No-How Generator:
an artistic investigation of the event of choreographic performance as a site of embodied knowledge-generation

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Abstract

This written thesis is an exegesis of developments arising within my choreographic practice and thinking through the creation and performance of the choreographic work *No-How Generator*, an artistic investigation of the event of choreographic performance as a site of embodied knowledge-generation. Drawing on the cognitive science perspective of Guy Claxton and others, this thesis emphasises the embodied basis of knowing and argues that this grounds an understanding of knowledge-generation as intrinsic within the embodied context of choreography. This understanding foregrounds the integral presence and contributions of ways of knowing that are felt, more-than-rational and intuitive within the generation of knowing and intelligence. Insights are articulated into how these ways of knowing unfold in my choreographic practice, supported by specific conceptual and practical tools and orientations that I have developed in a choreographic context during this research. This includes *no-how* (drawn from Samuel Beckett via Sarat Maharaj's writings on art-as-knowledge), which I use to name the particular kind of knowing that I consider this artistic research to be generative of, and *Magic & Science* (drawn from art-historian Aby Warburg) which I use to name the broader epistemological orientation that I situate choreographic no-how generation within. Drawing connections between Warburg's work and my engagement with the work of choreographer Deborah Hay, this thesis emphasises that the catalytic dynamics of paradox are a generative and inherent part of the artistic and embodied landscape of what I term choreographic no-how generation. Drawing on humanities writers including Boaventura de Sousa Santos, the thesis emphasises that a continual, underlying attention to the social and political contexts within which choreographic no-how generation unfolds is an integral dimension of a choreographic engagement with it. Through its integrated embodiment of this particular multidisciplinary constellation of knowledges, this artistic research develops novel approaches to practicing and conceptualising the generation of knowing in choreographic contexts. This research works to broaden understandings, both within and beyond the field of dance, of the forms that knowledge-generation can and does take, and of the social and political relevance that such a broadening has.

Acknowledgements

I am deeply grateful for the meshwork of generous support that has made this artistic doctoral research possible. I thank Midlands4Cities, Dance4 and Siobhan Davies Dance for being the core funders and partner organisations enabling my studentship, and I thank Dancers Career Development for a grant that contributed support to my first year of studies. I thank Arts Council England, whose crucial support made the creation and premiere performance of *No-How Generator* possible, together with my core funders/partner organisations and additional generous support from Sadler's Wells. I thank the organisations and contexts that have additionally offered essential opportunities to share and develop practical work-in-progress, including ADiE (Artistic Doctorates in Europe), Independent Dance, Eintanzhaus (Mannheim), Future Oceans (New York), and Weld (Stockholm). My deep thanks to all of the collaborators who have contributed to the development of *No-How Generator:* Katye Coe (Collaborating Performer), Iris Chan (Producer), Jackie Shemesh (Lighting and Space Designer), Joel Cahen (Sound Design Consultant), Alexa Pollmann (Clothing Designer), Mabel Luz Flores (Clothing Fabricator), Stefan Jovanović (Visual Design Consultant); to Jennifer Lacey and Fernanda Muñoz-Newsome for contributing to *No-How Generator* as Guest Performers, and the artists who contributed to the development and testing of the Guest Performer role, including Susanna Recchia, Hilary Kneale, Jamila Johnson-Small, Antonija Livingstone and Victoria Malin; and to Victoria Ford (Graphic Designer), Camilla Greenwell (Photographer) and Matthew Cawrey (Video Production) for creating the images and documentation of *No-How Generator* included in this written thesis. For their generous and essential support, I thank: Jim Hendley and the team at Dance4; Lauren Wright and the team at Siobhan Davies Dance; Eva Martinez, Robyn Cabaret and the team at Sadler's Wells; the DMU Venues/ Performance & Events team; my scientific collaborator Guido Orgs and the Neurolive team; the encouragement and conversation of Simon Ellis, Kirsty Alexander and Martin Hargreaves; and all who have attended and supported work-in-progress sharings and performances of *No-How Generator*. My deep gratitude to Deborah Hay, Guy Claxton and the Warburg Institute for the vital contributions that their work makes to this research, and for their generosity in speaking and working with me in person during this research process. My deepest thanks to those who have travelled so closely with me through this entire process, with such extraordinary generosity, brilliance, and warmth: my PhD supervisors Ramsay Burt, Sally Doughty and Paul Russ, my collaborating performer Katye Coe, my producer Iris Chan, my artistic mentor Siobhan Davies and to my partner Neil Wissink, my family and friends for such generous and constant support throughout my PhD.

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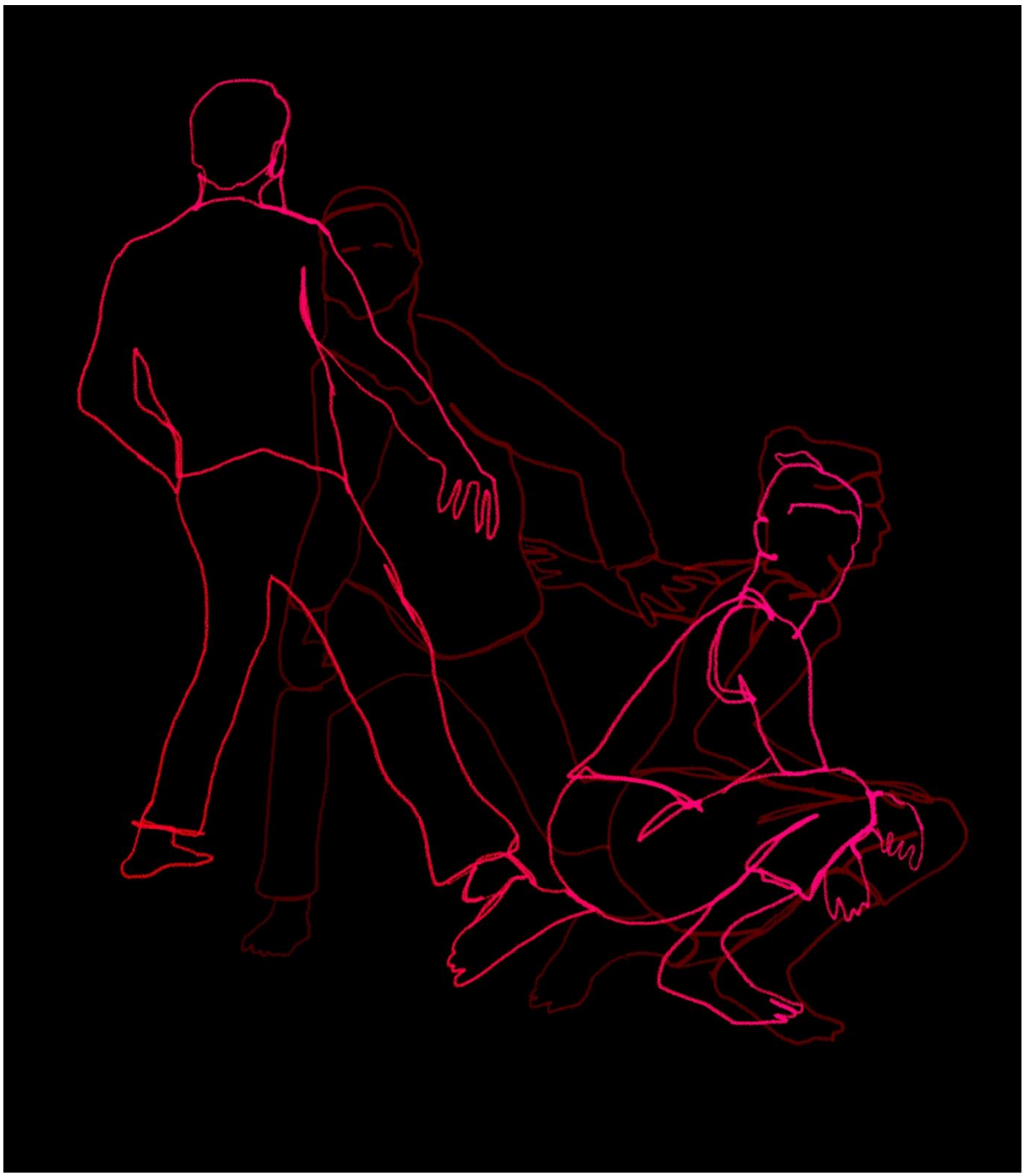

Figure 1: *No-How Generator*, graphic by Victoria Ford

Figure 2: *No-How Generator*, graphics by Victoria Ford

Section 1: Introduction

What if how all of my cells are doing knowing serves me well in the practice of no-how generation?
(1/8/19, Sperling 2017-2021)[1]

Choreography is a generative field of human experience, and what is generated within that field is intrinsically enmeshed with forms of embodied knowing: that is my belief and interest as a choreographer and performer of dance as an artistic field, and it is the perspective from which this artistic doctoral thesis embarks. My own history of practice of dance and choreography over more than thirty-five years underlies the specific artistic research process of this doctoral study. Through this lens, this thesis seeks to affirm that choreographic practice and events of choreographic performance have the capacity to be sites of emergence of meaningful potentials in the world, and that this capacity is grounded in the embeddedness of human knowledge-generating capacities within the embodied context of the medium of choreography itself.

As this written thesis will elucidate, this artistic research understands knowledges and ways of knowing to be inherently plural, and to be differing yet entangled and ultimately complementary parts of an ecology of knowledges.[2] Therefore, while this thesis and its investigation of choreography and/as knowledge-generation is certainly interested in affirming that choreographic practices operate through and generate forms of knowing that are intelligent, this does not entail that it associates choreography exclusively with ways of knowing that are, for example, entirely conscious, explicitly communicable in language, characterised by rationality and logic, and fixed in form. While such qualities may arguably be most frequently or typically identified with knowledge and intelligence in many (especially Western, academic) cultural contexts, the embodied and

[1] This question, quoted from my studio notebook writings, is part of the choreographic score of *No-How Generator*, the work that is the primary site of this artistic research process. The form of this question references the question-forms of choreographer Deborah Hay. Section 3, below, discusses how Hay's practice, including her question-forms, strongly inform this research.
[2] I use the phrase 'ecology of knowledges' with reference to Santos (2014), as discussed in section 7, below.

choreographic perspective of this artistic research inherently understands ways of knowing to also take forms that exceed this limited set of associations. This artistic research acknowledges and centres the contributions of knowledges and ways of knowing that unfurl at the edges or outside of fully-conscious awareness, that exist in felt, implicit or tacit forms, that are intuitive or more-than-rational, and that are in motion. These are aspects of the particular forms of embodied knowing that this artistic research considers to be particularly active in environments of choreographic practice and performance. My emphasis within this artistic research, therefore, is on recognising forms of knowing that I consider to be always already integral within my experience of choreography, rather than advocating that choreography should become identified with something else, called 'knowledge', which is conceived of as existing outside of or apart from what choreography itself already is.

Aims, research questions and context

My aim in this written thesis is to offer an exegesis of developments that have arisen within my choreographic practice and thinking through my artistic doctoral research process, which has unfolded through the creation and performance of the choreographic work *No-How Generator.*[3] The specific focus of this artistic doctoral research process, and therefore of this written thesis, is to investigate and articulate a deeper and richer understanding of the relationship that my choreographic practice has to knowledge-generation. This written thesis aims to articulate insights into the particular character of the kinds of knowing that I consider to be most active and relevant within this, and how they unfold in praxis. It articulates how this unfolding is supported by specific conceptual and practical tools and orientations that I have developed in a choreographic context during this research, including *no-how* and *Magic & Science*, which I use to name (respectively) the

[3] Documentation of the live choreographic work *No-How Generator* (Sperling 2019) is shared in this written thesis in the form of a written choreographic score (see Appendix A) and video documentation of two performances (see Appendix B).

particular kind of knowing that I consider this artistic research to be generative of, and the broader epistemological orientation that I situate choreographic no-how generation within. This written thesis aims to contextualise these insights in ways that are relevant to choreographic practices and to the theoretical fields that these insights implicate and draw upon. By doing so, this written thesis not only nourishes the ongoing evolution of my own artistic practice-research, but also aims to offer other practitioners and researchers in dance/choreography and in other fields what might be termed 'compost': nutrients that contribute materially yet non-prescriptively to the growth of what they themselves are cultivating.[4] This contributes to: expanding understandings of and engagement with my choreographic practice by others; stimulating the appreciation and development of expanded choreographic approaches by other choreographic practitioners; and broadening understandings, both within and beyond the field of dance, of the forms that knowledge-generation can and does take, and of the social and political relevance that such a broadening has.

A constellation of research questions guides this investigation. They are:

- What new potentials for choreographic practice emerge from choreographically investigating perspectives (including Deborah Hay's in dance, Guy Claxton's in embodied cognitive science, and Aby Warburg's in art history/philosophy) that understand knowledge-generation as a profoundly embodied process of conjuring?
- Given choreography's particular capacity to engage with embodiment as both its material and its subject matter, what can approaching ideas of embodied knowledge-generation through the specific lens of choreographic practice contribute to wider cultural and scholarly understandings of these ideas?
- How can understanding artistic knowledge-generation as *no-how* inform choreographic and experiential approaches to investigating these ideas and processes?
- How can understanding choreographic knowledge-generation as a practice in which *Magic & Science* are continuous with one another inform choreographic and experiential approaches to investigating these ideas and processes?

[4] I thank Siobhan Davies for developing the notion of 'compost' as a characterisation of how dance works meaningfully nourish each other and pass on their knowledges, without necessarily replicating each other's outward manifestations. Davies developed and discussed this during the making of collaborative work *Table of Contents* (Davies et al 2014), on which I also collaborated.

- How can an engagement with critical-theoretical perspectives on political dimensions that intersect with framing artistic practice as knowledge-generation (including the work of legal scholar Boaventura de Sousa Santos) support the development of choreographic and experiential approaches that engage cogently with these dimensions?

This written element of my thesis is my exegesis of the outcomes of the choreographic research process through which I investigated these questions. This process has been focused through the creation and performance of my choreographic work *No-How Generator* (Sperling 2019), which is the primary outcome and manifestation of this research. While this research process evolves from my earlier work, I take as its formal beginning the start of my artistic doctoral research period in October 2017. I then began a continuing process of solo daily practice that constitutes the ground from which and within which this research emerges.[5] This typically took place every weekday from 9am-10am at Siobhan Davies Studios,[6] as regularly as time commitments and access to studio space allowed. This process (and this ground) then grew to involve a number of other collaborators during the nine-month period that led up to the premiere performance of *No-How Generator*, shaped around two phases of intensive studio-based activity: the first phase comprising four non-consecutive weeks in February/March 2019, and the second comprising a further four weeks spread across the period from July to October 2019.[7] Four sharings of work-in-progress took place with

[5] My approaches to daily practice are discussed in detail in section 3, below.

[6] I am deeply grateful to Siobhan Davies Dance and Siobhan Davies Studios (London) for their indispensable and multifaceted support as a partner organisation in this artistic doctoral research process, including through providing this essential access to studio space for daily practice, on an in-kind basis whenever the space was not otherwise in use. This research process would not have been possible without their generous and expert support, combined with that of the supporters discussed below.

[7] These two phases of intensive studio-based activity with collaborators were made possible through a range of support. Dance4, the lead partner organisation in this artistic doctoral research, generously provided in kind studio space for almost all of these two phases of activity, alongside commissioning funds and multifaceted forms of expert support, all of which have been absolutely integral for this research journey. Siobhan Davies Dance also generously provided further forms of support including artistic mentorship and access to full-day studio hire at subsidised rates. The first phase of activity was supported by funds from Midlands4Cities, while the second phase of activity was supported by funds from Arts Council England. Additional support, including in kind studio space, was also provided by Sadler's Wells Theatre (London). I am deeply grateful to all of these supporters for making this activity possible.

audiences in different contexts during this nine-month period,[8] leading to the premiere performance on October 10, 2019.[9] The second performance of *No-How Generator* took place on 24 November 2021.[10] Throughout these intensive periods, I have been joined by my core collaborator, dancer Katye Coe,[11] who, together with me, performs the work. We have also been joined intermittently by several other collaborators and guests[12] invited to make specific contributions to the process.

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[8] Work-in-progress sharings of *No-How Generator* occurred at: iC4C, Dance4, Nottingham, 3 March, 2019; Siobhan Davies Studios, London, 22 March, 2019; Eintanzhaus, Mannheim, Germany, 30 March, 2019; Per/Forming Futures conference, Middlesex University, 12 April, 2019. In addition, I have also shared solo versions of some elements of the work-in-progress on several occasions, at: Future Oceans/ APAP, Marlene Myers Theatre, New York, USA, 6-7 January, 2019; Slade School of Art, London, 25 January, 2019; Cracking the Established Order conference, De Montfort University, Leicester, 28 June, 2019. My thanks to all of these contexts for providing these essential opportunities to iteratively test the developing work with the participation of different audiences and their feedback.

[9] The world premiere performance of *No-How Generator* took place on 10 October, 2019, in The Space at Nottingham Contemporary (Nottingham), as part of Nottdance 2019, presented by Dance4.

[10] The second performance of *No-How Generator* took place on 24 November, 2021, in Hall 2 of The Venue at De Montfort University (Leicester), with support from Midlands4Cities and Dance4. A rehearsal process of 10 days with Katye Coe, between July and November 2021, preceded this performance. This public performance facilitated my examiners' experience of the practical element of my artistic doctoral thesis.
Further performances of *No-How Generator* have since taken place at Sadler's Wells Lilian Baylis Studio (London) on 21 & 22 April, 2022, with support from Sadler's Wells.

[11] As collaborating performer in *No-How Generator*, Katye Coe has a truly core role in the development and performance of this work, and in the travelling of this artistic research journey with me. It is critical to acknowledge how extraordinary and experienced an artist Coe is, and how deeply the sophistication, wisdom and generosity of her practice as a dancer has nurtured this artistic research process. While this has been the first time that Coe and I have worked together in a choreographic process, we have been colleagues in the UK independent dance ecology for many years, increasingly crossing paths and sharing interests, which lay the ground for our collaboration on *No-How Generator*. In particular, my participation (over the course of several years preceding my artistic doctoral research journey) in Coe's occasional facilitation of open morning classes at Independent Dance (London) has deeply shaped this artistic research in several ways. Coe's practice as a facilitator/ teacher is deeply cohesive with her practice as a dancer. Her classes have provided a context in which we have been able to grow familiar with one another as artists and dancers, grounding our shared intuition that working together on *No-How Generator* was timely and purposeful. The care-fully facilitated environment of Coe's classes has been among the key contexts (alongside the classes of Charlie Morrissey) where certain currents shaping this artistic research have been enabled to well up. Specifically, these classes helped to host and catalyse an opening up of the presence and valuing (by me) of the act of dancing as a no-how generator within my choreographic practice. Coe's deep commitment to embodying and articulating the 'agency of the dancer and… the dancers' experience as one where rich information is often held in silence' (Coe 2017, in Ellis, Blades & Waelde 2018, p.324) has been a vital catalyst and crucial friend, both in the time leading up to and during the travelling of this artistic doctoral research journey. I cannot thank her enough, nor can I adequately articulate the richness and multifacetedness of her contribution to this artistic research as collaborating performer.

[12] Collaborators who have contributed to the development of *No-How Generator* are: Katye Coe (Collaborating Performer), Iris Chan (Producer), Jackie Shemesh (Lighting and Space Designer), Joel Cahen (Sound Design Consultant), Alexa Pollmann (Clothing Designer), Mabel Luz Flores (Clothing Fabricator), Stefan Jovanovic (Visual Design Consultant), Victoria Ford (Graphic Designer). Several other artists have contributed to the development of the role of Guest Performer in the work: Jennifer Lacey (who was also Guest Performer for the premiere performance as part of Nottdance on 10 October, 2019), Fernanda Muñoz-Newsome (who was also Guest Performer for the performance at De Montfort University on 24 November, 2021), Susanna

Just as the constellation of collaborators in the process of creation and performance of *No-How Generator* was profoundly important to the work, so is the constellation of different fields that this written thesis draws upon an integral aspect of its argument. Alongside the primary source of my own experiences of my choreographic practice, this constellation of fields and references includes: other artists' dance and choreographic practices (most frequently referring to Deborah Hay, along with the always-implicit contribution of Siobhan Davies,[13] and key affinities with Jennifer Lacey); critical-theoretical perspectives on knowledge-generation (in particular those of Sarat Maharaj and Boaventura de Sousa Santos, alongside Minna Salami and Donna Haraway); embodied cognitive science and theorisations thereof (with particular reference to Guy Claxton, alongside N. Katherine Hayles and Andy Clark); and the epistemological philosophy arising from the art historical work of Aby Warburg (referencing Warburg, alongside commentators on his work including Georges Didi-Huberman, Christopher Johnson and Claudia Wedepohl). Each of these is a necessary ingredient for conjuring the specific imaginary of choreographic knowledge-generation that I consider to best activate generativity within my practice. Key threads within the constellation of ideas woven together from multiple directions by these ingredients are:

Recchia, Hilary Kneale, Iris Chan, Jamila Johnson-Small, Antonija Livingstone and Victoria Malin. My deep thanks to all of them for their involvement in this process and their individual contributions to it.

[13] As an artistic mentor, collaborator and friend, Siobhan Davies has been and continues to be a formative influence on the orientation to choreography that I take in my work and in this thesis. Our ongoing collaborative dialogue has continued to grow since it began in 2006. Over this period, Davies and I have co-created several works, often together with others (these works have been initiated by Davies and produced by Siobhan Davies Dance, including *Minutes* [2009], *To hand* [2011], *Table of Contents* [2014], and my creation of *Loop Atlas* [2017] for *material/ rearranged/ to/ be* [2017]). These processes of investigation, creation and performance, and the learning environments that they have constituted, have played a pivotal role in enabling the development of my individual practice and interests as an artist over the past 15 years. These experiences underlie and inform my specific understanding of the potentials of choreographic practice to be an *investigative* endeavour and, thus, a knowledge-generative one. Beyond these particular collaborative works, Davies has also been an artistic mentor for my practice as a whole, including during the creation of all of my independently produced works, since 2006 (see http://www.matthias-sperling.com/works.html for a full list of works). During this artistic doctoral research journey, Davies has continued to be a deeply supportive mentor and critical friend. Her organisation, Siobhan Davies Dance, has also played a crucial role in offering practical support to make the undertaking of this research possible (see footnote 6, above). Thus, I consider Davies' contribution to be implicitly present throughout this thesis, and I cannot thank, celebrate or acknowledge her enough for her vital, insightful, generous and ongoing contribution to my thinking and practice.

· Human knowing is a lived process that necessarily wells up in and through embodiment and its felt sense experience – a perspective that grounds knowing as intrinsic to the embodied context of choreography, and that is grounded in an understanding of the fundamental continuity of body and mind.

· Ways of knowing that are more-than-rational, felt and intuitive are an integral and embodied part of the process of the welling up of knowing and intelligence.

· The catalytic dynamics of paradox are a generative and inherent part of the artistic and embodied landscape of choreographic no-how generation.

· A continual, underlying attention to the social and political contexts within which these processes unfold is an integral and generative dimension of a choreographic/artistic engagement with those processes.

These research interests and the perspective through which I engage with them are situated within the particular areas and contexts of contemporary dance practice that my individual history of practice has been grounded in. For the past 25 years, my practice has unfolded primarily in the context of UK contemporary dance practice. Prior to this, the first 10 years of my dance practice and study were situated predominantly in Toronto, Canada. As a member of the school and company of the Canadian Contemporary Dance Theatre (1984-1993), I engaged with a range of modern and contemporary dance techniques with influences including (primarily) Limón and (to a lesser extent) Graham, alongside training in ballet, Contact Improvisation, and Ideokinesis.[14] The main focus of my learning was through creative practice and performance, working as a dancer with more than twenty commissioned contemporary choreographers on creations for the company repertoire. Concurrently, I also studied dance and theatre at Claude Watson School for the Arts (1986-1993), in

[14] For context on Canadian Contemporary Dance Theatre, see Canadian Contemporary Dance Theatre (2021); on Limón technique and founder José Limón, see Limón Dance Company (2020); on Graham technique and founder Martha Graham, see Martha Graham Centre of Contemporary Dance (2022); on Contact Improvisation and its initiator Steve Paxton, see Contact Collaborations (2022); on Ideokinesis, see Sweigard (1974).

which context I additionally learned through creating and presenting my own choreographic works.[15] In the UK, I first studied at Trinity Laban, as a post-graduate student and member of Transitions Dance Company (1997-1998).[16] I then worked as a dancer in the companies of choreographers including Matthew Bourne (1999-2000) and Wayne McGregor (2001-2006), before focusing on the development of my own choreographic practice.[17]

The positioning of my current practice is shaped by the ways that my curiosity to explore and expand the potentials that I perceive within dance and choreographic practice have increasingly led me to work in areas of the UK contemporary dance ecology that are particularly engaged with similarly exploratory, experimental and investigative approaches to the art form. For example, I have worked closely with Siobhan Davies Dance (since 2006, as a collaborating and/or commissioned artist) and Dance4 (since 2007, as an associate artist, research artist and co-curator).[18] I am also regularly engaged with Independent Dance (as a participant in and occasional contributor to their programme of artist professional development) and Sadler's Wells (as an artist presenting my work in the Sadler's Wells Lilian Baylis Studio programme, and as a Sadler's Wells Summer University artist [2010-2014]).[19]

My artistic work in dialogue with these environments (among others) spans multiple forms and contexts: performance on theatre stages in dance contexts; performance in galleries and museums

[15] For context, see Claude Watson Secondary Arts Programme (2022), Toronto District School Board (2022).
[16] For context, see Trinity Laban (2022).
[17] For context on Matthew Bourne, see New Adventures (2022); on Wayne McGregor, see Studio Wayne McGregor (2022).
[18] For context on Siobhan Davies Dance, see Siobhan Davies Dance (2022); on Dance4, see Dance4 (2021); on my work as co-curator (of biennial international festival Nottdance 2019) with Dance4, see Dance4 (2019).
[19] For context on Independent Dance, see Independent Dance (2022); on Sadler's Wells, see Sadler's Wells Trust (2022).
My presentations in the Sadler's Wells Lilian Baylis Studio programme have been: 2015 – *We Need To Talk: Matthias Sperling with Marcus Coates*; 2016 – *Now That We Know*; 2018 – *Now That We Know* and *Institute of Neurochoreography – First Open Congress*; 2022 – *No-How Generator*.
Sadler's Wells Summer University brought together a cohort of fifteen artists for two weeks of professional development each year, for a four-year period. It was led by Jonathan Burrows, Emma Gladstone and Eva Martinez, and supported by Jerwood Charitable Foundation and Leverhulme Trust.

in visual art contexts; and collaboration with researchers working in multiple disciplines (often including neuro- and cognitive sciences) in academic research contexts.[20] Thus, through the pursuit of my artistic interests, my choreographic practice has become situated in a terrain where contemporary dance is frequently in collaborative dialogue with contemporary visual art and scientific research, among other research fields.

My history of practice encompasses a relatively broad range of 20th and 21st century Western contemporary dance approaches, from my earlier engagement with Limón-influenced modern dance, to a stronger emphasis on ballet and Cunningham-based[21] training during my work with Wayne McGregor, to a growing involvement in what are sometimes referred to as somatic dance[22] and post-modern dance[23] approaches that I have increasingly engaged with via my work with Siobhan Davies Dance and its closely interwoven relationship with Independent Dance. A "somatic" sensibility (i.e., one in which a person's unfolding experience of their own bodily sensations is foregrounded) is evident in my approaches to practice within the artistic research discussed in this thesis, as is the influence of "post-modern" approaches (particularly through my close engagement with the practice of Deborah Hay[24]). While these approaches clearly play a deeply informing role in my practice, I simultaneously consider my current practice to also be informed by aspects of the earlier approaches that I have engaged closely with over the course of my career – synthesising what

[20] For a list of dance contexts where my work has been presented, see Sperling (2022); visual art contexts where my work (often in collaboration with Siobhan Davies and others) has been presented include Barbican Curve, Hayward, Institute of Contemporary Arts, Tate Britain, Tate Modern, Tramway, Turner Contemporary, Victoria Miro, Whitechapel and Whitworth Art Gallery (UK), Lenbachhaus Museum/Kunstbau (DE) and Leopold Museum (AT); examples of my collaborative work with cognitive neuroscientists include Sperling (2015), Vicary et al (2017), Zimmermann et al (2018), Neurolive (2022).

[21] For context on Cunningham technique and founder Merce Cunningham, see Merce Cunningham Trust (2021).

[22] Somatic dance practices have been described as 'characterized by a return to the self and sensorial awareness, to cultivate a new consciousness of bodily movement; hence the term 'soma' (of the body) and 'somatic' as a reference to the first-person perception, and the balance between first and third-person perspective, which underpins these experiential practices' (Whatley, Alexander & Garrett, 2009).

[23] See Banes (1980) for a noted contextualisation of the term *post-modern* in relation to 20th century American dance history.

[24] Hay was a founding member of Judson Dance Theatre in New York in the 1960s, often closely associated with post-modern dance. See, for example, Banes (1980).

I have learned from this breadth of different experiences of artistic practice is an underlying aim that inflects the forms that my work takes. My particular history of experiences of dance and choreographic practice contributes to shaping my positioning within and my perspective on my field of research.

Clarifications of key terms

Before giving an overview of the route that this written exegesis will travel, I will first prepare the ground for the body of the discussion ahead by articulating how I understand a number of the key terms that frame this thesis. The particular ways in which I understand these terms is implicit throughout this research and underlies its argument. Clarifying them here will allow the discussion to move ahead further and more fluently. I will discuss my understanding of the terms *embodiment*, *felt sense*, and *choreography*, as well as what I mean by the term *event of choreographic performance*, and why I choose to use the term *knowledge-generation* to frame this research.

Embodiment

My understanding of what the term *embodiment* means fundamentally grounds and shapes my choreographic orientation toward knowledge-generation as developed in this thesis. It is important, therefore, to briefly outline this here and to introduce some of the implications that this entails. It is intrinsic within my choreographic orientation toward knowledge-generation that embodiment denotes not merely the fact of bodily presence, but that bodies are continuous with minds. The term embodiment, understood in this way, denotes that minds are bodily phenomena and refers to embodied cognitive science understandings of how bodies give rise to minds, consciousness and knowing. Cognitive scientist Guy Claxton, for example, characterises his perspective on the intrinsic continuities between body, mind and intelligence by saying: 'my intelligent flesh has evolved, as part of its intelligence, strategies and capacities that I think of as my "mind". I am smart precisely

because I am a body. I don't own it or inhabit it; from it, I arise' (2015, p.3). Such cognitive science perspectives also inform my understanding that what the term embodiment describes does not stop at the edges of my skin.[25] Rather, my use of this term further implies that my minded body is fundamentally constituted through its embedded and extended relations with environments. As Francisco Varela, Evan Thompson and Eleanor Rosch write in one of the founding texts of the field of embodied cognition, this perspective on embodiment highlights 'first, that cognition depends on the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological, and cultural context' (1991, p.173). Cognitive philosopher Andy Clark takes this further, arguing that embodiment and embodied cognition are not only environmentally embedded but also extended: that objects and materials beyond the skin can participate in cognition so fundamentally as to co-constitute (rather than merely support) the feedback loops of embodied thought processes. As he puts it: 'thinking and cognising may (at times) depend directly and noninstrumentally upon the ongoing work of the body and/or the extraorganismic environment' (Clark 2008, p.xxviii). Such environmentally embedded and extended views of embodiment also inherently implicate it with social, interpersonal, intersubjective dimensions; in myriad ways, human bodies-persons do not exist apart from their relations with other human bodies-persons. Claxton, for example, details a multitude of physical, even cellular, ways in which 'whether we are aware of it or not, our bodies are in a state of continual resonance with those around us – or those we may be remembering or imagining' (2015, p.210). From this view of embodiment, 'the "intelligent agent", seen rightly, extends throughout and beyond the whole body. It is constituted by the tools and the space around us, and also by everyone with whom we are 'in touch'' (ibid, p.8).

[25] This wording refers to the text of my science-fiction performance-lecture *Now That We Know* (Sperling 2016), in which I say: 'even the thought processes of our physical minds don't stop at the edges of our skin, but extend out into the environments around us, in loops of interactions with objects, situations and other people' (Sperling 2016).

An immediate implication of this understanding of embodiment, therefore, entails that the term 'embodied knowledge' is not here used in the limited and inherently dualistic sense of knowledge that specifically resides in the body and not in the mind. Rather, the term 'embodied knowledge' is used to draw attention to the always-embodied character of human knowing in ways that are relevant to choreography.

This use of the term 'embodiment' also implicitly understands that embodied capacities of human knowing are always inclusive of a human anatomy and physiology that spans multiple modes of knowing. This entails that, within this orientation, the integral presence and necessary contribution of tacit, felt-sense, intuitive modes of knowing are always implied. Here, knowing is understood to never be exclusively associated with modes that have an explicit, languaged, rational and propositional character, but rather to encompass the full spectrum of human embodied capacities for knowing.

This understanding of embodiment also clarifies that a focus on human embodied knowing does not entail an individualistic orientation, nor an anthropocentric one. As this conception of embodiment extends beyond the individual body to include its environments, origins and relationality with other humans, it incorporates an appreciation of the entangled, relational ontology of human bodies and human knowing. This is an ontology of *intra-active* relations, to use feminist theorist Karen Barad's term emphasising that agents bring each other into existence through their relations, rather than existing as pre-given separate entities that meet in *interaction* (Barad 2012, p.77).[26] In this way, this

[26] Barad writes: 'The usual notion of interaction assumes that there are individual independently existing entities or agents that preexist their acting upon one another. By contrast, the notion of "intra-action" queers the familiar sense of causality (where one or more causal agents precede and produce an effect), and more generally unsettles the metaphysics of individualism (the belief that there are individually constituted agents or entities, as well as times and places). According to my agential realist ontology, or rather ethico-onto-epistemology (an entanglement of what is usually taken to be the separate considerations of ethics, ontology, and epistemology), "individuals" do not preexist as such but rather materialize in intra-action. …It is not that there are no separations or differentiations, but that they only exist within relations' (Barad 2012, p.77).

conception of embodiment has implicitly political resonances, including standing in contrast to the individualism and atomisation that pervades the operations of neoliberal capitalist systems and the ideologies underlying them.[27] Similarly, this understanding of embodiment clarifies that a focus on investigating human knowing and its embodied basis does not entail an anthropocentric perspective. This understanding of embodiment links human knowing not only with human bodies but, by extension, also with the lineage of biological evolution through which those bodies have come into being. As such, this conception of human embodiment is intrinsically linked with the wider, more-than-human world of all forms of evolved biological life and, indeed, also with the inorganic world that precedes and supports biological life. Therefore, an orientation that focuses on human knowing does not imply human exceptionalism, but understands that knowing, like cognition and consciousness, is a capacity that is not the exclusive preserve of humans (N. Katherine Hayles' detailed and far-reaching articulation of this is discussed in section 2 below). Through its emphasis on embodiment, I argue, this orientation understands a human investigation, exploration and discussion of human knowing to be situated at the human node within a wider web of knowing that spans other forms of biological life. An emphasis on situatedness, as Donna Haraway argues, forms the basis of an ethical way of understanding and practicing human knowing, as it grounds the ability to take responsibility and be held accountable (1988, discussed in section 2 below), including on a planetary ecological scale. To focus, as a human, on human knowing in this way can thus be considered to ground an ethical engagement that extends to the more-than-human world.

Felt sense

Closely related to this view of embodiment is *felt sense*, conceived as part of the experience of embodiment and something that can be integral within choreographic approaches. The term *felt*

[27] See, for example, Harvie (2013) and Paramana (2015), who both discuss neoliberal individualism in contrast with artistic practices of performance-making. Harvie states that 'dominant neoliberal capitalist ideologies… aggressively promote individualism' (2013, p.2). In *Ungoverning Dance* (2017), Burt offers an analysis of dance practices that embody forms of resistance to 'the individualism encouraged by neoliberalism' (2017, p.54), and that instead engage in 'defending the commons… [which] is always under attack' from neoliberalism (ibid, p.7).

sense is a frequent and central reference throughout this written thesis, referring to an implicit, intuitive and informative awareness of bodily feeling. While this concept can apply to all embodied experience, my use of it is focused on the context of bodily felt sense awareness, experienced (and honed) within events of choreographic practice and performance. Bodily felt sense is an always-ongoing process of 'reading' (largely nonverbal) embodied experience as it unfolds in relationship with internal and external events. I consider this process to be the basis of how the generation of knowing emerges in choreographic contexts. While I use the term *felt sense* to name something that arises within and is central to my history of embodied experience in dance and choreographic practice, I situate the term itself as originating from the work of American philosopher and psychologist Eugene Gendlin. Gendlin describes felt sense as 'a special kind of internal bodily awareness' (2003, p.10). He points toward this in the context of his research aiming to pinpoint which factors enabled clients of psychotherapists to successfully experience shifts that move toward resolving what they sought to address; Gendlin's research identified that the key factor predicting the success or failure of an individual's psychotherapeutic journey was the degree to which clients were able to attune to their own bodily felt sense as a resource for self-awareness and problem-solving (2003, pp.3-4). As a result, Gendlin developed a specific method aiming to help people to develop their ability to attune to their bodily felt sense, called Focusing, viewing this as a fundamental skill that can be, and frequently needs to be, learned and refined through practice (2003, p.4). For Gendlin, a felt sense percept:

> …is usually not just there, it must form. You have to know how to let it form by attending inside your body. When it comes, it is at first *unclear*, fuzzy. By certain steps it can come into focus and also change. A felt sense is the body's sense of a particular problem or situation. A felt sense is not an emotion. We recognise emotions. We know when we are angry, or sad, or glad. A felt sense is something you do not at first recognise - it is vague and murky. It feels meaningful, but not known. It is a body-sense of meaning. (2003, p.10)[28]

[28] The emphasis/ italics in this citation are in the original. Throughout this written thesis, when italics appear in citations, their source is always in the original, unless I have stated that the emphasis has been added by me.

