offer as findings a series of criteria, or considerations, ranging from practical to ethical ones. This set of findings constructs an outline of a researcher’s position, her code of conduct, in the institutional, non-institutional, and social contexts of research.

1. *Collaboration.* Collaborative aspect is present within the practices of arts-based and artistic research, be it collaboration with technology, nature, humans or non-humans. For instance, in the reviewed bioart case studies combining natural sciences, technology and textile design, the experience of the researcher interconnects with a living medium, and within this collaboration the agency of the researcher is in connection with the medium’s own agency. Similar agency syntony takes place when a researcher collaborates with AI and utilises biometric technology.
2. *Authorship in collaboration with non-humans.* Over the years, and in the scope of decolonising practices, the issue of authorship has been widely present in artistic research. It is rather obvious that collaborative practices result in shared authorship, but new forms of collaboration raise a new question: how to define the authorship where humans and non-humans are involved? This is a current research gap that Pietarinen discusses in her case study.
3. *Value for art academies and universities.* Arts-based and artistic research are valuable for the art academies and universities, as apart from being able to discover the new aspects within art and design itself, they can be drivers of social innovation, activist action, and cross-disciplinarity, with the aim of destabilising current, generally accepted, institutional knowledge. These methodologies utilised by individuals can move the institutions towards a change and pluriversal thinking, because innovation in the fields of art and design, are first of all started by individuals both within and outside of institutions.



4. *Skillset of the researcher.* Arts-based and artistic research practices involving technology, require redefining the artist's and researcher's skills. For example an artist might need to refine her skills as an interactor with AI and as an editor, alongside creative producer skills. Another example is that of collaborative research settings with groups, especially those in vulnerable contexts, where the artists-researchers approach their participants with extra care and empathy and often have to acquire skills from the fields of psychology and mediation.
5. *Pluriversal approach to audiences.* Researchers, readers, and audience members have different backgrounds. Therefore, awareness of providing a possibility/place/space to participate and perform, as an audience, at different scales/levels is crucial. The collaboration and co-participation builds upon the value of each contribution.
6. *Affordances.* Artistic research, as the opportunity for affordances, through art, containing playfulness, intuition and improvisation, can contribute to the concept of placemaking, which is crucial for example for border-crossing people, who are newcomers to different locations and cultures. This is evidenced in the case study by Miettinen.

All these findings contribute to the interconnected approach to arts-based research, artistic research and pluriverse from the following angles: i) artistic and research processes are embodied in the multiplicities of ways of collaboration between humans and non-humans, which contributes to the rethinking of the normative borders in individual and institutional contexts; ii) artistic and research outcomes are designed to have a wide range of impact on the involved institutions, communities and audiences. Pluriverse here implies a multiplicity of holistic “worlds” and truths co-existing on an equal level. In this way a pluriversal agenda within arts-based and artistic research contributes to envisioning a future of art education at the universities and art academies.

## 8. Conclusion

In this chapter the five authors created a common ground for exploring collaborative approaches to artistic research within and outside of institutional academic settings. In doing so they aimed to view artistic and arts-based

research through the prism of pluriversal agenda. They identified four questions related to research practice to guide their inquiry. Social aspects of artistic research were at the core of the discussion and were regarded from a variety of perspectives including the non-human viewpoints.

As a result of autoethnographic analysis of relevant case studies from their respective research practices the artist-researchers formulated a series of ethical, theoretical and practical considerations proposed as an indicative code of conduct for a contemporary researcher engaged in pluriversal artistic and arts-based research practices. The application of the outcomes of this research is manifold: acknowledging the value of pluriversal approach to the institutional arts-based and artistic research; contributing to the development of the university pedagogies towards constructing multiplicity of alternative futures of education; innovation within the framework of authorship and authorial rights; and dismantling the hierarchies within artistic research. This study can impact on the understanding of the contexts and conditions arts-based and artistic research are conducted in, as well as the means, agents and contributors involved. Further, this study may benefit regional aspects of decolonisation of knowledge within and beyond the university pedagogy contexts.

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# Empathy in Digital Participatory Artworks

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## 1. Introduction

In a digital era, particularly with the new emphasis on digital communications due to COVID-19, we need to enhance our creativity, confidence and resilience to handle unexpected situations. We will focus on practices in creative participation and how to utilise digital channels to communicate and increase empathy and creativity in real time in different participatory contexts, such as art project performance, art symposia and art events. One part of our study arose from the human–nature dialogue and how this exercise was conducted using online participation. We present digital empathy from the position of an artists’ ability to connect and share experiences and feelings with the audience or co-participating artists through technology used during art events. The *Power of Nature* (PoN) study case shows that researchers will meet nature as an equal participant, as posthumanism or transhumanism describes it (Valera, 2014).

*Table 1.1. Definitions of empathy used in this study, developed by the authors of this study based on the previous research (Friesem, 2016a; Kim, 2015; Lithoxidou et al., 2017).*

<i>Term</i>	<i>Explanation</i>
Digital empathy (Friesem, 2016a)	Empathy between humans immersed in digital and media activities.
Kinaesthetic empathy (Kim, 2015)	Empathy is based on encounters with aesthetic objects or experiences and one’s feelings relating to them.
Empathy towards nature (Lithoxidou et al., 2017)	Empathy in which humans put nature needs above their personal interests to promote environmentally friendly values.

This study extends the long-term arts-based action research of Finnish artist researcher Katja Juhola and Lithuanian artist researcher Marija Griniuk. The third author is an art educator and artist researcher Romanian Smaranda Moldovan, who participated as an artist of Juhola's long-term research in the International Socially Engaged Art Symposium (ISEAS) and the *PoN* workshop. People will have to change their consumption habits. We see digitalisation as an opportunity to form a new community activity that includes nature as a participant. Our study presents cross-border and arts-based action research into communicating empathy and compassion through digital connections in participatory art. We explore the patterns of challenges and possibilities in digital communication in art. Artists' responses can play a meaningful role in enhancing and communicating empathy in digital connections involving humans and non-humans. In the artwork, these responses interconnect towards the emotionally safe and welcoming common space of creativity, despite the difference in the backgrounds of the involved participants and facilitators. Thus, art can be used to develop empathy because it is based on the kinship of the common functions of both practices: response, emotion and connection (Peloquin, 1996). According to Trott's (2017) definition, radical innovation is based on introducing new technology to service production. We see using digital channels in art practice or curating as filling these criteria. However, according to Sarantou (2020), challenges tend to inundate processes. Sarantou argued that overcoming challenges requires innovative strategies supported by empathetic art-based approaches (2020). This provides new opportunities for re-examining and adapting the most effective ways to expand artistic practices.

