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SHAPING THE DIGITAL DISSERTATION

KNOWLEDGE PRODUCTION IN THE ARTS AND HUMANITIES

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15. Lessons from the Sandbox

Linking Readership, Representation and Reflection in Tactile Paths

Christopher Williams

In December 2016, I successfully defended a natively digital dissertation in Artistic Research entitled 'Tactile Paths: On and through Notation for Improvisers'[1] (hereafter, TP) at the Academy of Creative and Performing Arts, Leiden University. In this chapter I will share a few field notes on my motivation for publishing TP as a website, my chosen platform, on the collaboration with a professional designer, and the consequences of this route for the research process itself.

I write as a user of digital publication tools, rather than a scholar or designer of them. Both despite and by virtue of this limited perspective, I hope what follows might prove a useful case study for writers and theorists of digital dissertations, in Artistic Research and beyond.

Topic

The topic of TP is the encounter of notation and improvisation in contemporary music, of which I am both a scholar and a composer-performer. This topic was a crucial factor in my embrace of the web-based format. Historically speaking, notation for improvisers is nothing new. There are many examples of music across epochs and cultures in which notation and improvisation fruitfully coexist: Tibetan ritual

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1   Christopher Williams, 'Tactile Paths: On and through Notation for Improvisers' (PhD dissertation, Leiden University, 2016), http://www.tactilepaths.net/

horn tablature, Duke Ellington's big band music, or the Chinese guqin tradition. Up until the late nineteenth century, this encounter was also common in Western concert music, e.g., medieval chant, baroque *basso continuo* and virtuosic Romantic solo repertoire. However, throughout the late nineteenth and early twentieth centuries, academic discourse and compositional practice in Western concert music tended toward the idea that written notation should comprehensively prescribe and/ or preserve the salient elements of musical works. Consequently, improvisation became less visible than it had been previously.

Over the last fifty years, improvisation has returned to prominence in both practice and theory. Many key figures in contemporary music have integrated both notated and improvised practices into their work. Likewise, performativity and improvisation have begun to recapture scholars' attention. Nevertheless, most contemporary music that works explicitly and dynamically with improvisation and notation still remains underrepresented. Very little of this work has been analyzed collectively. The goal of TP is thus to articulate a conceptual framework for these practices. To this end, I analyze aesthetically and historically diverse examples of the practice to find common methodological threads. These threads reveal core issues and principles applicable to a broad spectrum of other work, trends and problems in contemporary music.

Field

TP inhabits the broader academic field of Artistic Research (hereafter, AR). Like the topic of TP, a few words on AR should help clarify my approach to native digital publication. Henk Borgdorff, an oft-cited AR spokesman, characterizes the field as follows:

> The expression artistic research connects two domains: art and academia. Obviously the term can also be used in a general sense. Every artist does research as she works, as she tries to find the right material, the right subject, as she looks for information and techniques to use in her studio or atelier, or when she encounters something, changes something or begins anew in the course of her work. Artistic research in the emphatic sense […] unites the artistic and the academic in an enterprise that impacts on both domains. Art thereby transcends its former limits, aiming through the research to contribute to thinking and understanding; academia, for

its part, opens up its boundaries to forms of thinking and understanding that are interwoven with artistic practices.[2]

[A]rtistic research—embedded in artistic and academic contexts—is the articulation of the unreflective, non-conceptual content enclosed in aesthetic experiences, enacted in creative practices and embodied in artistic products.[3]

Following Borgdorff, I seek to articulate 'the unreflective, non-conceptual content enclosed in aesthetic experiences'—to unpack my own practical work with notation for improvisers. Since existing theories of notation and improvisation fail to explain the research objects, for reasons described above, working with the materials firsthand is a useful point of departure. Strategic documentation of this practice provides rich data that more conventional scientific observation may be ill-equipped to capture. At the same time, reflection in the process of documentation deepens and transforms the practice: observing oneself working changes how one works. This is not merely a condition of Tactile Paths; it is an objective. In the dissertation I aimed to develop my own creative work and that of my artistic community, and thus 'unite the artistic and the academic in an enterprise that impacts on both domains' (my emphasis). In other words, Tactile Paths is both a discussion and an instance of artistic practice.