Gendlin defines attunement to felt sense as an embodied skill of abiding in not knowing, that enables an experiential reading of a situation and forms the core of a generative process of recognising meaning and making change. Moreover, given Gendlin's concentration on therapeutic contexts, his understanding of felt sense is also interpersonal: his method of Focusing is most commonly framed as an interaction shared by two or more people (e.g. client/s and therapist) in a shared space and time. Felt sense attunement, then, relates not only to reading one's own internal bodily awareness, but also to attending to others' processes of felt sense reading; of holding space for and participating in collective processes of finding things out via bodily felt sense.

In this thesis, felt sense is considered, not in Gendlin's therapeutic context, but in the artistic context of choreographic practice and performance, where the same fundamental bodily and interpersonal conditions apply. I use the term *choreographic no-how generation* (discussed in section 5) to describe a felt sense process of finding out that aligns with this specifically artistic context and the different aims that different artists may self-define for it, as distinct from the therapeutic context and aims that Gendlin foregrounds. While recognising this distinction, Gendlin's concept of bodily felt sense remains important throughout this thesis. Alongside the ways that my own embodied experiences of felt sense within my practice are a constant resource guiding this thesis, Gendlin's influence is also woven into this discourse through my frequent references to Guy Claxton, whose perspective on embodied cognitive science is itself strongly imbued with an appreciation of Gendlin's work (e.g. Claxton explicitly acknowledges this in Claxton 2015, pp.254-257).

Choreography

Throughout this thesis, I frame the practice, context and subject of my artistic research as *choreography*. In several ways, my use of this term assumes particular understandings of it that may differ significantly from how this term is understood in other contexts. Firstly, my use of the word *choreography* to describe my practice is inherently inclusive of my work as a choreographer and as a

performer or dancer within my own choreographic processes. I consider my practice, as a whole, to be a practice of choreography, encompassing all of the elements that are integral to my experience of that process. Inseparable from the creation of choreographic works, this includes, for me, my engagement in a daily practice of investigating through moving, and my embodiment as a performer of the works that I make.[29] I am interested in emphasising that, through all of these facets of practice, the generation of unique works of art is occurring. Thus, I consider all of these to be inseparable facets of choreography and my choreographic practice.

Secondly, my understanding of choreography emphasises that it is a practice of creating artworks, without thereby necessarily defining it in terms of fixing sequences of movement (nor setting such movement sequences to music) during a creative process. The orientation toward choreography that has arisen for me through my history of practice (and through influences on it including Siobhan Davies and Deborah Hay) is particularly interested in the generative potentials that exist within experiences of events of choreographic practice, not only during creative processes, but also during performances themselves. This entails a shift of focus away from an exclusive emphasis on repeating what may be visibly fixed within a choreographic composition and manifested in (apparently) precisely the same movements of muscles and bones each time it is performed. Rather, the focus of choreography becomes the always-ongoing process of engaging with the coming-into-being of what is not yet known, by putting in place conditions, habitats or environments that knowledgeably enable the activation and navigation of that engagement. A choreography can thus take the form of a choreographic score that, while potentially highly defined in terms of its parameters, tools and many layers of compositional detail, is not necessarily manifested through precisely the same movements each time it is performed. Rather, each performance's journey through the choreographic environment defined by the score is a process of discovery and will necessarily have

[29] While I have created numerous commissioned choreographic works in which I was not a performer, it is generally characteristic of my practice that I perform (either solo or together with collaborators) the works that I self-initiate the creation of.

unique aspects that emerge from its status as a choreographic engagement with the time, space and context of that particular performance as a unique occasion of lived experience. This orientation towards choreography, including the ways in which it is particularly clearly informed by Deborah Hay's practice and thinking, is further discussed and contextualised throughout this written exegesis.

I note that, in this thesis and in my practice in general, I choose to understand choreography as an artform that consists in human embodied activity. I recognise that choreography can also be understood in other ways.[30] My interest, however, is in emphasising the links between choreography and embodiment, highlighting particular modes and affordances that choreography can offer for investigating embodiment, and arguing that this is among the ways in which the field of choreography holds the capacity to make a specific and meaningful contribution that other fields do not already make.

Finally, I also acknowledge that my orientation toward choreography includes a choice not to use the word *improvisation* in relation to my work, for a combination of reasons. It may be helpful to clarify these here at some length, given that some features that my orientation to choreography is inclusive of may also be associated with the concept of improvisation, such as the practice of not necessarily fixing or repeating precisely the same sequences of movements of muscles and bones in each performance, focusing on the coming-into-being of what is not yet known, and defining a score that hosts unique manifestations each time it is performed. While overlaps may be evident between these features and some conceptions of improvisation, my interest is focused on the practice of choreography, and the ways in which I locate these features within what choreography affords as a medium.

[30] I am thinking, for example, of choreographer Mette Ingvartsen's *The Artificial Nature Series* (Ingvartsen 2009-2012), which stage choreographies of objects or materials, in which human bodies are either entirely absent or not the centre of attention.

Given that I understand choreography as an artform that consists in human embodied activity, and given the understanding of embodiment that I have discussed earlier in this section, I consider the medium of choreography to fundamentally incorporate and engage with the ongoing unfolding of the not-known as an integral aspect of its (epistemology and) ontology. Choreography, from this orientation, is an artistic medium that includes and engages with the unpredictability that is inherent within a complex, situated occasion of lived human experience. This orientation encompasses both the understanding that a given event of choreographic performance is never fully repeatable in every (experiential, relational, visible, invisible, cellular, molecular) detail, and at the same time also encompasses the understanding that a choreographic artwork can be meaningfully repeated on different occasions through the repetition of the elements that constitute its choreographic score (which need not entail an attempt to exactly replicate the outward forms that a given performance of a work takes). When choreography is considered in these ways, a binary conception of choreography and improvisation (which defines them by contrast with one another) is untenable. Rather than being conceived of as defining the opposite of what choreography is (i.e., in relation to a conception of choreography as a wholly predicted composition), these features that may be associated with the concept of improvisation are instead understood as features that are always already inherent within what choreography itself is and what choreography affords engagement with.

This orientation toward choreography in my practice is influenced by my deep fascination with hearing Deborah Hay say in workshops that her work (the choreography of which, on the whole, does not operate through prescribing movements of muscles and bones to be repeated each time that a given choreographic work of hers is performed) is not improvisation, but rather the opposite of improvisation (Hay 2009, 2012a). This understanding, deeply embodied in her approach to practice, relates to why Hay does not use the term *improvisation* to describe her work (ibid). A key

part of what motivates my sustained engagement with Hay's practice, which is evident throughout this thesis, is my fascination with and appreciation of the ways in which her work has successfully evolved an example of an approach to choreographic practice that is inclusive of the implications (described above) that I consider to arise necessarily within a medium that consists in human embodied activity.

My choice not to use the word *improvisation* in connection with my own work also stems from my desire to emphasise that my work (and the work of others in my field) involves the practice of creating artworks. I consider the unique affordance and expertise of choreography to be the embodied dynamic balancing and negotiation of both predictability (the fixity, specificity and meaningful degree of repeatability of an enduring artistic entity) and unpredictability (the ever-unfolding of the not-known in embodied, situated lived experience) at once. I consider the meaningful degree of fixity and repeatability that choreography can have as an important contributor to choreography's potential to be a field in which knowledges endure, interact and evolve over time.[31] While dance and choreography are often thought of in terms of their ephemerality, I see it as necessary for this field to also highlight the enduring and ever-growing depth of knowledges that are alive in and through it. While I have no doubt that dance practitioners who frame their work in terms of improvisation are deeply aware of the highly sophisticated and long-practiced knowledges that they deploy in their work, I have a tendency to feel that this semantic framing may risk being misread by non-specialist publics as describing a field of practice whose artistic potential is necessarily limited by consisting only of the entirely unpredicted, unplanned and unrepeatable and not also the deeply knowledgeable. This contributes to the multiple reasons that inform my choice to foreground the word *choreography* in the languaging of my work and my conception of my field.

[31] My collaboration on *Table of Contents* (Davies et al 2014), which investigated the relationship between dance and archive, is where my thinking on this subject was developed.

Events of choreographic performance

My framing of this thesis (and its title) as an investigation of what I term *events of choreographic performance* follows from the orientation to choreography that I have just articulated. This somewhat unusual term helps to clarify and emphasise particular dimensions of this orientation. Discussing choreography in terms of events of choreographic performance foregrounds an understanding that choreographic knowledge-generation occurs not only in the time and space of the creative process of making choreography but, importantly, also in the time and space of the performance of a choreographic work. This serves to clarify that it is integral to my conception of choreographic knowledge-generation that audience members, as much as performers and choreographers, are understood as *knowers* who participate in and co-constitute embodied and experiential processes that are generative of knowing in choreographic contexts. In the time and space of events of choreographic performance, I consider the presence of audience members participating as witnesses to be implicit. In this shared space and time, the embodied knowledge-generating capacities of performers and audience members alike are all present and activated in different ways, together constituting the dynamic knowledge-generative environment of events of choreographic performance. What this emphasis seeks to clearly distinguish itself from, then, is a notion that choreographic knowledge-generation might be something that only choreographers and performers engage in (i.e., during studio-based creative processes that occur without the participation of audience members), and/or that choreographic knowing is something that is *performed at* audiences. Clearly contrasting with this, my use of the term *events of choreographic performance* seeks to acknowledge, throughout this thesis, that live and participatory processes of choreographic knowledge-generation are something that choreographers and performers can and do co-facilitate with and for audience members.

Knowledge-generation rather than knowledge-production

Throughout this artistic research process, I have chosen to work with the term *knowledge-generation* rather than knowledge-production. This choice stems from my desire to affirm choreographic practice and performance as sites of generativity rather than sites of production, informed by a desire to ally my practice with ecological and biospheric metaphors while encouraging a distancing from metaphors of industry and economic instrumentalisation. The terms production and knowledge-production, while frequently used in discourses about art and/as knowledge,[32] strike me as steeped in associations with market economies and neoliberal capitalist ideologies that limit themselves to conceiving of knowledge as something to be instrumentalised and monetised. I concur with Sarat Maharaj, who (within his theorisations of relationships between art and knowledge) writes: 'Why speak of "production" when it smacks of factories, surpassed industrial modes, heavy metal sites and plants, the assembly line's mechanical regime - standardizing components at odds with the vagaries of art practice?' (2009, p.8). In my approach to knowledge from an embodied, choreographic perspective, and in my interest in articulating an approach that enacts a resistance to prevailing political forces that increasingly marketize knowledge, I feel that *knowledge-generation* is more supportive of my project. My orientation towards practice as generative – and specifically knowledge-generative – is also situated within the particular contexts of contemporary dance that my current practice exists within, as I have mapped earlier in this section. I consider these contexts (including Siobhan Davies Dance, Dance4, Independent Dance and the wider communities of independent practice in which they are enmeshed) to broadly share this focus on understanding dance and choreography as a generative field of investigation, learning, curiosity and interdisciplinary dialogue.[33] For this combination of reasons, the term *knowledge-generation* and its

[32] For example, Borgdorff (2011), Choi, Hlavajova & Winder (2008), Gehm, Husemann & von Wilcke (2007) Holert (2009).

[33] See, for example, Roy (2022) on Siobhan Davies' orientation to the field, and Independent Dance (2007) where co-founder Gill Clarke memorably characterises the orientation of these communities of practitioners with the motto "I am only passionately curious" (quoting Albert Einstein).

associative inflections are the lens through which this artistic research investigates relationships between choreographic practice and knowledge.

Synopsis of the written thesis

The body of this written thesis moves through six parts. Following this introductory first section, Section 2 begins by articulating what my foundational orientations towards knowledge-generation are within this choreographic research, grounded in the understanding that all human knowing is embodied knowing. To contextualise this, I draw upon multidisciplinary perspectives from cognitive scientist Guy Claxton, social critic Minna Salami and multispecies feminist theorist Donna Haraway. I also establish how particular aspects of the respective work of Claxton and literary critic N. Katherine Hayles each make foundational contributions to how my choreographic orientation to knowledge-generation can be articulated, extended and contextualised.

Following this grounding, Sections 3 and 4 then turn to discussing detailed examples of how this orientation to knowledge-generation has manifested in my choreographic practice during this research process. Section 3 focuses on my engagement in daily practice as the seedbed of my choreographic research process. This section introduces the practice and thinking of choreographer Deborah Hay as a key resource strongly informing my own ways of understanding and approaching practice, including daily practice. This section also discusses how daily practice, as a choreographic engagement in knowledge-generation, resonates with three other seams of thought and practice: the cognitive science perspective of Claxton, the art-historical and philosophical orientations of Aby Warburg, and my own interest in examining parallels between practices of choreographic knowledge-generation and notions of magic and divination.

Section 4 continues this foregrounding of practice by focusing on one particularly central choreographic material[34] that forms part of *No-How Generator*, which I give the name *back-and-forthing*. I elucidate how this material emerged from a process of learning-through-moving, and how it itself hosts the ongoing process of learning-through-moving within the performance of the choreographic score. I also unfold several of the ways in which this material travels through a number of further articulations over the course of its presence in the choreographic score of *No-How Generator*. Through the lens of this central material, the discussion accesses and reveals a granular exegesis of this choreographic investigation's particular ways of engaging with embodied knowledge-generation in/as performance. This section contextualises *back-and-forthing* in relationship to my past practice, and in relationship with elements of Warburg, Claxton and Hay's work, as well as drawing a parallel with shamanic practices as described by Michael Harner.

Section 5 unpacks the term *no-how*, which forms the title of the choreographic work and the thesis as a whole, *No-How Generator*. This unpacking more specifically situates and characterises the knowledge-generation that I consider to be at work in choreographic practice and performance, as *no-how generation.* I trace my encounter with the term *no-how* in the writings of Sarat Maharaj on art as knowledge-generation, which themselves draw the term from Samuel Beckett's literary artistic work. I also discuss how the terrain of *no-how* interconnects, again, with the key constellation of cross-disciplinary perspectives formed by Hay, Warburg and Claxton. The language of *no-how* thus emerges as a poetic and heuristic tool that directly informs practice.

In Section 6, I further expand the discussion of choreographic no-how generation by articulating how I situate it within the broader epistemological orientation that I call *Magic & Science*. This phrase, drawn from Warburg's systems, names a single category in which magic and science co-exist as complementary and entangled ways of knowing. I discuss how using *Magic & Science* as a heuristic

[34] My use of the term 'choreographic material' denotes a distinct strategy or form that comprises a section of the choreographic score.

for guiding choreographic knowledge-generation supports that process to navigate how it bridges a necessary range of ways of knowing. Further unspooling this choreographic-epistemological orientation of *Magic & Science* in relation to Warburg, I draw upon art-historian and philosopher Georges Didi-Huberman's analyses of Warburg to highlight how practices of divination sit at the crux of this bridging category. Connecting this with choreographic no-how generation, I draw parallels between these associations with bodily practices of divination and the respective choreographic practices of Deborah Hay and Jennifer Lacey, as well as my own. In this context, I discuss how the act of *taking a reading* through felt sense in choreographic practice has become an increasingly important framing for me during this research and how this embodies a choreographic epistemological orientation of *Magic & Science*. I then address the ways in which I consider the choreographic work *No-How Generator* to embody a choreographic imaginary of *Magic & Science*, including the important role that elements of humour and absurdity play within this.

In Section 7, I widen the frame of the discussion still further by drawing some connections that reach out from the concepts and practices that are active within this choreographic research, toward considerations of a wider social, ethical and political 'macro dramaturgy' (Kerkhoven 1999). I do this by exploring resonances between the conceptual orientations of this investigation and three concepts from sociologist and legal scholar Boaventura de Sousa Santos' *Epistemologies of the South: Justice against Epistemicide* (2014), which considers epistemological orientations as keys to shaping geopolitical dynamics. The discussion in this section aims to notice and appreciate where resonances between Santos' account and my investigation exist, wishing to advocate for an appreciation of the potentials of choreographic practices as epistemic generators and of the wider relevance that a choreographic engagement with such questions has. Focusing on concepts including the inherent plurality of knowledges, the knowledge in not knowing, and paradox as a generative ground for knowing, this section also notes how Santos' concepts relate to those of several other artists and thinkers threaded through earlier parts of the discussion.

Throughout the journey of this written thesis, two writing voices will be imbricated. Together with this more academically-oriented writing voice, a more immediate connection to the practice being discussed is embodied by excerpts selected from my studio practice notes, gathered throughout each stage of this choreographic research (Sperling 2017-2021). These notes, generally written in the immediate aftermath of studio-based movement practice that engages learning-through-moving, will always be presented right-aligned and italicised in the formatting of this document.

Figure 3: *No-How Generator*, performance view, Nottingham Contemporary, 10 October, 2019. Photo by Camilla Greenwell.

Section 2:

All human knowing is embodied knowing: a choreographic orientation to knowledge-generation

What happens when the choreographic (both the artistic and the embodied)
is placed at the centre of epistemology?
(12/3/19)

The (realm of) intellectual (things) is never not bodily, but an intellectual experience or endeavour
may be more or less cognisant of its bodily rootage/ its bodiedness.
So simple. Too simple. But sadly so relevant and missing and needed in so many contexts.
And pointing to positive potential.
(16/1/19)

How could knowing arise, other than through (noticing) moving? And moving through?
(1/7/19)[35]

Knowledge is a question of movement: that is the orientation underlying this investigation of choreography as knowledge-generation. In my experience, this particular orientation towards knowledge arises directly from and is grounded in my several decades of involvement in dance and choreographic practice. In the more than thirty-five years since my involvement in the art form formally began, I have experienced my evolving practice as a continually and fundamentally informing way of learning – of coming to know – about how to be in the world as an embodied being. As Deborah Hay has said of her dance practice: 'I practice because that's how I learn' (2018); and specifically, 'practice is how I learn, without the linear mind thinking' (ibid). This orientation towards knowing is deeply ingrained in me through my history of lived experience of attending to movement and of learning through the investigation of movement, dance, performance and choreography. For countless other practitioners with similar experiences, I presume (and often encounter) that orientations closely akin to this will have similarly arisen. The argument I make here is that my dance and choreographic practice experience directly grounds a specific perspective on

[35] This note is shorthand for: '*How could knowing [possibly] arise, [in any] other [way] than through (noticing) [one's] moving [in relationship with one's environment]? And [through embodied processes of] moving-through [that noticing]?*'

knowledge-generation and epistemology, and that this underlies the arguments that will unfold later in this written exegesis of my artistic doctoral research.

This section will focus on setting out my foundational orientations or principles about knowledge and knowledge-generation, beginning with a discussion of how and why I understand all human knowing as embodied knowing, drawing on multidisciplinary perspectives from the writers Guy Claxton, Minna Salami and Donna Haraway to elucidate the necessity of affirming this apparently obvious principle. I will then return to Claxton and introduce N. Katherine Hayles to the discussion, to more extensively map out the foundational contributions that these two writers make to how my choreographic orientation to knowledge-generation can be articulated, extended and contextualised. On these foundations, I will then specify what I consider the pivotal aspects of my choreographic orientation toward knowledge-generation to be and to entail, setting these out in an almost manifesto-like form. This begins with the understanding that:

All human knowing is embodied knowing.

The starting point of my orientation toward knowledge-generation simply emphasises that human knowledge cannot be conceived of as occurring without lived human embodiment: every occasion of human knowing occurs in, through and between one or more human bodies. Indeed, thinking of human knowledge on the whole in terms of *occasions of human knowing* helps to bring out this emphasis on its lived and embodied character. This acknowledgement of human knowing as a bodily event applies equally to occasions of human knowledge-generation and to occasions of human knowledge transmission or reception. That is, this acknowledgment applies even when lived human embodiment is less obviously in focus, such as when the transmission of human knowledge occurs via objects, materials or technologies (including, for example, books, films, digital technologies and all manner of material constructions), rather than via an otherwise unmediated process of in-person knowledge transmission wherein bodies are immediately co-present in time and space. Even in a

more distanced knowledge transmission process that passes through objects, materials or technologies, both the source and the reception of that process are lived human embodied experiences of knowing. Thus, my orientation toward knowledge and knowledge-generation emphasises that human embodiment always remains the locus of any occasion of human knowing.

This perspective is further extended, given the understanding (established in section 1) of embodiment as fundamentally embedded, situated and entangled with/in environments, including physical, social, cultural and ecological environments. This is because it problematises the notion that there are neat distinctions between where embodiment ends and the rest of the world begins, and thus also between what is and is not enmeshed in bodily processes of knowing. When environment and materials are understood as entangled in embodiment (and vice versa), the necessary presence of embodiment within conceptions of the locus of human knowing becomes even more expanded and highlighted.

Despite how self-evident it may seem to say that human knowing is embodied knowing, it is both helpful and necessary to state this because it runs counter to many of the ways in which implicit conceptions of knowledge broadly tend to be framed, particularly in a Western cultural setting. Many writers from multiple disciplines have illuminated this context and have argued for the ongoing need to counter it. To establish this multi-dimensional context, I will briefly cite three such writers here, whose work in different disciplines and discourses I find particularly resonant with my choreographic orientation toward embodiment and knowing: Guy Claxton, Minna Salami and Donna Haraway.

Claxton, a cognitive scientist with a specific focus on the embodied basis of learning, writes in his book *Intelligence in the Flesh: Why your mind needs your body much more than it thinks* (2015) of the wider context in relation to which emphasising the connectedness of embodiment and

knowledge-generation unfolds. Claxton's work develops a scientific understanding of an embodied approach to intelligence, which I read as substantially corresponding with what I term human embodied capacities for knowledge-generation. In a general sense, I take it as uncontroversial to view the bodily capacities that constitute and enable intelligence as being closely related with those enabling knowledge-generation. More specifically, I understand intelligence to be the embodied capacity that facilitates learning, and I understand the embodied process of learning (something not pre-existing in a given context) as knowledge-generation. Claxton's sensibility foregrounds the role of movement, felt-sense and intuition within the embodied basis of learning and intelligence, all of which make his work particularly relevant to this discussion. Claxton emphasises that 'we neglect our bodies because we underestimate their intelligence… [and this] is a matter of assumptions and values' (2015, p.2). He argues that 'the predominant association of intelligence with thinking and reasoning isn't a fact; it's a cultural belief… that misdirects us' (ibid, p.3). Claxton joins many other commentators[36] in pointing to the seventeenth-century philosopher René Descartes as the writer whose work 'is generally thought to have… succeeded in cleaving Mind from Body completely' (ibid, p.20) in the history of European philosophy. From the legacies of Descartes' Cartesian dualist philosophy, Claxton writes:

> …we have inherited a view of 'mind' as the 'organ of intelligence', and of 'intelligence' as predominantly rational, conscious and dispassionate… This picture of the human mind and its relation to the body has influenced and to a large extent controlled [Western] society's view of human nature for nearly 400 years. (ibid, p.23)

The implications of this have effects at the scale of both 'individual well-being and… the over-intellectualised, somatically-impoverished institutions that surround us' (ibid, pp.10-11). He describes, as symptomatic of this, the way that 'the Cartesian worlds of medicine, education and the

[36] For example, Maxine Sheets-Johnstone, a philosopher with a background in dance and choreographic practice, emphasises the need to 'restore what is properly due the body since… Descartes convinced us that mind and body are separate, and that mind is the primary value' (1992, p.1). Neuroscientist Antonio Damasio's book *Descartes' Error* (1994) similarly evokes Descartes 'as an emblem for a collection of ideas on body, brain, and mind that in one way or another remain influential in Western sciences and humanities' (p.247) – ideas that erroneously posit 'the abyssal separation between body and mind' (p.249) and, hence, the designation of a 'nonthinking body' (p.248) and a 'disembodied mind' (p.250).

law lock together into a self-reinforcing system that validates reason and neglects the body' (2015, p.278). Claxton also calls attention to examples of earlier and/or parallel histories of varied degrees of 'anti-body sentiments' (ibid, p.18), both in Western and non-Western cultural contexts (ibid, p.20). In particular, he points to the earlier and enduring influence of Plato's philosophical ideas from the context of ancient Greece, which considered the body and bodily feeling as 'wayward and primitive urgings that continually threaten to undermine the fragile structures built by dispassionate reason' (ibid, p.5). Contrary to an understanding of knowing and knowledge as embodied occasions, Plato's thought conceives of knowledge as something that exists within 'a parallel, abstract – what we would now call 'Platonic' – world of everlasting ideas and concepts' (ibid, p.18). Rather than this static and abstracted conception of knowing, Claxton's view of the body as 'an event' (ibid, p.36) characterised by an ongoing 'swirling flux of information streams' (ibid, p.264) underlines that human knowing can and must be understood as a phenomenon that exists in and of this living, bodily context. Claxton's work seeks to counter these Cartesian-Platonic histories of deep-seated denials of the bodily basis of knowing, by articulating and evidencing how, in fact, 'intelligence pervades the body' (2015, p.66). He emphasises that 'an embodied approach to intelligence gives pride of place not to rationality but to sensibility' (ibid, p.242), meaning that bodily feeling and intuition should be understood as integral aspects of intelligence and knowing. Indeed, the bodily intelligence of intuition that he gathers evidence for has 'a greater value and validity than the Cartesian model allows' (ibid, p.267). Thus, Claxton's discussion of intelligence as existing in the flesh emphasises both that human knowing is grounded in embodiment and that this needs to be said within a cultural context that frequently presumes the opposite. I will return to Claxton shortly, to discuss how his work is more broadly integral to my orientation toward knowledge-generation. Indeed, Claxton will be a frequent reference throughout this thesis.

Intersecting with the trajectory of Claxton's scientifically focused discussion, writers contextualising their work within feminist discourses, including Minna Salami and Donna Haraway, also highlight the

importance of giving emphasis to the relatedness of knowing to embodiment. Their work articulates crucial political dimensions in relation to which an emphasis on the embodied basis of knowing is closely interwoven and necessary to activate. The author and social critic Minna Salami writes, in *Sensuous Knowledge: A Black Feminist Approach for Everyone,* of the need to emphasise that 'knowledge is an active, embodied process' (2020, p.40). Salami's focus in the book is 'to rethink ideas that are central to the human mind with an Africa-centred black feminist sensibility' (ibid, p.4), via her conception of *sensuous knowledge*, which she defines against the mind-body dualism and exclusive rationalist emphasis of what she terms Europatriarchal knowledge (ibid, p.21). Europatriarchal knowledge 'dismisses the process of interweaving knowledge with the sensuous because it privileges the austere idea that knowledge may have nothing to do with embodied experience' (ibid). Salami argues against the Europatriarchal tendency 'to think of knowledge as an acquisition, [meaning that] you must first think of it as res extensa, something separate from you' (2020, p.32). The effects of such a view have far-reaching ethical and political consequences both because they serve 'to deprive knowledge of its humaneness' (ibid, p.22) and because 'the narrative through which we view knowledge is both the seed and the fruit of the culture it produces' (ibid, p.4). Salami defines the sensuous as that which 'affects not only the senses, but your entire being… Sensuous Knowledge is knowledge that infuses the mind and body with aliveness' (ibid, pp.14-15), which I read as emphasising a felt-sense and experiential understanding of knowing. Given its embodied basis, Salami's conception of sensuous knowledge 'means seeing knowledge not as static but as a creative project, something that grows and advances - a human activity, an artwork' (ibid, p.21). Foregrounding this view of knowledge is important and necessary, she writes, because 'the more we connect with the sensuous, the better we can identify needed political, economic, cultural and social change' (ibid, p.41). Salami thus offers a black feminist critique that directly connects affirming the embodied and sensuous character of knowing with far-reaching social and political relevance.

Multi-species feminist theorist Donna Haraway's text *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective* (1988) also draws far-reaching implications from an emphasis on the bodily situatedness of knowing. Haraway describes a feminist perspective on knowing that is attuned to its embodied, particular, personal and ethical-political dimensions, all contributing to an articulation of a 'feminist objectivity' (1988, p.581). Haraway emphasises the necessity of acknowledging that any act of knowing is situated, limited and partial, and contrasts this against the masculinist illusion of an avowedly placeless, all-pervasive and impartial knowledge, which is merely a "god trick" that serves to exert power over (gendered, racialised and otherwise marked) others (ibid). Along with the 'radical historical contingency' (1988, p.579) that a partial perspective entails, though, Haraway argues that a feminist objectivity also simultaneously needs 'a no-nonsense commitment to faithful accounts of a "real" world' (ibid). Both of these – the more particular/partial and the more general/account of a "real" world – are grounded in 'the view from a body' (1988, p.589), from which situated knowledges can emerge. Haraway writes that it is only through a situated epistemology that the taking of responsibility can become engaged: 'it allows us to become answerable for what we learn how to see' (ibid). Haraway is:

> …arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims. These are claims on people's lives. I am arguing for the view from a body, always a complex, contradictory, structuring, and structured body, versus the view from above, from nowhere, from simplicity. Only the god trick is forbidden. (ibid)

Haraway describes how a situated epistemology concerns not only the question of responsibility, but the possibility of generating meaningful knowledge per se, because 'the only way to find a larger vision is to be somewhere in particular' (1988, p.590). Haraway's account of situated knowledges thus highlights (like Salami's account of sensuous knowledge) both how fundamental embodiment must be within conceptions of knowing, and how emphasising this connects directly and significantly with fundamental ethical and political implications. These ways in which embodiment affords

situated and sensuous knowing, and the implications that this has, are perspectives that remain implicitly informative throughout this thesis. A more explicit focus on resonances between my choreographic orientation to knowledge-generation and political dimensions will be foregrounded in section 7, through the lens of Boaventura de Sousa Santos' writing (2014).

Although writing in different contexts, Claxton, Salami and Haraway can be read together as writers whose work supports the view that it is indeed helpful, necessary and consequential to emphasise the orientation that *all human knowing is embodied knowing*. Taken collectively, this discussion of these writers' different and intersecting perspectives on human knowing as embodied helps to begin to ground a way of understanding knowledge-generation as a necessarily present potential within the embodied context of an event of choreographic performance.

Claxton and the embodied basis of knowing

To return to Claxton, it is helpful at this point in the discussion to emphasise his articulations of several foundations that are integral to an understanding of the embodied basis of knowing. Claxton's contributions are particularly resonant and informative within this choreographic research area, not least because his work succeeds in holistically articulating principles from embodied cognitive science in ways that connect with embodied experiences of the emergence of felt-sense knowing, learning and creativity, as in the context of dance and choreographic practices (Claxton 1997, 2005, 2015).[37] One of the foundational principles that Claxton articulates has already been alluded to above, and concerns the conceptual framing through which human bodies themselves are understood. This is the view that 'the body isn't a thing, it's an event' (Claxton 2015, p.36). Claxton

[37] I am grateful to dance artist Gill Clarke (1954-2011) for bringing Guy Claxton and his work to my and many other dance artists' attention (see, for example, Clarke's writing in Clarke 2010/2011, and Clarke's curation of a talk given by Claxton within a dance context, Claxton 2011). Siobhan Davies and Andrea Buckley are among the dance artists who have continued to be in conversation with Claxton in recent years (e.g., Buckley and Claxton 2015, Davies and Claxton 2018). I was fortunate to be able to invite Claxton to have a conversation with me at De Montfort University in Leicester in November 2018, in the form of a seminar hosted by CIRID (Centre for Interdisciplinary Research in Dance), see Claxton and Sperling (2018) for a recording.

also expresses this idea with reference to an expanded context by saying: 'I am a body-mind-context constellation, ever changing and ever welling up' (2015, p.266). Understanding bodies as intelligent meshworks of continually unfurling dynamic processes (rather than as entities of a fixed and static character) underlies the understanding of the processual basis of human knowing and how this has an integral presence within the embodied context of events of choreographic performance.

A further foundational principle is the focus that Claxton places on the profound connection between the modulation of bodily *doing* and the human mind-brain-body capacity for intelligence. He holds that, as an embodied, living human, situated within complex, ever-changing environments, at any given moment 'my job – the function of my intelligence – is to… answer… the perennial, deceptively simple-sounding question: 'What is the best thing to do next (all things considered)?'' (2015, p.64). This, for Claxton, is the all-encompassing, underlying and ever-present question that human minds-brains-bodies-persons have evolved to continually be in the embodied practice of answering. From this perspective, the ongoing knowledge-generating process that this question motivates is so intrinsic to human embodiment as to be a key driver of the biological evolution of human brain-bodies and human intelligence per se. This profoundly links human processes of coming-to-know with the context of *doing* and movement, and even more specifically with the context of being in the process of making (conscious and/or unconscious) choices, experiments and creative discoveries about what to do and how to move or act in the world, within a given situated environment. This both echoes and informs how and why I understand choreography as a context in which knowledge-generation has an intrinsic presence and relevance. That is, I understand the creative process of making a choreographic work as an engagement of these embodied capacities of knowledge-generation. Furthermore, because these embodied capacities are so intrinsic to human bodily being and knowing, I choose to foreground these capacities as bodily potentials that remain actively in process during events of choreographic performance. This view of bodies, embodiment and knowing informs and echoes my interest in approaching choreography as a practice of

composing environments in which embodied processes of knowing and learning are ongoingly engaged, encountered and reflected upon during and *as* performance, rather than approaching choreography exclusively as a practice of composing and re-presenting the fruits of past processes of learning and knowing.

Claxton describes himself as a Learning Scientist and has a particular focus on using insights from embodied cognitive science to inform approaches to learning in educational settings. The way he defines learning in that setting is a further foundational principle that also has relevance for my choreographic orientation to knowledge-generation. Learning, he writes, 'is what you do when you don't know what to do. Learning to learn, or the development of learning power, is getting better at knowing when, how, and what to do when you don't know what to do' (1999, p.11). Two threads in particular emerge from this in relation to my choreographic orientation. Firstly, this definition of learning, closely related to the question 'What to do next?', highlights that this embodied capacity is engaged within experiences of not knowing. Thus, this further undergirds how and why I understand a choreographic performance that engages (with) embodied knowledge-generating capacities to be composed of an experiential environment in which not knowing is a constitutive and necessary ingredient. In order for it to be possible for an event of choreographic performance to facilitate the live engagement of embodied capacities for knowing and learning, a choreographic score must serve to create an environment in which the performers have room to not know everything about *what they will encounter and do* in advance of the moment-to-moment unfolding of the performance. In a sense, this is always already a part of the ontology of choreographic performance: insofar as it is embodied, it necessarily unfolds in a lived experiential context, the full and particular complexity of which can never be predicted in advance nor repeated in every microdetail. Different choreographic orientations, however, can choose to either play down or foreground the integral ingredient of not knowing; while always present, it can be seen as either outside of or within the choreographic work itself. My choreographic orientation is one that chooses to foreground and engage with this

ingredient of not knowing and these embodied capacities for knowledge-generation, considering these as elements that are crucial aspects of meaningful potentials of the art form.[38]

The second thread that emerges from Claxton's definition of learning is the concept of 'learning to learn' as characterising the engagement of the embodied capacity for knowledge-generation. From my perspective as a choreographic practitioner, I like to think of this embodied capacity for learning quite literally as a body part – a capacity that is an actual and intrinsic part of the anatomy and physiology of my dancing body, that can be engaged and set in motion in my dancing. From this perspective, a conception of "virtuosity" in dance performance emerges that is significantly different from the one/s that informed parts of my earlier training and career as a dancer. At times in my past experience, emphasis was placed on what might be characterised as an *athletic* conception of virtuosity, wherein the height of a leg extension or jump, or the number of turns performed were considered dancerly feats to aim for (oneself) and look for (in others) in choreographic performance. In contrast with this, understanding the embodied capacity for learning as a particularly meaningful part of my bodily palette suggests an expanded view of virtuosity that, instead, focuses attention on the active engagement of this part. From this perspective, regardless of how big, high or extended the movement that I perform may be, if I am not engaged in an ongoing process of learning in relationship with my unfolding environment, then a crucial part of my embodied being is not engaged, is in stasis. This means that, within the making and performance of a choreographic score, what becomes particularly of interest is a choreographic approach that can create and sustain room for an intelligent and intuitive embodied negotiation with what unfolds in perceptual experience during a performance. Again, this gives an intrinsic role to the unknown and unpredicted within a choreographic performance interested in engaging (with) knowledge-generating capacities. When

[38] One of the strands within my long-standing interest in the choreographic approaches of Deborah Hay is the way that I consider her work to be a particularly clear and radical example of how precisely this kind of orientation can (re)shape a praxis of choreography. Hay will be a frequent reference in later sections of this thesis.

not only *learning* but also *learning to learn* is accorded importance as an embodied capacity to be engaged in choreographic performance, the parameters of the activity themselves become a field that holds potential for mobilisation. Not only is it of interest to engage an ongoing process of learning within a given structure of activity (rather than exclusively re-presenting past learning), but it also becomes of interest to invite mobilisation at the level of the structure itself. *What* may be learned and *how* something may be learned may thus be considered to remain continually open to being reframed and to enable unforeseen potentials to emerge – both on the moment-to-moment timescale within performance, and also on longer timescales such as the creation of successive choreographic works over the span of several years. Thus, from this orientation, what my dancing and my choreographic work looks like seeks to remain open to the possibility of change, revision and variation, through an ongoing process of learning in relationship to continually changing environmental conditions.

The final foundational principle that I will relate to Claxton's work here is that of the cognitive unconscious and its role in embodied knowing. The articulation of this from a cognitive science perspective affords ways of thinking in increasing detail about how the 'welling up' (2015, p.266) of knowing (to use Claxton's evocative metaphorical formulation) may be understood as an embodied and experiential phenomenon, including in the context of choreographic practice and performance. As Claxton writes: 'much of our somatic intelligence operates unconsciously, without conscious supervision or even awareness… [Consciously] unfurling meanings and decisions… have their origins in the darker, deeper, more visceral areas of the brain and body' (2015, p.7). Indeed, 'most human intelligence depends on [these] processes of which we are not - and largely cannot be – aware. [In his earlier work,[39] Claxton] called it "the undermind". It is now also widely known as the adaptive or cognitive unconscious' (2015, p.11). To succinctly summarise the reframing of conscious knowing

[39] Claxton (1997).

that scientific theories about the cognitive unconscious afford, Claxton quotes cognitive psychologist Benny Shanon, saying: '[Conscious] structures are not the basis for mental activity but rather the products of such activity' (2015, p.173). In this scientific framework, conscious and unconscious knowing are not fundamentally separable processes: 'what looks like a structural separation between conscious and unconscious can actually be a reflection of an acquired cognitive habit. We see a sharp distinction, but only because we are inattentive to the gradient that leads from unconscious to conscious' (2015, p.180). Thus, even though the strata of unconscious cognition largely remain inaccessible to direct conscious awareness, experiential attention to the welling up of embodied knowing does make a difference. The 'bodily glue' (Claxton 2015, p.5) that joins up this gradient from unconscious to conscious knowing is the information provided by felt-sense or feelings, which 'are somatic events' (ibid).[40] Describing the basis of conscious reasoning and knowing in feeling and the cognitive unconscious, Claxton writes that 'our more abstract understanding grows out of… physical and sensory concepts' (2015, p.6). Attending to 'physical feelings and intuitions' (ibid, p.5), then, is an important means through which a greater degree of direct awareness of the gradient along which knowing wells up can be cultivated. My orientation to knowledge-generation understands the embodied and artistic context of choreographic performance as an environment that affords less conscious and more intuitive modes of knowing particular kinds of opportunities to explore the contributions that those modes of knowing make.