We present two case studies: socially engaged art and performance art. We used the arts-based action research (ABAR) method to develop two different kinds of research. In both studies, digitality embraces empathy. The first case study is the August 2020 *International Socially Engaged Art Symposium* (ISEAS), which featured international online participation for the first time. ISEAS shows how arts-based methods can create empathic attitudes towards nature. The second case study presents the performance *Territory* by Giniuk, realised in 2018. Here, performance art meets digital channels to communicate empathy and interconnectedness between the artist and the audience using visual or audio outcomes in real time during the performance.

We ponder what factors could strengthen the conditions for success in digital participation and provide recommendations on how to make it more motivating and successful using empathy as a key tool. Arts-based research (ABR) (Barone & Eisner, 2012; Leavy, 2017, 2018; McNiff, 1998; Rolling, 2013) uses art as a tool to access research results. Art can be used to illuminate things that might otherwise be hidden or difficult to express verbally. ABR is inherent in the researchers' interests and methods of art. ABR can be used through conversational art (Bhabha et al., 1998; Kantonen, 2005, 2010; Kester, 2004). Juhola's research focuses on developing an intensive art symposium (ISEAS) (see Table 1.3). Griniuk steps into the context of technology-based participation in real time during a performance from the perspective of a performance artist. Embodied experience is at the core of her study as bodily sensations happen in the action space. Griniuk's research focuses on developing methods through which these moments of bodily involvement and creative enlightenment can be transferred to digital sociomateriality during an art event in real time. Both cases share performative and participatory acts of art.

We aim to jointly find new digital methods and recommendations to enhance motivation within participation based on developing empathic ways in the field of socially engaged art (SEA) and performance art. Our research question arises from the current global social and artistic context and proforce technology-based innovations: how can digitality be applied to art workshops and artistic fieldwork? We also examine how arts-based methods could be used in the wider field of organisations, where art could be used as a method to develop empathic actions towards nature.

## 2. How Empathy can be used to develop a Participatory Artwork

Digital empathy comprises five types of empathy (Friesem, 2016b). These five different types of empathy layered our structural stages of constructing a digital-art event. Kester (2004) argued that empathic vision is an essential part of dialogical aesthetics in participatory art. He suggested that empathy is a necessary basis for communicating and understanding race, sexuality or ethnic origin, which is essential in cross-border and cross-cultural art events. Empathy towards nature (see Table 1.1 ) is the ability to consider 'Others'– non-humans, and thus, 'ecocentric orientation' was developed (Lithoxoidou et al., 2017). As posthumanism sees all living beings

on an equal footing, the ‘ecocentric orientation’ makes people’s needs less important to secure other living beings.

Thompson (2012) claimed that SEA had revealed numerous tensions over the past 40 years, primarily by shaking the foundations of art discourse and sharing techniques and ideas in fields far from the forms of classically perceived art. In the 1990s, Lacy (2010) highlighted the struggle between the SEA and more traditional art. Lacy argued that participatory art is a competitive option where artists connect with a wide and diverse audience, and each group contributes to the discussion. Lacy’s art pattern is based on the relative aesthetic (Bourriaud et al., 2002) and the dialogical aesthetic (Kester, 2004).

Performance art focuses on participatory practices centred on the artist’s role as a facilitator. Schechner (1977) claimed that performance is artistic action, consistent with a ritual, where transformation happens in a liminal space. Participatory performance is discussed by Bishop (2004) as artwork in which the audience can become a collaborator and transgresses the threshold of spectatorship. In this study, we used ‘participatory performance’ and ‘art’ to describe artworks containing participation and interconnectedness between all involved in real-time action, including nature. Kinaesthetic empathy (Kim, 2015) as empathy-in-movement is applied in performance artwork. Miettinen et al. (2016) stated that the storytelling narrative function is a crucial tool that facilitates empathic processes, primarily in service design.

McKenzie (2001) argued that a liminoid space is a meeting between technology and performance. Liminoid space includes cultural, organisational and technological performances, which are digitally remediated and united in the performative space (McKenzie, 2001). Trott (2017) introduced technology-based innovation, which can be applied to techno-performance (McKenzie, 2001), focusing on the cyber-spatiality of bodies immersed in interactions by technological means. This technology allows the performer or artist facilitator or a curator-facilitator and participants to experience bodily sensation in playing the performative action, which happens in this liminoid space. Hoby and Lowgren (2011) showed that connectedness and empathy within the digital performance space have three key points: the performer strategy, the social play in the performance space and the

narrative built in the interactions (Hoby & Lowgren, 2011). According to Salen and Zimmerman (2004), sounds and images impact the motivation to participate in social play, which is determined by a safe and non-judging environment that allows empathic connections between the facilitator and participants. Both of our cases show narrative playfulness that has been created using empathy to create a truthful atmosphere for creating something new.

### 3. Methodology

ABAR was developed at the University of Lapland (Hiltunen, 2008; Jokela, 2019). ABAR comprises research cycles due to its action research approach (Arslan-Ari et al., 2020). Each cycle operates independently and evolves based on the evaluation and results of previous cycles. The research question also evolves as research progresses. ABAR learns during each cycle, and its research questions can be reformulated. Each cycle of ABAR involves the design, artistic implementation, reflection, analysis, publication of research results and setting new goals (see Table 1.2).

*Table 1.2 ABAR. Common steps for the researchers Griniuk and Juhola, developed by the authors of this study.*

Step 1.	Step 2.	Step 3.	Step 4.	Step 5.
Defining the goals for the research cycle.	Planning the artistic event to test and gather the data.	Realising the artistic event and gathering data.	Analysing the collected data and extracting the results..	Defining the goals for the new cycle.

This study is based on a loose collaboration between two separately developing ABAR processes (see Table 1.3). One of them is to develop art–science symposia as socially engaged art by artist-researcher Juhola; the other ABAR process involves Griniuk’s performance art research based on various digital devices whose importance is to contact the public.