Motivation: Readership

Early in my doctoral studies, my supervisors Marcel Cobussen, Richard Barrett and Frans de Ruiter suggested publishing TP as a website. Cobussen, author of one of the first natively digital PhD dissertations[4] in Europe, was especially encouraging.[5] His rationale was twofold. First, readership would increase immensely. As an example, he cited regularly

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2   Henk Borgdorff, 'The Production of Knowledge in Artistic Research', in *The Routledge Companion to Research in the Arts*, ed. by Michael Biggs and Hendrik Karlsson (New York: Routledge, 2011), pp. 44–63 (p. 44).

3   Ibid., p.47.

4   Marcel Cobussen, 'Deconstruction in Music' (PhD dissertation, Erasmus University, 2002), http://www.deconstruction-in-music.com/navbar/index.html

5   I should note that Cobussen himself received no such encouragement as a student. Like editor Virginia Kuhn, he encountered stiff resistance from university administration. For having 'broken the digital ice', I am grateful to him, Kuhn and others featured in this volume.

receiving emails from new readers of his dissertation nearly fifteen years after its publication. On this point I was immediately sold. In terms of accessibility, a bound volume housed in a university library or a PDF stored in academic databases can hardly compete with a contemporary open-access website. Like scholars in any field, I wished to maximize exposure. Specifically, I wished to reach fellow practitioners who would rarely, if ever, find my work in academic contexts. Many of my peers in contemporary music read professional magazines and books, but only a limited number of them read academic journals where TP might be cited or published in article form. Even fewer would find TP directly in a university library or digital repository. A website would intersect with this demographic's habitual knowledge circuits.

Cobussen's second rationale was the ease with which the web absorbs nonverbal media such as audio, video, and musical scores. Integrating such materials is far less practical with physical media. Examining a large, detailed score in a bound A4-sized book while navigating a separate DVD can be clumsy. Comparing multiple audio recordings simultaneously is impossible from a single playback device. On a website, however, such functionalities are painless for the writer to implement and the reader to engage with. This ease of media integration was important for presenting work by other artists that I would analyze. Since the practices under scrutiny were poorly represented in mainstream publishing and scholarly discourse, readers needed access to high-quality primary sources. I also needed to adequately represent my own creative work at the heart of the research. In both cases, showcasing time-based and nonverbal media was essential.

Discovering Design Issues: Representation

After deciding to publish TP in a natively digital form, a website, my next step was to investigate the *Research Catalogue* (hereafter, *RC*), a go-to platform for many artistic researchers. *RC* combines a website-building interface, hosting service, and social network for diverse AR projects and publications. Users include over 10,000 graduate students and professors, independent scholars, institutions and journals such as the *Journal for Artistic Research*, *RUUKKU* and the *Journal of Sonic Studies*. Initially, *RC* seemed ideal. Cost-free membership provides

simple, intuitive tools for building multimedia expositions; unlimited media hosting and high-quality media players; basic technical support from *RC* staff; and access to a large AR community. After further experimentation, though, I found a number of fundamental problems. First, *RC* layouts are non-responsive. They do not adapt to differently sized computer screens, tablets, and smartphones.[6] On smaller devices, all visual information shrinks to fit the screen. This is an obvious problem for fatigued eyes. While one rarely reads an entire dissertation from a smartphone, a casually interested reader may initially peruse it this way. If the contents are illegibly small, one may not return to it later on a larger device.

Second, *RC* links styling and content in raw HTML; it does not permit CSS.[7] Authors must manually place and format every section of a text and multimedia object in a given project. This work then expands by a factor of (x) number of pages in a given project. (One can imagine the stress this creates for designing a dissertation of several chapters.)[8] *RC* thus provides no centralized way to ensure consistency among layouts and typography classes across an entire project. Furthermore, sharing and forking layouts is impossible; this is surprising, considering the community-oriented nature of the initiative.