Hayles and nonconscious cognition

Having discussed this meshwork of foundational principles that Claxton's work offers for a deepened understanding of my choreographic orientation to knowledge-generation, I now want to introduce literary critic N. Katherine Hayles' work into the discussion. The terrain addressed by Hayles' book *Unthought: The Power of the Cognitive Nonconscious* (2017) overlaps with that of Claxton, but

[40] Claxton's perspective on this is informed by neuroscientist Antonio Damasio's 'somatic marker' theory (1994, p.173), as acknowledged in Claxton (2015), p.14.

approaches the terrain from a humanities perspective that pays in-depth attention to particular developments in cognitive science and articulately theorises their significance in relationship to (and through) an artistic field (i.e., literature), among several other spheres. Developing and defining her own terminology, Hayles focuses on what she terms *nonconscious cognition* as a powerful explanatory framework that enables detailed analyses of the connections between human cognition, the whole of biological life and technological systems. Overlapping with what Claxton refers to as the cognitive unconscious, Hayles' framework of nonconscious cognition helps to deepen and broaden the understanding of a key bridge within my choreographic orientation toward knowledge-generation: the bridge between embodiment and human knowledge-generation. Via the framework of nonconscious cognition, an understanding is further clarified of how human bodily, organismic materiality – and thus, I argue, the embodied context of choreography too – is generative of and continuous with human knowing, including those modes of rational thought that have been most identified with knowledge-generation (i.e., in a traditionally Cartesian paradigm).

Hayles focuses on *cognition*, which she defines in a notably broad way as '*a process that interprets information within contexts that connect it with meaning'* (2017, p.22). Cognition, so defined, is inclusive of but by no means limited to 'thinking', because Hayles specifically associates thinking with 'the thoughts and capabilities associated with higher consciousness such as rationality, the ability to formulate and manipulate abstract concepts, linguistic competencies, and so on' (2017, p.2). Hayles' definition of cognition also distinguishes it from consciousness, which is just one of three varieties of cognition that she describes as existing along a continually interacting continuum: consciousness (explicit awareness, including awareness of awareness), unconsciousness[41] (spanning modes of greater and lesser awareness, but still at least partially accessible to awareness) and the

[41] The cognitive unconscious, or unconsciousness, within Hayles' framework refers (as for Claxton) to current scientific understandings of cognition. It is thus distinct from the notion of the *psychoanalytic* unconscious, as defined within earlier-established theoretical frameworks such as Freudian psychoanalysis (Hayles 2017, p.27).

cognitive nonconscious (operations that always occur entirely outside of awareness). Cognition, for Hayles, is thus a far broader and more inclusive category than consciousness.

This view of cognition aligns with the field of cognitive biology which, writes Hayles, 'views all organisms as engaging in systematic acts of cognition as they interact with their environments' (2017, p.14). This view radically expands a traditional conception of what knowledge is: '*Knowledge*, in the traditional view remains almost entirely within the purview of awareness and certainly within the brain. In cognitive biology, on the contrary, it is acquired through interactions with the environment and embodied in the organism's structures and repertoire of behaviours' (2017, p.16). Hayles' framework thus entails an understanding of knowing that links with my own conception – discussed later in this section – of choreographic knowledge-generation as the expansion of repertoires of behaviours or embodied *ways of being*.

In relation to my research, Hayles' expanded view of cognition offers an articulation of how human capacities for knowledge-generation are fundamentally grounded in the materiality of embodiment: although not all bodily processes are conscious, this expanded view entails that all of the processes of every cell in a human body are cognitive. The simplest cellular or physiological acts of nonconsciously gathering and interpreting information are continuous with, and are the essential basis of, all of the more complex – and eventually conscious – cognitions that humans are capable of (2017, p.15). This helps to ground my perspective that the embodied and situated process of engaging in an event of choreographic performance (whether as performer or as audience member) is fundamentally continuous with cognitive processes of knowledge-generation.

Hayles' expanded definition of cognition can also be considered in relation to the choreographic scale of perceivable human behaviour. This suggests the understanding that a choreographic performance is cognitive if/when the bodies-persons involved are in a process of interpreting

information in relationship with their context and environment, such that this context potentialises connections between this process and the making of meaning. The overlapping definitions of human cognitive and knowledge-generating capacities frame this understanding as also proposing an orientation to choreographic knowledge-generation. As discussed above, this perspective highlights the process of engaging with one's unfolding experiential environment as being of particular interest within choreographic performance. The frameworks defined by a choreographic performance and its score can thus be thought of as existing to support the ongoing happening of this process, rather than this process already having been completed before the performance begins – a way of thinking that echoes and helps to elucidate my choreographic orientation.

It is also significant to note that Hayles views the relations between nonconscious, unconscious and conscious cognition as non-hierarchical. She cites abundant experimental evidence that nonconscious cognition uniquely possesses many important strengths that consciousness lacks and relies upon, involving the integration and processing of information and the recognition of patterns at speeds far faster than consciousness is capable of (2017, p.10). In Hayles' view, consciousness is 'not… the whole of cognition' (ibid, p.9) as we may conventionally tend to assume; rather, consciousness 'creates the (sometimes fictitious) narratives that makes sense of our lives and support basic assumptions about worldly coherence' (ibid). Based on this, Hayles goes so far as to affirm that nonconscious cognition, by virtue of being 'removed from the confabulations of conscious narration, …is closer to what is actually happening in the body and the outside world; in this sense, it is more in touch with reality than is consciousness' (2017, p.28). Extrapolating from the context of Hayles' discussion, this resonates with my perspective that choreography, too, by virtue of its closeness (relative to other knowledge practices) to the body and the felt experience of being-in-the-world is, in significant ways, *more* in touch with rich streams of cognition, and not *less* so (as I would contend is arguably conventionally presumed in a majority of Cartesian-inflected academic

and Western cultural contexts, when considered at their most general scales).[42] This serves to highlight that part of what motivates my artistic engagement with relatively recently emerging perspectives in and around embodied cognitive science is precisely that many of these perspectives not only resonate strongly with my own experiences of choreographic practice, but these perspectives also serve to perform this reversal of conventional (general) prejudices, encouraging a recognition that investigative embodied practices in dance and choreography can be closer to and not further from the upwelling of the sources of knowledge-generation.

Hayles' framework makes a further significant contribution to how I can articulate my orientation toward the presence of knowledge-generation within events of choreographic performance, by introducing thinking in terms of 'distributed cognitive systems' (2017, p.2). For Hayles, this allows for descriptions of how cognitive processes are not sealed-up in brains, nor in the whole bodies of individual organisms, but spread at multiple levels within and between organisms, their environments and more. It also allows for an important emphasis that 'the larger implications of cognitive assemblages occur at the systemic rather than individual levels' (2017, p.12). From the perspective of my particular focus on the event of choreographic performance, the term 'distributed cognitive system' neatly describes how I intuitively tend to conceive of the relationship between choreography and knowledge-generation. The no-how generating event of choreographic performance is precisely a distributed cognitive system: each performer, each audience member and each aspect of the environment intra-act to make that event generative of the particular registers of knowing that 'no-how' describes. Characterising the event of choreographic performance in this way contrasts importantly with what is arguably a default or conventional understanding of it: namely, this characterisation underlines that the performance of a choreographic work can be understood less as a representational event and more as a constitutive event. Because it consists of the

[42] A shorthand, but not insignificant, way to evidence this broad claim that Western cultural presumptions accord a relatively low status to choreography in relation to knowledge-generation is to say: there's no such thing (to date) as a Nobel prize for dance or choreography.

embodied acts of co-present people embedded in the world, it does not *represent* the generation of knowing, but rather *constitutes* the generation of knowing or no-how. Furthermore, recognising that human cognition is best characterised as a distributed cognitive system suggests a view of the event of choreographic performance – when viewed as itself being a distributed cognitive system – as a particularly significant context in which to investigate knowledge-generation. Choreographic performance creates a socially and spatially distributed environment, in which the investigation of how knowing arises can be engaged collectively, experientially, and more-than-rationally. Thus, my choreographic orientation to knowledge-generation includes viewing the event of choreographic performance as a unique type of environment, which can offer unique types and textures of contributions to collective knowing.

While Hayles' framework has a strong focus on highlighting the cognitive contributions of nonconscious processes, considering this framework in relationship to choreographic performance does not entail that the conscious experience of that context falls out of the picture. Since Hayles' framework proposes a fundamental continuity between nonconscious, unconscious and conscious cognitive processes, her framework (like Claxton's) maps an understanding of how the explicitly conscious and liminally conscious strata of experience during choreographic performances are generated in and through bodily materiality. To put this in terms closer to Claxton's: it joins up the gradient along which conscious forms of knowing well up, and values the whole journey of that gradient, rather than exclusively addressing nonconsciousness. Hayles' emphasis on nonconscious cognition does not suggest a diminishing of the role of conscious and felt-sense knowing in experiences of choreographic performance; rather, it grounds a stronger understanding of their bodily rootage and it extends the understanding that bodily materiality is not just the source of cognition, but is itself intrinsically cognitive, at every level.

An important aspect of the contribution that Hayles' framework makes is its ability to thicken and extend the relevant connections between cognitive-scientific considerations and larger ethical-political dimensions. Hayles discusses connections, for example, between her framework's attention to materialities and the political ramifications of philosophical discourses of New Materialisms (2017, pp.65-85).[43] This connection stems from Hayles' expanded view of cognition entailing not only that every cell in a human body is engaged in cognitive processes, but also that all biological organisms, even the simplest single-celled bacterium, is engaged in at least a basic form of nonconscious cognition.[44] Hayles' framework thus embodies a dismantling of understandings of knowing that are 'rooted in anthropocentric projection' (2017, p.9) and it shares many New Materialist writers' focus on 'decentering the human subject, along with the characteristics that have long been identified with human exceptionalism, including language, rationality and higher consciousness' (ibid, p.65). As Hayles describes:

> Nonconscious cognition is the link connecting material forces to us as subjects, thus serving to deconstruct the illusion of subjects as "masters… of the very forces that constitute us", without requiring that subjects be altogether erased [within a philosophical framework] or ignored as agents capable of political actions. (ibid, p.77)

Hayles' framework thus opens toward a meaningful politics in which cognitive-scientific perspectives on the embodied basis of knowing can participate in important ways. These wider connections, then, are also relevant to consider in relation to a choreographic orientation toward embodied knowing.

[43] Hayles (2017, pp.65-85) makes connections with discourses around New Materialisms with reference to writers including Karen Barad, Jane Bennett, Rosi Braidotti, Gilles Deleuze & Felix Guattari, Elizabeth Grosz, Jussi Parikka and Luciana Parisi. This terrain of discourse connects with Haraway (1988), discussed above. While Haraway is not among the authors that Hayles (2017) directly refers to, Haraway (1988) is recognised elsewhere in new materialist discourses as 'having planted the seed for feminist new materialisms' (Tuin 2015, p.26).

[44] As alluded to above, this view aligns with the field of cognitive biology, in which the adaptive choices made by even a unicellular organism in response to its surrounding environment are understood as not being fundamentally distinguishable in kind from more complex cognitions that have evolved in, for example, mammals with brains (Hayles 2017, p.16).

Hayles' concepts of cognition and distributed cognitive systems enable her to formulate the idea of a 'planetary cognitive ecology' (2017, p.3), in which the intra-relatedness of humans with biological and planetary life as a whole is emphasised. Hayles evocatively imagines how it might feel to implicitly attune one's embodiment to the implications of the framework of nonconscious cognition in lived experience:

> Alert and responsive, she is capable of using reason and abstraction but is not trapped wholly within them; embedded in her environment, she is aware that she processes information from many sources, including internal body systems and emotional and effectual nonconscious processes. She is open to and curious about the interpretive capacities of nonhuman others, including biological life-forms and technical systems; she respects and interacts with material forces, recognising them as the foundations from which life springs; most of all, she wants to use her capabilities, consciousness and nonconscious, to preserve, enhance, and evolve the planetary cognitive ecology as it continues to transform, grow and flourish… (2017, pp.63-64).

Hayles' framework of nonconscious cognition can thus act as a lens that can inform how lived experiences are inflected towards and oriented within their unfolding environments, and her evocation makes it readily imaginable to include within this lens the experiential environment of a choreographic performance. In this way, Hayles' far-reaching framework enables an understanding of an event of choreographic performance not only as a distributed cognitive system in itself, but also as a node or eddy within the cognitive flows of a wider planetary cognitive ecology.

Pivotal aspects of my choreographic orientation toward knowledge-generation

Having first introduced my orientation that *all human knowing is embodied knowing*, and then how Claxton and Hayles make foundational contributions to how I articulate this orientation, I will now specify what I consider to be the pivotal aspects of my choreographic orientation towards knowledge-generation. This orientation emphasises understanding human knowledge (in the broader sense that Claxton and Hayles articulate) not only in terms of *occasions of human knowing*, but also in terms of the embodiment of *ways of being.* The concept of *know-how* will help to elucidate this, while also implicitly weaving these concepts into the orbit of its homophone and my

over-arching titular term, *no-how*. For succinctness, I will move through the aspects of this orientation point-by-point, in a manifesto-like way.

The meaningfulness of an item of human knowing consists in the differences that it makes to embodied human behaviours in the world.

Insofar as *things known* might be imagined (for the purposes of this discussion) as discreet entities, an *item* of human knowledge can be considered meaningful only insofar as it makes a difference to how embodied and relational human actions unfold in the world. This applies however macro- or micro-scale such differences may be, whether they generate a whole action (or webs of multiple actions) or affect the nuance of how an action and/or its effects unfold in a given context. My orientation toward knowledge, then, understands all human knowing in terms of the choreographies of human movement, action and behaviour that it generates in relationship with the world – here considering *choreographies of human movement* in their broadest possible sense and in any lived context, extending far beyond the scope of human movement that is explicitly framed within a dance or art context. This orientation thus asserts that every item of human knowledge can be viewed through this lens: all effects of human knowledge on the universe – even the most distant, complex or abstract effects – can be thought of as effects of the human movements that items of human knowing have differentiated.

All human knowing can therefore be understood to ultimately become meaningful in the form of embodied knowing-how.

The term knowing-*how*, as contrasted with the term knowing-*that*, intends to highlight a kind of knowledge that is practical or applied. Dance Studies scholar Anna Pakes (2003) discusses the twin concepts of knowing-*how* and knowing-*that* in relation to the dance field, pointing to Gilbert Ryle (1949) as a frequently referenced source for discussion of these terms in epistemological discourse. As Pakes describes, 'knowing *how* is a question of being able to perform tasks intelligently - a form

of knowledge that epistemological philosophy has neglected because of its focus on knowledge *that*' (2003, p.140). In Pakes' discussion, the term knowing-*how* thus intends to refer to practical knowledge of how to do things, whereas the term knowing-*that* intends to refer to a more theoretical kind of knowing – that is, being cognisant of something such as a fact or a story. The way I specifically define knowing-*how* in the language of my present discussion, then, is: the applied performance of an item of knowing (or meshwork of knowings) through the specific modulation of movement, action or behaviour, situated within a lived environment. Whereas Pakes discusses knowing-*how* and knowing-*that* as two forms of knowing that are distinct from each other (albeit within a power relationship that has tended to ignore the role of knowing-*how*), the orientation that I argue for here seeks to emphasise that even knowing-*that* can ultimately be considered a form of knowing-*how*. I suggest that this can be understood in two senses. Firstly, knowing-*that* does not have an abstract existence, but is an act of embodied consciousness; the act of knowing any given specific thing is something that a body *does* and is therefore a human body's knowing how to know that specific thing. Secondly, knowing-*that* is meaningful insofar as it leads to modulating actions in the world: knowing-*that* ultimately manifests in embodied *doing* and, as such, its meaningfulness as knowledge lies in *knowing how to do* that action. This applies regardless of the form that the modulation of embodied doing takes: the action that results from a given specific item of knowledge-*that* may, for example, take the form of inaction (i.e., in an instance of knowing that it is a good idea *not* to do something, in a given circumstance in which that particular action is likely to have adverse effects). From this perspective, knowing-*that* may be understood as embodied latent knowing-*how*.

I note that the term *know-how* also features importantly in Robin Nelson's well-known theorisation of the epistemology of artistic doctoral research (2013). I consider my use of the term *know-how* (or knowing-*how*) to largely overlap with Nelson's articulation of it, while at the same time having some differences of emphasis that arise from the grounding of my orientation to knowledge-generation

and epistemology in my dance and choreographic practice experience. Like Pakes (2003), Nelson refers to Ryle's (1949) articulation of *know-how* as procedural knowledge that manifests in performed acts (Nelson 2013, p. 41, p.192); Nelson also highlights *know-how* as a form of knowing focused on embodiment and movement (2013, p.37, p.42), all of which broadly correspond with what I associate with this term. The main differences of emphasis that I perceive between Nelson's use of the term *know-how* and mine are threefold. Firstly, whereas Nelson's model frames the embodied and movement-focused mode of *know-how* as one form of knowing that is positioned alongside others (2013, p.37), my choreographic orientation toward knowledge-generation places greater emphasis on embodied knowing by positioning it as the fundamental ground and purpose of other forms of human knowing (such as knowing-*that*, as I argue here). Secondly, (following Polanyi [1983] and Schön [1983]) Nelson characterises *know-how* as 'tacit' knowing that is frequently acquired and held nonconsciously (2013, p.42). Given the somewhat wider scope that *know-how* has for me than for Nelson, I more readily consider it as having the capacity to include the full spectrum of both conscious and nonconscious modes of knowing. Thirdly, Nelson associates *know-how* with embodied forms of knowing that tend not to be articulated in words (2013, p.38, p.42). Nelson's discussion of this seems to suggest that a non-languaged zone of knowing is by definition apart from the realm of propositional meaning (based on an assumption that propositional meaning can only exist in languaged forms), and that a zone of non-languaged knowing is inaccessible to intersubjective exchange (based on a seeming assumption that knowing is only or best exchanged through words)(2013, p.39, p.38). In contrast with these assumptions, my understanding of *know-how* is inclusive of the idea that felt sense knowing can be a zone of non-languaged yet meaningful and specific propositions – an idea that accords with understandings such as Hay's (quoted in full in section 3, below) of one's body as 'a cogent medium for indefinable specificity' (2012, p.1). Moreover, my choreographic orientation is inclusive of the idea that embodied, non-languaged, performed knowing can indeed be accessible to forms of intersubjective encounter and exchange –

and that the context of choreographic performance can afford precisely such an opportunity for (as I discuss in Section 6) “taking a felt-sense reading” of “what was never written”.

As a brief aside: my positioning of all human knowing as knowing-*how* (or, equally, *know-how*) imbues the overarching title of this choreographic research, *No-How Generator*, with specific resonances. As I will discuss fully in section 5, I use the term *no-how* to activate connections with (and, simultaneously, differentiations from) its homophone *know-how*. While *know-how* (or knowing-*how*) are terms for epistemological discourse, *no-how* intends to name and activate an experiential landscape for considering these implications in ways that are germane to a specifically artistic and choreographic context.

A text is a trace of knowing, rather than the knowing/knowledge itself.

Understanding knowing/knowledge through the lens of this embodied and choreographic orientation reframes the arguably common (that is, culturally generalised, everyday) habit of easily and primarily associating the concept of knowledge with a realm of libraries, books and written texts. From the perspective of this embodied orientation to knowledge, however, material objects that contain texts written by living or dead authors (such as, for example, printed books or stored digital files) may encode and transmit a *record* of human knowledge, but the text *itself*, in this view, is not knowledge. A forgotten text, by an author no longer living, that is archived in the depths of a library is potential, latent (as well as former) knowledge, but the content of the text only has the occasion to be known when a living human (with the ability to decode it) has an embodied encounter with that text and the effects that the interpretation of its encoded contents may have.

This choreographic perspective on the relationship between texts and knowledge also suggests a reframing of the way that a contribution to knowledge tends to be conceived of, in an academic doctoral framework such as the one that this thesis is undertaken within. De Montfort University’s

doctoral degree guidelines, for example, define that the aim of a doctorate is to make (and defend) a contribution to knowledge, which is typically and primarily evidenced through the creation of a written text (now defined as being submitted in an electronic form) and the archiving of that text in perpetuity within public repositories including the British Library (De Montfort University, 2020). While it is permitted for a thesis (such as this one) to include elements other than written texts (albeit only up to a limited proportion), the practice of validating doctoral contributions to knowledge remains patterned on and focused around written texts as their most representative and indispensable manifestation. By contrast with this, an embodied and choreographic orientation to knowledge suggests that the making of a contribution to knowledge is not best framed primarily in terms of the contribution of a text to libraries holding an ever-accumulating repository of (printed or digital) written texts. Rather, this suggests a view that a contribution to knowledge may be better framed in terms of a contribution to repertoires of *embodied ways of being* and the proliferation of embodied interpretations thereof, instantiated in relationship with lived environments. A contribution to human knowing, that is, should rather be imagined as a contribution to choreographic repertoires (broadly conceived) of lived *ways of being* in the world.

New extensions and variations of human knowing come into being (are generated) in and through processes consisting of human embodied experiences.

No new human knowing can be generated without being sited within living human embodiment and the environments within which embodiment occurs, regardless of how disregarded that fact may be in a given process of knowledge-generation. Choreography, like any other field of human endeavour, is a field of experience in which these embodied capacities for knowledge-generation are at work. Unlike other fields, however, choreography, I argue, can be approached as an opportunity to give particular attention to embodiment, both as a medium in and through which investigation is undertaken and as a subject matter of investigation, in the artistic and intersubjective context of choreographic practice and performance. As I have articulated above, the particular orientation that

I am setting out here understands the event or occasion of the performance of a choreographic work as a field of experience in which embodied learning and knowledge-generation always remain ongoing. Rather than understanding choreographic performance primarily as consisting in an occasion for the demonstration of previously generated human knowing, this orientation emphasises that human capacities for the generation of knowing remain present and active in all human participants (performers and audience members) throughout the timespace of choreographic performance. My orientation toward knowledge-generation is therefore one that has co-evolved with my artistic interests: these work to develop methods and conditions that support choreographic practice and performance to foreground and cultivate the presence and investigation of human potentials for embodied knowledge-generation within that particular artistic context. My choreographic work *No-How Generator* embodies this artistic investigation.

In this orientation, knowledge-generation is understood as the generation of ways of being.
Ways of being here denotes the broad category of the repertoires of actions and action patterns that a person embodies in the world and how they perform them, in any context. This category can here refer to any scale or duration of action, and any aspect that inflects the ways in which those actions and their effects unfold. It includes voluntary and involuntary, conscious and nonconscious actions, and the various registers of felt-sense, sensory perception, intention, thought and reflection in which actions can be considered to exist and be diffracted.

This orientation towards knowledge-generation as the generation of ways of being links with the discussions of Claxton and Hayles above. Through this lens, Claxton's focus on the question 'What is the best thing to do next?' (2015, p.64) as the moment-to-moment foundation of human embodied intelligent activity can be understood as a focus on the conjuring of ways of being in relationship with a given set of conditions. It echoes, too, Hayles' expanded view of cognition and knowledge in terms of an organism's repertoires of behaviours in relationship with a given environment. In

relationship with these ideas, Siobhan Davies has articulated a foundational way of understanding how this orientation toward knowledge-generation and the brain connects with choreography and indeed all forms of artistic endeavour, saying that 'art is ultimately a way of dealing with the question "How to live?"' (Davies 2014). This understands art as an endeavour that is, at some fundamental level, concerned with questioning, proposing and evolving ways of being. Choreography can be understood as a particularly foundational and directly generative endeavour in this sense, when it is approached as an artistic medium that itself consists of embodied action. As such, an event of choreographic performance is one that is comprised of ways of being. While embodied ways of being in the world (in general) can be figuratively conceived of as choreographies, the creation and performance of a choreographic work (in the context of art) can be considered as a composition that consists of ways of being, in multiple senses.

Choreographic works (and events of their performance) both consist of and exist within complex meshworks of ways of being.

A workable, adequate and accurate understanding of the relationship between choreography and ways of being requires a simultaneous appreciation of both of these aspects: how ways of being exist within a choreographic work and how a choreographic work exists within wider meshworks of ways of being. A choreographic work, shared in an event of choreographic performance, can be understood as embodying choices made by the choreographer/s, performer/s and other collaborators about which ways of being are performed and how they are performed (including both the qualitative dimensions of their performance and the process that generates their performance). As an instance of embodiment, however, the ways of being that are active within an event of choreographic performance will inevitably exceed those layers that are chosen, intended by and foregrounded in the attention of the artist/s. There may, for example, be unconscious and/or habitual layers of embodied *ways of being in the world* at work that are not explicitly intended by the artist/s. The generative interactions and intra-actions between performed ways of being and the

specific context of the time, space and environment of a given event of choreographic performance may also have both intended and unintended dimensions. The audience's experience of the choreographic work can be said to consist in their (conscious and nonconscious) readings of *what* ways of being are performed and *how* they are performed. These readings will always be interpreted through the lenses of each audience member's own lived experiences and the associations they may have with what they see embodied in the work, whether or not this is (wholly or partly) congruent with what the artists intended to be read. In most cases (it can generally be presumed), there is some degree of overlap, but not total congruency between what the artists intend, what complex meshwork of ways of being are actually embodied (including those that are perceived and those that are not) and what individual audience members read as being embodied. All of these, I argue, can be considered to be ways of being that are occurring within a given event of choreographic performance. The complex fabric of ways of being that are active within an event of choreographic performance will also inevitably have a porous interconnection with the wider, unlimited meshwork of ways of being in the world around it in time and space – although beginnings and ends of the embodied performance may be marked and perceived, it is never entirely apart from the rest of the world and, in my view, this is part of its significance.

Acknowledging the likelihood of there being a degree of incongruency between the intentions of the artist/s, what they embody, and the readings of the audience members need not entail that a choreographic work (understood as consisting of ways of being) necessarily lacks clarity, coherence or meaning. Rather, I consider this a necessary and appropriate condition of working with the complexity of embodiment as an artistic medium, and one that dance artists and audiences develop sophisticated skills in navigating. Dance artist and choreographer Lucy Suggate, for example, is among the choreographic artists who have spoken of, as well as practiced, 'the complexity you learn to metabolise in dance' (Suggate 2019), an observation that I consider relevant to the context of this discussion. In relation to the individual and interpretive readings of each audience member, the

event of the performance of the choreographic work can be considered to offer a welcome and meaningful opportunity for the generation of these embodied perceptions and experiences, which would otherwise not be brought into being.

Choreographic knowledge-generation consists in the expansion of repertoires of ways of being.
The generation of knowing in choreographic practice and performance consists of participating (as a choreographer, dancer, collaborator or audience member) in processes that expand individual and/or collective repertoires of ways of being. This includes expansions that take the form of germinating new repertoires, as well as new extensions and variations of existing repertoires, and also the expansion of access to the embodiment of extended and reconfigured repertoires within the context of lived experience. Given that ways of being participate and unfold on multiple levels within choreographic events (conscious and nonconscious, chosen and not), the potentials for choreographic expansions of ways of being should also be understood as a multitude of simultaneous processes, that can be sampled in different ways by different people from their individual experiential perspectives at different moments in time. Choreographic expansions of ways of being are of a processual character – as well as occurring on multiple levels, they are always ongoing. This includes during the timescale of an event of choreographic performance itself, and in the extended timescales of the aftermaths and reverberations of the experience of a choreographic event. Choreographic expansions of ways of being do not have the deathly character of something fixed, still and unchanging, but rather are living, dynamic, responsive, complex and remain in flux. Choreographic expansions of ways of being, generated by a given event of choreographic performance, will have both predicted and unpredicted, known and unknown dimensions for any one person who participates in it. These expansions may exist as phenomena that register within a participant's felt-sense, intuitive, imaginative experience, and may or may not take forms that lend themselves easily or immediately to being explicitly described in words. Insofar as an occasion of

choreographic practice and/or performance participates in the generation of ways of being in these senses, then, it participates in the generation of knowledge.

Gathered together, the pivotal aspects of my orientation to choreographic knowledge-generation that this discussion has articulated are:

- *All human knowing is embodied knowing.*
- *The meaningfulness of an item of human knowing consists in the differences that it makes to embodied human behaviours in the world.*
- *All human knowing can therefore be understood to ultimately become meaningful in the form of embodied knowing-how.*
- *A text is a trace of knowing, rather than the knowing/knowledge itself.*
- *New extensions and variations of human knowing come into being (are generated) in and through processes consisting of human embodied experiences.*
- *In this orientation, knowledge-generation is understood as the generation of ways of being.*
- *Choreographic works (and events of their performance) both consist of and exist within complex meshworks of ways of being.*
- *Choreographic knowledge-generation consists in the expansion of repertoires of ways of being.*

Section Conclusion

In sum, this section has set out the key features of my choreographic orientation toward knowledge-generation, which is grounded in an understanding of all human knowing as embodied knowing. This orientation emphasises the processual and lived character of human knowing as an embodied occasion, in contrast to understandings of knowledge as something that is abstract, fixed and can exist apart from lived embodiment. This embodied orientation understands knowledges as repertoires of ways of being, and therefore understands choreographic knowledge-generation to consist in the expansion of repertoires of ways of being. To contextualise the necessity and consequentiality of affirming that all human knowing is embodied knowing, the discussion drew on multidisciplinary perspectives from Claxton, Salami and Haraway. This section also expanded on the foundational contributions that Claxton and Hayles' perspectives from and about cognitive science make to how my choreographic orientation to knowledge-generation can be articulated, extended

and contextualised. This orientation toward knowledge-generation arises directly from and within my history of practice, and provides the grounding for the continuing journey through this written exegesis of my artistic doctoral research. What my argument in favour of this orientation amounts to is that, in a word, what I mean by (embodied) knowledge-generation is: choreography.

Figure 4: *No-How Generator*, rehearsal views of Matthias Sperling (above) and Katye Coe (below). Photos by Camilla Greenwell.

Section 3:

Daily practice as method: layers, sources and resonances

I consider daily practice the seedbed and primary site of my choreographic practice-research process. In the context of my engagement in this particular artistic doctoral research process, *daily practice* means dedicating time, space and attention to investigating through moving, primarily in the context of solo movement practice while alone in a dance studio, usually for one hour every weekday.[45] Overlapping with my engagement in daily practice is what I term *open practice*, which names the openness of the parameters of the investigation in movement rather than its regularity in time, and which therefore more readily applies to co-practice with others with whom I may not be able to meet on a daily basis long-term (particularly with my core collaborator and co-performer of *No-How Generator*, Katye Coe).[46] In this section, I will focus on discussing daily practice, while folding in discussion of open practice along the way. How I conceive of and approach both daily practice and open practice in this artistic research is strongly informed by the thinking and methods of choreographer Deborah Hay. Based on my history of previous engagement with Hay's practice, my approach to these methods during this artistic doctoral research process sought to draw on Hay's methods while also evolving versions and applications of them that best support the purposes of this research and the ongoing development of my practice. In this section, following a mapping of the parameters of my daily practice and open practice, and a contextualising of the background of these approaches in my engagement with Hay's practice, I will discuss how this choreographic engagement in knowledge-generation resonates with three other seams of thought and practice: the cognitive

[45] As noted in Section 1, this usually took place in the Research Studio at Siobhan Davies Studios (London) from 9am to 10am, with this access to studio space generously provided in-kind by Siobhan Davies Dance.

[46] In overview, the way that the relationship between solo daily practice and open practice with Katye Coe and collaborators has unfolded over the course of this research process is as follows: I began the solo daily practice process as soon as I began my PhD in October 2017 and continued this as regularly as circumstances allowed until the premiere of *No-How Generator* on 10 October, 2019 (in Nottingham), and less regularly after that point. Open practice together with Katye Coe and guest collaborators took place primarily in the context of 8 intensive, full-time weeks, spread out during the period February - October 2019. Details of where these intensive weeks took place and the range of support that made them possible are given in Section 1.

science perspective of Guy Claxton, the art-historical and philosophical orientations of Aby Warburg, and my own interest in examining parallels between choreographic practice and notions of magic and divination.

Layers and parameters of daily practice and open practice

Multiple layers of different purposes co-exist in daily practice. Within and alongside the daily pursuit of this research project's overarching purpose of investigating and shaping performative practices of knowledge-generation, my daily solo practice also encompasses pragmatic purposes such as warm-up and maintenance of my fitness levels as a practitioner (not least to support injury-prevention).

To me, practice is something that takes a lot of repeated opening up to get somewhere substantial, but micro-shifts happen in each practice. Part of that is simply about maintenance, fitness, range of motion availability, etc - that is a gradual and constant task, like weeds overgrowing other plants. (13/11/19)

On the way here, the thought about the daily practice as a daily swim. How it is a tuning and a clearing. Rather than the immersion in water, the immersion in noticing feedback from the body. (13/3/19)

Daily practice also supports the expansion of the scope of my investigating-through-moving, by continually testing the edges of my ranges of motion and working to notice and expand these. These ranges of motion encompass several interrelated dimensions: as well as the overtly physical range of motion of my muscles and bones, this also integrally includes movement in perceptual registers (expanding acuity and range in my modes of perceiving, sensing and attending) and relational registers (attuning to how my movement practice is unfolding in relation to my – present or imagined – audience and any other people I am dancing with, and, more broadly, in relation to the context or environment that I am moving within).[47] Daily practice creates occasions for paying attention to what is unfolding in my felt-sense experience of all of these dimensions at once, thereby learning from what is there, while also continually tuning and growing my ability to "read" my

[47] This understanding (and foregrounding) of perceptual and relational registers of movement is particularly strongly informed by my experiences of Hay's methods and approaches.

experience in this way. It is a daily opportunity to swim in the full spectrum of registers of cognition, unfolding attention to sensorial, kinaesthetic and intuitive registers that tend to be less foregrounded in everyday modes of awareness and social interaction.

That daily practice is a *choreographic* practice is especially apparent in its capacity to be a site of emergence of choreographic forms and materials that can become integral parts of a choreographic score for performance. Although the coming-into-being of choreographic forms is far from being an explicitly evident process on a daily basis, its subterranean continuity over several months is a crucial layer of daily practice, and materials that evolved in this way form the body of the substance of the choreographic score of *No-How Generator* – in section 4 below, I describe the emergence of the choreographic material *back-and-forthing* as an example of this. In daily practice, all of these different layers and purposes – including warm up, maintenance, expansion of ranges of movement, attending to felt-sense experience, generating choreographic materials – are interlinked. Different layers become foregrounded at different times, both within the duration of a daily session of practice, and within the ebbs, flows and changes within daily practice over the duration of this research process.

At the most general level, the methodology of the daily solo practice that I engage in is my way of taking up Hay's recommendation to 'dance alone uninterruptedly for at least 40 minutes daily' (2000, p.1) as the ground of one's practice. It also takes up her recommendation to briefly write what you learned, immediately after practicing each day (Hay 2012a) - this daily writing practice is among the main generators of the studio practice notes that are quoted as the italicised, right-aligned writing voice that is woven throughout this written thesis. Although there can be a great deal more at work in daily practice than these simple parameters, in an important sense, these simple parameters are themselves sufficient to begin to catalyse dance as a self-directed generative learning practice – a practice of research and knowledge-generation.

Within these general parameters, during this artistic doctoral research process I have in the main engaged in daily practice as an "open" practice:[48] one in which the intention to learn through moving is clear, yet which does not consciously predetermine what the movement will be, what tools for practice I will deploy, or what I will learn in that particular session. Such practice is a knowledgeable negotiation with not knowing. It negotiates dynamically with what unfolds in one's situated lived experience of moving in that time and space. It has the capacity to draw on a repertoire of tools for practice (both developed from one's own experience and given by other practitioners from sharing theirs) that continually evolves through one's cumulative experiential history of dance practice. Which tools are deployed in a given session, and how they are deployed, emerges intuitively in relationship with what feels available and interesting to be learned and probed in that experience, informed by the ongoing conscious and nonconscious metabolization of the research questions being investigated. It is a practice that actively and skilfully holds open the space of possibility for discovery in and through a first-person mode of research[49] that is attuned to embodiment.

I consider a choreographic practice configured in this way to make the root characteristics of choreography (as I understand it) practicable within a daily embodied research methodology. Like choreography in general, this form of daily practice has the capacity to dynamically balance and negotiate predictability (known parameters and tools) and unpredictability (the ongoing unfolding of the not-known). The embodied character of the context of choreography is a grounding facet of how and why I consider this negotiation a defining feature of choreography's ontology: given that daily practice and/ or choreographic performance consists in the activity of living persons whose moment-

[48] I have approached my daily solo practice mainly but not exclusively as open practice, in the sense that there have been periods along the way when I have shaped what I was working on into a more defined score. Usually, this has been connected with opportunities arising to performatively share work-in-progress of my ongoing research in a solo form. In the lead-up to these occasions, my daily practice focused on shaping and practicing a solo work-in-progress score to support these performative sharings in a particular context.