*PoN* research data were collected while participating in ISEAS 2020. ISEAS includes photographers and videographers, facilitated conversations every day, art in action, and reflections collected afterwards from the participants to be analysed from the perspective of digital participation and emphatic action towards nature. The data also include participants’ written reflections, collected via email by Juhola, Juhola’s recorded conversations and research diary. Juhola also participated in one of the third *PoN* experiences during ISEAS. Moldovan’s research was conducted using autoethnograph-

Griniuk's ABAR cycles	Description of the cycles	Juhola's ABAR cycles	Description of the cycles
1. Pre-study 2015–2019 Cycle 2019–2021	Defining the framework of the study, test performances and presentations using electroencephalogram (EEG) (Griniuk, M., 2021d, in print). Exhibition at the gallery Kilo (Rovaniemi, Finland) was followed by an article based on reflexive research as a strategy (Griniuk, 2020).	1. Pre-study and cycle 2013–2016	Participating in eight international symposia. Organizing the first art symposium in Finland 2014. Organizing the first ISEAS 2017. One article was written about these experiences (Juhola & Moldovan, 2020).
2. Cycle 2020	EEG and DIY electronic instruments on the body as the tools for connecting with the audiences during live events (Griniuk, 2021b).	2. Cycle 2017 and 3. Cycle 2018	ISEAS 2017 had a case study in nine locations (Juhola et al., 2018). The 2018 ISEAS with performance art focused on collective methods of improvisation (Juhola (ed), 2020).
3. Cycle 2020–2021	The role of the artist as a teacher. EEG as a monitoring tool. Performance pedagogy project The Nomadic Radical Academy (Griniuk, M., 2021a; Griniuk, M., 2021c, in print).	4. Cycle 2019	ISEAS in Nature 2019 resulted in five articles, themed around reconnecting to nature, ethics of gathering, creativity within knowledge engagement and circular economy (Juhola, 2019; Raatikainen et al., 2020; Juhola et al., 2020; Huhmarniemi & Juhola, forthcoming; Juhola, 2021).
4. Cycle 2021	Collaborative performance. EEG as the tool for communication and documentation during the performance (Griniuk, M.; Mosich, T., B., 2021, in print).	5. Cycle	In August 2020 and January 2021, ISEAS in Western Lapland resulted in data gathering to develop arts-based methods for environmental conflict mediation.

*Table 1.3. ABAR cycles in the research by Griniuk and Juhola, developed by the authors of this paper.*

ic methods; while participating online in ISEAS 2020 and 2021 ISEAS she attended physically and gathered data through her experience, which was analysed and further developed in the visual arts and presented in the Korundi art museum. Griniuk's data were collected as video and photography, alongside the artist's notes from 2018 during the performance art event.

#### 4. ISEAS Power of Nature

ISEAS 2020 was held in August 2020 in Äkäslompola, Western Lapland, Finland, and focused on developing conversational art in meditating con-

flicts arising from using natural resources. ISEAS's goal was to design, experiment and evaluate artistic, interdisciplinary, community-based and artist-driven approaches. ISEAS is based on multi-level conversations. All research data were collected and analysed with written permission.

The team *PoN* workshop focused on strengthening people's relationships with nature. Empathy towards nature was an essential tool. The work began with online meetings in early 2020. The team included Finnish artist Maria Huhmarniemi, English shamanism researcher Francis Joy, Romanian artist Smaranda Sabina-Moldovan and Chilean dancer-choreographer Hugo Peña. The planning was curated, guided and facilitated by Juhola during the online meetings on Messenger. Due to COVID-19, Moldovan participated in the 2020 symposium online.

The goal of the *PoN* team in ISEAS 2020 was to enhance connectedness towards nature and expand dialogue and a sense of community between humans and non-human nature and nature spirits. This project focused on sharing spiritual knowledge and practices that would help participants enhance, communicate and strengthen links between people and nature by Joy's (2018) understanding of how nature has a hidden spiritual side. Arts-based methods were created by Moldovan together with her team. Workshops started by Joy explain how to communicate with trees and continue by Peña inviting participants to dance with nature. These artworks are related to affective learning in the contemporary art field (Snellman, 2018). The team decided to use the same practices in Romania and Lapland and to share their experiences via online video meetings. Moldovan explains her experience in the feedback on ISEAS:

*I began my experiment by searching for trees with interesting shapes in their crowns. The crowns initially had a decisive impact on my choice of tree for my first experience. After that, I was getting closer and closer to the triangular 'tree gate'. I felt warmth and a feeling of levitation, although I knew that my feet remained on the ground. My hands, positioned in front of my body, perceived a new, trustworthy atmosphere. As I came out from under the crown, its influence diminished, and slowly, the ordinary air of the place was reinstated.*



*Later, I had discussions in a video meeting with the team and participants from the workshop. Meanwhile, I discovered that my experience of the white willows near the water could be linked to the feminine presence and white elements that help to treat depression. An online dialogue with the participants started from the story of this experience. I started mirroring the shared images using visual metaphors. The identification created a bond between the participants. I used happiness and optimism in communication. Creating a joyful environment in a virtual space was necessary for everyone to avoid fearing the pandemic spread globally.*

(Moldovan, August 2020)

A participant in the Lapland workshop described their feelings as follows:

*I approached the tree carefully, walking around and feeling the plough. Then, I introduced myself to the tree. The tree was an old pine tree with several small pine benches underneath. I hugged a tree and asked the tree if he could advise me on next weekend's 'Vision quest' in Rautavaara. The tree replied that he would communicate to the trees that would help me there. He himself cannot help me in any other way. I felt a tree stroking my hair. In the second session, we had to feel the wood and go around the wood still feeling. We had to wrap around the tree. I felt like it was a sexual dance with a tree.*

(Anonymous participant, August 2020)

After the symposium, all ISEAS artists were asked for feedback on Moldovan's online participation. The feedback strongly highlighted empathy for Moldovan and admiration for her positive attitude. The artists had experienced participation in the symposium as a self-reinforcing experience, and they found it very unfair that Moldovan could not participate physically. However, all ISEAS residents stated that Moldovan was present among them; although they had not physically met her, they felt that she was already their friend and part of a very personal reinforcing experience, as explained in the two quotes:

*Many times, I wondered what it would feel like to be there myself, participating online. However, she [Moldovan] always looked brisk and good-natured, although I might have been sad and felt like a true outsider if I had stayed home and hung out from there.*

(Anonymous participant, October 2020)

*Smara's online participation was also a reminder of the real world in the symposium's universe; there is a world in the background that is now controlled by a coronavirus. Yet it also reminded us how important it is for humans to be social, near others and participate online, at least, so that we can all be together somehow. I see us, and that is what ISEAS represents to me – being together as people.*

(Anonymous participant, October 2020)

This experience enhanced our creativity, confidence and resilience in approaching unexpected situations. Our biggest challenges were technical issues (i.e., stable internet connection, telephone signal). The ISEAS 2020 allowed us to experiment with digital tools and observe how empathy between artists was present in digital communication in art. The empathic response of all artists to the ABR methods (storytelling, dialogical art, sharing images and videos) played a meaningful role in finding a way to enhance and communicate empathy in digital connections.