The third problem I discovered is a consequence of the first two: all content in RC, including thumbnails and media players, occupies an absolute position in the layout. Sticky headers and sidebars, or areas of a page that remain in place at the top or on the side of the screen independent of user scrolling, are impossible to implement. If an

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6   *RC* founder Michael Schwab states that '*RC* was conceived and developed by SAR [Society for Artistic Research] at a time when the internet was still very much a desktop affair [2010–12]. This explains the above mentioned developments [non-responsive layouts], but also the slowness in which things happen: SAR is not a business with investment and return, but a non-profit association that serves its members (and the wider community). So I won't be able to say much about how things will look in the near future regarding issues of responsive design etc'. Personal email to the author, June 23, 2018.

7   Cascading Style Sheet is a standard styling language used by web designers to format HTML content. It permits global changes to layouts, typography, etc. To their credit, the technicians at *RC* did attempt to test the integration of a CSS template at my behest. Unfortunately, it was not successful.

8   Schwab notes that 'the publishing of theses may have been in people's minds, but did not matter at this stage. What mattered was to create a link between sustainability, a requirement for serious publishing, and (web) design'. Schwab, personal email to the author, June 23, 2018.

exposition contains a lengthy scrollable verbal text, media players and thumbnails usually occupy a fixed location within or beside it. Visually, this relegates nonverbal media to the status of figures or footnotes, i.e., supporting evidence. On the other hand, nonverbal media or players can be large and centrally placed, with verbal text placed in an internally scrollable window beside them. In this case, the hierarchy is reversed, and verbal text may resemble a caption or program note. This problem turned out to be a dealbreaker for TP. In order to present nonverbal media on equal footing with verbal text, I wished to make all materials as accessible as possible to the user/reader at all times. This would prioritize primary sources as I required and allow for quick and easy cross-referencing.

Lesson #1: Nuts and Bolts Help Reveal the Big Picture

While it may sound as if I came to *RC* expecting things it could not offer, the truth is quite the opposite. Before experimenting with *RC*, my understanding of responsive design and CSS was hazy at best; I did not even know sticky elements existed. I came to see the need for them through my frustration with *RC*'s structural inflexibility. Ironically, working through this technical frustration gave a boost to my research process as a whole. It was clear before addressing any design questions that verbal texts and nonverbal media should intertwine in a general sense. However, the particulars of their integration only began to emerge through experimentation. My principal discovery, as elementary as it was consequential, was that multiple media files could be grouped as a gallery independent from the verbal text. The possibility of emphasizing scores, video, and audio together in the layout highlighted the exhibitional potential of the web format in a way that I had not imagined. That potential, combined with my original intention to share my research objects with a broader public, gave the dissertation a new curatorial impulse.

Beyond considering how to package my arguments effectively for my supervisors and a few selected experts, I began to grapple with how to represent my field of inquiry appropriately. Choosing my objects of analysis was no longer merely a function of theoretical relevance or personal taste, but also of their potential to provoke readers to rethink

the identity of my topic. I believe the final constellation of research objects, i.e., the work I discuss in Paths 1–5 (a Path is the equivalent of a chapter in this website), reflects this new concern. The music analyzed is radically distinct on aesthetic, historical and methodological levels. The scores employ a range of notational elements: from informal verbal instructions to detailed conventional Western notation and abstract graphics. Some of the work is more exemplary of notation for improvisers, some less obviously so.

The website also became a space for users to explore materials themselves. To this end, interaction between verbal text and multimedia from Path to Path is also quite diverse. For example, in Path 1, an original documentary film plays a leading role in articulating physicality in works by Malcolm Goldstein; the brief verbal text serves simply to frame it. In Path 3, the verbal text is the protagonist, but a significant portion of it mixes analytical reflections with playful performance instructions reminiscent of the work under lens, Ben Patterson's *Variations for Double-Bass* (1961). Path 5 presents a collection of unpublished scores and out-of-print recordings by Bob Ostertag in a grid that allows readers to trace how notation and recordings in a four-part project relate over time.