[49] Following the links already explored in Section 2, I note that this offers a further point of connection between (my) experiences of choreography-as-knowledge-generation and the field of embodied cognitive science. In particular, this echoes Francisco Varela's use and theorization of first-person research methods in this field (for example: Varela & Shear 1999, Maharaj & Varela 2012).

to-moment lived experience is continually unfolding within the wider world, some degree of unpredictability and the necessity to negotiate with unpredictability will always be present. Other facets of (or lenses on) choreography also emphasise how fundamental this negotiation is to it. This includes thinking about how choreographic composition unfolds over time during events of performance, and how this facilitates and sustains audience members' engagement with it. As the collaborative work and thinking of choreographer Jonathan Burrows and composer Matteo Fargion has highlighted (with reference to composer Kevin Volans, in Burrows 2010, pp.107-108), the negotiation of predictability and unpredictability (in the sense of regularity vs. irregularity of compositional patterning over time) can be considered the root dynamic at play in any form of time-based composition, including choreography. Their highlighting of this has not only strongly informed[50] how I understand choreographic composition, but also highlighted how strongly this characterisation of compositional dynamics connects with understandings of embodiment that emphasise un/predictability. In addition to a general understanding of unpredictability as inherent within the ontological condition of the embodied context of choreographic performance, this also relates to understandings from (and about) embodied cognitive science, such as Claxton's (discussed in section 2, with reference to embodied intelligence as a responsive negotiation of ongoing states of not-knowing) and Clark's (discussed below in this section, with reference to the Predictive Processing theory of brain function). These meeting points, which bring together ideas about choreographic composition and ideas about the embodied dynamics engaged by performers and audience members during events of choreographic performance, point toward the wider relevance (for choreographic practice) of the contact that daily practice affords with these dynamics of un/predictability. These dynamics are not only inherent in daily practice, but also in events of

[50] My encounter and engagement with these ideas has a context that begins roughly 10 years before my artistic doctoral research period began. Conversation, in various contexts, with Burrows and Fargion about these subjects over this time, has been an important part of my engagement with these ideas, in addition to the textual reference to Burrows (2010) given above.

choreographic performance. Daily practice, approached with the layers and parameters discussed above, affords attunement to choreographic investigation of and through these dynamics.

Tracing the influence of my engagement with Deborah Hay on how I approach daily practice

The grounding for this approach to daily practice within my ways of working was laid by my participation in Hay's Solo Performance Commissioning Project (SPCP) in 2012. The SPCP 2012 was the last of fourteen annual iterations of this project that Hay offered,[51] which involved Hay selecting twenty dancer/choreographers from several different countries to work with her for an intensive ten-day period in Findhorn, Scotland. These participants would enable the co-commissioning of a new solo choreographic score to be developed by Hay, the practice of which she would then transmit to the participants during the group intensive of ten days. At the end of this group stage of the process, participants signed a contract with Hay, committing to a minimum nine-month period of daily practice of the solo score before presenting it in a public performance.[52] The other SPCP 2012 participants and I then went our separate ways, each independently pursuing the process of daily practice of the score, through which we developed our own individual adaptations of Hay's choreographic work, titled *"Dynamic"* (2012).

[51] A feature-length documentary film of the 2012 SPCP process at Findhorn, titled *Turn Your F^*cking Head* was created by filmmaker Becky Edmunds, commissioned by Independent Dance and is published by Routledge.
The 2012 SPCP was produced by Independent Dance in collaboration with BodySurf Scotland.
My participation in the 2012 SPCP was made possible through the generous financial support of Siobhan Davies Dance and Dance4.
The other 19 participants were: Gry Bech-Hanssen, Aura Fischbeck, Miguel Guzman, Detta Howe, Miriam Jakob, Antonija Livingstone, Janne-Camilla Lyster, Cinira Macedo, Megan Metcalf, Laurence Nguyen-Monnot, Gulsen Ozer, Marika Rizzi, Ana Rocha, Christopher Roman, Shannon Stewart, Maria Svensson, Emily Sweeney, Asher Woodworth, Olga Zitluhina.
"Dynamic", the solo choreographic score created by Hay for the 2012 SPCP, is dedicated to Gill Clarke (1954 – 2011), who was instrumental in establishing the context that supported 9 iterations of the SPCP.
[52] The nine-month duration was specific to the 2012 SPCP; other iterations of the SPCP defined shorter durations, typically three months.

As is characteristic of Hay's choreographic practice, the score for *"Dynamic"* does not consist of a fixed sequence of overtly physical movements to be repeated on a daily basis, which will have the same outward appearance each time the score is performed. Rather, Hay's written choreographic score maps a journeying through a landscape of questions and directives that activate the performer's attention to 'multiple levels of perception at once' (Hay 2012b). Every performance of the choreographic score (with or without an audience) is a live negotiation of the journey through this terrain, arising from and within the performer's perceived relationship with themself, their (present or imagined) audience, the space where they are dancing and each passing moment. The language of the written score's directives is a finely honed balance between offering the performer a clear and endlessly absorbing problem to engage with, without determining a singular possible solution to that problem (and while at the same time also forming part of the choreographic composition that supports an audience's engagement in a similarly non-singularly-resolvable journey of attention). For example, following a preface and preset, the score opens with: 'Upon choosing a place to begin the dance, you find comic movements without acting funny. Getting to the floor, you assume a minimally composed shape' (Hay 2012, p.7). And, from later in the score:

> Moving rapidly, without struggle, lift your body mass away from the floor as you turn without turning, navigating a teardrop path covering at least half the stage. Use or don't use your arms, more or less. The work is to remain as simple as possible in relation to the movement while becoming as sophisticated as possible in terms of your perception of time, space, and dynamic. You want to give the impression that this activity is habitual, but it is not. (ibid, p.10)

My participation in the SPCP 2012 thus gave me an experience of a daily practice that, although a repetition of the same choreographic score each day, was never embodied in precisely the same movements from one day to the next, and which always remained an ongoing process of discovery and generation of my individual adaptation of *"Dynamic".* While I was initially daunted at being required (for the first time in my experience) to commit to a (roughly) one-hour daily practice of one score every weekday for a continuous period of nine months, I increasingly realised how much

learning was generated for me by this process. Rather than being constrained by the repetition, I experienced how the finely honed cogency of Hay's scoring instead created conditions in which practice could be endlessly informing. As a result, I found myself choosing to continue the daily practice of *"Dynamic"* beyond the nine-month minimum. An opportunity to present my first public performance of my adaptation of *"Dynamic"* arose after fourteen months of daily practice in November 2013,[53] and a second performance opportunity arose in February 2014[54] after eighteen months of daily practice, after which I made a choice to call an end to that uninterrupted period of my daily practice of that particular score. In this way, my participation in the 2012 SPCP clearly laid the foundations for my engagement in a self-directed daily solo practice – it convinced me that it is logistically possible to do, that it sustains rather than quells personal motivation over long durations, and that it is artistically fundamental as a way of learning.

The starting orientation for my solo daily practice at the beginning of this artistic doctoral research process, then, was to use a methodology that drew on my experience of adapting Hay's *"Dynamic"* in 2012-2014 and retained the outward structure of that experience's most general parameters, but without orienting that structure toward the practice of a score by Hay nor to any other single performance score already predefined by me or anyone else. My history of the daily practice of a specific score gave me a working understanding of how I could engage in a daily practice that was, rather, a choreographic investigation of my current research questions and that could itself be a generator of a new choreographic score.

As well as informing the outward structure of my daily solo practice, my experience of Hay's SPCP also informs how I engage in investigating-through-moving *during* the more open daily practice of

[53] 2-3 November, 2013, at Tate Britain (London), performed in a gallery together with Martin Creed's *Work No. 227: The lights going on and off*, as part of Tate Family Festival.
[54] 18 February, 2014, at De Montfort University (Leicester), in a double bill with Sally Doughty performing her adaptation of Hay's *I Think Not*, presented by Dance4.

this artistic research process. A series of 'tools for the practice of performance of Dynamic' (2012, p.2), which make up the preface to Hay's written choreographic score for the work, are particularly influential in this regard. These performative tools are intended to be deployed by (or available to) the performer throughout all parts of the journey that Hay's written score shapes. They take the form of five questions that each begin with 'What if…?', a form that is characteristic of Hay's use of language in her choreographic practice. These include: 'What if my whole body at once is my teacher?' and 'What if how I see while I am dancing, including what I imagine, invent, project, can and cannot see, in a prescribed area near, mid-range, and far, at any given moment, is a means by which movement arises without looking for it?' (Hay 2012, p.2).

These questions, among other questions and tools, support what Hay terms *the practice* that is the mode of engagement that underlies her work, which can be understood as distinct from and larger than the performance of a specific choreographic score such as *"Dynamic"*. This is manifested, for example, in the way that, during the ten-day SPCP group intensive in Findhorn, Hay structured parts of the working day as periods for focusing on deepening the performative use of these tools in themselves, outside of the context of the specific directives that form the journey through the score. She termed these periods 'practice without the shape', in contrast with the performance of the score itself which she termed 'practice with the shape' (Hay 2012a). My experience of the distinction between these two modes of practice, the shifting between them and the complementarity of their purposes underscores how I approach my 'open practice' (whether daily or not, solo or with others) and how I understand it to have a porous connection with the generation and practice of a more composed choreographic performance score, such as *No-How Generator* became during this research process. While "open", the practice is a knowledgeable mode of research and its degree of openness can be dialled up or down to responsively support the needs and potentials of the research in a particular moment in time.

Hay's 'What if…?' questions are an important presence in my daily/ open practice in multiple ways, of which I will discuss three. Firstly, I consider the five questions that make up the preface to the score for *"Dynamic"* (alongside other questions originated by Hay) as important parts of the repertoire of tools that I draw upon in my practice. It is extraordinary to me how the asking of these kinds of questions within the context of dance practice opens up and activates the practice of dance as a field of experiential research. They are catalytic lenses through which to perceive experience in motion, that spark and direct investigation. They make very clear and palpable the shift that happens – the expanded perceptual terrain that begins to open up to discovery – when choreographic performance is approached not as a demonstrative, athletically virtuosic repetition of predetermined physical motions, but as a performative practice of being in the act of questioning and noticing the felt-sense feedback that the question's probe generates. I appreciate that the language with which Hay forms these questions enables me to hold and work with them while dancing. They may be complex questions, with many parts, with language that seems obscure or mysterious, but they are an *experiential* language: a language that is shaped and consolidated *from* experiences of practice and that is balanced and honed *for* experiences of practice.

I thought about how potent it is to make practice the asking of a question.
Immediately, that orientation opens up a world of discovery and possibility –
but it takes the asking / the act of questioning to open that.
I also thought about how significant it is <u>which</u> question I ask. I thought about the notion that how you formulate the questions that you ask contributes to determining the 'answers' that you get – or at least, contributes to determining
where those questions lead you, what those particular questions open up.
Here is, again, the strong relationship between what is at stake in (for example) science research (and history of science / epistemology of science) and what is at stake in dance as a knowledge practice, in a very immediate, experiential way.
(11/5/20)

Secondly, Hay's 'What if…?' questions provide the reference and basis for my development in this research process of variants on those questions, that have become important elements of the score and practice of *No-How Generator*. These include:

What if everywhere that I am, knowledge-generation is?
Just get moving and call it knowledge-generation.

What if everywhere that I am, no-how generation is?
Just get moving and call it no-how generation.

What if how I know serves me well?
What if how all of my cells are doing knowing serves me well
in the practice of no-how generation?
(1/8/19)

All of these questions and practice-tools (quoted here from my studio practice notes), are part of the score of *No-How Generator* (see Appendix A) and the process of development of that score. Each is a variation on a formulation of Hay's, which I encountered either during the SPCP or during two other week-long workshops led by Hay that I attended at Independent Dance in London (in 2009 and 2018), or indeed repeated and varied by Hay across more than one of these occasions. Examples of the spoken and/or written formulations of Hay's to which I refer are:

'What if everywhere that I am is what I need?'

'What if wherever I am, intimacy is?'

'Just get moving and call it "what if?".'

'What if how I see serves me well?'

(Hay 2009, 2012, 2012a, 2018)

My variations benefit from the forms of Hay's honed and practicable sentences, and "drop in" the language of my artistic doctoral investigation, as a way of "dropping in" to my body and my practice the terrain of the phenomena of knowledge-generation, no-how generation and knowing, as a terrain that I can inhabit and learn from experientially. The linguistic variation of the question brings with it a palpable shift in the sensorial topography that it elicits in practice, opening possibility for the investigation of the terrain of practice to unfold in a different way.

For example, the shift of orientation from Hay's language 'how I see' to my formulation 'how I know' re-organises my experience of my body in a way that expands my attention beyond an emphasis on my eyes and visual system. Although Hay's more expansive version of the question beginning 'What if how I see…' (quoted in full on p.68 above; Hay 2012, p.2) makes very clear that what it addresses goes far beyond a literally visual conception of seeing, in my own experience of practicing this question I nevertheless notice that I tend to give my visual system and visual perception a heavier weighting in my attention than the rest of me. Shifting the emphasis to 'how I know' reorients me toward asking where I locate knowing in my body and in my experience of practice, attuning me toward noticing how that unfolds. The weighting of my attention expands toward noticing *how all of my cells at once are doing knowing*: in practice, I locate my bodily process of knowing in how all of my perception, sensation, thought, feeling and imagination are unfolding in each moment in relationship with my internal and external environment, in all parts of my body and in all layers of my present experience.[55]

Thirdly and finally, the broader orientation of *learning without thinking* that underlies Hay's 'What if…?' questions is particularly instrumental in informing how the daily/ open practice within this artistic research process – and indeed this research as a whole – approaches choreographic practice as a zone of knowledge-generation. 'Practice', Hay has said, 'is learning without thinking' (2016, p.105). Hay gives notable emphasis to this concept in the written score for *"Dynamic",* by positioning it as the aim that all of its performative tools exist to support. She sets out the overall direction for the practice of the work in the enigmatic epigraph-like words that form the very first statement that appears in her written score:

> 'In order to get the most from this work, you will want to notice and redirect your reliance on your physical body and what it can do. Redirecting this dependence requires an unselfish regard for your whole body at once as a cogent medium for indefinable specificity. You are thus positioned to learn without thinking.' (Hay 2012, p.1)

[55] This does not entail that I believe it is possible to be fully consciously aware of all of the ways that all of my cells are doing knowing in any given moment. Rather, it is a trigger for expanding toward noticing more.

More than any single tool or question on its own, the broader orientation toward 'learning without thinking' that they share is what orients not only the practice of Hay's *"Dynamic"* but also of my artistic doctoral research with *No-How Generator*. What I understand Hay to mean by 'thinking' in the context of this phrase is informed by my experience of practice sessions with her. For example, in workshop settings that I have participated in, she has offered the tool: 'Whenever you get stuck in your thinking mind, just get moving and call it what if' (Hay 2009). She has also emphasised that the intended way to work with her questions is to 'move the question from your head down through your whole body and notice how the sensual impact from the question alters you' (Hay 2016, p.125). I understand 'thinking mind' and 'head' as references to language-oriented, logical, deliberative reasoning – the mind that reasons and passes judgement, which can powerfully inhibit investment of attention in other more sensual-sensorial, less linear, less explicatory cognitive modes. Hay also advises, in this regard, that in the practice of her work: 'there's no time for judgement' (Hay 2009). Hay's phrase 'learning without thinking', then, is not about an absence of cognition or intelligence, but rather a dialling down of one particular (usually dominant and in some contexts inhibitory) mode of cognition, to create the conditions for a dialling up of another. This is again an experientially-inflected choice of words on Hay's part, reflecting the sense that, in practice, when I feel like I am *thinking* (or indeed *over-thinking*) in a way that is not supporting me to 'get the most from this work', it is this more head-bound and deliberative mode of cognition that I am noticing.

Claxton, cognitive science and *learning without thinking*

Claxton's cognitive science perspective on the embodied basis of learning resonates strongly with this choreographic orientation toward learning without thinking. For example, Claxton notes that, in modern Western culture, embodied capacities for learning are impoverished by the tendency to 'give exclusive credence to conscious, deliberate, purposeful thinking' (1997, p.7) which he terms 'd-mode' (ibid, p.4), standing for both the deliberation that it prioritises and its unwarranted entrenchment as the default mode. Claxton argues against the exclusive prioritisation of d-mode,

and for a renewal of appreciation for the necessary contributions that other modes of knowing make to learning, among which he includes 'productive intuition' (1997, p.8), 'a relaxed yet precise non-verbal attention' (ibid, p.26) and processes that 'are tolerant of information that is faint, fleeting, ephemeral, marginal or ambiguous… [and that are] willing to explore without knowing what they are looking for' (ibid, p.13). Claxton cites studies in cognitive science showing that, through such processes, 'there are things we can learn… which d-mode cannot master; and …d-mode, if used over-enthusiastically, can actively interfere with this way of knowing' (ibid, p.21). Contrasting with these more expansive cognitive modes, Claxton describes that d-mode 'relies on language that appears to be literal and explicit… [and] maintains a sense of thinking as being controlled and deliberate' (1997, p.10). D-mode is 'justificatory [and] …tends to suppress other ways of knowing' (ibid, p.8.). 'A close, sustained but unthinking attention… is foreign to d-mode' (ibid, p.10), because d-mode 'values explanation over observation' (ibid, p.7) and is 'much more interested in finding answers and solutions than in examining the questions' (ibid). That Hay's 'learning without thinking' is oriented toward a mode of cognition that contrasts precisely with the 'd-mode' that Claxton describes is evident from her statement that 'Questions lift me up. …When I get an answer, it's over' (Kourlas 2016). Indeed, when describing this approach in more detail, Hay emphasises that her tools and questions are intended as necessary and active supports for shifting away from a dominant, default, deliberative cognitive mode:

> I set up a proposition in the form of a "what if?" question. The question is meant to inspire and engage the dancer in noticing the sensuality of the feedback from the question as it unfolds in his/her cellular body. The question is not there to be answered. *And*, to not look for an answer requires a lot of work for everyone. That's why the question has to be so attractive for the person who is dancing: "…non-knowing is not a form of ignorance but a difficult transcendence of knowledge". (Hay 2016, p.11, quoting Bachelard 1994, p.xxxii)

Through this clarification, and through the reference to Bachelard on non-knowing, Hay connects a choreographic methodology with an epistemological orientation toward embodied learning, one

that strongly resonates with Claxton's perspective on embodied learning from the field of cognitive science.

A Warburgian *Somatic Denkraum*

As a second transdisciplinary perspective on *learning without thinking*, I want to draw a parallel here between choreographic daily/open practice (as conceived above) and the thinking of the German art historian and "cultural scientist" Aby Warburg (1866-1929). Here, my aim is to weave in an initial introduction to Warburg and my engagement with his thinking in my artistic research via a discussion of his concept of *Denkraum* and how this resonates with my understanding (following Hay) of choreographic daily practice as a space of *learning without thinking*. (A more extensive discussion of different concepts of Warburg's and their relation to this research will follow in section 6.) Through the lens of Warburg's concept of *Denkraum*, an understanding of my choreographic daily/ open practice comes into sharper focus by being able to think of that practice as what I term a *Somatic Denkraum*.

The German composite term *Denkraum* translates literally as "think-space" or "thought-space". Claudia Wedepohl, Warburg scholar and archivist of the Warburg Institute, attests that this term is one of Warburg's most well-known neologisms and played a central role in his thinking (Wedepohl 2014a). The scope of that thinking was expansive: although rooted in the consideration of Western visual art, Warburg's thinking bridges this with philosophy and indeed orients itself toward seeing links between different disciplines, spanning art, science and magic (a conjunction that will be the focus of section 6, below). Warburg is particularly interesting to consider from a choreographic perspective because of the important place that human movement and gesture occupy in his understanding of art history. As Warburg scholar Daniella Sacco relays, Warburg 'defined concisely the purpose of his studies as an attempt at developing a "theory of man in movement"' (2015, p.73). Art historian Georges Didi-Huberman (whose analyses of Warburg's methods will be foregrounded

in section 6, below) also affirms that 'dances, human gestures in general, make up the essential, the centre' of Warburg's perspective on art, art history and how they relate to knowledge-generation (2018, p.13).

Warburg defines *Denkraum* as the '"creation of a space of thought as a cultural function"' (Warburg 2001, cited in Wedepohl 2014, p.20, English translations from German mine) and he considered this epistemological act to be '"the foundational act of human civilisation"' (Warburg 2000, cited in ibid, p.29). *Denkraum* involves the creation of 'a certain "feeling of distance" [*Fern-gefühl*] between the person and their environment' (Wedepohl 2014, p.17). By opening and dynamically sustaining such a distance between 'I' and 'world', a space for the generation of thought comes into being (ibid, p.18). Within this space, thought generates cultural forms that together constitute the vast and ever-changing web of human civilisation, broadly conceived. In particular, Warburg situates artistic production within this generative thought-space – for Warburg, the human capacities for the genesis of symbols, artistic works, culture and civilisation are all understood as being part of the same continuum (Wedepohl 2014, pp.21-22).

Characteristically for Warburg, though, *Denkraum* is not catalysed simply by distance alone, but by the navigation of a tension or *polarity* between distance and non-distance in the relation between self and world. As Wedepohl elucidates, Warburg describes *Denkraum* in terms of 'the oscillation range of the pendulum-swing between sensual perception and productive creation, the ideal framework of a thought-movement between two poles' (Wedepohl 2014, p.39). Here, 'sensual perception' denotes the non-distanced, physically and sensorially entangled relationship with the world, while 'productive creation' denotes the differentiation of something new that can occur within the generative space that distance opens up. An entangled and embodied *subjective* perspective, then, is just as integral to Warburg's epistemological orientation as is a distanced perspective that aspires toward a more *objective* relation to one's environment. As Wedepohl

affirms, the way Warburg conceives of *Denkraum* exemplifies the way that he 'fundamentally develops his concepts in a historically concrete context, whereby his own experience functions to an extent as a navigator' (Wedepohl 2014, p.19). His own subjective, embodied experience is thus integral to how he conceives of *Denkraum* and how he practices engagement with it as a researcher. This positioning of embodied experience within Warburg's conception of *Denkraum* begins to suggest how choreographic daily/ open practice resonates with this and many other aspects integral to a Warburgian thought-space.

Indeed, Wedepohl emphasises that, by conceiving of thought in spatial terms as the *Raum* of *denken* (space of thought), Warburg's orientation is physical and philosophical at once (Wedepohl 2014, p.25). Warburg wanted to understand a 'Physik des Denkens' (physics of thought) (ibid, p.26) and he developed 'a specifically physical terminology' (ibid, p.25). Relevant to the discussion above of choreographic daily practice in relation to the cognitive science perspective of Guy Claxton, Wedepohl also traces how Warburg's ideas were influenced by his fascination with perceptual psychology and his ambition to bridge cognitive-scientific and aesthetic-philosophical perspectives within his work (Wedepohl 2014, p.26).

Further parallels between Warburg's approaches and a choreographic practice of *learning without thinking* emerge through the way that Warburg understood the embodied and entangled orientation of non-distance to be associated with feeling and irrationality (Wedepohl 2014, p.40). As Warburg scholar Christopher D. Johnson elaborates, the necessary inclusion of irrationality within the polarity of Warburg's thought-space resists the conflation of *Denkraum* with a Kantian, transcendental form of reason or an exclusively logical form of thought (Johnson 2012, p.27). Non-distance and irrationality are related by Warburg to magic (in opposition to logic) and to the foregrounding of '"hitherto debased epistemological values"' (Warburg 1920, cited in Johnson 2012, p.37). The inherent role of these elements within Warburg's *Denkraum* makes it not only a 'mutable,

vital' space (Johnson 2012, p.130), but also one that always retains an aspect of volatility and disruption (ibid, p.38). Johnson articulates that 'Warburg thinks intuitively, in figures' (ibid, p.135) and that he was interested in engaging 'a nonconceptual, non-systematic mode of thought that never sublates[56] the disruptive claims of sensuous experience' (ibid, p.132).

At the core of both Warburg's *Denkraum* and a choreographic daily/ open practice of *learning without thinking* is their shared commitment to engaging in knowledge-generation in a way that understands subjective (non-distanced) and objective (distanced) ways of knowing as mutually entangled, interdependent and implicating embodiment. Warburg's orientation is one in which the dynamic polarities of self/world, non-distance/distance, subjective/objective, irrational/rational and magic/logic are each understood as being made up of elements that '"blossom grafted to a single stem"' (Warburg 1920, cited in Johnson 2012, p.37) - divergent concepts that unfurl by virtue of their entanglement. Wedepohl also articulates that Warburg 'was actually interested in balancing the extremes associated with the poles - their productive cross-fertilization' (Wedepohl 2014, p.42). This resonates strongly with a choreographic practice wherein the generation of knowing unfolds in an embodied context and wherein the topic of enquiry is an embodied condition-of-being in which subjective experience (mind, person) and objective materiality (body, organism) are understood and experienced as a continuity.

The cumulative resonances between Warburg's concept of *Denkraum* and my choreographic daily/ open practice suggest an understanding of that practice as a *Somatic Denkraum*. Daily/ open practice, approached as *learning without thinking*, is a practical epistemological engagement in generating knowing by navigating the continually unfolding relationship between self and world. The space of practice is also one that engages a nonconceptual, non-systematic mode of thought (as

[56] *sublate*: 'assimilate (a smaller entity) into a larger one' (Stevenson, Pearsall & Hanks 2018).

quoted above) and in which sensuous-sensorial experience is foregrounded as integral to the coming-into-being of knowing. Like Warburg's resistance to the exclusive privileging of reason and logic, the *Somatic Denkraum* of daily/ open practice is one in which a habitually dominant mode of deliberative reasoning is purposefully dialled down. Claxton's articulation of the importance of a mode of 'productive intuition' (1997, p.8), parallels Warburg's intuitive mode of thought, while Claxton's pointing toward 'non-verbal attention' (ibid, p.26) parallels Warburg's mode of thinking through visual (art historical) images of human movement and the intuitive resonances between them. Hay's reference to the continual effort that is inherent in *learning without thinking's* 'difficult transcendence of knowledge' (2016, p.11) also parallels the tension, volatility and disruption that inhere in Warburg's *Denkraum*.

Choreographic daily/ open practice can be appropriately described as a specifically *Somatic Denkraum* because, despite the integral role that concepts of embodiment, subjectivity and non-distance play in Warburg's notion of *Denkraum*, a movement-based choreographic daily practice nevertheless has a far greater and more direct emphasis on attending to immediate bodily experience than Warburg's approach has. *Somatic Denkraum* is a space that is able to sustain a practice of generative thought and learning within a specific embodied context that radically minimises the degree of distance between the researcher's self and the researched world. Daily/ open practice embodies a higher tolerance for non-distance, skilfully inhabiting a greater proximity between the poles of Warburg's pendulum swing – and perhaps also to some extent a greater porosity and lesser volatility between them.

While the relation of *Somatic Denkraum* to non-distance is evident through its rootedness in embodiment, it may seem less clear how it relates to distance, to which Warburg's ideas ascribe an allied importance. Hay's articulation of the role of dis-attachment within her practice of *learning*

without thinking provides a helpful way of understanding how distance, too, is an active presence within such a practice. In an Artist Statement about her practice, Hay has written:

> Without it being my intention, dance has become a medium for the study and application of detachment. Actually, I prefer the term dis-attachment because it implies a more active role in letting go. The balance between loyalty and dis-attachment to that loyalty, sensually and choreographically, is how the practice of dance remains alive for me. (Hay 2010)

Describing how this becomes activated moment-to-moment in practice, Hay includes a reminder in one of her choreographic scores '…to avoid my automatic response to be creative or to fall into habitual behaviour regarding the words I use [in the written score]. Instead, I immediately dis-attach from those impulses by noticing the whole body at once as my teacher, thus assuming the cellular intelligence of my body' (2016, p.108). Dis-attachment from habitual patterns, which may be positively construed as loyalties or critically construed as limitingly-automatic behaviours, is a key aspect of the moment-to-moment practice of *learning without thinking* – and such dis-attachment from loyalty always needs to be cogently balanced with the loyalty itself. Actively engaging this is a defining characteristic of practice for Hay, who observes that 'When dancers learn to dis-attach from their particular strengths their transparency is visibly matchless' (2016, p.105). Distance can thus be understood to be as integral to an embodied practice of *learning without thinking* as non-distance. In *Somatic Denkraum*, the opening up of a certain distance through activating a readiness to dis-attach from habitual patterns and loyalties is a catalyst for setting into motion conditions in which other patterns have room to emerge. As Johnson says of Warburg's *Denkraum*, this is a space of practice in which something 'can be thought anew, but also in which the world's immanence can still be felt' (2012, p.166).

Choreomancy and Predictive Processing

Warburg's connection of his thinking with notions of magic enables me to make a final note on a third transdisciplinary perspective before summing up this section on the role of choreographic

daily/ open practice within this artistic research. That is to propose that daily/ open practice, as conceived in this research, can also be considered to connect with notions of magic and can be thought of through the lens of my self-concocted term *Choreomancy*: divination through dance. To consider choreographic daily/ open practice as a form of *Choreomancy* is to draw associative links between different kinds of embodied practices – dance and divination – that are not typically considered to be 'grafted to a single stem'[57] in contemporary Western contexts, but between which overlaps can be fruitfully perceived. A choreographic daily/ open practice of *learning without thinking* is a knowledge practice that engages intuitive, felt-sense, more-than-rational modes of learning in the conjuring of choreographic forms and knowings. As an engagement of a non-distanced, subjective orientation, such a practice exceeds the bounds of strictly objectively-verified ways of knowing, thereby aligning the practice with the epistemological zone of magic. Divination has been defined as 'the practice of seeking knowledge of the future or the unknown by supernatural means' (Stevenson, Pearsall & Hanks, 2018), which has a meaningful degree of overlap with this understanding of choreographic daily/ open practice as a mode of research that exceeds exclusively objective, empirical or scientific-positivist forms of verification. While I reserve a fuller discussion of notions of magic for section 6, in brief, I conceive of 'magic' as a similarly broad and epistemologically-based term that can be inclusive of any knowledge-practice that functions beyond the scope of objective verification. My interpretation of 'magic' in this way, and the role that this plays in my artistic research, is influenced by Warburg, who considers magic to contrast with logic, science and reason – and who considers these two contrasting poles to form a polarity (which will be the focus of section 6). For Warburg, magic is connected with a broad range of phenomena, inclusive of ritual practices, mystical knowledge, myth, symbolic imagery and artistic production. Wedepohl relates that Warburg gave particular importance in his thinking to divination as a practice that

[57] This Warburgian phrase (from Warburg 1920, cited in Johnson 2012, p.37) will be further discussed and contextualised in section 6.

bridges categories, viewing it as 'the missing link between pathos [feeling] and magic' (Wedepohl 2014, pp.36-37).

In addition to these connections with Warburg, the notion of *Choreomancy* as a bodily practice of divination also creates parallels with neuro- and cognitive science, via the central role that prediction plays in the increasingly influential Predictive Processing theory of brain function. Philosopher of cognitive science Andy Clark is a noted articulator of this theory, which argues that:

> Brains… are essentially prediction machines. They are bundles of cells that support perception and action by constantly attempting to match incoming sensory inputs with top-down expectations or predictions. … Such accounts offer a unifying model of perception and action….[and] offers the best clue yet to the shape of a unified science of mind and action. (Clark 2013, p.1)

Clark (2013) outlines that the still-evolving theory of Predictive Processing is supported by significant and growing amounts of experimental evidence that promisingly crosses multiple levels of description, including neurological function, perception, cognition, and action. Furthermore, the 'unifying framework' (Muckli et al in Clark 2013, p.41) that prediction provides is capable of including 'subdivisions such as attention, expectation, and imagination' (ibid) within its scientific-theoretical understanding. Prediction can be seen, in this theory, as an embodied capacity that bridges understandings of subjective experience and objective (neuro)physiology. In this theory, prediction also acts as a lens through which to understand the unfolding relational dynamics between human bodies and the environments that they move and learn within. I have previously speculated on the perspectives that Predictive Processing theory suggests for dance and choreography, in my science-fiction performance-lecture *Now That We Know* (2016), saying:

> All the time, at every level, what we are tuned towards is attempting to predict what will happen next in the world around us, so we can adapt our behaviour to it.

> And we ourselves are always a presence in our model of the world that we are predicting, so we are also always predicting ourselves. Our whole physical minds at every level are always arising through our predictive physiology.
>
> And what's great about this is the new perspectives it gives us on all those practices - all those different kinds of cultural practices - that reach across to the unknown, that bring something from the unknown into the known or the sense-able.
>
> Though we can't fully tell the future, nevertheless, our whole being is evolved precisely to continually be in the act of attempting to tell the future. It's as basic and constant a part of our action as our breathing and our heartbeat. Every bodymind is an oracle, a shaman, a fortune teller, a prophet. (Sperling 2016)

Choreographic daily/ open practice considered as a form of *Choreomancy* does not, in my view, foreground divination literally as a fore-telling of the future, but is engaged in divination as an intuitive process of finding the forms of meaningful and generative ways of being in a given (present and future) choreographic context. While the cognitive-scientific theory of Predictive Processing does not frame prediction as a supernatural or divinatory phenomenon, this theory's focus on the central role of prediction within human cognition and action nevertheless suggests a resonance between these different conceptions of the embodied unfolding of prediction, in ways that I find fruitful for choreographic practice. The term *Choreomancy* is a playful way of pointing toward this resonance linguistically.

Section Conclusion

This section has given an overview of the context, background, meanings and purposes of the choreographic methodology of daily and open practice that has been the primary site of my artistic research during this process. The practices of the choreographer Deborah Hay, and my history of experience of those practices have been particularly important in shaping my approach to this, including the outward form of the daily, hour-long practice, and what tools and sensibilities support this to be a knowledgeable negotiation with not knowing. The discussion has shared how Hay's methods have fundamentally supported me in my ongoing evolution of tools, materials and approaches that extend what I have directly experienced through her work and that have opened up

practicable routes toward the investigation of this artistic doctoral research process, and toward the generation of the new choreographic score, *No-How Generator*. The discussion of Hay's 'what if?' questions described how practice with these kinds of questions sparks a form of engagement that opens up dance practice as a field of first-person experiential research. The specific question-tools that I developed, as variations on Hay's, made my research questions accessible to experiential investigation in practice, expanding my attention toward noticing *how all of my cells at once are doing knowing, in relationship with everywhere that I am*. The broader practical, cognitive and epistemological orientation that Hay describes as 'learning without thinking', which underlies practice with these kinds of question-tools, is a constant source of orientation and purpose within this research. The cognitive aspects of these practices are underlined by their resonance with the cognitive science perspective of Guy Claxton on embodied learning, opening up a transdisciplinary perspective on this choreographic approach to daily/ open practice. A second such transdisciplinary perspective was opened up through an introduction to art historian Aby Warburg and the Warburgian notion of *Denkraum*, which suggests an understanding of daily/ open practice as a *Somatic Denkraum*. A third and final transdisciplinary perspective expanded on the notion of magic and divination, noting how this resonates with a daily/ open practice that engages *learning without thinking*, and considering this practice through the lens of the invented term *Choreomancy*. To conclude this section on daily practice, a number of other excerpts from studio practice notes on daily practice go further:

The swerve as really important:
Just getting moving, and learning through moving,
But investigating what getting moving is
and including getting moving in my perception and in practice of relation in that.
And swerving from the already habitual/ available movement/ behaviour/ action/ practice/ relationship,
Which is where there is actually, granularly (in practice, in experience),
The space/ place/ opening/ experience in which something expanding arises/ comes into being;
Something that wasn't already there is generated. (21/5/20)

[In daily practice today,] I feel lots of insufficiencies, but that is part of it - they are part of the reading, and knowing how to orient towards what I'm reading in such a way that it is not obstructive of the possibility of going beyond what I perceive as limitation is part of what is skilled about it. (Here, there is Deborah's 'There's no time for judgement', for example.)
Alongside the insufficiency, I feel the sufficiency and necessity of working through it - this may have lots of insufficiency wrapped up in it right now, but this is how to get somewhere. So much dross to get through, so much need for daily practice to work through all of that enough to be able to offer something to someone else, as art, rather than as therapy for myself.
I noticed how the question opened up other awarenesses, other readings of what lights up. I noticed fallow areas and could start to plough them - like resuscitating a sourdough starter, refreshing, feeding it, tending to it, creating the possibility for it to get what it needs.
Is it foolish and self-deluding (and self-indulgent) to believe that working through it all will/ does get somewhere that can be generous toward another/s? I don't think so. Certainly not entirely, and that's enough for it to matter, even though self-monitoring always has to be a part of it. (11/5/20)

I learned that it's all here - all of the subject of dance-as-knowing, all of the complexity, all of the richness, all of the aspects, are available within practice. Even though practice is limited at home, and limited by [me] being out of practice,[58] the whole of the matter is present in practice – it's not distant or elsewhere. (11/5/20)

Thinking about how extraordinary it is that all of this landscape of material and transformation is in the room, when I am working just with my self/body/perception. I am not using other stimuli (like music), I am not working with objects or materials. But so much is happening and, given more time, so much more could be happening. And I am interested in that, and I know how to activate that, and I know how (nohow?) [to] … sustain the unfolding of that.
This really is alchemical as practice, because from (apparently) nothing but oneself comes something, and something rich. (14/3/19)

[58] This note dates from May 2020, during the first UK lockdown caused by the global COVID-19 pandemic, when my practice could only occur at home and irregularly, when circumstances allowed.