## 5. Digital Performance

The performance *Territory* at the festival Terytoria in Torun in Poland in 2018 explored communal territory and sensual, mental space. By remediating interhuman connections through technology, the performance integrated innovative performance practices from the perspective of the foreign artist participant, who interacted with the audience of the international performance art event. This enabled the artist to connect with the audience despite language barriers or feelings of unfamiliarity with the artist's culture of participation.

Performance is built on the concept of interhuman embodied interactions (Dourish, 2001). It is inviting, motivating and playfully focused on connecting with the audience and inviting it into active cocreation of the artwork, even in events and environments unfamiliar to the artist. Developing an encouraging, motivating and empathic space of interaction and participation is at the core of participatory performance. Including digital and electronic channels to make the moments of interconnection visible or sonified in real time can reduce doubt within participants' decision-making on whether to join the performance (Hobye & Lowgren, 2011). Active-



ly and non-verbally engaging the participants in performative action can make artworks completely accessible to international audiences, thereby bypassing the obstacles to equal participation commonly posed by linguistic or cultural barriers.

The performance created an empathic connection with the participants and highlighted how every decision they made could affect performance. Griniuk utilised digital channels and wearable devices connected to physical actions and movements to remediate empathic connections with her audience (see Figure 1). These costumes include sound, multi-coloured lights and other electronic devices mounted on the performer's body.

*Territory* explores the remediation of interhuman connectedness by incorporating DIY technology into the aesthetic outcome based on image and sound. The performance was realised as a solo performance facilitated by one performer. It comprised vocal and movement-based sequences, accompanied by sound based on the distances between the performer, surfaces, objects and audience members. Griniuk presented the performance in which she attached electronic devices to her body, mounted with motion and distance sensors, which responded to the distances between the performer's body and the viewers using sequences of light and sound. Additionally, the viewers could play a tune on the performer's body using an electronic device that sent a weak electric charge throughout the body of the performer and the body of the interacting audience member. The performance created a dialogical space where communication took place by electronic means and where the public influenced the course of the performance. Griniuk also appeared to be vulnerable, where trust and empathy for dialogue matter (Figure 1). The performance was designed to highlight the prevailing networks in society that are also controlled by electronic means.

## 6. Recommendations for Digital Participation in International Contemporary Art

Technology has entered and occupied a huge part of our creative and communicative processes. We proved that empathy relates to the artistic area, as the intentionality, stratification and concretisation of the creator's intentions relate to the viewer's or participant's reaction at an intimate, sub-



Figure 1. *Territory* by Marija Griniuk, 2018. Video still. Credit: Centre of Contemporary Art, Toruń, Poland. Editing: Marija Griniuk.



jective level (Peloquin, 1996). Our findings showed that empathetic human connections can be formed using current technology.

Digital empathy is a new concept designed to emphasise social, emotional and cognitive practices as part of digital and media literacy. It is classified into five different stages: empathic concern, cognitive empathy, projective empathy, affective empathy, psychological empathy and aesthetic empathy (Friesem, 2016b). Our two case studies revealed similar structures between empathy phenomena in works of art that arise from empathic pre-planning, encounters with another artist during artwork and reflection on works. Our analysis shows that there are benefits to using digital tools in art activities. We suggested that third-sector organisations could leverage the kinship between art and empathy to create functional new ways of working digitally based on the following findings.

First, an online art experience can never replace a face-to-face one. However, we found that there are certain prerequisites for the successful involvement of participants through virtual channels:

1. Understanding the reasons and contexts of all the participants involved is core. This impacts the desire for successful outcomes of online meetings. Participants' attitudes and motivation for active participation are among the most important prerequisites.
2. When we cannot use senses other than seeing and hearing, an empathic way of working is required. Sharing one's background and situation helps to create an empathic approach: the willingness to communicate and share experiences is crucial to this. Cognitive empathy and affective empathy are part of the process and should be fully developed.
3. Visual images and conversations can increase the imaginative, empathic spectrum of connections among group members. Activating both video and sound connections in virtual events is important.
4. Optimism is part of the empathic concern and is a great tool for creating a safe environment.

Second, regarding the pandemic and climate crisis demands, we find new ways to continue sustainable international artistic work. One way to develop online participation could be structured group work in which partici-

pants would not be alone but would work together in small groups in the same location and interact with other groups in other locations.

1. *PoN* showed how art could develop and enhance an empathic and loving relationship towards nature from the perspective of pluriversal experience in a participatory project.
2. We find this action of empathy topical, as we live in a period in which human actions have caused widespread problems worldwide.
3. Third, motivation to be actively involved in participatory artistic action is enhanced through utilising digital channels to remediate the embodied interaction in sound-or image-based artwork cocreated with audience members or participants. This impacts the feeling of togetherness and projective empathic connections among all in the performative space.

Last, during participatory art events, when the interconnections between the artist and participants are remediated into the artistic outcome in real-time, bodily or online, the artist or curator should aim to focus the attention first on developing emotional empathy among the group, and second on playfulness in interhuman connectedness. When discussing the importance of digital channels for communication – whether from online participation in an art symposium or a live performance event – connections between people are invisible but are more reliant on emotional and empathetic aspects. When the senses are in focus, there is a shift towards valuing moments of real contact. According to discussions in research and development towards process innovations (Trott, 2017), culture and context in organisations directly influence the implementation of novel processes, led by face-to-face interactions between individuals. In other words, innovation happens between people, not between organisations as institutions. Therefore, moments of real contact drive the innovation processes in art, and for these moments to be frequent and beneficial, participation must be designed as a positive experience. This was especially evident in the *PoN* workshops that occurred in Lapland Forests, where poor internet connections limited Moldovan's participation. However, participant feedback supports our claim to use empathy to increase connection with nature. It also confirms that while digital participation is possible, it requires empathy, tools and forward planning to be successful. It is explained in the two following extracts:

*My own experience with the workshop was that it was very revitalising and liberating. I received good advice from Francis' contribution both to strengthening my own nature connection and to guiding the client in finding their own nature connection. I found Hugo's dance rehearsals very invigorating. They took root for a moment, focused on the body and nurtured creativity. I would have liked Hugo's part to continue for longer. For me, Smaranda's role remains unclear, or I just do not remember it anymore.*

(Anonymous participant, July 2021)

*I remember that the workshop created an 'agreed' space for the group to spend time in the forest, rush free. The simple, clear instructions helped me to focus and be present, without thinking I had to do anything anywhere else. The exercise gave me the chance and the space to open up and connect to my experience, sensations, emotions and thoughts in a natural environment, which I found very beneficial regarding relaxation and gaining clarity. The workshop also made the group, I believe, come together by connecting with a common set of values.*

(Anonymous participant, July 2021)

The core goal of digital participation is to create a feeling of a united space and togetherness in the same process. Kester (2004) argued that the dialogical aesthetic is conversational art. The conversation can vary from a digital performance with an audience to non-verbal connections with trees. Lacy (2010) stated that performance also provides a sense of immediacy, feedback, boundary-blurring and direct communication from the empathic action between audience and performer. Schwarz (2002) highlighted the value of the non-judging environment for quality participant involvement. Therefore, motivation for active participation can be designed around clarity in communication and a safe, empathic and non-judging place.