Granted, some of these results may have been possible in book form, and/or for an exclusively academic audience. My point is that the very need to think about these issues of representation took root in a technical discovery, sticky media galleries and the disseminatory affordances of an open-access website more generally. Without tinkering with the nuts and bolts of web design, this would not have happened.

Implementation: Reflection

Presented with the above-mentioned arguments for using an alternative to *RC*, my supervisors agreed to fund professional web design. I chose to work with Patricia Reed of Leaky Studio, a specialist in projects for art, culture and academia. She played a key role in maximizing TP's potential, both content- and audience-wise. Reed proposed developing TP with WordPress (hereafter, WP), a free[9] and open-source content management system used to build an estimated 25–30% of the world's

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9   Unlike RC, WP does not offer free hosting.

websites.[10] Aside from Reed's own positive experience with the platform, two specific features recommended WP for the project. First, WP uses CSS, along with Java and other common web scripting languages. This permitted responsive layouts, sticky sidebars and other basic functionalities I missed from *RC*. WP and CSS decouple content from styling, so non-expert users such as myself can input their own content when working in tandem with a programmer/designer who customizes front-end and back-end to their needs. Second, there is a community of millions of developing themes, improvements, plugins, add-ons and security fixes for WP mainly free of charge to implement. (This is a stark contrast to *RC*, which limits authors to its own tools.) As WP becomes more prolific, the likelihood of rapid software irrelevance is improbable. Although WP was initially conceived as a blogging platform rather than a durable archive, its ubiquity has ironically translated into a kind of de facto 'security or permanence factor', according to Reed.[11]

Using WP for a dissertation has its limitations, as does any platform. First, decoupling content from styling is a double-edged sword. Authors who are unable to do their own specialized design work—more the rule than the exception in a field such as music—need support for all but the crudest tasks. Generally this costs money. I had the rare privilege of support from a forward-thinking department that was both willing and able to pay Reed for her labor. Most PhD students, particularly in our neoliberal era, do not. Technical interdependence in WP also has its downsides. In order to solve a variety of aesthetic and functional issues, we used plugins by third-party developers. Compatibility among these plugins and with rolling WP system updates requires maintenance. Reed states that 'all existing uploaded/created content must remain updated within the system—meaning that yearly upgrades would be suggested, as opposed to the printed dissertation which can be done once and forgotten. Online is synonymous with perpetual attention (upgrades)'.[12] This is precisely the sustainability problem that *RC* solves by limiting design tools to its own.

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10   Monty Munford, 'How WordPress Ate the Internet in 2016... And the World in 2017' (December 22, 2016), *Forbes*, https://www.forbes.com/sites/montymunford/2016/12/22/how-wordpress-ate-the-internet-in-2016-and-the-world-in-2017/

11   Personal email to the author, June 23, 2017.

12   Personal email to the author, June 23, 2017. At the time of writing, eighteen months after defending TP, I have not updated any element of the website. It looks the same as when it was finalized.

Collaboration

The interpersonal element was at least as important to TP's design as conceptual and technical factors. Reed and I began working together in early 2015, about two years before I defended TP. The time we spent collaborating while I was writing the content allowed her knowledge of design to enrich my own research process.[13] Our point of departure was the following outline, which I prepared alone in October 2014:

Tactile Paths — WEBSITE STRUCTURE

Introduction/ Table of Contents + TAGS page

- "Chapters / TAGS" button organizes info at top of page like http://charliemorrowevents.blogspot.de/?view=flipcard

- TAGS are topics that apply to multiple chapters

- clicking on each TAG opens a window with explanation

- clicking on chapter title goes to that chapter

12–15 "chapter" pages (each about a single musician/ group/ piece/ group of pieces, not ordered by number, similarly formatted). Each chapter contains:

- TAGS

- texts with footnotes and bibliographic references

- sticky sidebar with relevant images (scores), recordings (audio and/ or video) so reader can easily access material regardless of where she is in the text

Bibliography

Copyright/ Acknowledgements

About/ Contact

We implemented much of this plan as I intended. But the best solutions were not always obvious from the outset. Throughout our collaboration, seemingly superficial details would provoke deeper questions about user

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13   By 'writing' I also include the preparation and production of relevant nonverbal media, not only verbal text.

experience. These would then require reflection on my core research, much as my discovery of sticky sidebars had before Reed appeared.