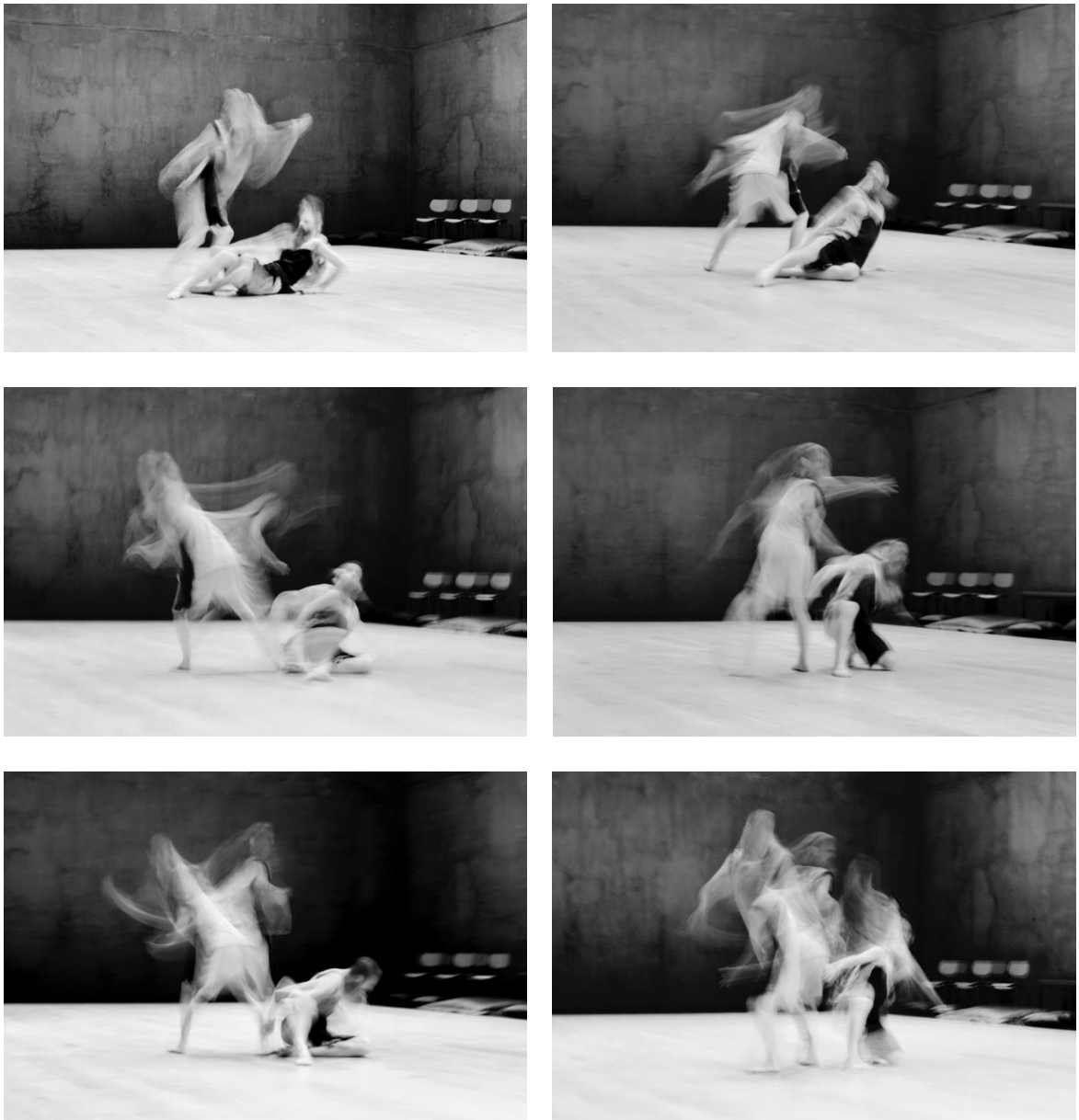

Figure 5: *No-How Generator*, photos by Camilla Greenwell.

Section 4:

Back-and-forthing: a granular exegesis of a choreographic material

This section focuses in on one particularly central choreographic material that forms part of *No-How Generator*. This material emerged through a process of learning-through-moving and is itself a form that hosts the ongoing process of learning-through-moving within the performance of the choreographic score. This section will first discuss this material and several of its articulations within *No-How Generator*, before placing this in the larger context of my history of practice, characterising this material not only as an immediately embodied process of learning-through-moving, but also as part of a longer, longitudinal process that implicitly seeks to bring together learning gathered across several decades of practice. In practicing and reflecting on this emergent material, a clarity has landed that it embodies a synthesis of these longitudinal interests, which span contrasting orientations to practice that I will characterise through the terms 'momentum' and 'perception'.

Back-and-forthing, looping, and seismography

The side to side, the rocking,… the freedom of it.
Regularity and rhythm but also changeable and open.
The back and forthing…
In a sense, it is the back and forth pathway that circular 'looping' is not
- except, it's freer, lighter, looser, less strict.
Something about the between of the back and forth as a space of emergence
- perhaps also the spilling beyond the back and/or the forth,
as well as what emerges between them.
Something about the regularity of the back and forth as allowing something to establish and to emerge more, a process of becoming by staying with
(and then not staying with; a light touch of the staying with).
What if you don't know what it will look like, if you don't know what will emerge?
Or, at least, what if you don't have to know what will emerge?

What if it's about becoming available to be a seismograph,
taking a reading of what's here and noticing what comes up?
*(*20/2/19)

Here is the arrival[59] of *back-and-forthing*: the rhythmic yet changeable rocking motion that came up in open practice and became the nucleus of the choreographic score of *No-How Generator*. The behaviour emerged and held my interest with its aerated combination of regularity and mutability. While the rhythmic rocking of weight remains a constant, the specific form of the movement is always evolving and adapting in relation to the perceptual feedback that I experience from my moving body and the environment around me. This material is a development of other, earlier materials – particularly 'looping', the material that formed the basis of my work *Loop Atlas* (Sperling 2017)[60] – and it re-addresses aspects of those materials that I had come to find limiting, by opening up ways of going beyond them.

Back-and-forthing offers a more open system than those previous materials: 'looping' defined itself as a strict process of repeatedly describing a circular, cyclical movement, while gradually allowing change to occur in the precise shape of the movement through the smallest possible of incremental changes between each repetition. For example, this might include sustaining the rhythmic, gradually-evolving circular movement of weight through my body, while also allowing it to incrementally change level (such as from sitting on the floor to standing) and direction of facing in space, eventually evolving cumulative changes in movement shape, detail, location and also dynamics. These incremental accumulations allow the movement to travel through a wide variety of

[59] The arrival of back-and-forthing occurred during open practice together with Katye Coe at iC4C (Dance4, Nottingham) on 20/2/19. During this practice session, this behaviour (back-and-forthing) emerged in my dancing and I stayed with it. During the same practice session, Coe sensed what I was exploring and joined me in investigating the potentials of this behaviour as a choreographic material. I consider it very significant that back-and-forthing emerged and became a shared activity in this way – that is, in and through the modality of open movement practice itself, without being first formulated or communicated verbally. In particular, this highlights the sophistication of Coe's practice as a dancer and collaborating performer, and what such sophisticated attunement to practice affords to collaborative processes of (what I am terming) no-how generation. Coe has developed an understanding of her work as a dancer – both in collaborative creative process and in performance – as 'maieutic' practice (i.e., in the sense 'to act as a midwife' [Stevenson, Pearsall & Hanks 2018]) (see, for example, Coe & Sperling 2020). For me, Coe's intuitive way of attending in the arrival of back-and-forthing embodies an especially pivotal example of this during our work together on *No-How Generator*.

[60] *Loop Atlas* (Sperling 2017) is a solo installation performance. It was commissioned by Siobhan Davies Dance as part of the group performance installation *material/ rearranged/ to/ be* (Davies et al 2017).

states over time while seemingly undergoing almost no immediately perceptible changes. The primary limitations that I found myself coming up against in my durational performances of this material in *Loop Atlas* were: firstly, the simple fact that it soon became physically painful through the rather intense muscular effort required to navigate my body through the strict form of this task, particularly over many hours and many days in succession and; secondly, that this strictness (and the associated distraction of the physical strain it often produced) in some ways made it less possible for me as a performer to be fully engaged in a live process of learning-through-moving that is informed by the moment-to-moment perceptual feedback from my body, because the possibilities of what could happen next in any given moment were in fact already largely known and limited by the constraining parameters of the task. Back-and-forthing evolves away from these limiting aspects of the parameters of 'looping', by defining itself through a shifting back and forth of weight in space, between body parts and/or spatial locations that emerge as 'what lights up'[61] in my kinaesthetic-sensorial perception from moment to moment. Rather than focusing primarily on a regularity defined by the shape of movement, as was the case with 'looping', back-and-forthing focuses on the regularity and continuity of the variable pendulum shift of momentum between a back and a forth, a rhythmic behaviour of weight which remains present in space regardless of smaller (and sometimes larger) changes in the shape of the movement. This permits change to occur more readily and immediately in response to what is being 'read' by the performer in their perceptual feedback. For example, when perceptual feedback is received that a new curiosity or appetite towards a particular detail of movement is emerging, or that something is becoming painful through repetitive strain, the opportunity always remains available to re-direct the momentum to 'what lights up' next, elsewhere. Degrees of change that occur can be smaller or (at defined times) larger, always in response to 'what lights up' in the 'reading'. Back-and-forthing thereby goes beyond what I learned to recognise as limitations of 'looping', and yet still sustains the presence of a clear form or process

[61] 'What lights up' (see Appendix A, p.195 for details) is a material that forms part of the score of earlier choreographic works of mine, including Do Not Be Afraid (2011-2013). My development of this material is informed by both my engagement with the practice of Deborah Hay and my interest in neuroscience.

over time, still performing the crucial function of shaping an unfolding choreographic event that both performer and audience can perceive and travel together with.

Through the lightly-held looseness of the definition of its edges, back-and-forthing opens up room not only for choreographic form, but also for choreographic thinking to emerge by 'taking a reading'[62] of what is perceptually present in the operational field of the performance in each passing moment. The flexibility of the form allows it to become a means of noticing, learning and discovering during/as performance, rather than being a mere representation of such processes.

This engagement in noticing, sensing and intuiting draws a parallel between this form of choreographic practice and Warburg's use of the metaphor of the "seismograph" to describe how he understood his own practice as an art historian. Warburg wrote: 'When I look back on my life's journey, it seems that my function has been to serve as a seismograph . . . to be placed along the dividing lines between different cultural atmospheres and systems' (Warburg 1927 in Michaud 2004, p.332). To conceive of a person as a seismograph is to understand them to be engaged in generating knowing by taking a felt reading of their unfolding affective environment. In Warburg's case, this involved reading relations between images of human movement that connected and evoked different times and places, while in a choreographic practice such as back-and-forthing, the emphasis is on an embodied reading that is sensitised to one's immediate experience of movement and the environment within which it unfolds. The artistic and embodied context of choreographic practice highlights and inhabits the implicit continuity between the notions of body-as-seismograph and artist-as-seismograph: that is, between the human bodily capacity to generate knowing through intuitive felt-sense reading of perceptual environments (body-as-seismograph) and the role of the

[62] My choreographic focus on 'taking a reading' is further expanded on in Section 6.

artist – and/or Warburgian art historian – as a perceiver, diagnoser, interpreter and renderer of cultural resonances (artist-as-seismograph).

Articulations of back-and-forthing

The elements that we [KC and MS] may want to attend to in Back and Forthing are:
Tuning in
Working with what lights up
Seeing near/ mid-range/ far
Seeing each other
Seeing the audience members
Carrying weight/ sloshing weight
What if how all of my cells are doing knowing serves me well in the practice of no-how generation?
Humour muscle
Möbius-ing - articulation along the pathway between the back and the forth
Pressing back against what lights up, as opposed to expanding into what lights up
Tempo/ speed
Relational composition with each other - same/different, degrees of sameness, and the rate of occurrence/change of this
Same/different timing
Same/different level
Same/different direction
Same/different shape
All directions
Getting moving what is fixed
Leaning in
(30/9/19)

Back-and-forthing is further articulated in numerous ways as it unfolds in the choreographic score of *No-How Generator,* usually over a duration of approximately 30 minutes, forming the first half to two-thirds of the full duration of the work. I will briefly note what some of these articulations are here, to thicken the discussion of what back-and-forthing works with in practice. Some of these articulations are available to be used as tools throughout the practice, while others are designated as the focus of a particular point in the score.

- '*Tuning in'* is the entry into the practice of back-and-forthing, allowing time for attention towards sensorial-kinaesthetic perceptual feedback to become established.
- '*Carrying weight/ sloshing weight*' is a reminder of the range of qualitative variation that the shifting of weight in back-and-forthing can have. 'Sloshing weight' is a looser behaviour of

weight, that imagines one's body as a bag of water that sloshes back and forth as it moves, having the effect of loosening the edges of the form of the bag and creating a ricocheting water-flow of force that is largely self-sustaining. 'Carrying weight', conversely, is a more collected behaviour of the whole body's weight travelling through space, without the lag produced by the sloshing.

- '*Humour muscle*' is an active locating in felt-sense of the potential for lightness, humour, and laughing at oneself, which relates to Hay's statement 'I always retain the capacity to laugh at my own serious intentions, even while those intentions remain serious' (Hay 2009).
- '*Möbius-ing*' is a twisting articulation of the pathway of motion between the back and the forth which, like a möbius strip, engages a twist that is integral to the movement's continuous form, rather than an obstruction to the flow of weight.
- '*Getting moving what is fixed*' refers to the ongoing activity of dis-attaching from patterns and perceptions that feel fixed, frozen and unmoving, letting go of these fixities to mobilise a space of possibility for the emergence of other patterning.
- '*Leaning in'* is a behaviour (engaged as back-and-forthing nears its quieting and transformation into the next phase of the score) of a repeated rebounding of weight that emphasises and leans in to 'what lights up', by varying the regularity of the pattern of alternation between a back and a forth, bringing in sequential variations such as back-back-forth and back-forth-forth.

All of these articulations of back-and-forthing arose in and through daily/ open practice and then found their form and place in the score of *No-How Generator* through a combined, iterative process of non-conscious and conscious composition. This involves noticing what seems to want to land where and how during practice, alongside watching back videos of score practice to more consciously monitor and refine the compositional effects of choices and parameters.

back and forthing in contact:
mainly working with maintaining a light touch contact, without weight
(but occasionally with some weight);
the basic principle is at least one point of contact at all times
but sometimes this hovers with a floating briefly out of contact on each repetition
or losing contact in transition and re-finding another contact;
working with phasing in and out of towards-ing and away-ing;
working with phasing in and out of same rhythm and different rhythm/tempo – same stream,
departing to differing streams and then returning to another joint stream of timing;
possibility of travelling;
possibility of lightness and boogie (what does that look like?);
enjoying the sense of it being a nohow generator and the nohow is what's between us;
the seeing changing - near, mid-range, far
seeing each other/ sharing eye contact or not, head stabilised or rocking out;
the shifts of attention - from my weight to your /our weight –
turning the volume up on noticing either my sloshing or your sloshing –
when/whether we become in service to the other's sloshing –
becoming more a listener at some moments and less a doer
(28/2/19)

Two further articulations of back-and-forthing form particularly distinctive shifts in the course of its unfolding within the score of *No-How Generator*: '*back-and-forthing in contact*' and '*rooting/routing/planting*'. The initially individual back-and-forthing spatial journeys of the two performers (Katye Coe and I) meet after a time, first finding proximity and a shared spatial alignment in our back-and-forthing, before establishing a point of hand-contact while back-and-forthing continues without interruption. This shift into a state of working in contact is itself further articulated in several different ways in succession, including: phasing in and out of synchronous timing with one another; shifting the co-ordination of the alignment of our back-and-forthing from moving our weight in the same direction at the same time ('towards and towards') to opposite directions at the same time ('towards and away'); travelling through space together while working with 'towards and away'; and dialling up and down the degree of weight that we mutually pour into the contact of the 'towards'. Being in contact re-tunes our perceptual environment as performers, by affording reading through touch. It further expands our felt-sense reading by using touch as a source of information through which we can increase the acuity of our attention to being in relationship with one another's experience and the wider relational environment. It not only creates a visible compositional shift for the audience from (relatively speaking) two solos to one duo, but

also continues to grow the scope of our engagement as performers in back-and-forthing's practice of embodied no-how generation. The modality of touch introduces information from another person into the felt-sense landscape that one is reading, thereby scaffolding the expansion of the scope of the practice of embodied no-how generation towards fulfilling more of its potential to be a relational, intersubjective and collective process, rather than a more solitary and primarily internal one. The scope of this bridging work is not limited to the relation between the two of us as performers, but interconnects with a wider relational web that integrally includes the audience members in the room within the communicative and generative circuits being established. As Coe commented during the rehearsal process: 'The contact between the two of us is a microcosm of the *being with*, in relation to everyone in the room' (Coe 2019). Foregrounding attention to felt-sense in the practice of no-how generation that back-and-forthing supports is not an internalised and private practice, but is integrally a practice of *being with* all of the other people in the room during the event of choreographic performance. The felt-sense reading is a reading *of* and *for* the relational environment. Although working with contact in this way is something that I have ample experience of in the context of open professional dance classes facilitated by others (including Coe, as a highly experienced facilitator), this is not something that has previously been very present in my past choreographic practice. Coe's very specific and sophisticated expertise with working in contact and her deeply-informed belief in the important ways that this can expand the scope of practice were very significant contributors to making it possible for me to find ways to integrate these potentials further into the landscape of my own choreographic practice in *No-How Generator*.

What if my whole cogent body at once has the potential to root/route/plant what lights up (including what lights up as inactive) downwards (to the lower world), with trust and ha!? (27/9/19)

Immediately following the journey through the varied forms of '*back-and-forthing in contact*', '*rooting/routing/planting'* is another articulation of back-and-forthing that forms a distinctive shift in the score. As with several other core elements of the score, this articulation takes the written shape

of a 'What if?' question, informed by Hay's use of this question-form within her choreographic language. Having gathered increasing intensity in '*back-and-forthing in contact*', '*rooting/routing/planting'* addresses how to work with that heightened intensity of dynamics, force and potency being experienced within back-and-forthing as a practice. It engages in the intention of rooting, or routing, or planting what lights up, by strongly directing it through the pathways of one's own internal bodily connections and downward into an imagined reservoir-space below the floor surface. It engages simultaneously with:

Connection to the lower world.
Noticing that many [body] parts, many areas, are not connecting down into the floor (and centre) but remain disconnected, thereby having less power/agency/ability to become present in the room.
Whatever lights up, looking for its root (route) down into the floor, and its capacity to direct down to the lower world under the floor, as if sending a message, communicating.
By sending downwards, something can come back up from that world (and from undermind).
Also opens dynamic movement and strength in space far more.
What I perceive, all of what I notice, what I feel and experience, what I am reading, what lights up - finds connection downwards to the lower world, and sends.
What if connecting downwards to the lower world through what I am reading is a means of finding something out from undermind? A means of no-how generation?
What if the moving sends things down into the lower world, charges it up, then the journeying meets that charged space and travels within it?
(15/7/19)

'*Rooting/routing/planting'* engages with multiple layers, purposes and metaphors at once. In terms of physicality, it is a way of activating increased connection (of 'lines of movement' within one's own body [Sweigard, 1974]) thus accessing greater capacity to send movement along those lines with increased range and force. In this way, it turns up the volume on the physicality of our engagement with our body as our medium. Through the intention of 'connection to the lower world' this material also refers – loosely and metaphorically – to notions associated with shamanic practices: an alternate, lower world that is part of a 'cosmic geography of non-ordinary reality' (Harner 1990, p.21) accessed by a shaman via a 'shamanic state of consciousness' (ibid). My use of this language related to shamanism and my understanding of how it may connect with an artistic, embodied practice, also refers to the enduring influence of artist Marcus Coates' performance/ video work

Journey to the Lower World (2004), among other works by Coates, on my thinking and practice.[63] This material also engages with a further set of references by connecting with Claxton's cognitive science notion of 'the undermind' (1997, p.7), which he uses to refer to the intelligence of embodied nonconscious cognition.

The 'What if?' question (27/9/19, above) that became the more condensed written formulation of '*rooting/routing/planting'* within the choreographic score also includes drawing on the support of 'trust' and 'ha!'. The word 'trust' is a quick reminder to get any inhibitory judgement or doubt out of the way of the rooting (or routing, or planting) by actively giving oneself permission to trust in the quick-fire perceptions and intuitions that appear and in the cogency of one's body's handling of each passing moment at that speed. The brief syllable 'ha!' is a multifaceted concretion that acts as an imaginative reminder to engage an orientation that, like 'trust', supports and propels '*rooting/routing/planting'.* It is at once an onomatopoeic, metaphoric and physical syllable that engages 'ha!' as a reference to the qualities of emphatic-ness, discovery and lightness/ laughter/ humour, and that also locates these qualities physically in one's body as an (imagined) vocalisation that can emerge with force from the strongly grounded and connected juncture of one's diaphragm.

Momentum and Perception: Back-and-forthing as an implicit synthesis of longitudinal learning

Having discussed the material back-and-forthing and several of its articulations in *No-How Generator*, I will now place this in a larger context of my history of practice, by looking at this choreographic material as a synthesis of flows of practice and interests that I term 'momentum' and 'perception'.

[63] This influence developed, in part, thanks to the opportunity I had to curate a public talk between Coates and myself at the Sadler's Wells Lilian Baylis Studio in 2015 (see Coates and Sperling 2015).

And a clear feeling that one of the things I am constantly working on
is the simultaneous practice, the bringing together,
of perception-in-motion and momentum/weight-in-motion.
One of the (too simple, but perhaps momentarily useful) ways I can describe or situate this is to say
it is a bringing together of my Limón lineage (which is far too simple a way to describe
what is really involved) and my engagement with Deborah Hay and all that entails.
Really, it is not just Limón at all (which is so far in the past for me, although influential at the
beginning of my development) but all of my history of practice that I am attempting to address
(and in some ways synthesise and update to my current and future physicality –
and the physicalities of others).
(8/7/19)

Talking with KC [Katye Coe]
About momentum and perception.
About not over-extending in performance practice experience,
and not under-extending by shrinking back either.
That's how momentum and 'what my body can do' have importance for me.
Without giving some emphasis to 'what my body can do', I feel that
the zone/field of my possible learning diminishes.
The zone between the over-extended (the pressing outward) and the under-extended (the resting
inward) is the zone of learning.
This zone of learning (what we are practicing) is about expanding outwards from within, without
losing the connection to the within.
KC said it has to do with degrees of familiarity - it's expanding from the familiar into the unfamiliar,
but not going too far or becoming too unmoored in the unfamiliar.

This relationship of perception to momentum also has a lot to do with me reckoning with my past
practice, which I would say was focused on momentum and the over-extended form
of engagement with practice.
For me, it's a lot about what feels like it's worth doing.
(13/7/19)

I consider my formulation of back-and-forthing as a choreographic material to engage directly with a broad interest of mine that is an underlying driver within my choreographic research: how to integrate with one another the two choreographic approaches that I have come to characterise as 'momentum' and 'perception', which I consider to have had different prevalence within different phases of my three-and-a-half decades of learning and development as an artist. My desire to integrate these approaches with one another is a desire to access and incorporate all of my previous learning in my current practice, and to activate the fullest possible potentials of the artform as I understand it. 'Momentum' is an (oversimplified but shorthand and therefore useful) way of referring to an orientation towards dance and choreographic practice that I characterise, in its most

direct sense, as focusing primarily on articulating and extending the physical potentials of working with body weight in relationship to gravity. What I characterise as 'perception' contrasts with this, yet, in my view, does not necessarily oppose or occlude it:[64] 'perception' refers, for me, to a choreographic orientation that emphasises and activates the perceptual experience of the performer as a choreographic material, or even as *the* choreographic material.

My references for formulating these orientations in this way are rooted in my experiences of practicing in this artform. I associate 'momentum', in part, with my early years of dance study (roughly 1984-1993) in which the gravitationally and anatomically focused approach to dance technique attributed to José Limón (1908-1972) was among the most prominent influences. During these years of my first introduction to the fields of dance and choreography, I was studying intensively as member of the (then) Canadian Children's Dance Theatre (Toronto), where the experienced Limón teacher Donna Krasnow (Professor Emerita and Senior Scholar, Department of Dance, York University, Toronto) was one of my main tutors and mentors. As a young dance artist, I greatly enjoyed, appreciated and identified with all that I was able learn and embody through my engagement with this approach. In the earlier stages of my subsequent professional career, I also consider 'momentum' to have been important within my work as a dancer with Kerry Nicholls Dance Company (with whom I worked 1999-2002, and whose approach to movement is directly influenced by Limón) and Wayne McGregor's (then) Random Dance Company (with whom I worked 2001-2006, and whose approach less directly references Limón but strongly emphasises physical extension and the display of an athletic, virtuosic form of physical articulacy). While all of these were important sources of learning for me, in my later career I became increasingly interested in engaging with perspectives that emphasised a different and further-expanded set of potentials within the artform.

[64] Alongside Katye Coe, another important fellow practitioner with whom I feel I share this perspective is Charlie Morrissey. I have learned and continue to learn a great deal about this perspective from/with Morrissey, including in the context of open classes led by him at Independent Dance (London), over the past decade or so.

My engagement with Deborah Hay's practice (beginning in 2008, through seeing her work, reading her writings, participating in workshops and the SPCP)[65] particularly exemplifies this for me, and it is primarily with her understandings of the art form that I associate the choreographic approach that I call 'perception'. Concurrent with my engagement with Hay's practice, my collaborative working with Siobhan Davies and other artists with Siobhan Davies Dance (beginning in 2006) has equally been among the key contexts that have afforded and supported my engagement with the potentials of an expanded understanding of choreography.

Hay encapsulates what I consider as a choreographic approach that emphasises 'perception'[66] in her statement that 'As a choreographer, I am not interested in… movement technique' (2016, p.3), but rather in 'how one perceives' (ibid). Hay has also defined her practice as proceeding from the presumption that her perception is visible to her audience (2009). 'How I see while dancing' (2016, p.130) is what Hay's practice engages with, because, she writes, 'my body is capable of so much more than what it can do' (ibid, p.56). Over the course of my engagement with Hay's practice, I have come to understand the orientation that she names as fixating on 'what my body can do' to overlap with the orientation that I now term 'momentum'. Hay's orientation toward emphasising 'perception' is a radical critique and radical expansion of the orientation toward emphasising 'momentum', which was for me - and in my observation, for many other artists and audiences in the dance field - not only a far more established perspective, but also one assumed to be self-evident and unquestionable. I largely took for granted in the earlier phases of my career that of course dance and choreography must be and can only be about 'what my body can do' and that this was a

[65] My participation in Hay's SPCP (Solo Performance Commissioning Project) is discussed in Section 3.

[66] Hay is certainly not the only artist who can be associated with bringing about an expanded understanding of choreography in which the potentials of 'perception' play a key role, but she is the one I have engaged with the most extensively, and I consider her to be the choreographer who, to my knowledge, has articulated this expanded view of the potentials of the artform most clearly, fully and radically, both in her practice and in her writings.

matter of extending the precision of the visible movement of my body mass. Indeed, in an interview Hay observes wryly of her choreographic practice that 'what I'm using is pretty much the antithesis of what 98% of people out there are calling dancing' (Hay 2015). In my practice-experiences with Hay, she has at times explicitly warned against allowing physical momentum to take on a leading role in the performance of her work. For example, her choreographic score for *"Dynamic"* includes the advice that, throughout its performance, 'Do not lose command of how you use your weight. Arms do not hang or swing casually' (Hay 2012, p.4). During the SPCP group intensive with Hay, I remember being curious about how to make sense of this in relationship with my history of practice and asking her directly for her view on whether falling weight and momentum might have a role to play in my practice of the performance of *"Dynamic"*, to which she responded that she wouldn't recommend it (Hay 2012a). I interpret Hay's advice to have several motivations: firstly, Hay wants the artform of dance to evolve and thus emphasises what she sees and experiences as its most interesting capacities (Hay 2015); secondly, momentum habitually and easily dominates the attention and experience of both performers and audience members, and thus needs to be de-emphasised in order for other potentials to emerge and be sustained; thirdly, working with higher degrees of bodily momentum triggers a rapid-fire succession of pragmatic problems of physics that demand the performer's cognitive attention in order to be solved (to avoid physical injury and/or the interruption of a particular learning process), thereby diverting cognitive capacity away from other possibilities; and finally, for Hay, the key capacity within the practice of the performance of dance is the agency to redirect patterns of behaviour that have already been consciously and/or nonconsciously absorbed and established (Hay 2016, p.128),[67] and the speed and gravitational inevitability that comes with momentum can occlude precisely this agency.

While I respect these as extremely important reasons for de-emphasising 'momentum' and while I consider that momentum *can* indeed occlude the registers of agency activated within a

[67] Here, Hay emphasises 'the strategies I have adopted in order to change, tinker with, bypass, yield to and play with the choreography of my learned behaviour as it unfolds in my dancing' (2016, p.128).

choreographic approach that highlights the potentials of 'perception', I also consider that it does not necessarily always do so. The zone of possibility in which 'momentum' and 'perception' work together in a mutually supporting process of learning-through-moving is, in my view, a particularly generative zone for choreographic practice to identify and inhabit, and it is this that back-and-forthing implicitly and intuitively aims to do. Although I do consider Hays' practice to ultimately be open to accessing the potentials of 'momentum' (if they can be deployed in ways that do not detract from other potentials), I nevertheless consider this area to be one in which the interests or emphases of my practice and Hay's diverge to some extent. From my past experience as an artist (and indeed, also from my experience of my changing body as I age), I understand the expansion of 'momentum' and 'what my body can do' to have the capacity to enlarge the scope of my learning-through-moving, even while I recognise that learning-through-moving is a concept that inherently activates a choreographic orientation towards 'perception'. As this discussion of 'momentum' and 'perception' helps to elucidate, my choreographic shaping of back-and-forthing, then, is not only a learning from experience in and of the moment of practice of *No-How Generator*, but also an engagement with learning from experience longitudinally, in the history of my practice as an artist and my consideration of the potentials of the artform that I am interested in activating.

Section conclusion

In conclusion, this section on back-and-forthing has encompassed the unpacking of this choreographic material and several of the articulations that differentiate its unfolding within the choreographic score of *No-How Generator*. It has discussed how this choreographic material has emerged as an evolution of its immediate antecedent 'looping', and how it relates to the Warburgian metaphor of the practitioner as an embodied 'seismograph' generating knowing by taking a felt reading of their environment. It has drawn connections between back-and-forthing and the image of the 'lower world' in shamanic practices, and with Claxton's cognitive science notion of

the ‘undermind’ or embodied nonconscious intelligence. Finally, it has contextualised back-and-forthing as an address to the longer history of my artistic practice, seen through the lenses of ‘momentum’ and ‘perception’ as choreographic orientations. As the nucleus of the choreographic score of *No-How Generator*, back-and-forthing’s process of emergence and further articulation was among the richest sites of learning during this artistic research process, and has become a form that continues to scaffold further learning through its performance.

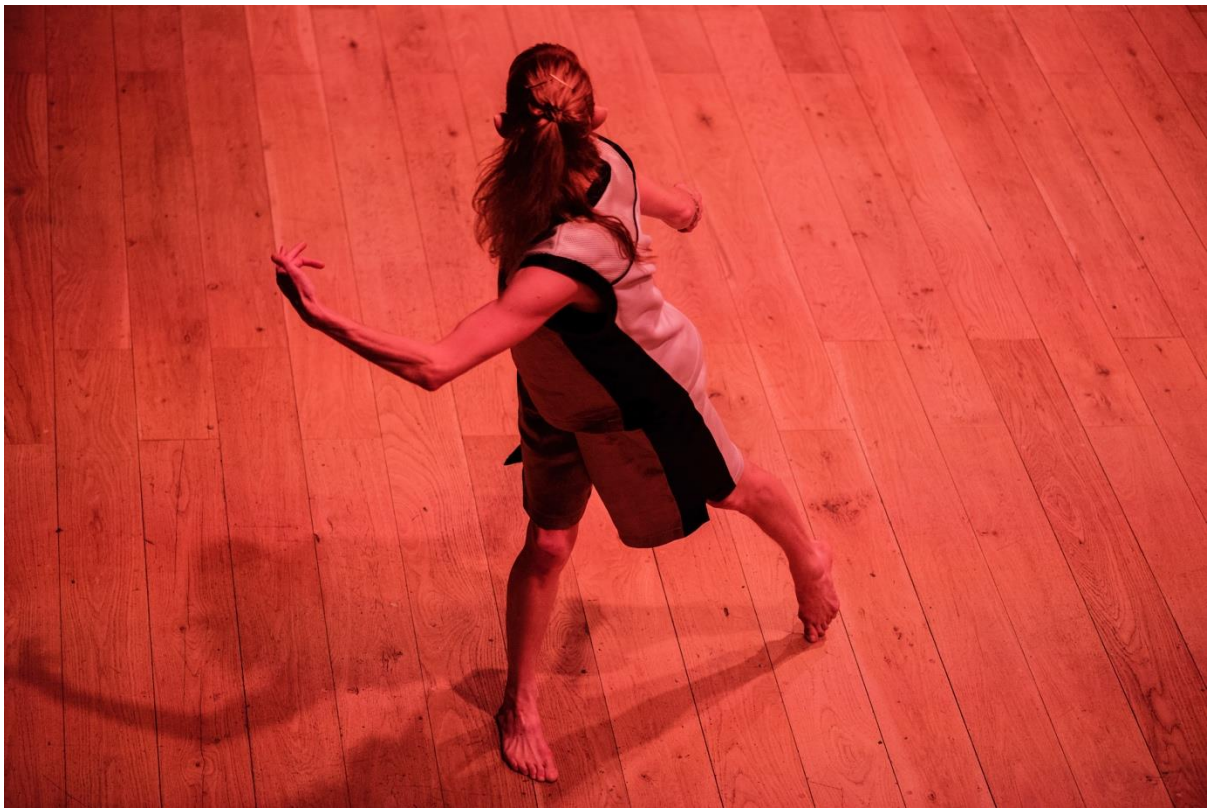

Figure 6: *No-How Generator*, rehearsal view of Katye Coe, photo by Camilla Greenwell.

Section 5:

No-how: languaging a generative zone of knowing in practice

The term *no-how* plays a key role in the languaging of this artistic research, and I will now discuss how I understand it. This term has become the primary way that I name the particular kind of knowing that I consider this artistic research to be generative of, and thus forms the title, *No-How Generator*, of both the choreographic and written elements of this thesis. I first encountered the term *no-how* in the writings of Sarat Maharaj on the character of knowledge within the context of art (2009), writings that themselves adopt and adapt this term from Samuel Beckett (2009). Beckett and Maharaj's uses of the term (which I will elaborate on below) open up ways of languaging what I experience as a generative zone of knowing in practice. This languaging of the terrain of *no-how* also brings out interconnections with the choreographic thinking and practice of Hay, the art-historical approaches of Warburg and the cognitive science perspective of Claxton. Using the language of *no-how* as a poetic and heuristic tool for informing how and where I direct my attention in practice has, in turn, supported the ways that my ongoing experiences of practice have continued to learn from and about this terrain of choreographic no-how generation.

journeying towards no-how
what if everywhere that I am, no-how is
…
nohow is not indulgent
nohow is not hocus pocus, even if it plays with that

nohow - non-expectant expectation
(25/2/19)

sense of [there being a] nohow generator between:
- between my own back and forth
- between us [KC and MS]
- between me and environment
- between us and environment
(1/3/19)

What if everywhere that I am, No-How Generation is?
No-how as a 'being with'.
An opening of (immediate/ experiential) space of possibility
But without expectation,
Without conditions,
Just with attention and presence,
(Not a mode or a space of 'production', but being with, becoming and noticing)
(7/3/19)

[The look and feel of no-how generation is]
So light in its nothingness, yet absorbing;
Wafer-thin ontology of the generative zone
(17/6/19)

No-How Generation:
No and yes.
This is not a way to knowledge [of the conventional variety],
and it is the only way to knowledge.
(11/7/19)

No-how generation
is felt, is a feeling, is in a felt register
is modest

an alternative conception of knowing
that is about your embodied capacities
meeting your environment
(15/7/19)

No-How -
there is no 'how' of doing this
There is no one way of doing this that will guarantee knowing being generated by this one performance, but we're doing it anyway
(22/11/19)

To hurry, or try, or get over-excited, or demonstrative lowers the temperature [of the performance].
What maintains a 'generative' temperature is a sense of ease/ not touching the sides.
(5/12/19)

No-how is a paradoxical and oscillatory formulation: it clearly relates itself to embodied ways of knowing by being a homophone of *know-how*, and yet it also clearly sets itself apart from the

certainty of technical accomplishment that *know-how* is suggestive of, by asserting from the outset that there can be no expectation of a predetermined and failsafe *how* or way of accomplishing the task in question. *No-how*, then, is a linguistic form that moves in more than one direction at once, and it is this oscillatory capacity that grounds its functioning as a characterisation of the relationship between artistic practice and knowledge-generation.

Encounters with no-how: Maharaj and Beckett

Sarat Maharaj discusses *no-how* in the context of theoretical discourse on artistic practice and research (with a focus on visual art discourse), but he draws the term from the literary context of Samuel Beckett's *Worstward Ho* (2009) (which is best known for the oft-quoted: 'Ever tried. Ever failed. No matter. Try again. Fail again. Fail better' [ibid, p.81]). In Beckett's poetic and rhythmic prose text, 'nohow' (unhyphenated) appears frequently, as in its opening lines: 'On. Say on. Be said on. Somehow on. Till nohow on. Said nohow on' (Beckett 2009, p.81). In parts, Beckett's use of 'nohow' points towards a zone of operation beyond words. For example:

> What when words gone? None for what then. But say by way of somehow on somehow with sight to do. With less of sight. Still dim and yet -. No. Nohow so on. Say better worse words gone when nohow on. Still dim and nohow on. All seen and nohow on. What words for what then? None for what then. No words for what when words gone. For what when nohow on. Somehow nohow on. (Beckett 2009, p.93)

Reading this through a choreographic lens, I consider this poetic language to call up an attention to non-verbal felt-sense, and therefore also perceptual registers of movement, as ways of navigating through the world. Alongside this parallel between the way that the term *no-how* figures in my choreographic research and in Beckett's text, there is also a distinction to be made: like Maharaj, I too 'intend it here without that shot of bleakness with which [Beckett] normally imbues it' (Maharaj 2009, p.3). In this artistic research, there is a fundamental importance to the possibility that *no-how* and its generativity may also be associated with a degree of hopefulness regarding what might be learned and brought forth. While the specific quality of existential bleakness that Maharaj associates

with Beckett's usage is something that I don't necessarily wish the atmospheres of my artistic research to be limited by, more generally, the existential zone of experience that Beckett addresses certainly does relate to this choreographic context. Like the relations that are evoked in Beckett's text, I understand a choreographic context to necessarily entail an engagement with an embodied, felt perspective on fundamental relations between self and world. As quoted from my notes, above, *no-how* in a choreographic context 'is about your embodied capacities meeting your environment' (2017-2021, 15/7/19) and thus touches that root level of constitutive relations that Beckett's text fathoms.