When involving technology, the core issues are that the technology should be functioning (Trott, 2017) and that all should know how to interact using it. Salen and Zimmerman (2004) argued that interactive and playful activities are essential in adapting to a digital space. It is important not to lose optimism due to the complexity of actions or technological errors. When technology meets art, it needs to be contextualised. Fluency is required in the instruction part before participants enter the digital space of artwork

and after participation. This enabled the clarification of how each individual experienced the participation.

The two cases discussed in this chapter suggest that empathic connectedness does not depend solely on technology, and the facilitator should strategise it regarding the narratives built into the invitations to interact (Hobye & Lowgren, 2011). These values are central to the concept of ISEAS and participatory performance environments, where playfulness and the motivation to engage actively are key. We recommend that the same practices be more widely adopted in different organisations. ISEAS can be considered a third-sector organisation, and as an output of this experiential development research, we can provide a broader understanding of how other third-sector organisations also benefit from our results. More research should be conducted on human and non-human relationships through art and aesthetic means.

#### **7. Summary 1: Lessons learned that can contribute to the organisational or business context**

This study showed the parts of online art and technology-based interactions in performance art that succeed in creating a sense of togetherness, although all the senses cannot be utilised within this format. Notably, highlighting empathy can partially mitigate this. The desire to participate is enhanced by creating a non-judging, communication-based environment. The empathic responses of all artists to the ABR methods (storytelling, conversational art, sharing images and videos) played a significant role by enhancing and communicating empathy in digital connections. Empathic connections by utilising technology can lessen creativity barriers for participants and communication barriers for artists.

#### **8. Summary 2: Contribution to organisational or business knowledge or practices**

Both case studies created a sense of togetherness using digital tools. Focusing participation on group work rather than solo tasks promotes community feelings, particularly in non-profit or voluntary organisations. Regarding art projects, community building through group-based activities can induce longitudinal connections and collaborations among all the mem-



bers. Our recommendations include dialogue-based participation in art projects in GLAM (galleries, libraries, archives and museums) and NGO organisations, where the artist needs to remain flexible and ready to adjust and respond to participants' interactions. Also, we recommend involving artists in organisations so that the collaboration meets the expectations of both the artistic goals and the organisations.

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**Participatory Site-Specific Performance to Discuss Climate Change and Water Pollution**



## Participatory Site-Specific Performance to Discuss Climate Change and Water Pollution

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The phenomenon explored in this research is participatory site-specific performance art, themed around eco-violence, climate change and water pollution, which is discussed within a framework of the decolonisation of knowledge through arts-based action research and a pluriversal approach to participants' experiences. The two case projects were conducted with youth and children aged 6-13 y.o. from Kaunas, Lithuania. The data gathered during the two case projects include photo and video documentation and my notes. Via the examples of the provided cases, the present study explores how the transcorporeality of the space and site of a participatory site-specific performance can be used to discuss eco-violence, climate change and water pollution with a young audience. The research presents tools that performance artists can use to properly utilise the site, space and transcorporeality to start a dialogue with their audiences about environmental issues in a Lithuanian context. The research results are interesting for performance artists and educators who are working with performance pedagogy and participatory performance art in the artistic and educational milieus or targeted at the local businesses and companies.

*Performance; arts-based research; pluriverse; transcorporeality*

### 1. Introduction

The phenomenon presented in this research is participatory performance themed around environmental issues – namely climate change and water pollution. The two cases addressed in this study are performances presented by Dr Julia Kurek and myself, PhD Cand. Marija Griniuk, implemented within the framework of the project *The Nomadic Radical Academy* (2019 and 2020) at the Gallery Meno Parkas in Kaunas, Lithuania. The study takes an innovative approach to the framework of decolonisation

of knowledge through the media of participatory performance within the arts-based action research and pluriversal approach to the experience of participation. The research problem is defined as follows: There is a lack of tools, specifically within participatory performance, for interdisciplinarity and decolonial thinking in the projects themed around nature and the environment (Fisher, 2007). The aim of the present research is to analyse the two provided cases and define the tools needed for their implementation. The study's objectives are as follows: to map the theoretical framework of arts-based action research applied within this study, to understand the key terms and to analyse the cases within this research from the perspective of the decolonisation of knowledge as a pluriversal approach to participation. The research question answered by this study is, 'How can site-specific participatory performance be utilised as a means for decolonising knowledge about care towards nature and the environment among children and young people?'

This paper consists of three parts. The first part explains the theory behind arts-based action research and defines the terms *performance art*, *space*, *site-specific* and *transcorporeality*. The second part describes the cases. The third part investigates the tools applied by the artists within the cases. These tools are extracted and contextualised within the framework of the pluriversal experience as decolonisation of knowledge.

## 2. Methods and terms

This study is developed by means of arts-based action research. The method employed was shaped by the group of scholars at the University of Lapland (Jokela, 2013; Jokela, 2017; Härkönen, Huhmarniemi & Jokela, 2018). It was aimed to promote the recognition of the existing problems within the researched field and developing a multiplicity of possible solutions by using the arts as a medium to interact with research participants (Jokela, 2013; Jokela, 2017; Härkönen, Huhmarniemi & Jokela, 2018). Arts-based action research within this study follows the developmental approach and is designed using research cycles, each of which starts with the idea and the pilot project and finishes with the evaluation phase (Jokela, 2019). Within *The Nomadic Radical Academy*, three cycles were completed and designed around data collection from the two pilot projects in 2019 and 2020. The first cycle focused on network-building strategies within the case projects (Griniuk, 2021). The second cycle focused on interaction and experience design through arts-based methods with the involved children. This paper is part of the second cycle of the research. The third cycle focused on enhancing children's creativity by means of participatory performance and resulted in one paper (Griniuk, 2021, in print).

The materials gathered during the two cases presented within this research are notes, photos and video materials from the case performances. The cases are either implemented by me or witnessed by me from the perspective of an audience member during the arts-based action research project *The Nomadic Radical Academy* 2019 and 2020. The data are analysed via a visual and verbal narrative analysis within arts-based action research.