The media gallery layout in the Paths was one significant case. Reed initially proposed a framework based on hideable panels placed to the side of a centered verbal text. One panel contained tags, another contained the media. Readers could open either panel by clicking on its corresponding vertical tab. Tags and media were accessible at any location in the verbal text, as I had requested. We also avoided clutter among multiple categories of information packed into a single screen.

Meanwhile, I was also working on Path 1, 'Seeing the Full Sounding' (described above), and Path 2, 'A Treatise Remix Handbook', which centers on an original radio piece about Cornelius Cardew's graphic score *Treatise* (1967). In both cases, I was in the process of determining how written verbal text would integrate with the audio and video pieces, which contained spoken explanatory verbal texts of their own.

The panel layout was a clean and beautiful option, but observing how the panels separated verbal text and multimedia into discrete zones gave me a slight discomfort. I realized that a certain degree of clutter between words and time-based media was actually desirable. It would help maximize connections between the medial presence of the verbal text and the explanatory potential of the audio and video. This would rhetorically reinforce my exploration of the dialectic of poetry and program in experimental notation as a whole. Thus, we adopted a layout in which tags and media would be permanently visible alongside the main column of verbal text.

Moreover, this reflection shaped the content of Paths 1 and 2. Instead of merely unpacking the nonverbal media, the verbal texts also extend and question them. In Path 1, for example, I discuss sociologist Richard Sennett's concept of 'expressive instructions,' which he elaborates in a discussion of three different recipes for a famous French chicken dish.[14] Although I do not discuss Sennett anywhere in the film, this part of the verbal text links the documentary's specialized subject and filmmaking techniques to practices beyond the film's immediate purview. In Path 2, I cite Cardew's thoughts about *Treatise* both in the verbal text as right-justified, italicized quotes and in the radio piece as spoken text. Each

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14   Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008), pp. 179–93.

context offers the reader a different, sometimes contradictory, framework in which to consider Cardew's theories of notation and improvisation, which changed considerably throughout his career.

Finally, Reed refined my vision for user experience and ultimately opened TP it to a wider public. The website as a whole functions as a sort of meta-score for improvisers. As there is no linear argument from Path to Path, readers can 'choose their own adventure' through the dissertation. I had planned for tags, or Topics, to provide the principal link between Paths. Reed included additional 'tactile' and user-friendly elements for the same purpose. The homepage and main navigation menu, for example, list all the chapters in random order with rollover GIF animations and visual icons, respectively. These entice the reader to interact with the structure more intuitively than my original plan. She also added a search function, with which readers can cut across Paths by effectively inventing and implementing their own index.

Lesson #2: Work with and Learn from Designers

This lesson would seem like an inevitable conclusion to the previous section. However, collaboration is not, as a rule, the center of doctoral training. The task of the PhD student in any discipline, as my supervisors and others such as artist and design scholar Ken Friedman[15] have framed it, is to show that one is capable of independent research by making an original contribution to one's field. Universities award PhDs to *individuals* who accomplish this task. In AR, the medium of presentation may form an inherent part of that original contribution, as it does in TP. So it follows that students in these cases should also perform the design work, just as they write what might more conventionally be called 'content'. Or does it?

RC founder and AR theorist Michael Schwab indirectly shares this line of thought when he cites *RC*'s often 'underdesigned' appearance, a consequence of artists meeting the sometimes unwieldy challenge of integrating graphic and web design as crucial elements of their research:

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15 Ken Friedman, 'Now that We're Different, What's Still the Same?', in *Doctoral Writing in the Creative and Performing Arts*, ed. by Louise Ravelli, Bruce Paltridge and Sue Starfield (Faringdon: Libri Publishing, 2014), pp. 237–62 (p. 249).