In Maharaj's writing on visual art practice and research, he uses the term to name the particular character of knowledge within art, which is 'distinct from the circuits of *know-how* that run on clearly spelled out methodological steel tracks. It is the rather unpredictable surge and ebb of potentialities and propensities - the flux of *no-how*' (2009, p.3). In Maharaj's articulation, '*no-how* embodies indeterminacy, an "any space whatever" that brews up, spreads, inspissates [i.e., thickens, condenses]' (ibid). With this, Maharaj proposes an appreciation of art's ability to operate within an intermediate zone of '*non-knowledge* - activity that is neither hard-nosed know-how nor its ostensible opposite, ignorance' (2009, p.1). This is a zone of generative indeterminacy and non-linearity, which Maharaj identifies as associated with the non-verbal and the somatic (ibid, p.4). He elaborates on this zone of *non-knowledge* and *no-how* through the sanskrit term 'avidya':

> The word 'vidya' means 'to see-know'. It gives us the Latin 'video' ('to see') and the modern English 'video' as in VCR. When we attach the prefix 'a' to it, we normally mean to signal something like its opposite - 'ignorance'. But 'a' can also neutralise rather than negate - as we find with in-between, indeterminate terms such as typical<atypical>untypical or moral<amoral>immoral. The middle term highlights the shortfalls of the binaries 'knowledge/ignorance' - but it questions the assumption that by knowledge we only mean the full blast variety, such as that of the established disciplines [of academia]. *Avidya* or non-knowledge, contrary to appearance, is not anti-knowledge…. It is more a *détournement* of ready-made knowledge systems, a flip-over and displacing of structured data and information, dissolving them as they try to settle and fix into institutional disciplines. Within knowledge

> systems,[68] the learning-creating process centres on transfer and transmission of what's already known. It is about tracing-repeating-reproduction; and representation of ready-made, canonical elements. Avidya is more about production, about generating new forms of think-feel-know, about first-person creativity, unknown circuits of consciousness. (Maharaj & Varela 2012, p.73)[69]

The conceptual oscillation within the language of 'avidya', 'non-knowledge' and 'no-how' is a gesture of hovering between two poles in order to open another, more nuanced, set of possibilities – a gesture that notably echoes the role of polarities in Warburg's thought (discussed in section 3, above). The language of these terms refuses to identify with more conventional conceptions of knowledge, and yet it does not thereby land at the opposite pole of ignorance. Instead, such hovering language helpfully directs attention toward a more complex and paradoxical terrain that serves as an appropriate and generative habitat for art-as-knowledge, including choreography-as-knowledge. Maharaj's discussion of this hovering language thus helps me to clarify that the role of the term *no-how* in my choreographic research is not to negate in a way that renders any potential for generativity inert. Rather, the term *no-how* serves as a paradoxical catalyst that opens spaces of possibility for this specific mode of knowing to become engaged.

Maharaj also addresses the process by which *no-how* comes into being, which he terms 'the agglutinative mode' (2009, p.4). This mode, he writes, operates through '"stick on" processes of figuring forth, of constellating assemblages' (ibid). 'Its principal thrust is decisively beyond the organizing, classifying spirit of grammar' (ibid), as well as contrasting with grammar's function as a '"slice and carve" mechanism' (ibid). The agglutinative mode rather 'brings into play associative manoeuvres, juxtaposition, blend and splice, non-inflexional modes of elision and stickiness' (ibid). Maharaj aligns this with *no-how*, characterising the agglutinative mode as being 'at odds with the

[68] As contrasted with systems or processes of *non-knowledge*.

[69] Here, and below, I quote Maharaj from a transcribed conversation with the neuroscientist Francisco Varela (Maharaj & Varela 2012). Varela was among the key instigators of the field of embodied cognition (Varela, Thompson & Rosch 1991): this conversation therefore highlights a notable bridging point between two researchers and two fields of research that are significant in the constellation of the present investigation.

computational constancy and equilibrium of *know-how* and closer to the all-over smears, surges and spasms, the unpredictable swell and dip of *no-how'* (ibid). In Maharaj's characterization of the agglutinative mode, I recognise an evocative description that chimes with my experience of the iterative, gradual and unpredictable ways that choreographic forms, materials and events well up in my creative practice. This speaks both to the overall timescale of the choreographic research process of daily/ open practice over many weeks and months, as well as to the moment-to-moment timescale of the unfolding of choreographic forms within a single performance of, for example, back-and-forthing. Additionally, the way that Maharaj characterises the agglutinative mode also chimes strongly with the methods, approaches and qualities of Warburg's *Atlas*[70] practice, which is precisely a practice of 'constellating assemblages' (ibid). Maharaj points to this link in his text, speaking of Warburg's 'experimental-embodied practice' as allied with his own reflections on the character of knowledge in visual arts practice (2009, p.10).

Maharaj's interweavings of 'the agglutinative', 'no-how', 'non-knowledge' and 'avidya' are more broadly situated within his concept of a 'xeno-epistemics' that describes the particular relationship between art and knowledge. In a summary of a conference presentation given by Maharaj, Alejandro del Pino Velasco helpfully outlines this concept:

> From the combination of the terms "xeno" (which means strange, foreign, other) and "episteme" (which means knowledge), this expression achieves integration of both the idea of a specific cognitive production and the search for a type of knowledge that does not avoid contradiction and difference and is not consumed by rational and empirical criteria. …[T]his new mode of xeno-epistemic knowledge could be identified with the type of cognitive experience that is articulated in contemporary visual arts (and also in drama). (2007, p.135)

The terrain of 'xeno-epistemics' is a terrain of strange knowledge, and this is a mode of knowing that can be engaged in experiences of making, performing and encountering art. Strange knowledge

[70] Warburg's *Mnemosyne Atlas* is discussed in Section 6.

embodies a form of knowing that, while holding specificity and generativity, is also able to hold the contribution of more-than-rational flows, processes and intelligences. *No-how* is situated within this terrain, and these dynamics, I argue, can be a lens through which to understand choreography-as-knowledge-generation, just as much as the other artistic fields that del Pino Velasco directly references above. Indeed, the embodied context of choreographic practice can be considered an especially relevant context within which to consider these dynamics: an emphasis on that which is cognitive and yet reaches beyond the rational is particularly pertinent to an artistic medium that engages closely with the body, and thus necessarily includes the full span of embodied cognitive modes, including more-than-rational as well as rational modes. The 'xeno-epistemic' choreographic space of *no-how generation* is particularly a space that enables the dialling up of the more-than-rational as a way of knowing, without needing to divorce it entirely from its complementarity and interdependence with the rational.

While Maharaj's discourse on art and/as knowledge does not directly discuss the choreographic field, the way in which he languages the artistic terrain of *no-how* resonates and accords with many dimensions of my lived experience of choreographic practice. For example, Maharaj's association of *no-how* with a space of experience that 'brews up, spreads' (2009, p.3) and thickens/condenses is strongly evocative of my experience of what choreographic *no-how generation* feels like in a context such as back-and-forthing. Furthermore, the spell-like associations that can be made with the language of 'brewing up' also helpfully holds a relationship to the ways that notions of conjuring and magic feel present in (and relevant to) what I experience in choreographic practice, and how this thickens particular ways of thinking about the connectedness of choreographic practice and epistemics via such notions.

Affinities, connections and nuancings of no-how: Hay and Claxton

Maharaj's evocation of the terrain of *no-how* also has affinities with the distinctive choreographic orientation of Deborah Hay, which I consider to inform the orientation of my own choreographic research. The dynamics of paradox-as-catalyst, which are inherent in the term *no-how*, suffuse much of Hay's practice and language – as embodied, for example, by Hay's use of the seemingly paradoxical phrase 'learning without thinking' (2016, p.105)[71] to identify what her practice engages in. In addition, Maharaj's characterisation of the terrain of *no-how* as unpredictable, indeterminate and dissolving attempts to settle into fixities resonates with Hay's understanding of her work as 'a continuity of discontinuity' (Hay 2016, p.9). Hay considers that her 'work succeeds when there is no one "one", no single moment, or meaning, movement, image, character, emotion, that exists long enough for either the dancer or the audience to identify an "is" that is happening' (2016, p.10). Hay's articulations of the understandings that she has gained from her experiences of practice frequently correspond with, as well as inform, my own experiences of practice. They underlie my choreographic understanding of *no-how* as a lived practice of knowledge-generation for which there is no singular *how*.[72]

It is undoubtedly helpful that Maharaj clarifies his use of *no-how* by contrasting it with *know-how*. At the same time, it is worth noting that a choreographic perspective (i.e., one that foregrounds embodiment) can suggest a further nuancing of the relationship between these two terms. Whereas Maharaj seems to describe this relationship in terms of a clear distinction between the 'steel tracks' of *know-how* and the 'unpredictable surge and ebb' of *no-how* (2009, p.3), a foregrounding of embodiment highlights a more fluid and interdependent relation between them. While the

[71] Discussed in Section 3.

[72] In pointing out these parallels between the thinking of Hay and Maharaj, it is also significant to note how telling it is (i.e., of how significant the learning brought about by *no-how generation* within choreographic practice can be) that Hay's practice and language are so densely imbued with meaningful nuances, all of which she has developed in and through practice itself as the site of her research.

know-how of an embodied skill can indeed become learned to the point of becoming habitual and non-consciously deployed, this kind of embeddedness of a learned pattern is not written in stone (or steel), but rather inscribed in a dynamic body which always retains the capacity to unlearn and repattern. From a choreographic perspective, then, *know-how* can be understood as holding the capacity to become liquid enough to be linked with the zone of *no-how* without necessarily figuring as its opposite. Compared with Maharaj's articulation of *no-how* in the context of discourse around (visual) art and/as knowledge, I therefore consider that my use of the term *no-how* in a choreographic context suggests a more multivalent and porous understanding of the relation between *know-how* and *no-how*.

The aptness of relating Maharaj's discourse on the terrain of *no-how* to the embodied context of choreographic practice is also further underscored by a recognition of how readily this discourse can be connected with Claxton's cognitive science perspective on embodied knowledge-generation. That Claxton's orientation to ways of knowing can be considered to resonate sympathetically with the paradoxical tenor of *no-how* is evident, for a start, from his identification with the claim that 'intelligence increases when you think less' (Claxton 1997) (the playful-sounding but ultimately thoroughly-evidenced claim that forms the subtitle of one his books). More specifically, the ways in which Maharaj characterises *no-how* overlap significantly with the qualities and capacities of what Claxton refers to as the 'cognitive unconscious' (Claxton 2015, p.11), the embodied basis of which he argues plays an essential and widely under-recognised role in human intelligence and learning. Section 3, above, discussed how Claxton has defined the learning modes of the cognitive unconscious by contrasting them with what he characterises as 'd-mode' – the conscious, deliberative, default mode that over-privileges logic, language and explicit knowing. As section 4 noted, Claxton has described the cognitive unconscious as 'the undermind' (1997, p.7), whose more expansive ways of knowing resonate with many of the attributes that Maharaj ascribes to *no-how*. Claxton identifies these more expansive, 'undermind' ways of knowing as those that:

> …do not rush into conceptualisation, but are content to explore more fully the situation itself before deciding what to make of it... They are tolerant of information that is faint, fleeting, ephemeral, marginal or ambiguous; they like to dwell on details which do not 'fit' or immediately make sense. They are relaxed, leisurely and playful; willing to explore without knowing what they are looking for. They see ignorance and confusion as the ground from which understanding may spring… They are happy to relinquish the sense of control over the directions that the mind spontaneously takes. And they are prepared to take seriously ideas that come 'out of the blue', without any ready-made train of rational thought to justify them. (1997, pp.12-13)

These cognitive unconscious modes of knowing, whose necessary contribution Claxton argues for a greater appreciation of, '[work] through a relaxed yet precise non-verbal attention to the details of… situations, and to the actual effect of one's interventions, without any explicit commentary of justification or judgement, and without deliberately hunting for a conscious, articulate, mental grasp' (Claxton 1997, p.26). For Claxton, appreciating and cultivating such ways of knowing is essential because exclusively 'adhering to conscious clarity and explanation holds learning back' (Claxton 2015, p.232). This perspective on the qualities and propensities of the ways of knowing of the cognitive unconscious echo Maharaj's association of *no-how* with the non-verbal, with indeterminacy and the 'unpredictable surge and ebb of potentialities' (Maharaj 2009, pp.3-4). It embodies a similar gesture of sustaining a hovering in a space that is unmoored from the familiar, by engaging a mode that is not a 'hard-nosed' (Maharaj 2009, p.1) or 'full-blast' (ibid, p.3) way of knowing, and which does not 'run on… methodological steel tracks' (Maharaj & Varela 2012, p.73). It is also a way of knowing that 'does not avoid contradiction and difference and is not consumed by rational and empirical criteria' (del Pino Velasco 2007, p.135). It is, rather, far more 'about generating new forms of think-feel-know, about first-person creativity' (Maharaj & Varela 2012, p.73). Thus, although Maharaj and Claxton unfold their perspectives on ways of knowing in different disciplinary contexts, their characterisations nevertheless have significant resonances and overlaps with each other. I take this to be a strength, suggesting that multiple perspectives note the insistent and palpable presence of the experiential terrain being described. These multiple, interwoven perspectives on *no-how* are an integral and enlarging part of how this term becomes accessible as a tool within my choreographic practice, and how it has become the primary way that I name what is in question in this choreographic research.

The term no-how as a poetic and heuristic tool for practice

Having discussed the ways in which Maharaj's and Beckett's uses of the term *no-how* interconnect both with my experiences of practice and with my readings of the work of other practitioners and thinkers on whom I draw (including Hay, Claxton and Warburg), I will now address what my use of the term *no-how* in the context of choreographic practice activates for that practice – during both creation process and performance, both for the artists/performers/collaborators and for audiences. In considering this, it is important to note that positioning Beckett's *Worstward Ho* (2009) as the source (via Maharaj) of my engagement with this term positions *no-how* as a linguistic formulation that is not just for (or from) theory but as language that is itself for (and of/from) practice – in this case, Beckett's literary artistic practice. Appreciating that the origin of this language is in and of art highlights that, when activated in the context of choreographic practice, this language functions as a poem, and not only as a concept or theorisation. As part of the title of the choreographic work *No-How Generator*, *no-how* is a one-word poetic tool offered to audiences for their use in engaging with the practice: this language-form is capable of evoking a meshwork of associations, questions and contradictions that are an entryway into the practice's dynamics. This poetic register of the term's operation is not reliant upon audience members having a familiarity with the term's background of references to Beckett or Maharaj – its core dynamics lie within the construction of this puzzle-like compound word itself. As a poetic language-form, *no-how* can operate as an interpretative and associative tool for audiences not only during the performance itself, but also before and after it; it remains available to act as a lens, from the moment the title is first encountered in advance of the performance, to retrospecting about the experience of the work after the event.

In addition to being characterised as a poem, the language-form *no-how* can similarly be accurately described as operating as a heuristic: a condensed formulation that functions as a useful tool through which to intuitively navigate the complex terrain of a lived, real-world learning process. In this case, *no-how* can be considered to act as a heuristic within the terrain of experientially and

artistically probing imaginaries of choreography's relation to embodied knowledge-generation. For myself and the other artists/performers/collaborators involved in the creation and performance of the work, the heuristic *no-how* functions as a wayfinder by reminding one of the orientation and purpose of the investigation, within that investigation's always-complex and unpredictable unfolding. For Coe and I as performers in particular, this language is operative not only in the title of the work, but also in the choreographic score itself, for example in our performative engagement with the questions (drawing on Hay's choreographic question-forms): '*What if everywhere that I am, no-how generation is?*' and *'What if how all of my cells are doing knowing serves me well in the practice of no-how generation?*' (Sperling 2017-2021, 1/8/19).

A crucial part of the reason why the language-form *no-how* has the capacity to be operative as a poem/ heuristic within experiences of the performance is because of the particular relationship it has to expectation. For audience members as well as for performers (albeit in their different individual experiences), the availability of a reminder that this experiential terrain is one for which there is no *how* can serve to helpfully redirect expectation, putting it a little more at rest and thereby opening up greater possibility for particularly choreographic kinds of generativity to unfurl. The flows of expectation that one may experience as an audience member during the unfolding of a choreographic performance are, in any case, a fundamental compositional ingredient within this time-based medium (as discussed in section 3). Expectation is additionally foregrounded in a particular way in the context of this investigation of choreographic performance as a site of embodied knowledge-generation. As an artwork, *No-How Generator* aims to share this investigation with audience members experientially, and it makes this intention clear in the audience-facing writing that accompanies public communications about the performance: 'With both seriousness and gently subversive humour', it states, '*No-How Generator* embarks from the question: If knowledge-generation is a fundamentally embodied process, can we see and experience it happening in a dance performance?' (Sperling 2019a). While this communicates the intention of the

performance that audience members are invited to share in, it also implicitly invites a sense of expectation around whether or not some knowledge will indeed be demonstrably generated within the performance, and what this knowledge might be. Given a cultural setting in which an item of knowledge is primarily conceived of as something that is fixed, can be expressed in explicit terms and can be instrumentalised economically, the performance's communications text risks setting up an unhelpful expectation of the delivery of a utilitarian type of *know-how*. *No-how* redirects attention away from such potential associations with the subject of knowledge-generation and instead acts as a lodestone that continually navigates toward a wider scope of possibility in which unanticipated forms of knowing can well up, unforced, in ways less coloured, preconditioned and limited by being called up through already-imagined expectations.

Part of the paradox that the language-form *no-how* both expresses and plays an active role within is that, in the artistic-experiential space of choreography, a certain degree of letting go of expectations of generating knowing and learning is a necessary tool for catalysing the generation of knowing and learning. As I have noted above, I associate *no-how generation* with a state of 'non-expectant expectation' (Sperling 2017-2021, 25/2/19). The ways in which this paradoxical relationship between expectation and dis-attachment acts as a tool that opens up possibilities within practice is something that has been articulately pointed toward by Hay, whose practice has included '[perceiving] your loyalty to DANCE, and your disinterestedness (in the loyalty) simultaneously' (Hay 2016, p.12). As already noted in section 3, Hay has said that this 'balance between loyalty and dis-attachment to that loyalty, sensually and choreographically, is how the practice of dance remains alive for me' (2010). Through the lens of this research, I read what Hay terms 'loyalty to dance' as a loyalty or commitment to the potential for the experiential space of choreography to be one in which particular forms of knowing are conjured. Hay's articulations help to clarify how, in this choreographic space, the generative dis-attachment from expectations that *no-how* invites is simultaneous with a sustained commitment to the choreographic generation of knowing.

Section Conclusion

In sum, this section has discussed how the term *no-how* plays out and reverberates within and through this choreographic research. It began with a gathering of some of my studio practice notes alluding to the evolution of my experiential understanding of *no-how* through practice, including the orientation that *'this is not a way to knowledge [of the conventional variety], and it is the only way to knowledge'* (Sperling 2017-2021, 11/7/19),[73] and also that, along the way, an easeful quality of *'not touching the sides'* (ibid, 5/12/19) is helpful in nurturing and sustaining the generativity of the process. *No-how* is a paradoxical and oscillatory formulation: it sounds indistinguishable from know-how and yet it is something other than know-how, making it a linguistic form that moves in more than one direction at once. *No-how* is expanded in relation to a discourse of art-as-knowledge-generation by Maharaj, who draws the term from Beckett's work, where the use of *nohow* evokes connections with the non-verbal context of movement and felt-sense in choreography. Maharaj develops a richly informing conceptual terrain around *no-how,* interweaving it with 'non-knowledge', 'avidya', 'the agglutinative mode' and 'xeno-epistemics'. This interwoven terrain articulates *no-how* as a form of knowing that is neither conventional (hard-nosed) knowledge nor an absence of knowledge, but rather a generative gesture of hovering and oscillating between these poles. The qualities of this terrain of strange knowledge connect with my experiences of choreographic practice and also have kinships with the choreographic orientation articulated by Hay, as well as with the 'experimental-embodied' art-historical practice of Warburg and the embodied cognitive science perspective of Claxton. In section 7, below, further kinships will become apparent between attributes that Maharaj ascribes to *no-how* and the forthcoming discussion of Santos' account of how the attributes of epistemologies intertwine with wider political concerns of social justice.

[73] i.e., Because this is an embodied, experiential way of knowing and – as I argued in section 2, above – 'all human knowing is embodied knowing'.

Reading Maharaj's visual-art-focused discourse through the lens of choreographic practice thus opens up ways of languaging the relationship between choreography and knowledge-generation that are attuned to the dynamics of choreographic practice and serve it well. A choreographic perspective also offers this discourse a close attention to embodiment that can add further nuance, suggesting a more multivalent and porous understanding of the relation between *know-how* and *no-how*. The language-form *no-how* functions within the choreographic work *No-How Generator* as both a poetic and heuristic tool that is available to the work's audiences and performer/collaborators alike, during both performance and creation process. It can act as a wayfinder or lodestone for navigation of the experiential terrain of *no-how generation* and it invites dis-attachment from expectation in ways that facilitate and thicken the experience of that terrain. Most significantly, the choreographic practice context of this artistic research develops an embodied and experiential investigation that is able to inhabit rather than describe the terrain of *no-how*. While this term informs the choreographic investigation, the choreographic investigation also unfurls the terrain of *no-how* in extended ways.

Figure 7: *No-How Generator*, rehearsal view, photo by Camilla Greenwell.

Section 6:

Magic & Science: a choreographic epistemological orientation

In this section, I will further expand the discussion of my approach to choreographic no-how generation by articulating how I situate it within the broader epistemological orientation that I call *Magic & Science*. The importance of this phrase within this research lies in understanding Magic & Science as naming a single category and, thereby, a single ecology of interrelated and complementary ways of knowing, rather than two fundamentally separate and incommensurable opposites. Magic & Science embodies a useful bridge for me in multiple and overlapping senses at once: it bridges between sets of disciplines or practices, while at the same time bridging between the embodied ways of knowing and embodied cognitive capacities that each of these sets of practices tend to foreground or favour specific anatomical-physiological segments of. Thus, *science* relates for me to the concepts and imaginaries that I encounter through the discipline of embodied cognitive science, and to ways of knowing that foreground cognitive capacities that are conscious, explicit, rational, logical, languaged, systematised, measurement-focused and (seeking to be) objective in their orientation. Bridging with this, *magic* relates for me to the practices and imaginaries of divination, shamanism, ritual, alchemy, (non-rational connotations of) hypnosis and conjuring.[74] The embodied cognitive capacities that I consider this broad and inexhaustive set of magical practices to foreground are the full spectrum of less-conscious, unconscious and nonconscious cognition, including the tacit, more-than-rational, intuitive, felt-sense, non-systematised and de-systematising, the imaginative and the subjectively orientated as ways of knowing. Given an understanding of the co-existence of both magical and scientific cognitive capacities as knowledge-generative potencies in and of the bodies of the people (including

[74] When I use the word 'conjuring', I intend to refer to a generative process of becoming; the creation or calling into being of something that was not previously present. While the word 'conjuring' (and indeed the word 'magic') may, for some, evoke associations with the sleight-of-hand tricks performed by stage magicians for entertainment purposes, this is not my focus when I use the word.

performers and audience members) who gather to constitute an event of choreographic performance, my choreographic interest is in finding ways to cultivate the practice of Magic & Science at once within that event. This interest does not represent turning choreography into science nor turning choreography into magic, but recognising the complex ecology of magical and scientific ways of knowing that always already animate choreography as an artistic knowledge-practice in its own right.

My engagement, through what I am terming *magic*, with allusions to practices and imaginaries of ritual, shamanism, divination etc. requires some contextualisation. I emphasise that my engagement with these concepts in my artistic research does not come with any claim that I or my work seek to directly embody or represent any of the vast range of (past and present) practices being alluded to. My engagement with these concepts is through allusion, and not through representation or appropriation. My focus is on how these allusions, which remain general and conceptual in character, serve to highlight specific dimensions and potentials that I consider to be always already present within (my) choreographic practice. I acknowledge, also, that my framing of ritual (and related) practices through the lens of my embodied-artistic-choreographic perspective is likely to differ from the ways in which these practices frame themselves within their multiplicity of respective culturally-specific contexts. I am framing them as human performative practices that are generative of knowing (which I consider can overlap, in the context of this discussion, with concepts including: finding something out, problem-solving, meaning-making or healing) and as practices that foreground certain human embodied cognitive capacities (i.e., more-than-rational, intuitive, imaginative forms of intelligence). While my choreographic engagement with the concept of ritual (and related) practices intends to be an appreciation that these are meaningful and meaning-making practices with wide-ranging relevance, I remain aware that any external framing of these practices by me does not represent any of the cultural-specificity of the origins that are proper to them. By using the framing of embodied cognitive capacities, what my engagement with these concepts aims

to emphasise is that routes of connection exist between diverse epistemologies such as embodied cognitive science and a vast variety of what I am terming *magical practices* - routes which intend to respect these differences even while highlighting connections.

The origins of my encounter with the phrase Magic & Science as a way of naming an epistemological orientation lie in Warburgian thinking and practice. In this section, I will first trace this encounter and its context, before travelling through a constellation of interrelated discussions and references that, together, map the terrain of Magic & Science as a choreographic epistemological orientation for me. Within this constellation are, firstly, the Warburg Institute in London, its photographic collection and Warburg's understanding of the polarity between Magic & Science. The constellation then extends and deepens by bringing in the art-historian Georges Didi-Huberman's discussion of Warburg's summative project, the *Mnemosyne Atlas* (1927-1929), and the epistemological orientation underlying it, which I understand the phrase Magic & Science to evoke. Didi-Huberman introduces the important role that divinatory practices – and specifically divination through viscera – play within Warburg's epistemological orientation, suggesting ways of understanding non-linear knowledge-practices that are inclusive of both an organic and an intuitive dimension. This is then constellated with choreographic perspectives on non-linear knowing and learning, examining how invoking connotations of divination in relation to choreography as a knowledge-practice helps to bring its bridging orientation of Magic & Science into focus. The choreographic perspectives that the constellation references in this regard are my readings of aspects of the practices of Deborah Hay and Jennifer Lacey, alongside my own practice. Within this, I discuss how the act of *taking a reading* has become an increasing focus for me in my recent practice, and how this embodies a choreographic epistemological orientation of Magic & Science. Finally, the constellation arrives at a discussion of the ways in which I consider the choreographic work *No-How Generator* to embody a choreographic imaginary of Magic & Science, which is actuated in part by the subversive cognitive force of humour and absurdity. What emerges from this constellation is an understanding that

Magic & Science, like no-how, acts as a heuristic that supports, focuses, complicates and dynamically balances a choreographic engagement with notions of knowledge-generation. This heuristic acts as a broad navigator and connective tissue of the theoretical and practical terrain within which choreographic no-how generation emerges.

Warburg's Magic & Science in relation to choreographic knowledge-generation

Figure 8: View of the Warburg Institute Photographic Collection, photo by author.

My engagement with the phrase Magic & Science was initiated by my encounter with it on my first visit to the Warburg Institute's Photographic Collection in 2015, during the early stages of my involvement in the creation process of the Siobhan Davies Dance collective project *material/ rearranged/ to/ be* (Davies et al 2017).[75] Among the rows of grey metal filing cabinets in which the photographic images of the collection are arranged, the section of drawers labelled Magic

[75] Through/ for which I created and performed the solo work *Loop Atlas* (Sperling 2017).

& Science immediately stood out to me and attracted my interest. The matter-of-fact way in which this category on the front of a filing cabinet drawer hosts a space for thinking (a *Denkraum*) in which these two terms embody a single zone of practice struck me as equally delight-inducing and potent. In the context of a contemporary Western society in which my experience is that the territories of 'magic' and 'science' are most typically assumed to be separate and diametrically opposed to one another, I recognised something deliciously and purposefully transgressive about seeing them framed together in this category's name as knowledge practices that '"blossom grafted to a single stem"' (Warburg 1920 in Johnson 2012, p.37). The sense of recognition that I experienced stems from this category's name striking a note that has a strong sympathetic resonance with choreographic questions about ways of knowing (as I shall unfold below). Since first encountering the phrase Magic & Science at the Warburg Institute, it has continued to reverberate and gather mass for me over the course of the creation of several works,[76] and has gravitated increasingly toward underlying the centre of my thinking through the process of making *No-How Generator*.

The list of sub-categories that the Warburg Institute's Photographic Collection houses within Magic & Science details the breadth that this category embodies in that context. It makes neighbours of:

Art and art theory
Hieroglyphica
Writing systems
Mathematics
Science, technology and medicine
Physiology
Psychology
Alchemy
Divination and prophecy
Sorcery and magic
Astronomy and astrology
Cosmology
Time
The Elements
Geography
Flora and Fauna (Warburg Institute 2020)[77]

[76] Most extensively in the creation of *Now That We Know* (Sperling 2016) and *Loop Atlas* (Sperling 2017).
[77] This particular list of sub-categories within Magic & Science is that given by the online Iconographic Database of the Photographic Collection of the Warburg Institute (2020). As the Iconographic Database does

The Warburgian category of Magic & Science understands Art, Science, Physiology, Divination and Prophecy to be of a kind with one another. Here, the relations between this set of practices can be understood as porous, rather than impermeable. Like choreography, this category is inclusive of practices that span the artistic, the embodied, the physical, the generative and the more-than-rational. Given Warburg's art-historical interest in tracing developments in Western culture through historical time, it makes sense that his work points toward a recognition that magical and scientific practices have shared historical roots, and have not always been considered distinct.

Warburg writes in more detail of the polarity underlying the category of Magic & Science in this passage, where he uses the terms *Magic* and *Logic*:

> *Logic*, which *creates* the *thought-space [Denkraum]*—between man [Mensch] and object—by a conceptually *special designation*, and *Magic*, which *destroys* again this very *thought-space* through a superstitious—theoretical or practical—association between man and object, these we observe in the divinatory thought of astrology as a single, primitive tool with which the astrologer can at once measure and work magic. That age when logic and magic like trope and metaphor (according to the words of Jean Paul) "blossomed grafted to a single stem," is actually timeless, and in the cultural-scientific representation of such polarity lies hitherto debased epistemological values for a more profoundly positive critique of a historiography whose theory of development is conceived merely in temporal terms. (Warburg 1920 in Johnson 2012, p.37)

Logic can here be understood as the mode of rational knowing that characterises practices that collect in the zone of Science. Among the threads that particularly stand out in this passage is Warburg's emphasis that the possibility of understanding a continuity and complementarity

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not yet include the full breadth of the contents of the Photographic Collection, these sub-categories in some cases represent combined headings that summarise those of the physical collection. For a complete list of the more than 17,000 sub-categories and sub-sub-categories that currently comprise the Photographic Collection, see https://warburg.sas.ac.uk/collections/photographic-collection/subject-index.
Additionally, the classification systems of the Warburg Institute's two main collections - the Photographic Collection and Library – share the same orientation, but are articulated in slightly different ways. The category Magic & Science also has an important place within the classification system of the Library, and its sub-categories are substantially but not entirely the same as those used in the Photographic Collection. For a complete list of the sub-categories within Magic & Science in the Warburg Library, see https://warburg.libguides.com/classification/magic-and-science.

between logical-scientific and magical ways of knowing is not something that he sees as restricted to a historical past – i.e., to earlier historical contexts represented in Warburg's researches, wherein the contemporary sharp dividing lines between magic and science did not yet exist. Rather, the possibility of an alliance between the two remains present and 'is actually timeless'. Furthermore, within this zone where logic-science and magic are understood as interconnected lie 'hitherto debased epistemological values' that merit reappraisal. While Warburg struggles with the tension between *logic* as the distancing force that creates room for thought and *magic* as the force destroying that distance, he avers that bringing these two forces together forms a single, more complex, epistemological tool. For Warburg, this tool is evident in practices of divination and astrology, and it enables a knowledge-practice to both measure (as science does) and conjure (as magic does) at the same time.

The dynamics and capacities that underlie this tool are ever-present in relations between humans and the world, as characterised within Warburg's conception of *Denkraum*, discussed earlier in section 3. *Denkraum* revolves, for Warburg, around the continual navigation of a dynamic and generative tension between distance and non-distance in the relation between oneself and the world. The logical-scientific orientation of distance is one that "objectifies" the phenomena of the world in relation to oneself, seeing them as separate from oneself and open to one's impartial or objective observation and rational judgement. The magical orientation of non-distance is, contrastingly, a "subjectifying" one, that collapses the presumed separateness of the world and instead presumes continuities between one's felt subjective experiences (mind), one's own embodied materiality (body), and the wider world (environment) within which one's embodied materiality arises, unfolds and is sustained. For Warburg, the divinatory practice of astrology is emblematic of this non-distanced orientation because of the way that it interprets causal connections between the unfolding of one's lived, embodied experiences and the movements of the

stars and planets – an intimate and consequential connection even with those heavenly bodies most distant from one's own body.

In this way, the bridge formed by the Warburgian category Magic & Science can be recognised as a bridge between subjective and objective ways of knowing, and this is the root of its relevance to my understanding of choreographic practice. Given that I understand choreography as an embodied artistic medium and embodied knowledge-practice, the bridging of subjective and objective is an inherent and defining feature of choreography's ontological condition and epistemological potential. In my view, to speak of human embodiment means precisely to speak of the inherent continuity between the subjectivity of conscious experience and the objectivity of bodily, organismic materiality. In the embodied medium of choreography, then, subject-ness (mind, person) and object-ness (body, biological organism, environment) always already exist as a continuum, as non-separation. In the present context of this investigation's specific focus on choreography's relationship to embodied knowledge-generation, what becomes highlighted is that, in choreography, a continuum of subjective and objective ways of knowing is always already incorporated in the embodied medium itself. Together, all of the persons-bodies who gather in an event of choreographic performance (including performers and audience members) constitute the human epistemological potentials of that event in and through the continuities of subjective and objective ways of knowing that they themselves embody. Given that the Warburgian category of Magic & Science also bridges subjective and objective ways of knowing,[78] this category offers a way of naming and nourishing ontologies and epistemologies that are inherent within this understanding of choreography.

[78] Warburg's engagement with these ideas highlighting inter-relations between subjective and objective ways of knowing overlaps historically with the development by Edmund Husserl (1859-1938) of phenomenology, which similarly gives particular attention to subjective experience in its philosophical approach (e.g., Husserl 1900-1901). Both were working in the intellectual context of Germany, and a meeting between them in 1923 is documented (Vongehr 2010).

[While co-leading, with Katye Coe, the public workshop day at Siobhan Davies Dance:]
'Doing Day: Magic and Science' on September 22nd, I said:

Just as mind and body are continuous, so magic and science are continuous too.
I don't have to try to combine them, I don't have to do anything about it - they just already are continuous, and I can notice that and operate in relation to that.
It's because magic and science, subjective and objective, mind and body,
are all part of the same world.
(*17/10/19)*

'To read what was never written': Didi-Huberman on Warburg's *Mnemosyne Atlas*

Having established an initial overview of Warburg's category of Magic & Science and how I consider it to relate to choreographic knowledge-generation, I now want to go deeper into this relationship by discussing a text that has particularly enlarged my attention[79] to the ways in which a Warburgian epistemology resonates with and for choreographic practice: the philosopher and art historian Georges Didi-Huberman's book *Atlas, or the anxious gay science* (2018).[80] In this work, Didi-Huberman develops an exegesis of the epistemology underlying Warburg's famous *Mnemosyne Atlas*, which is the final and culminative project that Warburg undertook in the years before his death in 1929. In Didi-Huberman's text, the *Mnemosyne Atlas* emerges as the most expansive and evolved embodiment of Warburg's distinctive practice of non-linear knowledge-generation, which is the Warburgian epistemological orientation that I take Magic & Science to name. While Didi-Huberman's text does not specifically concern itself with considering the relationship of choreography to Warburg, Magic & Science and the *Mnemosyne Atlas*, I read it as resonating strongly and helpfully with a choreographic perspective on knowledge-generation.

[79] It has done so since 2015, when I first read parts of an earlier published version of this text (Didi-Huberman 2010) in the Warburg Institute library, during the same process in which I first encountered the category Magic & Science, as noted above.
[80] Didi-Huberman's title makes reference to Friedrich Nietzsche's *The Gay Science* (1882).

Figure 9: Panels from the *Mnemosyne Atlas* project, photographed in the Reading Room of the Kulturwissenschaftliche Bibliothek Warburg (Hamburg) February 1927. Photo: Warburg Institute.

As was noted earlier (in section 3), Didi-Huberman's text affirms that 'dances, human gestures in general, make up the essential, the centre' (2018, p.13) of Warburg's orientation toward the intersection of art and knowledge-generation. Warburg's methods, that is, combined a questioning of knowledge-generation together with a focus on movement. Rather than tracing art history through a linear sequence of successive stylistic shifts, Warburg was interested in tracing the recurrence of movements and gestures in images coming from disparate times and places – in particular from the ancient world to renaissance Europe and into the image cultures of his own period. Warburg's *Bilderatlas* (meaning *picture atlas*) *Mnemosyne*, which I will refer to by its anglicised name *Mnemosyne Atlas,* was the culmination of this lifelong interest, taking its name from the Greek goddess of memory and mother of the muses. The *Atlas* – which remained unfinished at the time of Warburg's death – was formed of a series of large hessian-covered panels on which

photographic reproductions of art historical images could be pinned and arranged in precise constellations. At the time of Warburg's death, the *Atlas* consisted of 63 panels, on which approximately 1000 images were collected (Johnson 2016). In their selection and composition, and in the "intervals" created between these images-of-movement, Warburg aimed to generate a visual and sensible[81] (felt) form of knowledge (Didi-Huberman 2018, p.4), 'an argument whose elements are not words or propositions' (ibid, p.222) that would make it possible to (as Didi-Huberman invokes Walter Benjamin's phrase) 'read what was never written' (ibid, p.21). Although the constellations were replete with layered meaning, they were never fixed. Different combinations of images were always possible and would yield new insights – movement *of* the images in relationship to one another was as key to the method as the movement *in* the images. Warburg's unfinished, oscillating atlas ultimately aimed to map the 'afterlife of antiquity' (Johnson 2016) and thereby to forge no less than a '*Kulturwissenschaft*' (Didi-Huberman 2018, p.153), a science of culture, that Warburg hoped would reveal fundamental insights underlying the development of European culture over millennia.