*Performance* is a broad field with many sub-disciplines – in particular, participatory performance art merged with action research can impact the communities involved (Coghlan & Brydon-Miller, 2014). In order to understand the relationship between performers and their environment, it is necessary to define the concept of *space*. The term *space* has been used throughout history to refer both to the physical world and mental states (e.g. thought) (Stock, 2015). Space is the emplacement, distribution and connection of entities, actions and ideas (Stock, 2015). Physically, the term *space* is used to refer to any area or volume where matter is located (Stock, 2015). In addition, the word *space* refers to an area or environment that is not occupied by matter. *Space* is used to refer to the imaginable areas that exist in the brain or mind (e.g. the space between the past and future or the space between conscious and

unconscious thought). In speech, *space* is sometimes used as a metaphor to describe aspects of language (Auer et al., 2013). For example, the space between words can be compared to the silence between sounds. *Space* in performance is a state of mind that encompasses all physical properties, including time and location (McAuley, 1999). By using text, storytelling, lighting, sound, and other elements, the size and feel of a space can be changed to suit the purpose of the performance (McAuley, 1999), which, in this study, communicates themes of climate change and water pollution for the young audience.

The term transcorporeality refers to the ability of the performer's body to be affected by his or her environment (Alaimo, 2018). "Trans-corporeality means that all creatures, as embodied beings, are intermeshed with the dynamic, material world, which crosses through them, transforms them, and is transformed by them." (Alaimo, 2018, p. 2). Transcorporeality has a social and political influence on the human body in the moment of perception at the site of a performance. In other words, the site of performance involves the social and political constructions of bodies through artistic expression, which is meant to be perceived by not only other human bodies but also technology-empowered bodies.

Performance scholar Mike Pearson (2010) explains site-specific performance in the context of placeness. *Site-specific* performance is a work of art that is created to exist in a specific place (Pearson, 2010). The artwork gains something (be it aesthetic, cultural, or social) by virtue of its location. This term is used to describe the location of a performance and the impact that the site and local narratives have on the transcorporeal experience. Site-specificity describes the location of a performance and the impact that this site has on the transcorporeal experience. The idea of a site-specific participatory performance and its meaning is not vastly different from the notion of a theatrical production being site-specific. The action on stage is greatly influenced by the audience, which is a concrete feature of the site. The same can be said of a participatory performance.

*Pluriverse* is the vision of a world in which many worlds would co-exist (Mingolo, 2018). The concept of *pluriverse* builds on explanation according to the scholar Arturo Escobar (2017) and can be compared to the weaved alternative realities co-existing in one site of performance artwork, as if it were a tapestry. It addresses a social understanding of performativity and performance design, referring to the multiplicities of the experiences of the people involved in the community, who come from diverse backgrounds.

## 3. Cases

This research is based on the two cases from *The Nomadic Radical Academy* 2019 and 2020, where one of the cases is conducted by scholar and performance artist Julia Kurek and the other by me in the position of the principal investigator within this study. The projects of *The Nomadic Radical Academy* involved groups of international artists and scholars. Tue Brisson Mosich, Nanna Ylönen, Marta Gil, Sanna Blennow, Rikke Goldbeck, Anne-Louise Knudsen, Anders Werdelin, Adomas Danusevičius, Evelina Šimkutė and Raimondas Binkauskas, among others, participated in *The Nomadic Radical Academy* 2019. In 2020, the participants were Julia Kurek, Evelina Šimkutė, Rait Rosin, Tue Brisson Mosich, Julija Rukanskaitė, Linda Teikmane and Kaspar Aus, among others. Both participatory performance events took place at the gallery Gallery Meno Parkas in Kaunas, Lithuania.

Both cases targeted children aged six to 13 years old as the primary audience. The data were collected following the ethics of research. All visual and sound data from the events were taken after written agreement had been received from the children's parents regarding the photo and video documentation of the groups of children during the performances. In the 2019 event, 12 children participated, while around 20 children participated in 2020. The children were diverse in terms of their gender and

originated from families with various backgrounds: some children were from international families, while the majority were from Lithuanian families. While a few of the participating children were from the families of the artists and employees of the gallery and, thus, were directly connected to the project in 2019, most of the children were invited via an open call. Participation was voluntary, and the families submitted applications approximately a month before the events took place.

In 2019 my performances lasted an average of five hours a day; in 2020, the duration of my performances were 9.5 hours a day. I stayed with the children during the active moments of performing, as well as during the breaks, when the children interacted with each other in an unconstructed manner. The performative activity, which lasted from 20 minutes to 1.5 hours (with breaks in between), was themed around responsible consumption and empathy towards nature.

I initiated the session of costume-creation from the recycled materials, during which the children created their characters – often a real or fantastical animal or creature, such as a bat or dragon. These costumes were developed during the daily sessions, which lasted up to four days, and were actively involved in the performative movement-based activity. In this way, the primary message promoted the rethinking of the concept of trash and creating value from objects that were perceived as trash by their previous owners. The children extended this narrative to their own interpretations and stories as the characters were created and added into the space of performance.

The other activity that involved deconstructing the concept of trash was rearranging old posters (donated by the gallery) into the fragments of the tents that the children created and formed into a shantytown in the space of performance. This action in 2020 was an immersive echo of the event in 2019, as the artists built the tents and the children occupied them during the performances and breaks. In 2020, the children self-initiated the building of the shantytown in small groups and incorporated diverse materials, such as large format recycled paper and old posters.

Such embodied actions were followed by discussions about the framework of recycling, value deconstruction and eco-violence conducted in the past in Lithuania during the collective farming as initiated during the Soviet occupation and responsible behaviour of our generation and empathy towards nature. In other cases, the discussions were planned as separate performative sessions. For example, in 2019, the discussions were facilitated by me and performance designer Tue Brisson Mosich. All these discussions were not didactic but rather invited the children to contribute their narratives about nature and agriculture – for example, if their grandparents had been involved in farming. This narrative led to a discussion about water quality and the use of herbicides and pesticides in farms, both in the past and present.



Image 1: *The Nomadic Radical Academy (2020.) Performance by Marija Griniuk, recycled materials. Source: photo by Airida Rekštytė.*

The children's recommendations on how to recycle and reuse items when discussing responsible behaviours were of great value. The focus of these sessions and discussions depended on the children and their capability to extend the discussion or leave for another activity. Sometimes it was easier to discuss these topics with the older children, while other times the sparks within the narrative came from very young participants. In each of the projects, my performative actions, along with the breaks between the sessions, were developed from the role of moderator and facilitator to the role of the human being in the space of performance with the children. This state of being blurred the frames of the constructed teaching situation with the didactic purpose of the event. As such, it opened the space of multiplicities of expressions co-existing in the creative immersive flow themed around the empathic interconnection between humans and the environment. This culminated in the final performance, which was done in conjunction with the children, in which the children painted on my body collectively, which conceptually underlined the deconstruction of power relations and individual responsibility within the collective action.