> [O]ne can claim that the *RC* allows the calibration of an exposition, where this calibration forms an essential part of the research's experience and meaning. One might also want to add that a sense of integrity may be given space at the experiential core of a researcher's practice. Conversely, one may question the corporate sites of research—including those of academia—for interfering with the meaning of research through the control of the presentation.[16]

Schwab rightly prioritizes the intellectual and experiential role of design in AR. He values *RC* as a way to give AR scholars individual control over their presentation formats, even at the expense of conventional aesthetic standards. But he paints an unnecessarily binary picture of *RC* and the alternatives: do it yourself, or leave it to professional managers or corporate journals and research portals. This view does not take into account how researchers and designers can work *together* to *enhance* AR projects.

My experience with TP shows a fruitful middle way between the poles of total DIY and outsourcing. Collaborating with Reed involved no abdication of intellectual or aesthetic responsibility, nor any semblance of 'interference'. On the contrary, her contribution maintained high professional design standards *and* provided me valuable conceptual feedback, without which the project might not have reached its full potential. Reed's role was more akin to a lab partner than an employee.

Our collaboration is just one example of how designers and PhD students—not only in AR—can collaborate. Designers can advise on visual representation for the web in any discipline and at every scale, from site architecture, layout and typography to graphs and tables. Even when funds are not available for integral web design, students can learn from designers through online tutorials, workshops and other forums. Looking toward the future, one hopes that as native digital publishing becomes increasingly normalized, funding for designers and design education might become a more routine part of doctoral training in general.

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16   Michael Schwab, 'Expositions in the Research Catelogue', in *The Exposition of Artistic Research Publishing Art in Academia*, ed. by Michael Schwab and Henk Borgdorff (Leiden: Leiden University Press, 2014), pp. 92–104 (p. 100).

Lesson #3: AR and Natively Digital Dissertations are Good for Each Other

In this chapter, I have traced a few important elements and moments in writing TP as a native, media-rich website. Three interrelated concepts—readership, representation and reflection—anchor my narrative, which may be summarized as follows. Firstly, my research topic, notation for improvisers, is of interest to many nonacademics. I adopted the website format principally to reach them. Since my research objects were poorly represented in mainstream publishing and scholarly discourse, it was important to provide readers high-quality documentation of work by other artists, and of my own artistic interventions at the heart of the research process. Secondly, the main task of the web design was to represent artistic documentation appropriately together with lengthy verbal texts. This required making media and texts *simultaneously* accessible, so readers could compare them and perceive the kinds of tension between notation and improvisation I sought to articulate. A layout built around a sticky media gallery made it possible to represent audio, video, scores, and verbal text as dynamic partners in my arguments. Thirdly, personal experimentation with web tools and collaboration with a professional designer not only led to a satisfactory execution of the design strategy. They also clarified and enriched the research process itself by requiring deeper reflection on connections between form and content, verbal text and multimedia, and theory and practice.

I hope that this personal experience outlines some common issues in writing a native digital dissertation and thus helps other PhD students to determine whether, and how, to write their own. Zooming out, I hope these field notes show how AR can contribute to discussions around digital publishing in academia more generally. The case of TP exemplifies Schwab's claim that

> artistic research might offer a point of reference for any form of contemporary research, because an understanding of the impact of the presentation format not only enhances the communicative powers of a research project, but also shapes the research process and is reflected in its findings.[17]

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17 Michael Schwab, 'The Research Catalogue: A Model for Dissertations and Theses', in *The SAGE Handbook of Digital Dissertations and Theses*, ed. by Richard Andrews et al. (London: SAGE, 2012), pp. 339–54 (p. 339).

Zooming out further still, I hope TP suggests how the marriage of AR and digital publishing might fuel new forms of public intellectualism beyond the orbits of academia and the art world. TP was not only a dissertation to be defended and shelved; it is a living meta-work which continues to engage a wide variety of thinkers, practitioners and even popular media.[18] Though TP's scope is of course limited, it, nonetheless, publicly entangles creativity and critical thought in a medium where they are in shorter and shorter supply. Tomorrow's PhD students would do themselves and the world a favor by redressing that scarcity.

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18   Julian Cowley, 'Choose Your Own Route' (April 2017), *The Wire*, p. 16.