In its discussion of the *Atlas*, Didi-Huberman's text emphasises the embodied and felt perspective that Warburg engaged within his practice as an art-historian and the epistemological significance that this has. Didi-Huberman references Warburg's conception of himself as a 'seismograph' which, as I indicated in section 4, denotes one who engages in generating knowing by taking a felt reading of their affective environment. Didi-Huberman notes Warburg's metaphoric description of himself and other practitioners as '"receptors of mnemonic waves… of very sensitive seismographs with which the foundations tremble when they have to capture the wave and transmit it"' (2018, pp.208-209) and describes these waves as being felt directly by Warburg in 'his soul, his vision and all his

[81] Here, I use the word 'sensible' as it used in Didi-Huberman's text, which is translated from French. In French, the word 'sensible' includes the idea of the sensorial (the sense-able and the sensitive or felt). In the context of this discussion, therefore, my use of 'sensible' intends to reference an interplay between the French sense of the word (as sensorial or felt) and the English sense of the word (connecting with notions of intelligence and wisdom).

limbs' (ibid). Didi-Huberman also quotes Warburg's close colleague Ernst Cassirer who, in his eulogy of Warburg, emphasised that:

> "[Warburg] did not firstly cast his eyes upon works of art, but he felt and saw the great configuring energies behind the works… Where others had seen determined and delimited forms, self-contained forms, he saw moving forces; he saw what he called the great *forms of pathos* that Antiquity had created and left as a lasting patrimony to humanity… But this capacity was not only the gift of the researcher, nor that of the artist. He delved here into his own, most deeply felt experience. In himself, he had experienced and learned what he was capable of grasping and interpreting, from the centre of his own being and his own life… Warburg was not a scientist and a researcher in the impassive sense in which he might have contemplated, from on high, the playing out of life, or delighted aesthetically in the mirror of art. He always remained in the centre of the storm and the whirlwind of life itself." (2018, pp.159-160)

This highlights that the noteworthiness and significance of Warburg's epistemological orientation stems, in particular, from its ability to engage (or its inability not to engage) an embodied, felt perspective that is always situated in a lived, sensorial experience and always entangled with the complex world that it seeks to know. It also highlights how inextricable this perspective is from an attention to movement and moving forces in flux – an ability to perceive and understand forms and knowledges as being dynamically constituted by motion. The '*forms of pathos*' that Cassirer mentions are Warburg's concept of *Pathosformeln* (Didi-Huberman 2018, p.13; Johnson 2012, pp.62-64), the feeling-forms of archetypal human gestural expressions that he sought to identify and trace within constellations of art-historical images. This concept of *Pathosformeln*, integrating the transience of lived feeling (*pathos*) and the endurance of cohering forms, again underscores the integral role of feeling in Warburg's thought and practice. All of these qualities of Warburg's epistemological orientation contribute to germinating the connectedness that I consider it to have with choreographic knowledge-generation and with other key references that I draw upon. For example, there is a notable intersection here between Warburg's embodied-entangled-situated epistemological perspective and Haraway's emphasis on the situatedness of knowledges as the key to articulating an ethical and feminist epistemology, as discussed in section 2 (Haraway 1988).

Didi-Huberman's emphasis on the sensorial and the embodied in his characterisation of what Warburg's *Mnemosyne Atlas* does to epistemology thus holds relevance for thinking around what choreography does to epistemology. Didi-Huberman argues that, 'as a visual form of knowledge or a knowledgeable form of seeing… the atlas introduces the *sensible* dimension into knowledge' (2018, p.4, emphasis mine). Through its ability as a method to generate particular kinds of knowing via the visual, the gestural, the bodily, the intuitive, the non-rational and even the 'quasi-divinatory' (ibid, p.48), 'immediately… the atlas bursts the frames' (ibid, p.5):

> It bursts the self-proclaimed certainties of a science that is so sure of its truths, as it does of art that is sure of its criteria. It invents, between all of this, interstitial zones of exploration, heuristic intervals. It deliberately ignores definitive axioms. For it has to do with a theory of knowledge that is devoted to the risk of the sensible and an aesthetic devoted to the risk of disparity. It deconstructs, with its very exuberance, the ideals of uniqueness, of specificity, of purity, of logical exhaustion. It is a tool, not the logical exhaustion of possibilities given, but the inexhaustible opening to possibilities that are not yet given. Its principle, its motor, is none other than the imagination. (ibid, p.5)

This is exciting in the way that it evokes so many of the qualities, interests and dynamics that are at work in my experiences of choreographic no-how generation (as, for example, in the choreographic material back-and-forthing, discussed in section 4). Even more so when we recognise that, in comparison to the *Atlas'* work with images-of-movement, working in and through movement itself in choreographic practice manifestly introduces far more of the sensible into the epistemic. This suggests that, if the Warburgian atlas-of-images reconfigures epistemological landscapes, then here is an orientation to knowledge-generation in which the bodily and the choreographic hold a genuine potency and particular aptitude to take this reconfiguration still further. Here is an orientation to a knowledge-generating practice that handles - in fact, that thrives on and would not be possible without - dynamic complexity, layeredness, richness, 'the sampling of chaos' (Didi-Huberman 2018, p.116), flux, tension, between-ness, interweaving, and a register that is at once poetic and analytic. In short, the qualities that are alive for me in a choreographic interest in embodied knowledge-generation.

Three elements constellated in the above-quoted passage particularly bear pointing out, regarding the Warburgian epistemic orientation that Didi-Huberman articulates and how it relates to this discussion of choreographic no-how generation: the relationship to science, the opening of inexhaustible possibilities and the role of imagination. The first element to focus in on is that, for Didi-Huberman, 'science' here denotes ways of knowing following a Platonic tradition, which supposes that the 'intelligible sphere was extracted beforehand from – or purified of – the sensible' dimension of experience (2018, p.4).[82] This non-sensorial, maximally-abstracted orientation would be 'in short… the standard form of all rational knowledge, of all science' (ibid). Juxtaposed against this, the epistemology of the *Atlas* that Didi-Huberman articulates 'bursts the frames' of scientific knowing, exceeding them by insisting on the inclusion of sensible-sensorial and aesthetic registers of experience as active constituents within knowledge-processes. This maps on to my naming of both a Warburgian and a choreographic epistemological orientation as one of Magic & Science: in this epistemic space, science-as-knowledge is thus not excluded but exceeded *because* this space is constituted by embodied and artistic experience.

The second element to point out is that Didi-Huberman's characterisation of the epistemological orientation within Warburg's work points itself towards 'the inexhaustible opening to possibilities that are not yet given' (2018, p.5). This quality of enabling knowing to have a non-definitive character that aims to open up rather than exhaust possibility is crucial to making this epistemological orientation one that is commensurate to the creative, generative space of artistic-choreographic practice as I understand it. Like the *Atlas*, art, including choreography, is a space of continual potential generativity of textured, aesthetic knowing through recombination; it does not reach an end of being a space of possibility for the emergence of the not yet given and not yet known. Any adequate account of choreographic knowledge-generation, therefore, must be able to

[82] Section 2, above, discussed Claxton's related reference to the enduring influence of Plato's abstracted and 'anti-body' understanding of knowledge (Claxton 2015, p.18).

understand ways of knowing with these qualities, and must itself be non-definitive and serve to proliferate rather than delimit the scope of possibilities for choreographic (knowledge) practices.

The third and final element to draw out is Didi-Huberman's characterisation of the epistemology underlying the *Atlas* by emphasising that 'its principle, its motor, is none other than the imagination' (2018, p.5). For Didi-Huberman, imagination is not 'to do with any personal or gratuitous fantasy' (ibid). Rather, he quotes Baudelaire's view that '"imagination is… a quasi-divine faculty which perceives first of all, outside of philosophical methods, the intimate and secret relations of things, the correspondences and the analogies"' (ibid) in such a way that this faculty is an integral aspect of human intelligence. As a faculty that perceives, creates and recombines relations between things, 'imagination accepts the multiple (and even revels in it)' (ibid). While it is readily apparent that, like the quality of inexhaustibility, the faculty of imagination must have a place in an epistemology of art/choreography, it bears pointing out that imagination is another significant way in which the bridge is formed between artistic/choreographic practice and the zone of magic in Magic & Science. Recalling that, for Warburg, *magic* denotes ways of knowing that emphasise a subjective orientation, imagination is a faculty that is almost quintessentially subjective. Like magical practices of divination, imagination is interpretive and generative. From both an artistic and a neuroscientific perspective (as mentioned in section 3),[83] imagination is also constitutive in its direct worlding capacity – it brings things into the world that did not previously exist, with particular embodied immediacy in the

[83] Section 3, in its discussion of the relationship between my notion of *Choreomancy* and the neuroscientific theory of Predictive Processing, mentions that Predictive Processing 'is capable of including "subdivisions such as attention, expectation, and imagination" within its scientific-theoretical understanding (Muckli et al in Clark 2013, p.41)'. Cognitive and computational neuroscientist Anil Seth has also emphasised this in conversation with me following his participation in a Siobhan Davies Dance-curated event at the Wellcome Collection in 2016, which has been important to my thinking in this area. I told him of my interest in Predictive Processing research (to which he is a contributor) and my excitement about the way that it speaks of imagination, perception and action as phenomena that are fundamentally and causally continuous with another. I asked him if he thought that I was interpreting this correctly or reading too much into this from my choreographic perspective. He responded that his view is that my interpretation of this as an embodied reality is not a misreading and he considers there to be very good evidence for this (Seth 2016, private communication). The implication of this is that imagination plays a constitutive role in shaping both perception and action.

context of choreography. In this sense, imagination is an actualised form of conjuring – a form of magic – that is an embodied capacity which is integral to the unfolding of artistic-choreographic experiences.

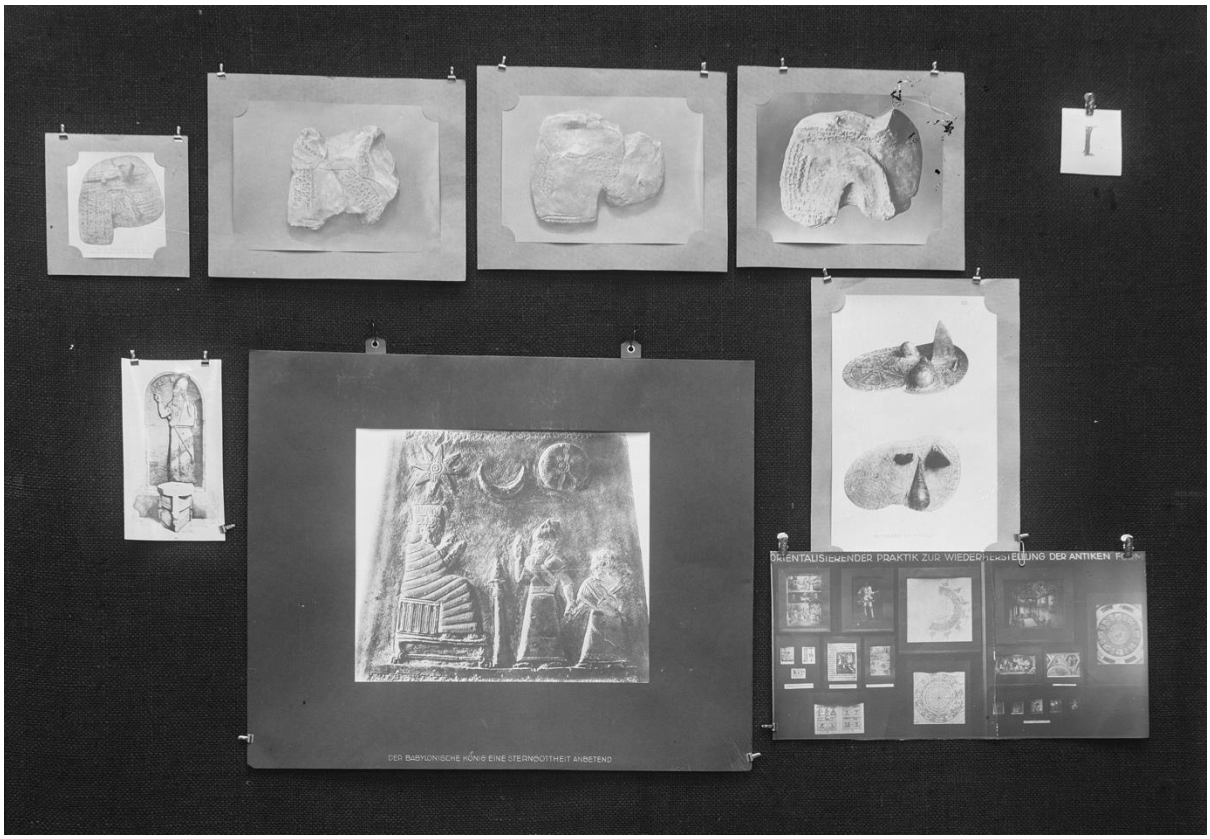

Figure 10: Panel 1 of Aby Warburg's *Mnemosyne Atlas* 1929 (detail). Copyright: Warburg Institute.

A further section of Did-Huberman's text that has particularly informed how I arrived at my focus on Magic & Science as a choreographic orientation is the section addressing the references to ancient Babylonian divinatory practices in Warburg's *Mnemosyne Atlas*. Titled *Visceral, Sidereal or How to Read the Liver of a Sheep,*[84] this section dissects Plate 1 of the *Atlas* (Figure 10). Across the top of this starting panel of Warburg's ambitious *Atlas* of Western art and culture, the first thing to appear is a row of five photographs of ancient Babylonian or Etruscan objects, each representing a sheep's liver

[84] Sidereal: 'of or with respect to the distant stars' (Stevenson, Pearsall & Hanks 2018)

and used in the practice of extispicy: divination through viscera. These objects, accurately shaped with the anatomical features of livers and inscribed with markings delineating various zones, were used to enable the reading of divinatory clues from an attentive examination and intuitive interpretation of actual organic entrails (Didi-Huberman 2018, p.18-19). Didi-Huberman considers these objects and their prominent placement in the *Atlas* 'strategically chosen' by Warburg, arguing that they:

> …are neither insignificant nor simple objects. Their complexity has to do with their function as dialectical images: images destined to edit and piece together those heterogeneous spaces of the visceral folds, on the one hand, and the celestial sphere, on the other. Warburg dedicated a considerable part of his research to questions of astrology: Is not reading the movements of time in visual configurations - like the constellations of the stars - a fundamental paradigm for all knowledge that seeks to extract the intelligible from the sensible? (2018, p.17)

The embodied context of choreography, too, can be seen in the light of this paradigm in which the intelligible arises from and within the sensible (although I argue that choreography seeks to notice, generate or propagate – rather than extract – the intelligible). In this elucidation of how to read the liver of a sheep, Didi-Huberman articulates a form of reading whose relevance to choreographic knowledge-generation lies in being at once visceral-organic-bodily and divinatory-intuitive-imaginative. Again invoking Benjamin, this is a type of knowledge-practice through which it becomes possible 'to read what was never written' (Didi-Huberman 2018, p.13). Indeed, Didi-Huberman also invokes Benjamin here as specifically affirming that '"reading, before all language"… occurs in the "entrails, in the stars, or dances"' (ibid). Here, in Plate 1 of Warburg's *Atlas*, is a form of reading and knowing that unfurls in the non-verbal and bodily dimensions that I consider foregrounded in choreographic practice.

Taking a reading: invoking choreographic connotations of divination

Didi-Huberman's discussion of the practice of divination through viscera particularly invites a choreographic reading for me, because of how strongly the discussion evokes certain aspects of the

language that Hay uses within and about choreographic practice, which I closely connect with my own interests, orientations and experiences in choreographic practice. I preface this with the caveat that I am aware that such a comparison of choreographic practice to divination-through-viscera holds a certain risk of being misread as implying – with reference to my practice or Hay's – that the choreographic activity is restricted to a navel-gazing sense of contemplating one's own internal milieu to the exclusion of everything else. This is emphatically not the case and not the intended implication. Rather, the present comparison implicitly takes into account that, in choreographic practice, the whole of one's body is engaged in taking a reading of the whole of one's (internal, external and relational) environment.

Didi-Huberman's discussion of knowing through an attentive and intuitive reading of viscera is particularly evocative of Hay's orientation toward dance as learning without thinking from one's own body as one's teacher. As Hay describes: 'When I go into the studio my attention is on my whole body in response to a set of conditions that I set out to explore in the course of my work that day. I am poised, in a metaphorical sense, at the feet of my body, my teacher' (2016, p.14). Her choreographic scores themselves consist in precisely such sets of conditions, which require the engagement of this orientation towards one's own body in order to be activated and performed. As section 3 noted earlier, the first statement in Hay's written score for the solo choreographic work "*Dynamic"* sets out that the performance of the work 'requires an unselfish regard for your whole body at once as a cogent medium for indefinable specificity. You are thus positioned to learn without thinking' (2012, p.1). The first question that Hay then positions as a tool for the performance of the score is: 'What if my whole body at once is my teacher?' (ibid, p.2). Not unlike the placement of the divinatory livers within Plate 1 of Warburg's *Atlas*, Hay's positioning of these words at the very start of this written score highlights the salience of this choreographic orientation within the practice. Her articulation of the practice as one of 'indefinable specificity' and 'learning without thinking' positions it as a more-than-rational way of knowing and, in this sense, akin to

divinatory reading. The body being learned from is 'cogent', and the attention being given is to 'my whole body at once' – or as Hay also often phrases it, to the feedback from 'every cell in my body at once' (2016, p.66). While there are clear differences between this choreographic attention to one's own body and the diviner's attention to the liver of a sheep, both of these are an attention to reading the organic and this choreographic orientation can also be thought of as implicating the same embodied capacities for intuitive reading that the practitioner of extispicy engages. The event of choreographic performance can also be understood to inherently engage a reading of information arising through bodies other than one's own, from the perspective of an audience member who (attentively and intuitively) reads what is offered by the performer who is 'inviting being seen' (Hay 2012a).

I experience Hay's highly-considered language as a potent tool within my own choreographic investigation, because of how successfully and succinctly that language identifies the complex and multidimensional dynamics that I experience within my own practice, even as it also helps to inform how my experiences and interests continue to develop. Hay's language helps to clarify that my approach to choreographic practice is implicitly orientated toward and activated by taking an intuitive reading of my embodied experience while/as dancing. This orientation is the ground beneath my choreographic reading of Didi-Huberman's discussion of divination through viscera in relation to Warburg's *Atlas*. More broadly, this orientation is also the ground beneath my understanding of choreography as a practice whose every moment is implicitly engaged in generativity, knowing and learning – a space of learning-in-progress rather than exclusively a space of repetition and re-presentation. During my artistic doctoral research process, this orientation has evolved for me into an increasing focus on *taking a reading* in/as choreographic practice, alongside increasingly understanding the presence of a divinatory and magical connotation within the embodied actuality of choreographic performance. Although I have mentioned *taking a reading* a number of times above in passing (most directly in section 4), I have reserved bringing a focus to its

role in my research for the present context of this section's discussion of the divinatory connotations of choreographic knowledge-generation. Rather than being a choreographic material, *taking a reading* is, for me, a broader approach toward the choreographic materials and choreographic performance in this research. It is, for example, the underlying activation of *taking a reading* that sets in motion the more particularised form of a choreographic material such as back-and-forthing (discussed in section 4). Back-and-forthing, in other words, is one of the specific forms of engaging in *taking a reading* that together make up the choreographic score of *No-How Generator*. Other than the prior communication of the title of the work itself, *taking a reading* is the only language from the work's choreographic score that is directly named and shared with audiences during the performance of *No-How Generator*: in welcoming the audience as we begin, Coe and I verbally introduce our guest performer to the audience, with Coe saying that the guest 'is taking a reading this evening, of a kind. Us too, and all of you' (Coe's performance in Sperling 2019).[85] This aims to introduce, into the space of the performance, the shared awareness that *taking a reading* is the orientation that we, as performers, are engaging, and that we invite the audience to also engage with and consider. Through the naming of this suggestion, I aim to invite audience members to consciously or unconsciously engage in asking (of themselves and of the performance) questions along the lines of: "What do they mean by 'taking a reading'? What are they taking a reading of? What is their experience as they take a reading? What is generated by their taking this reading? How might I take a reading? What ways of attending are invited through the invitation to take a reading as an audience member? What is generated through my experience of my own ways of taking readings during this performance?" In this way, I consider the words *taking a reading* to act as an entry way towards a very particular choreographic orientation that the audience are invited to be aware that this work is engaging with, and to be aware that they are invited to also engage with this orientation in their ways of experiencing this performance. I consider *taking a reading* to suggest

[85] That we will verbally introduce *taking a reading* while verbally introducing the guest performer is a fixed element of the choreographic score. The precise words used to say this, however, are not fixed. The quoted words are the way in which Coe spoke them in the premiere performance on 10 October 2019 in Nottingham.

associations with both science (the use of some measurement device) and magic (divinatory readings of palms, tarot cards, tea leaves…). More generally and most importantly, I consider *taking a reading* to invite the audience members to be aware that the performers' unfolding and yet-to-unfold perceptual experience is an integral part of the choreographic proposition of this work: the performers are inviting being seen more as bodies-minds-persons-readers-knowers that are in the process of experiencing something (along with the audience members) and less as images or representations seeking to show something (to the audience members). *Taking a reading*, then, is a choreographic orientation that has not only scientific but also magical and divinatory connotations. As such, it is a practice of reading 'what was never written' (Didi-Huberman 2018, p.13) that shares textures and dimensions with Didi-Huberman's elucidation of the epistemological orientation embodied in the references to extispicy in Warburg's *Mnemosyne Atlas*.

To further contextualise my interest in the relevance of divinatory connotations to choreographic practice, I will now move on from Didi-Huberman's text probing the epistemological orientation of Warburg's *Atlas,* and introduce into the constellation a choreographer whose work has been particularly important to me in this regard: the choreographer and dance artist Jennifer Lacey and her work *Extended Hermeneutics* (2011-). The kinship between Lacey's work and my research led me to invite Lacey to be the guest performer in the premiere performance of *No-How Generator*, alongside inviting her to concurrently present *Extended Hermeneutics* in the context of the same festival programme.[86] In *Extended Hermeneutics,*[87] Lacey uses a collection of artworks 'as a divining system' (Lacey 2019a) to offer 'individual readings' (ibid) to a participating audience member who

[86] Both works were presented in the context of Dance4's biennial festival Nottdance 2019, which I co-curated together with Dance4's Artistic Director Paul Russ. The two works were constellated not only in the same festival programme, but also in different parts of the same building (Nottingham Contemporary). I'm very grateful to Lacey for participating in this, and for the unique opportunity to invite her that Dance4 made possible. Lacey's participation in Nottdance 2019 was additionally supported by FranceDance UK.

[87] Lacey's choice of title reveals a further connective trace between her work and this discussion. The field of hermeneutics developed largely from Husserl's work, whose historical and intellectual parallels with this Warburgian terrain are alluded to in note 78, above.

poses a problem to be addressed and discussed together. 'Chosen artworks and concepts' (ibid) from the collection 'are rendered into card form and read as a sort of conversational tarot' (ibid), making the performance something 'between a life coach and a palm reader' (ibid). This (usually) one-to-one, conversational performance practice started by using Lacey's own past choreographic works as the collection of artworks being read, then became a practice that could work with any given collection of artworks that Lacey can have a sufficiently detailed contextual knowledge of[88] (Lacey 2019). The performance 'invests in the pleasure of reading removed from the necessity to arrive at a final definition of the sign that is read, affording the art works… a level of autonomy, including their right to remain opaque and resonant even as we pursue the (delightful) desire for meaning and resolution' (Lacey 2019a).

As the title and Lacey's description indicate, this is a work dealing with interpretation, readings, meaning and legibility in art, as questions arising in and through Lacey's choreographic practice. While foregrounding an artistic engagement with connotations of divination, Lacey clarifies that the choreographic relevance of this lies in her positioning of her activity as 'not *doing divination* but *working with a divining system'* (Lacey 2019). The relevance of the connection does not consist in choreographic practice seeking to position itself as actually performing divination; it is rather an allusion that choreographic practice makes in order to bring into focus an aspect of what it itself is already doing. In a one-week workshop centred around the choreographic concerns of *Extended Hermeneutics*, Lacey spoke of what the choreographic field learns from engaging with divination-like practices, saying (I paraphrase): 'These kinds of activities are also ways in which we (as artists) develop skills of perceiving how sense is made in dance contexts, for ourselves and for others, and to learn how (and how much) we might provide that for others as audience' (Lacey 2019). With this

[88] In the context of Nottdance 2019, the collection of artworks that Lacey worked with was chosen from the then-current exhibition *Still Undead: Pop Culture in Britain Beyond the Bauhaus* at Nottingham Contemporary, with readings performed in the exhibition galleries.

insight, Lacey focuses an understanding of how and why *taking a reading* and connotations of divination have an integral relevance to and connection with choreographic practices: they engage practice-grounded, more-than-rational approaches to investigating how (to recall Didi-Huberman) the generation of the intelligible within the sensorial occurs in dance and choreography.[89]

Lacey occasionally ends her performance of *Extended Hermeneutics* by dancing for the person for/with whom she is reading,[90] but a direct performance of dancing is not a core or constant element of this primarily dialogic work. The intermittence or absence of overt dancing, though, does not impinge on my consideration of this work as one that embodies and highlights specifically choreographic competencies of knowledge-generation. Part of the reason why this work is important to me is because I consider Lacey's interest in framing a performance around tarot-like readings, as well as the fluid and skilful virtuosity with which she is able to perform them, to stem directly from her experience as a choreographic artist. The questions that the work asks about how and what we come to know through art are choreographic questions because they deal with embodied cognitive capacities that unfold in artistic contexts, with particular immediacy in the context of choreography. The competencies that the work is animated by – skilfully navigating intuitive felt-sense reading and connection-making in the unknown conditions of live performance encounters – are choreographic competencies that I observe dance artists frequently come to hone. It is this both embodied-actual and divinatory-intuitive competency and potentiality within

[89] In the same workshop (Lacey 2019), Lacey further contextualised these choreographic questions by relating them with (among others) Édouard Glissant's call for the 'right to opacity' (highlighting the political relevance of a mode of relation that respects not-knowing; Glissant 1997, p.189) and Valentina Desideri & Denise Ferreira da Silva's practice of Poethical Readings (applying intuitive ways of knowing and divinatory practices of tarot reading to political problem-solving; Desideri and Ferreira da Silva, 2016, 2017). These significant references continue to inform my development of the present discussion/constellation and how it evolves in section 7, below.

[90] 'Dancing at the end of *Extended Hermeneutics* gives the person [participant] an opportunity to interpret.' It allows them to 'use me as a screen' (Lacey 2019).

choreographic practice that my use of the heuristic Magic & Science seeks to point toward and support.

Embodying a choreographic imaginary of Magic & Science in *No-How Generator*

Before concluding this section on how and why I understand the Warburgian category Magic & Science as a choreographic epistemological orientation, I will address the ways in which I consider this orientation to be embodied as a proposition within the choreographic work *No-How Generator* itself. I presume the zone of *science* within Magic & Science to already be implicitly present in the imaginary of this event of choreographic performance. Therefore, while it is an essential ingredient in composing a choreographic imaginary of Magic & Science as a continuity of ways of knowing, I consider the need for the choreographic work to flag the presence of this ingredient to be minimal. Associations with the zone of science and scientific ways of knowing are, in my view, already readily apparent given (not least) that the event is known to foreground bodies, bodily movement and bodily capacities, which are physical phenomena that are available to be described by scientific narratives. Furthermore, the event of choreographic performance implicitly consists in a science-like observational framework in which, for example, the actuality of (the audience's) direct, experiential witnessing of the unfolding of (the performers') human behaviour can be foregrounded. In addition to these general aspects of the event of choreographic performance as I conceive of it, *No-How Generator* also specifically implicates associations with science via the content of the public-facing written description of the work that the majority of audience members will encounter when booking (Sperling 2019a). This short text positions embodied knowledge-generation as the key question that the work sets out to investigate, which (in the context of Western culture in which science represents knowledge-generation *par excellence*) I take to necessarily implicate associations with science and the scientific or empirical verification of knowledge. For all of these reasons, then, I consider the zone of *magic* within Magic & Science to be more necessary for the choreographic work to actively and cogently cultivate as a presence within the composition of the event's imaginary,

given that my choreographic intention includes inviting audiences to experientially consider the relationship of an epistemology of Magic & Science to (this) choreographic performance. Also, given the hegemonic position of science as the assumed standard for authoritative knowledge in the wider cultural context, it is magical ways of knowing that, for me, are more in need of being able to establish not only presence but also a sense of legitimacy and belonging within the imaginary of the epistemological frame of the event.

The trance-like states and atmospheres that multiple elements of the work contribute to conjuring are perhaps what most actively implicates an imaginary of magical ways of knowing as belonging within the context of the performance. For example, the movement qualities and patterns generated by the opening choreographic material back-and-forthing (see section 4) are the first element to ground the establishment of this. Its rhythmic, repetitive rocking and constant gradual evolution have hypnotic and ritual-like qualities. This not only shapes the performative states of consciousness that audience members observe the performers experiencing, but also generates an unchanging-yet-evolving visual rhythm in the space that is suggestive of trance and hypnotic induction. The evolving sonic environment that Coe and I build for the performance to inhabit also contributes to this atmosphere. Consisting in our non-verbal vocalisations, aided by radio microphones and a loop pedal with a delay effect, this self-generated live soundscape starts with the looping of a continuous hum, producing a drone-like sound and meditative atmosphere. As the performance progresses, this loop continually accumulates any vocal sounds we make, layering and reverberating a constantly-deepening and immersive sound-space. The lighting design by collaborator Jackie Shemesh is a further element that manifests these experiential atmospheres. With imperceptible slowness, the lighting state in the room transitions subtly through phases of a colour bath over the course of the performance, evolving from a daylight state, gradually becoming deep red, deep blue, and yellow. These immersive changes of light colour are suggestive of a slow journey through transformations of atmospheric weather and mood. All of these elements -

movement, sound and light – unfold over time via markedly gradual processes of accumulation, evolution and transformation. They are all suggestive of tectonic processes that are emergent, that are both shifting and generating something – that the event is one in which transformation and conjuring are implicated. The processes and steady rhythms of gradual change also suggest particular trance-like states of attention. A trust is built that no sudden, jarring changes will occur in the experiential space. A meditative, perception-blurring attentional space of contemplation, reverie and freely unfolding imagination is invited. The audience, moreover, are seated on a combination of cushions and chairs, arranged in irregular clusters on all sides of the performance space, intending to deformalize and expand the setting of the event while forming a near ritual-like circle. All of these multiple elements, by suggesting a trance-like experiential space, intend to contribute to cultivating the presence of magical ways of knowing within the event's imaginary. Given that many of these elements are specifically suggestive of hypnotic qualities, I also consider them to create a bridge between imaginaries of hypnosis-as-magic and hypnosis-as-science. Like the verbal naming and inviting of *taking a reading* as an orientation to the performance as it begins, these elements all intend to contribute to composing and conjuring an imaginary of Magic & Science within and through this event of choreographic performance.

Also – it would be odd and oddly diminishing to omit to say – throughout the entire work, from the moment that we first welcome audience members as they enter the performance space, Coe and I are wearing prosthetic elf ears. I consider these, too, as elements that function to embody an imaginary of the zone of magic within Magic & Science in *No-How Generator*. Wearing the elf ears plants a flag on the embodied landscape of this event of choreographic performance that reshapes any easily-established expectations that its imaginary of embodied knowledge-generation is an exclusively scientific, rational and sober one. While being tucked out of the way in a place that does not otherwise interfere with or constrain our movement practice, these elf ears (these flags) are a constant presence in the performance, maintaining the context that they help to establish, even

when the sight of them fades into the attentional background through habituation. The elf ears are a confound to the ways in which expectations of fixity, logic and transparency can be placed on the notion of a choreographic performance that addresses embodied knowledge-generation: they are more-than-rational. They bring – into the physical context of our bodies as performers and into the imaginary of the performance – associations of otherworldliness, unidentified mythical creatures and supernatural potentials. Importantly, they are also an obviously fake and silly conceit: they clearly do not claim an authoritative and objectively verifiable "realness" but, rather, firmly position the subjectively made-up within the fabric of the performance. In this way, their marking of the territory of the performance insists on the necessary inclusion and contribution of the subjective ways of knowing of magic within Magic & Science. Equally importantly, and relatedly, they exceed the bounds of the objective seriousness of the scientific by announcing that we are not taking ourselves entirely seriously in our attempts to conjure embodied-knowledge generation in this performance. Subverting the seriousness of an exclusively scientific imaginary of knowledge-generation with absurdity and humour is a cognitive expansion. By asserting (and ensuring) that we are always able to laugh at ourselves while we attempt to investigate embodied knowledge-generation in choreographic performance, we gain the capacity to dis-attach ourselves from any given parameters to which we find we have unhelpfully and unnecessarily affixed ourselves and our embodied investigation. In this, I am constantly both informed and tested by Hay's finely-honed sentence: 'I always retain the capacity to laugh at my own serious intentions, even while those intentions remain serious' (2009). By being able to laugh at ourselves, our engagement in choreographic embodied no-how generation gains a critical faculty and begins to set in motion what would otherwise be fixed and immobilised parameters of the choreographic investigation. The joy of absurdity that I find in the elf ears also contributes to actuating the subjectively-oriented ways of knowing of magic in another sense: this establishes, for me at the very least, a practice of giving permission for the subjectively and intuitively felt to participate in significantly shaping and guiding the investigation. The elf ears are oxygenating of the space for choreographic no-how generation

because they help to establish the context of an imaginary in which Magic & Science are both operative at once.

[first time trying on the elf ears]

Elf ears
I love this feeling, feels good
The humour
The laughing at my own serious intentions
Katye looks amazing
It's stupid - it's ok to get it wrong and do something stupid - by allowing that to be part of it, it becomes more possible to perceive and be self-critical of the stupidness of some of the habitual boundaries of what we are doing - the things that we otherwise don't see well enough
It's a pleasure, a delight -
it brings pleasure and delight into the mix, affirms the belonging of that
…It introduces other worlds - faerie - also the cave, said KC
It introduces an almost alter-ego-ness
For me, it's drag, and that's why it belongs - it brings reflexivity
Which is also - fiction, speculative practice, engagement of imagination
Which is also the magic in Magic & Science
The ingredients in the room - the questions in the room are different - the questions that you are asking conditions the answers that you will find
(16/7/19)

Section Conclusion

In summary, this section has travelled through a constellation of elements to weave a meshwork through which an epistemological orientation of Magic & Science emerges as a heuristic for and within choreographic practice. Imagining this constellation of elements configured as a Warburgian *Atlas* plate, or indeed as the subcategories of a drawer labelled Magic & Science within a *choreographic* collection, the contents of the journey through it has included:

- The drawer labelled Magic & Science in the Photographic Collection of the Warburg Institute.
- Understanding magical and scientific ways of knowing to "blossom grafted to a single stem".
- Recognising subjective and objective ways of knowing as an embodied continuum in choreography.
- *Just as mind and body are continuous, so magic and science are continuous too.*
- Georges Didi-Huberman's book *Atlas or the anxious gay science.*
- Aby Warburg's *Mnemosyne Atlas* and the epistemology underlying it.
- Introducing the sensible dimension into knowledge, "to read what was never written".

- Non-definitive knowing and imagination.
- Plate 1 of Warburg's *Atlas.*
- How to read the liver of a sheep: divination and extispicy.
- Deborah Hay: learning without thinking from my whole body at once as my teacher.
- Practicing *taking a reading* as an underlying focus of *No-How Generator.*
- Jennifer Lacey's *Extended Hermeneutics*: a choreographic divining system.
- How *No-How Generator* embodies a choreographic imaginary of Magic & Science.
- Elf ears, laughing at ourselves, and the cognitive generativity of absurdity and humour.

Among the reflections that I take away from the journey through this constellation is the overall understanding that my engagement with the orientation that I call Magic & Science is a process of remapping my imaginary of the landscape of choreography-as-knowledge-generation. Before beginning this artistic doctoral research process, the associative zone of science (e.g. narratives from embodied cognitive science) were already a relatively well-established and well-versed part of that landscape for me, while the associative zone of magic was still a rather more marginal, unrecognised and delegitimised presence within my own sense of that map. The conceptual and textural-qualitative imaginaries that I associate with (embodied cognitive) science remain important and helpful to me as tools within choreographic practice, but I also recognise that the artistic-choreographic scope of those scientific imaginaries is limited and, on their own, can be limiting for choreographic practice. During this artistic doctoral research process, my understanding of the importance for choreographic practice of a conceptual and textural imaginary that I gather together around the term magic and around magical ways of knowing, while not entirely new to my practice, has significantly grown and developed.

I have also been able to begin to understand better how these different imaginaries and ways of knowing co-exist in relationship to one another, rather than presenting an either/or choice to me as an artist. Another way of encapsulating this learning is to say that scientific ways of knowing are necessary within choreography-as-knowledge-generation and magical ways of knowing are necessary within choreography-as-knowledge-generation, but neither of these on their own are sufficient for choreography-as-knowledge-generation. It is only together, as Magic & Science, that

magical and scientific ways of knowing bring about conditions that are both necessary and sufficient for choreography-as-knowledge-generation. By 'necessary', I mean that both scientific and magical ways of knowing are always already implicated in choreographic events *because* they are embodied events and *because* they are artistic events. This implicitly reveals that one of the unspoken perspectives that importantly underlies this understanding is a genealogical one in relation to the human artistic practice of dance and choreography. In considering what (my practice of) the artform of choreography can be generative of, I understand that the human embodied capacities that can become engaged in this context are not new: these embodied capacities, whatever they may be specified as, necessarily have a biological evolutionary history of at least tens of thousands of years and, through investigation and imagination, they can be understood to consequently also have immensely long and varied cultural histories of (what I perceive as) human performative practices associated with them. That is to say that, in my view, an artistic embodied event of choreographic performance today has implicit kinships with past and present performative magical practices of all kinds and contexts, and the magical ways of knowing that animate them. Thus, practices including varied forms of divination (as discussed above), as well as varied lineages of trance, ritual and shamanic practices are implicitly relevant kin to choreographic performance, particularly when it is considered as a practice that is generative of non-linear forms of knowing. The phrase Magic & Science makes inclusive reference to these kinships, and acts as a heuristic that encourages the perception and exploration of shared resonances between present choreographic practices and these lineages.