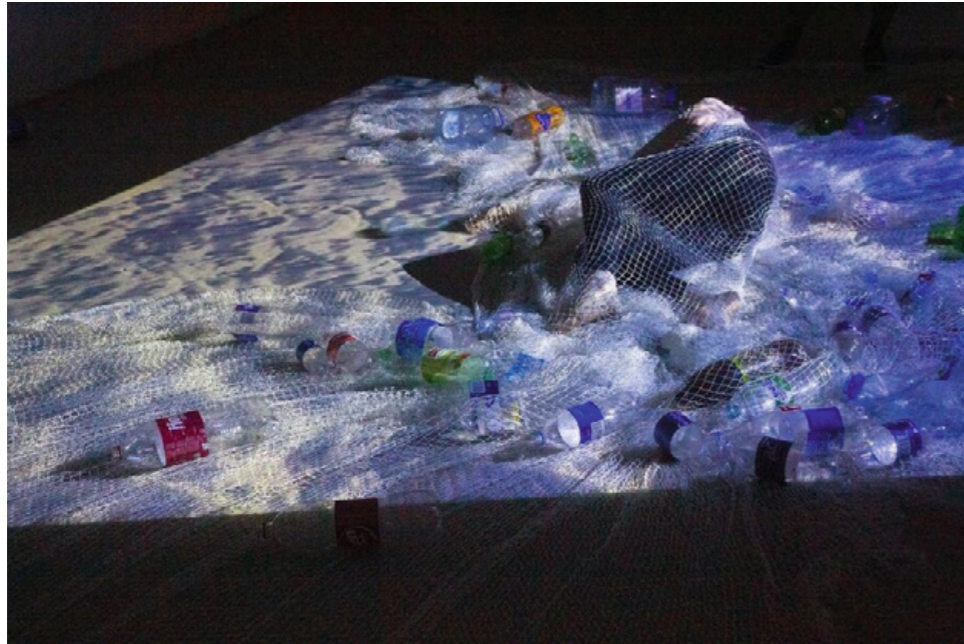


Image 2: The Nomadic Radical Academy (2020.) Performance "In the Deep of Plastic" by Julia Kurek at Meno Parkas Gallery. Source: photo by Airida Rekštytė.

The case by Julia Kurek *In the Deep of Plastic* has a different framework than my performative actions and was realised as a 30-minute performance within *The Nomadic Radical Academy* in 2020. The performance has the segments of liminal states and a clear indication of the start and end, along with a clear call for action towards the audience. Within the performance by Julia Kurek, the space of performance was the second floor of the Gallery Meno Parkas, where the focus was creating the empathic aesthetic experience of sea life polluted by humans. The vignette from my notes illustrates the feeling within the performance:

*The artist is covered by a fisherman's net, which covers the entire floor of the performance area. The seawater is projected onto the performance area. The used plastic bottles are under the fisherman's net. The artist starts to move. The movements express the desire to break out of the net, and the bottles start to make cracking sounds as the artist's body intervenes with them. I glance at the children, trying to see their reactions in the darkness. Few of us are sitting on the floor, and one girl asks if she can bring up her phone and film. The boy moves closer and closer to the net. He puts one of his legs under the net and looks back at me.*

This vignette shows the differences in the children's needs while interacting with the performance in the phase where the artist performs alone. The second phase of the performance is the artist's invitation to

the grown-ups to co-perform as she comes up to selected audience members, places the plastic bottle in between her body and the audience member's, and pushes the plastic bottle until it is flat. In this phase, the children are the observers, but they also receive an indication of the invitation by the artist to co-perform. In the third phase, the artist invites the children to step into the space and actively flatten the plastic bottles by jumping on them, after which they collect the flattened bottles into the net and carry them to the site of installation on the ground floor of the gallery.

Immediately after the performance, the children are invited into the discussion circle and are asked how each of them experienced and can interpret the performance. After the discussion, they each draw the performance. In this final phase of reflecting, the experience is in the core focus on the self and selves expression of the thoughts through both verbal and visual narratives, each of which is valuable in the phase of understanding how the artwork resonated with the audience and what it communicated.

#### 4. Tools contextualised within the framework of the decolonisation of knowledge

The act of decolonising knowledge can be seen in the pluriversal approach to the experience of participants of the performance artwork. This leads to an enriched discussion around the main topics of eco-violence, climate change and water pollution. These are not only built on the mediation of these difficult themes by means of performance but also involve the participants in co-performing and sharing their thoughts during the artwork or after the artwork is completed. The facilitators come from different backgrounds as facilitators-performance artists represented the international artists' community. Few of the children, especially during *The Nomadic Radical Academy 2019*, originated from international families, which contributed to the diversity of children's previous experiences. Those children were from the artists' families, who were directly involved in the project, which contributed to their familiarity with the art venue and the manner of behaviour within the art project. Furthermore, the different ages of the children varied from six to 13 years old. This led to the large scale of the interactions both between the facilitating artists and the children and among the children themselves. All these elements contributed to the grand scale of the strategies developed by the artists. They were built on the pluriverse of the participants' experiences before the two projects of *The Nomadic Radical Academy*, which shaped their way of being and expressing themselves during their participation. The themes of eco-violence, climate change and water pollution were familiar to all participants to a certain extent. The conversations and co-participation were built around the value of each contribution. A pluriversal approach to participation can be followed to decolonise knowledge and open the site for the multiplicity of alternatives. The main tools extracted while analysing the provided cases are pluriversal canvases, pluriversal sensorial experiences as the multiplicity of "selves" and pluriverse within site-specificity.

##### Tool 1: pluriversal canvases

In the performance by Julia Kurek, space is an important element. Her body becomes the metaphoric canvas within the space of performance. The space of the gallery is rearranged during her performance to mediate and narrate the problem of water pollution by plastic, pesticides and herbicides and its impact on the living organisms and her body is the narrator of the embodied action.

In traditional art, a canvas is a two-dimensional surface upon which an artist applies paint. The purpose of the painting is to create a visually pleasing work of art. Julia Kurek breaks this framework within her performance as the body becomes a "canvas" for transcorporeal artistic experiences. In this case, her body, as the canvas, indicates liminality. The artist no longer has total control over the experience of the



audience members but is rather designing the segments of liminality before the transformation within the performance happens. The audience members influence and change the nature of the artwork itself when invited to co-perform within the space. The audience members' bodies and minds become intertwined with the artwork. The artist designs the collective experience, consistent with multiplicities of pluriversal experiences, as she clearly indicates the moment when the children can step into the artwork and co-perform; she also steps into the audience space and co-performs with the few grown-ups. However, each of the participants has their own separate experience of co-participation. Based on their individuality, the participant will have control over how the experience is ultimately displayed on their body and mind, as another metaphorical canvas in the space of performance. Thus, the space of performance influences the transcorporeal immersive space and produces the multiplicity of pluriversal canvases – in other words, interpretations based on individual narrations of what performance artwork contains.

In the case of my immersive performative actions, my body becomes the pluriversal canvas over time, being in the space for the durational time of interactions daily. My body changes each day. My body experiences interchanging vocal capabilities or even pain in the muscles after a certain activity. My mind analyses and adapts to the performative actions as the days of the event unfold. In other words, the content of the performative actions is constantly reshaped and adapted according to the daily observations of the needs and interests of the participants. By the end of the nine-day performative action, this metaphorical pluriversal canvas becomes the actual canvas, as the children paint my body during the final performance. I become the live canvas for the children's collective painting. As in the performance by Julia Kurek, in the final performance by me and the children, the children reflect on the impact of the durational interactions and, on their behalf, voice their contributions using the colours applied to my body. They imprint their contributions in this way. The multiple pluriversal canvases are thus imprinted on my body.

### **Tool 2: pluriversal sensorial experiences as a multiplicity of “selves”**

The Nomadic Radical Academy builds on the sensorial experience within the site of performance, where the space can be read as the visual, sonic and verbal narrative. Smell is integrated as the active contributor to some of the indoor sessions, while in the other sessions the outdoor setting serves as the component of the space. Meanwhile, taste as the sense is involved in all the collective meal sessions. A transcorporeal artistic experience engages all of the participants' senses on a very subjective and intimate level. Sight, sound, touch, taste and smell are all engaged by a transcorporeal artistic experience within performance artwork, such as is the case in The Nomadic Radical Academy. The senses are the keys that activate memories or previously experienced spaces. The participant's mind combines all of these sensory inputs to create a complete experience – the above-mentioned pluriversal canvas is unique for each of the audience members due to their unique embodied previous experiences and memories of actions and places. This partly determines the content of the experience itself. The individuality of experience becomes especially evident at the end of the performance by Julia Kurek, where the reactions vary greatly: while some of the children applaud, one of the participants goes to the artist and hugs her.

The experience begins with a single point of reference: the participant's own sense of self. In the performative actions by the principal investigator, the durational performance is targeted at constructing a collective narrative based on deepening the investigation into this sense of self. A person's self is a combination of many factors, such as their personality, gender, age and beliefs – these factors were diverse within the group of children involved in The Nomadic Radical Academy 2019 and

2020. These diversities evolved into the internal patterns that highlighted specific aspects of making and being, as well as the segments of concentrated activities and free interactions.

The sensorial experience reacts and adapts based upon the person's own “self”. The sensorial experience uses the person's own “self” as a point of reference to tailor the experience towards that individual. The sensorial triggers are primarily the space, the materials and the people within the performance. The experience is not simply imposed upon participants, but it involves active construction that evolves as the project unfolds. The participant's own “self” is central to the experience and requires that the participant is open, compassionate and empathic within the space of performance. It also allows the participant to take an active role in the experience and co-creation for other participants. Pluriversal sensorial experiences, as a multiplicity of “selves”, is achieved throughout the performance.

### **Tool 3: pluriverse within site-specificity**

The Nomadic Radical Academy is a site-specific participatory performance project, as it addresses the local issues of the colonial past, eco-violence, water pollution, climate change and responsible consumption, all of which are part of the global discussion and call to action. Site-specificity is within the local narratives of the local community that become activated during the immersive performative actions. The pluriversal participation allows the wide spectrum of the local narrations and experiences to unfold, along with the global call for empathic connection to the natural environments. The conversations with the participants concern the narratives of responsible consumption, ecological agriculture and respect towards nature. As the participants and facilitators contribute through their experiences and storytelling, all of them can be viewed as part of the wide perspective of change and promote the rethinking of human actions. The Lithuanian context of The Nomadic Radical Academy allows us to investigate the depth of colonial history. These discussions involve eco-violence conducted during the decades of colonisation, including the nuclear power station, environmental pollution and the construction of the draining systems during the collective farming, which destroyed the swamps and biodiversity connected to them.

The other interesting, recent aspect is that in most Lithuanian cities the system of recycling domestic waste was introduced recently and includes the time of adapting and gaining the new habits of sorting domestic waste. Therefore, the thematic approach taken by me during the performances based on rethinking the concept of waste is explicitly site-specific in regards to the implementation of the project in Kaunas, Lithuania.

Julia Kurek addresses the local issue of waste, specifically plastic, in the Baltic Sea. She states that it is explicitly the locals' responsibility to solve the issue of water pollution and its impact on life and biodiversity. The artist opens the discussion and calls for action. Although all these points are obviously part of global environmental problems, it is important to address the local narratives, and pluriversal site-specificity plays the most significant role in this regard.

On the other hand, site-specificity falls within the implementation of the project in the space of the gallery with the participants, and the situation which occurs as the project unfolds is site-specific. The pluriversal site-specificity can be experienced within the liminal phase of the performance, as each of the contributions by the involved participants directly impacts everyone within the performance. The responsibility to engage in eco-friendly behaviour cannot be addressed only by individuals. The companies within agriculture and industries need first and foremost to change how they operate. Site-specificity within the discussion can extend to adopting projects such as The Nomadic Radical Academy to facilitate discussions involving local businesses, companies and industries, as the pluriversal approach

could lead to the development of a multiplicity of scenarios in which people can change their routines and become more eco-responsible.

## 5. Conclusion

The study explores, via the examples of the provided participatory performance cases, how the space and site can be used to discuss climate change and water pollution with performance participants. The research clarifies the three major tools used to decolonise the knowledge following a pluriversal approach while working with participatory performances themed around environmental issues: pluriversal canvases, pluriversal sensorial experiences as a multiplicity of “selves” and a pluriverse within site-specificity. With pluriversal canvases, the performer’s body is impacted by the participants, and the participants’ bodies are impacted by the performer and the other participants during the performance. Pluriversal sensorial experiences as a multiplicity of “selves” are each participant’s immersion in the space, based on their previous experiences. Pluriverse within site-specificity involves targeting local problems, which are part of global pollution, and developing scenarios towards the eco-friendly change. These results can be applied in similar projects aimed at pluriversal participation. The research results can be interesting for performance artists and educators working with performance pedagogy and can be applied to the larger scale of projects targeted at companies and businesses.

## 6. Acknowledgement

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## 7. References

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