In relation to Warburg's *Mnemosyne Atlas*, the heuristic Magic & Science functions as a navigation tool, which is related to the ways in which an atlas (more generally) serves to support the navigation of journeys. An atlas can be said to make journeys possible that were not possible before, and also to inform how journeys unfold: how they happen, how they are experienced, what expectations are brought to them, as well as where they go. As a heuristic within choreographic practice, what Magic

& Science helps me to do is thread what I am doing in any given experiential moment into a wider web of practice. It reminds me to say and enact: *yes* to scientific ways of knowing, *and yes* to magical ways of knowing; *no* to an 'either/or' epistemology; *yes* to a 'both/and' epistemology. It affirms the possibility and necessity of that breadth of artistic-epistemological approach to (and *as*) choreographic practice. It affirms an orientation towards what the space of choreographic practice (including the event of choreographic performance) is for and can do. Magic & Science is like a very boiled down ingredients list for a choreographic recipe. When making and performing, I can ask myself: are both of these types of ingredients present and active for me in the practice? Do I sense that what I am doing is breathing the imaginary of the landscape in which these two ingredients are continuous with each other and not mutually-excluding of each other? Then, I feel, I am in an artistic territory where a fullness of the knowledge-generating potential of human embodied capacities are being set in motion. Put differently: as a human-person-organism who shares in embodied-knowledge-generating capacities, I then can feel that I am coming closer to activating full-bodied dancing in the space of choreographic performance. Both figuratively and, I believe, also physically and actually, I am then bringing a fuller range of my knowledge-generating body parts into motion within the artistic practice of dance/choreography.

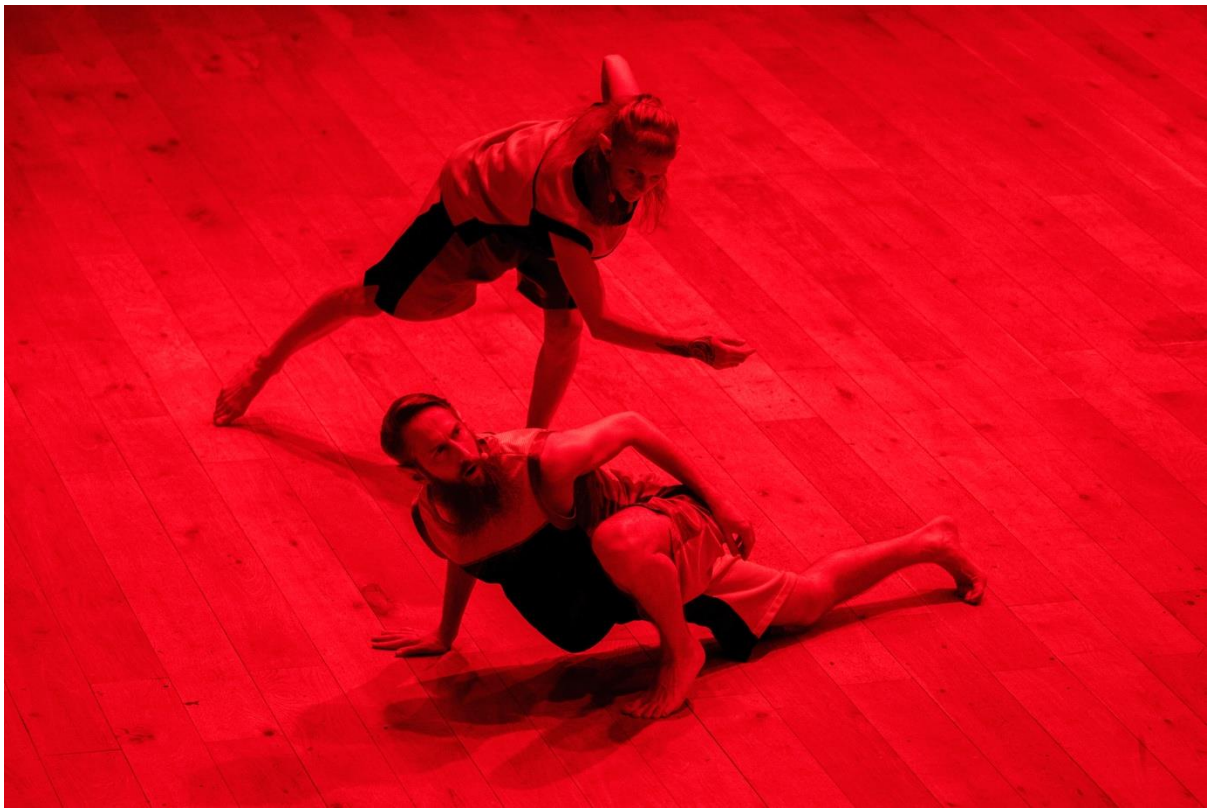

Figure 11: *No-How Generator*, photo by Camilla Greenwell.

Section 7:

Macro dramaturgies and political dimensions, through the lens of Santos' *Epistemologies of the South*

Having discussed how my approach to choreographic no-how generation is situated within a wider epistemological orientation of Magic & Science, I will now expand the scope of the discussion further by drawing some connections that reach out from these concepts and practices, toward wider contexts and concerns. This section gives space to the impulse to critically attend to what dramaturg Marianne van Kerkhoven terms the 'macro dramaturgy' (1999, p.67) of how the micro-scale of an individual artistic working process interacts with the wider social, ethical and political world around it.[91] I view this critical attention as, at once, always crucial to engage and always impossible to complete. It is an attention that is implicitly present throughout this artistic doctoral investigation – this section has the specific aim of exploring parallels between the conceptual orientations of this investigation and a text that I have found particularly helpful in supporting my post-premiere[92] reflections on the concerns that *No-How Generator* engages with: the book *Epistemologies of the South: Justice against Epistemicide* (2014) by sociologist and legal scholar Boaventura de Sousa Santos. Santos' book considers epistemological orientations as keys to shaping geopolitical dynamics, and thus offers a lens through which to reflect on ways in which the micro dramaturgy of my epistemological orientation to choreographic no-how generation resonates with the macro dramaturgy of the wider geopolitical dynamics that he analyses. In this section, I will discuss three concepts from Santos' analysis that resonate strongly with my orientation to choreographic no-how generation – the ecology of knowledges, the non-Occidentalist West and learned ignorance – and

[91] As Kerkhoven wrote: ''The micro dramaturgy' is to me the dramaturgical work that is situated around a concrete production, 'the macro dramaturgy' could be described in general and perhaps too vague terms as the dramaturgical work through which the theater gives shape to its social function… Which threads connect the daily theater work with a larger whole?' (1999, p.67).

[92] i.e., My engagement with this specific text post-dates the process of developing and presenting (in October 2019) the premiere performance of *No-How Generator*.

use these as a lens through which to consider aspects of the macro dramaturgy of my investigation. Before this, I will first briefly outline the motivation and scope of this discussion.

While I consider it to always be crucial (and generative) to critically attend to the social, ethical and political dimensions of artistic or choreographic investigation, it is perhaps especially so in relation to this investigation of choreography and/as embodied knowledge-generation, given the inherent entanglements that are articulated and felt between embodiment, knowledge and power. As writer, philosopher and curator Paul B. Preciado recently characterised the widely influential perspective of theorist Michel Foucault: 'the living… body is the central object of all politics. There are no politics that are not body politics' (2020, para. 2). The broad orientations of Foucault's work are also helpful in emphasising the necessary connections between not only bodies and politics, but also knowledge. For Foucault, 'power and knowledge directly imply one another; …there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations' (1977, p.27). In my choreographic research on knowledge-generation, I seek to remain critically alert to how such power relations are implicated in the subject matter I am addressing and the ways in which I am addressing it. Engaging with a discourse like Santos', which does not directly or primarily address choreography[93] or artistic practice, is a way of investigating how my work may be oriented in relation to power dynamics that play out at wider historical and geopolitical scales.

[93] In a later work (2018), Santos does touch directly on notable connections between dance/ dancing and his analyses of epistemologies of the South. 'Dance and song', he writes, '…exemplify the epistemological resources left untapped by Northern epistemologies… Dance, in particular, deserves special attention in this regard, as it is one of the most complex forms of lived, experiential bodily knowledge' (Santos 2018, p.93). He acknowledges dance as 'a way of knowing the world through the tactile-kinaesthetic experience of our bodies', and describes that 'such bodily knowledge has a non-linguistic, non-propositional character' (ibid). This 'endows dance with a specific ambiguity, an openness of meaning that, depending on the context, may be usefully transgressive' (ibid).

In *Epistemologies of the South* (2014), Santos places knowledge-generation and epistemology in a geopolitical context of decolonisation, arguing that ways of knowing associated with the global South provide the epistemic orientations from which a new liberatory global politics can emerge. Santos' account addresses histories and legacies of colonialism as epistemicide – 'the murder of knowledge' (2014, p.92) – and works to provide pragmatic theoretical support for activist practices of social justice for globally oppressed groups. The context of Santos' account is of a profoundly different order to my artistic investigation of choreographic no-how generation, which is situated in a particular scene of the contemporary dance field in the UK. Both this situatedness of my investigation and my identity as a white (male) (gay/queer) artist-researcher, born in Canada and of German parentage, firmly place me and my investigation in the context of the global North.

As I explore resonances between the concepts and dynamics that both my investigation and Santos' account engage with, I seek to ensure that I do not perpetrate the injustice of claiming or co-opting any equivalences across these profoundly different contexts – I emphatically do not claim that my choreographic research represents or makes any direct contributions to the urgent, globally pervasive struggles against the ongoing legacies of colonial violence. What I do seek to do is to notice and appreciate where resonances between Santos' account and my investigation exist, on the level of conceptual orientations towards epistemologies. (Santos, as I will describe below, offers a way of understanding how to map this.) What I want to advocate for, through the exploration of these resonances, is an appreciation of the potentials of choreographic practices as *epistemic* generators, alongside an appreciation that attending to this dimension of choreographic practices is not something that lacks meaningful connection with actual and urgent concerns in the wider world. I understand an investigation of the knowledge-generative potentials of choreography to be a kind of fundamental research whose act of burrowing deeply into itself can serve to access root systems that resonate outward to contexts far beyond itself. The connection to this wider relevance stems from this investigation being a choreographic one; an investigation that is in and of embodiment, relationality and the potentials of their situated generativity.

The ecology of knowledges

The core of Santos' argument in *Epistemologies of the South* is that 'there is no global social justice without global cognitive justice' (2014, p.42), and that, for cognitive justice to be possible, 'there has to be equity between different ways of knowing and different kinds of knowledge' (ibid, p.237). Epistemological concerns, therefore, are crucial for social justice, and equity between plural knowledges is the crucial condition for moving toward this. In this way, the core of Santos' argument offers a wider context within which to understand the choreographic epistemological orientation of Magic & Science that I have discussed in section 6. As a conjunction of two knowledges that are frequently defined as mutually exclusive of each other, Magic & Science names an orientation that embodies the quality of commensurability between different ways of knowing that Santos emphasises as crucial. Santos' concept of *the ecology of knowledges* (2014, p.42) especially exemplifies this; this concept names the fundamental understanding of knowledges as always and only existing in plural, as well as describing that a movement towards global social justice depends on continually sustaining habitats for 'intercultural dialogue and translation among different critical knowledges and practices' (ibid). While the number of different knowledges that exist is endless, 'the impossibility of grasping the infinite epistemological diversity of the world does not release us from trying to know it; on the contrary, it demands that we do' (2014, p.111). For Santos, 'at the core of the ecology of knowledges is the idea that different types of knowledge are incomplete in different ways and that raising the consciousness of such reciprocal incompleteness (rather than looking for completeness) will be a precondition for achieving cognitive justice' (ibid, p.212). Commenting on how this repositions the presumed singular authority of science to represent the only form of credible knowledge within hegemonic knowledge systems, he says: 'in the ecology of knowledges, finding credibility for nonscientific knowledges does not entail discrediting scientific knowledge. It implies, rather, using it in a broader context of dialogue with other knowledges' (ibid, p.189). What this entails is that 'the ecology of knowledges is basically a counterepistemology. This implies renouncing any general epistemology' (ibid, p.192).

Many of these features through which Santos delineates what he means by the ecology of knowledges map on to the choreographic orientation of Magic & Science and no-how generation. This choreographic orientation understands events of choreographic performance as habitats for plural and processual ways of knowing: 'magical' and 'scientific', intuitive felt-sense and reason, from a plurality of individually situated and constantly unfolding perspectives (i.e., of the performers and audience members) that are co-present within that habitat. Looking at the context of choreography through the lens of the ecology of knowledges suggests that the complexity, multi-layered-ness and processual unfixity of knowing in this embodied and artistic context are not reasons to deny it a relationship to knowledge-generation (i.e., based on presumptions that knowledge is something singular, explicit and fixed). These qualities are, on the contrary, something that especially closely associates such environments with the kinds of knowledge-dynamics that Santos identifies as being the most meaningfully generative. The choreographic orientation of Magic & Science and Santos' concept of the ecology of knowledges both include scientific ways of knowing within their epistemological map, while at the same time displacing an exclusive association of knowledge with science and insisting on sustaining dynamic spaces where multiple ways of knowing interact. Santos also points toward a further specific parallel between the two concepts, when he echoes the mythological focus of the Warburgian context in which the term Magic & Science arises, saying: 'the ecology of knowledges does not occur only at the level of the logos. It occurs as well at the level of the mythos, at the level of the tacit presuppositions that render possible the horizon of possibilities of each knowledge and the dialogues between them' (2014, p.210). Furthermore, through his designation of the ecology of knowledges as a counterepistemology, Santos also conjures a fundamental resonance with the epistemological orientation that the term 'no-how' is intended to embody in this choreographic investigation. As section 5 discussed, I intend 'no-how' as a term that oscillates counter to 'know-how', thus naming a lived practice of knowledge-generation for which there is no singular how. Drawing from Maharaj, section 5 also characterised 'no-how' as a

way of knowing that 'does not avoid contradiction and difference' (del Pino Velasco 2007, p.135) – inherently implying a plurality of knowledges that resonates significantly with Santos' account. In Santos' counterepistemological stance against the possible adequacy of any one singular way of knowing, I also hear a strong echo of Hay's understanding (quoted in section 5) of her choreographic practice on the basis that her 'work succeeds when there is no one "one", no single moment, or meaning, movement, image, character, emotion, that exists long enough for either the dancer or the audience to identify an "is" that is happening' (Hay 2016, p.10). In Santos' assertion that 'a feature of the ecology of knowledges is that it constitutes itself through constant questions and incomplete answers' (2014, p.206), he further echoes both the dynamics of Hay's question-based approaches and my related characterisation of choreographic no-how generation. A final significant resonance between Santos' concept of the ecology of knowledges and my earlier exegesis of this choreographic investigation is the relationship that Santos' ecosystem view of knowledge has to the role played by 'distributed cognitive systems' (Hayles 2017, p.2) in Hayles' work, discussed in section 2. The concepts of an ecology of knowledges and of a distributed cognitive system are both useful and relevant lenses through which to illuminate an understanding of how no-how generation is embodied in the event of choreographic performance, in ways that help to constellate together its multiple different implicit aspects.

The most fundamental perspective that Santos' ecology of knowledges illuminates for choreographic no-how generation is precisely its emphasis on an epistemological orientation of *knowledges*, plural, rather than singular. This helps to conceptually ground an understanding of knowledge-generation that is a far better fit with my experiential understanding of no-how generation than the more hegemonic conception of knowledge as a singularly defined mass, or as a linear system of progress. It is important to emphasise that a process of choreographic no-how generation does not merely 'permit' the plurality of ways of knowing recognised and supported by the concept of ecologies of knowledges - rather, it depends on it and is actively kindled by it. An embodied, choreographic

engagement in no-how generation is a form of the translation between different knowledge-cultures that Santos intends the ecology of knowledges to enable, given the multiple theories, fields, practices and experiences that no-how generation seeks to hold in a generative relation with one another.

The non-Occidentalist West

As part of his account, Santos also provides a potential way of more directly considering the presence of choreographic no-how generation within the map of the geopolitical dynamics that he discusses, in the form of his delineation of a *non-Occidentalist West* (2014, p.99). This apparently self-contradictory term could be rephrased as a "non-Westernist West" and is used by Santos to denote past and present currents of thought and action that, although themselves arising within the West, still run counter to the hegemonic epistemology of Western Eurocentrism. Santos defines this non-Occidentalist West as:

> …a vast array of conceptions, theories and arguments that, though produced in the West by recognised intellectual figures, were discarded, marginalised or ignored because they did not fit the political objectives of capitalism and colonialism that act as a foundation for the construction of the uniqueness and superiority of Western modernity. (2014, p.99)

While remaining fully aware that the intended focus of Santos' analysis is activist practices that directly struggle for social justice, I argue that the epistemological orientations of choreographic no-how generation can be interpreted as sharing significant features with those of the non-Occidentalist West that he conceptualises. In so doing, I am considering that the category of 'intellectual figures' that Santos mentions in his definition may be inclusive of artists and, as ever, I am situating my argument from my own perspective as a practitioner in my specific context of Western contemporary dance.

Santos argues that knowledges that have arisen within the non-Occidentalist West have a particular role to play in relation to global cognitive and social justice: 'Because they were marginalised and forgotten, these traditions had a fate similar to that of many non-Western ways of knowing, and so they are today better prepared to learn from them and, together with them, to contribute toward the ecologies of knowledge and interculturality' (2014, p.115). Santos describes that, epistemologically, the West has been 'greatly impoverished' (ibid, p.101) by the suppression of non-Occidentalist Western knowledges and argues for the importance of 'giving voice to [those] traditions and experiences' (ibid). He argues that it is through a recognition of the internal plurality of ways of knowing existing within the West itself that this can make an important contribution to the broader global interculturality that the ecology of knowledges supports. He writes: 'There is little to be expected from the interculturality currently maintained by many in the West if it does not entail retrieving an originary experience of [the West's own] interculturality' (2014, p.101). I argue that this begins to suggest an understanding of a counterhegemonic potential within choreographic no-how generation's position in relation to the broadly hegemonic epistemological (and thus also geopolitical) forces that it may be considered marginal to in its context.[94] While Santos argues that recognising a plurality of ways of knowing in the world is supported by first recognising that one's own culture and its histories always already consist of a plurality of ways of knowing, I would also ground that in a choreographic practice perspective by suggesting that it may also be further supported by, even closer to home, recognising how one's own embodied ways of knowing equally consist of an interdependent multiplicity of ways of knowing.

[94] Section 2, above, discussed views of a pervasive and enduring 'anti-body' (Claxton 2015, p.18) bias underlying many Western epistemologies and the power structures associated with them. In general terms, it is in light of this that I consider that the embodied focus of choreographic no-how generation in a Western (or UK) contemporary dance context may be considered marginal in its context. Section 2 also noted that there's no such thing (to date) as a Nobel prize for dance or choreography, offering this as a shorthand indicator of the marginal estimation of dance and choreography as a knowledge-practice in the West. Far more ways of demonstrating specifically situated examples of a frequent tendency toward the relative marginalisation (both historical and present) of dance and choreographic knowledges could be elaborated. For the purposes of this discussion (and brevity), my point here remains a general one.

Learned ignorance

Among the reasons why I consider it warranted to draw parallels between choreographic no-how generation and Santos' category of non-Occidentalist Western knowledge is the prominent role that the capacity to hold generative states of not-knowing plays in both of these contexts. Santos discusses this capacity as one that is exemplified by Nicholas of Cusa, a 15th century German philosopher and theologian whose thinking on this subject Santos argues has been unduly marginalised and forgotten in the Western critical tradition. Santos describes that Cusa's thought 'engages in a reflection on the idea of knowledge in not knowing. The important thing is not to know, [Cusa] argues, but to know that you do not know' (Santos 2014, p.109). Santos quotes from Cusa's *De docta ignorantia* (1440) in which Cusa observes: 'Indeed, …no greater knowledge can endow any man, even the most studious, than to discover himself supremely learned in his ignorance, which is proper to him, and he will be the more learned, the more ignorant he knows himself to be' (Cusa 1440 in Santos 2014, p.109). From this, Santos uses the concept of 'learned ignorance' (following Cusa in using "learned" as an adjective) to denote a non-Occidentalist Western way of knowing in which the capacity for acknowledging and holding not-knowing is paramount, and he argues for the retrieval and expansion of this as an epistemological practice that supports ecologies of knowledges.

I consider this conception of learned ignorance to be an orientation toward knowing that choreographic no-how generation also embodies and exercises.[95] A defining characteristic of the event of the performance of choreographic no-how generation is that the performers (as well as the audience) engage in the event without knowing everything about what will unfold within it: the event of choreographic performance is a time-space whose importance lies in the potential that it

[95] This conception of learned ignorance also resonates strongly with Hay's understanding of the necessity and difficulty of non-knowing in choreographic practice, quoted in section 3, above. A further significant link between this discussion of learned ignorance and the role of not knowing in choreographic practice is encapsulated in Jonathan Burrows and Matteo Fargion's memorable affirmation in their work *Cheap Lecture*: 'We don't know what we're doing and we're doing it' (Burrows & Fargion 2009).

offers for discovery and fermentation of knowledges that were not previously known and of the ways of being that embody them. During the creative process of the development of the choreographic work, detailed knowledge about the work and the practice of its performance is built up, composed and absorbed. Although all of this detailed knowledge is present when the work meets an audience in the event of performance, the purpose of such knowledge is precisely to make possible and sustain the space for not-knowing, in which the choreographic generation of no-how can continue to unfold. The roots of this understanding of choreographic performance as a time-space of generative not-knowing lie in the close connection between the investigation of the potentials of choreography as an art form and the human potential for embodied knowledge-generation. If human embodiment is understood as the material and subject of the art form of choreography, and knowledge-generation is understood as a profoundly embodied process, then the unique generative potential of the event of choreographic performance is its ability to engage human embodied capacities for the generation of knowledges – in performers, audience members and their collective interactions, in the artistic context of choreography. To engage one's capacity for knowledge-generation in the presence of others means being skilled in the ability to hold oneself in a state of openness to not-knowing, and to use all of one's knowledge to support and sustain a generative navigation of that state as it unfolds in relation to one's unpredicted experiential environment. This is among the ways, then, that choreographic no-how generation can be considered, as Santos describes ways of knowing of the non-Occidentalist West, a 'knowledge that does not know' (2014, p.115).

Section conclusion

In sum, considering how Santos' concepts of the ecology of knowledges, the non-Occidentalist West and learned ignorance relate to the epistemological orientations of this choreographic investigation of no-how generation offers a way of identifying some conceptual resonances between the micro dramaturgy of this investigation and much wider geopolitical macro dramaturgies (Kerkhoven 1999).

The significant degree of overlap of concepts and features suggests that this investigation's orientation toward choreographic no-how generation resonates with *some preconditions* for the forms of cognitive justice that Santos' account seeks to support, and which Santos positions as necessary foundations for momentum toward social justice, broadly conceived. Establishing a depth of conceptual linkages with Santos' account does not in itself entail that my practice actually contributes to social justice in the world, however oblique or indirect that contribution may understand itself to be. Santos makes clear that the concepts that he discusses offer a highly fallible potential for social emancipation that is not at all guaranteed; the will toward decolonisation is, in a vast number of possible ways, insufficient in itself to achieve it (Santos 2014, p.229). This danger is acutely present in the contemporary dance context in which my practice exists and has been commented on within dance discourses. For example, as Royona Mitra (Professor in Dance and Performance Cultures) and Steve Paxton (choreographer, dancer and founder of Contact Improvisation) have discussed with reference to Paxton's work, dance practices may be viewed and experienced very differently from the perspectives of different cultural backgrounds, and may enact exclusions despite thinking of themselves as having an inclusive intent (Mitra 2018, p.13). As Santos says, 'a constant vigilance is needed, and a highly tempered expectation' (2014, p.230). In addition to the necessary critical vigilance regarding one's own practice, Santos also points toward wider systemic reasons for tempering expectations: he does not actually believe that some of his emancipatory ideas stand a chance of becoming political realities within a global capitalist system (2014, p.114). A more hopeful response to this reality can perhaps be found in dance discourse, in the form of writer and curator André Lepecki's concept of choreographic "singularities", wherein the local and temporary embodiments of counterhegemonic dance works are no less actual or meaningful for being so (Lepecki 2016).

Among the through-lines that run within the resonances that have been discussed here between choreographic no-how generation and Santos's account is the frequent and meaningful presence of

paradox. While it is evident in the choreographic approaches named by no-how's oscillation between know-how and no how, and by the conjunction of the incommensurable in Magic & Science, it is equally evident in Santos's account of learned ignorance, the non-Occidentalist West and the knowledge of not knowing. Taken together, these formulations help to gather strength around a clearer understanding of paradox as an important and constitutive quality of the specific ways of knowing that are at work in choreographic no-how generation. Rather than deserving to be dismissed because they raise questions and blur certainties, these paradoxical, oscillatory moves are epistemologically and thus artistically important precisely for their question-raising capacity. This prominence of paradoxes is also evident in the choreographic practice and language of Hay, and purposefully so. 'Question-making', says Hay,'… is where she feels performance lives' (2000, p.62).

A further through-line or overview that can be charted through this discussion is the potential to metaphorically read the dynamics of Santos' global South/ North epistemologies as a bodily cartography. The ways of knowing instrumentalised by the global North, specifically the West, that Santos describes can be metaphorically mapped as a falsely and oppressively narrow understanding of mind as unsituated, disembodied, hegemonically Cartesian, and thus linked with capitalism, colonialism and patriarchy.[96] This narrow understanding renders the body that gives rise to such a mind invisible (to that mind) as a generator of knowledges and violently misconstrues it only as material. The ways of knowing that Santos ascribes to the global South can be metaphorically mapped as varieties of bodily intelligences that the narrowed mind of the global North depends on in order to exist but does not know or recognise. In this way, Santos' ecology of knowledges may be

[96] Santos characterises the dualistic Cartesian subject as inherent within capitalist thought-systems: Cartesian mind-body dualism is integral to the one-dimensional, passionless, rational subject demanded by capitalism's prioritisation of generating profit over all else (Santos 2014, p.63). Santos also acknowledges that his argument assumes 'the intimate link between capitalism and colonialism' (2014, p.120) and points toward a wide body of literature that grounds this understanding, including Eric Williams' *Capitalism and Slavery* (1944). As such, Santos's arguments are able to understand 'capitalism, colonialism, and patriarchy' as an inseparable historical and systemic nexus, against which he seeks to support social movements that fight 'for social justice, human dignity, or human decency' (2014, p.212).

read as a non-dualist, anti-Cartesian mapping of a minded body that is able to be known by itself and recognise the multiplicity, difference, situatedness and interdependence that constitutes it. A minded body such as this is one capable of engaging in choreographic no-how generation. This resonates, again, with the choreographic perspective of Hay, who has said in a workshop context that the Western culture in which she is situated views the body from the neck down as a mere vehicle for transporting the head from place to place, and her commitment to her dance practice is a commitment to bodily experience being something more than that (2009).

An important link can also be made between this bodily cartography and the field of embodied cognitive science. Whereas the paradigms of conventional cognitive science have been critiqued by thinkers including Alva Noë as fundamentally Cartesian and dualistic (Noë 2008), the perspective of embodied cognitive science articulates a scientific understanding that is counterhegemonic to this and recognises the profoundly embodied basis of knowing, learning and perceiving. Indeed, it is important to note this as, in light of Santos's profoundly useful but generally excoriating critique of modern science, this helps to contextualise my engagement with perspectives from and about embodied cognitive science (such as those of Claxton and Hayles) in my research. Just as the hegemonic West can give rise to non-Occidentalist Western knowledges, so, I argue, can embodied cognitive science be a context that gives rise to perspectives that are counterhegemonic to science as characterised by Santos. Indeed, as embodied cognitive science is a research field that makes embodiment its research focus, I argue that it cannot but arrive at this non-dualistic and counterhegemonic position, if it attends carefully to its subject.

Santos' *Epistemologies of the South*, therefore, helps me to further articulate how my practice of choreographic no-how generation can be understood to navigate relationships with a wider political dimension, as well as making further connections with and between the different fields and knowledges that continue to be relevant to this research. The expansively grounding perspective

that Santos offers stems from his detailed articulation of a call ‘not just for a new epistemology and a new politics but for a new relationship between epistemology and politics’ (2014, p.72). I consider Santos’ work to engage a radical epistemology in a way that is shared by the other references that are key presences in the constellation of my research, including Claxton and Hayles, Warburg and Didi-Huberman, Lacey and Hay. I consider each of these to be radical in the etymological sense of “being at the root”, in this case the root of understandings and practices of embodied human ways of knowing. Like Santos, the relevance of each of their bodies of work branches out into many directions of significance and connection with my research questions. This is because, as roots, they are each highly concentrated nodes within a wide meshwork of knowing. I consider them each as embodiments of a radical knowing and a radical understanding of knowing. They are each the site of multiple and overlapping border-crossings of knowledges that still too often remain habitually separate in how they are considered and understood. As a choreographer, I can read Santos’ text, and the texts of the other authors from fields beyond dance, as maps for navigating dance and choreographic practice, because choreographic no-how generation is a radical knowledge practice in this sense too, which holds in complex embodiment the same border crossings, approached from a different starting point.

Figure 12: *No-How Generator,* Matthias Sperling, photo by Camilla Greenwell.

Section 8: Conclusion

'What is it that I trust about the event of choreographic performance? If there is something indeed to trust about it, then No-How Generator is about tapping into that.'
(28/2/19)

'Confidence is for quitters.'
(16/1/19)

The primary entity that has been generated during this artistic doctoral research, as well as the primary site of the generativity of this research, is the choreographic work *No-How Generator*. This encompasses the daily/open practice that was the seedbed of the research, the intensive process of creating the work with collaborators,[97] the choreographic score emerging from this, and the events of performance of the work with audiences. Taken together, these phases of the coming-into-being of the choreographic work constitute the fullest embodiment of the knowledge – or, in the language of this thesis, the *no-how* – that this research has generated. In relation to this written exegesis, I consider the choreographic work to be the primary site of the synthesis (the simultaneous embodiment) of the constellation of ideas that this exegesis has discussed. To accord such primacy to the choreographic modes and processes within this research is not to displace the contribution that the modes and processes of writing (and reading) make to it: I consider both of these research modes to feed one another, reciprocally and iteratively. It is the choreographic zone of this research, however, that remains its purpose and its habitat: as a more immediately embodied, artistic and intersubjective zone, the choreographic holds and cogently navigates a non-linear multi-dimensionality of detail unfolding within lived experience, that I find the written element of my

[97] Katye Coe's close participation in this process as collaborating performer has been particularly vital to it, and the establishing and development of an artistic collaborative relationship between myself and Coe for the first time is itself a significant result emerging from this research journey. Coe's highly skilled, deeply wise, and multi-faceted participation in this process as a collaborator deserves a far fuller discussion than this present exegesis can provide. Integral within Coe's highly developed practice as an experienced dancer are the extraordinary and intuitive ways in which she contributes to holding and supporting processes of choreographic no-how generation as a collaborator and performer. Much could be learned about the potentials of dance practice and the unfurling of no-how from a closer exegesis of her practice. Coe & Sperling (2020) offers some indications of the role and contribution of Coe's practice within this artistic research process.

research to be far less capable of holding. I consider this written exegesis to address a selection of the ideas, concerns, ingredients and processes that have been alive for me within the wider field of experience of the choreographic work; a selection that I consider to form a particularly salient constellation of intra-related elements.

This constellation of elements that the written exegesis has moved through has included: the grounding of my choreographic orientation toward knowledge-generation in an understanding of all human knowing as embodied knowing (Section 2); examples of how this orientation toward knowledge-generation has manifested in my practice during this research, in the forms of my choreographic research process of *daily practice* and the choreographic material *back-and-forthing* (Sections 3 and 4, respectively); the languaging of this artistic research via the term *no-how* and its active role as a poetic and heuristic tool (Section 5); situating my approach to choreographic no-how generation within the broader epistemological orientation of *Magic & Science* (Section 6)*;* and reaching out toward macro-dramaturgical considerations by exploring parallels between the conceptual orientations of this investigation and selected concepts from Santos (2014) (Section 7).

Having moved through the creation and performance of *No-How Generator* and this written exegesis thereof, I will now revisit the five guiding research questions that I introduced at the beginning of this document and take a reading of what I consider this artistic doctoral research process to have generated in relation to each of them. I will focus on specifying what difference each of these lines of inquiry has made to shaping this *No-How Generator* choreographic research process, and what I consider these differences to potentially offer to others. It is the meshwork of these differences, taken together, that I consider embodies the contribution to no-how generation of this artistic research.

The first research question asked what new potentials for choreographic practice would emerge from choreographically investigating perspectives (including Deborah Hay's in dance, Guy Claxton's in embodied cognitive science, and Aby Warburg's in art history/philosophy) that understand knowledge-generation as a profoundly embodied process of conjuring. In an important overall sense, this question has served to clarify and focus attention (my attention, that of my collaborators and of audiences of *No-How Generator*) on an orientation toward choreography that is specific, that is atypical within the wider contemporary Western cultural context in which this research unfolds,[98] and that can offer a way in toward a deeper understanding of and engagement with choreography's capacity to contribute to that wider cultural context as a field of no-how generation. At the core of this orientation is the understanding that movers and observers of movers are *knowers*. Given the profoundly embodied character of knowledge-generation, continually unfolding processes of conjuring knowing are intrinsic to the embodied context of events of choreographic performance, for performers and audience members alike. By attending to this within choreographic creation processes and events of choreographic performance, knowledge-generative (or no-how generative) potentials within these experiences can be better discerned, accessed, activated and fuelled.

This orientation emphasises an understanding of choreographic experiences as spaces of becoming – of conjuring – rather than characterising choreography exclusively in terms of the structured repetition of the already-known.[99] Also, this orientation clarifies an understanding that events of

[98] This is to say that the orientation toward choreography of this thesis is atypical relative to what I encounter within mainstream, everyday discourse about choreography in the wider cultural context within which this research unfolds. I recognise and celebrate that many other artists and/or scholars bring attention to related orientations to choreography. In addition to choreographers whom I have cited, including Deborah Hay, Siobhan Davies and Jennifer Lacey, further artists, scholars and artist-scholars whose work particularly comes to mind as relevant examples include: Brandstetter & Klein (2003), Chauchat (2018), Clarke (2010/2011), Ellis (2018), Gehm, Husemann & von Wilcke (2007), Gotman (2018), Johnson-Small/ SERAFINE1369 (2021), Krische (2018), Noë (2008, 2015), Pakes (2003, 2009), Parviainen (2002), Sheets-Johnstone (1992, 2009). I contend, however, that the orientations to choreography that these voices offer are not currently the primary, most widespread ways in which choreography tends to be framed – neither within dance practice itself, nor in wider cultural discourses. As Pakes writes of the context within which understandings of choreography as knowing exist, 'dominant paradigms… deny that dance-making has epistemological value' (Pakes 2009, p.10).

[99] I consider this latter characterisation of choreography to be among the more typical ways in which choreography tends to be understood and framed, within the wider contemporary Western cultural context in

choreographic performance do not *represent* the generation of knowing, but rather *constitute* the generation of knowing or no-how. This orientation makes differences to how performers and audiences are invited to experience events of choreographic performance in general and *No-How Generator* specifically. It is a lens that emphasises recognising performers of choreographic events as people having a lived experience of the coming-into-being of knowing, rather than as figures seen as object-like images or representations. Simultaneously, this is a lens that emphasises recognising audience members of events of choreographic performance as participants (through their witnessing) whose lived experiences of their own individual embodied processes of unfolding knowing are integral to co-constituting the event, rather than as passive observers who are delivered images by an event that they remain wholly apart from and extraneous to.

This orientation shapes every defining aspect of *No-How Generator* as a choreographic work. It shapes the overall nature of the choreographic score as a composition of choreographic environments and materials (including *back-and-forthing*) that exist to host ongoing processes of learning-through-moving during and as performance. It shapes the audience-performance spatial configuration, which consists in multiple audience perspectives and the inclusion of audience members within each other's views of the work. It shapes the immersive sonic environment of the work, which comes into being through the live vocalisations of the performers during the performance. And it shapes myriad other aspects of the work, including all of the ways in which it consists in gradual processes of evolution, and the associative links it evokes with notions of magic, conjuring and trance-like atmospheres. While these are all specific practical approaches embedded within *No-How Generator*, these and/or related approaches can also inform, be practiced, developed, and re-imagined by others in their own work.

which this research unfolds. In general parlance, for example, something "highly choreographed" is usually considered something tightly structured and a form that is repeated exactly.

This orientation also shapes the processes of daily/open practice that have been the seedbed of the coming-into-being of *No-How Generator.* Informed by Hay, this foregrounds daily/open practice as a space of the conjuring of knowing, rather than emphasising it as a space of fitness training or of the re/arrangement of fixed movements. Through the lens of Warburg's thinking, this orientation also highlights the research zone of daily/open practice as affording a particularly close and sensitised navigation of distance and non-distance between the researcher and the researched world. The approaches and concepts (including *Somatic Denkraum* and *Choreomancy*) that this has generated can also inform the imaginaries with which others develop their individual practice and thinking.

There is significance, too, in what has been generated by investigating the multidisciplinary trio of perspectives that is embedded within this research question: Hay's perspective in dance, Claxton's in embodied cognitive science, and Warburg's in art history/philosophy. While numerous other perspectives relating to choreographic practice (Davies, Lacey), science (Clark, Hayles) and the humanities (Didi-Huberman, Haraway, Maharaj, Salami, Santos) make key contributions to this discussion, Hay, Claxton and Warburg have emerged in this exegesis as the voices that have most frequently come together to embody a constellationary lens through which to consider choreographic no-how generation. The multidisciplinary breadth of this lens affirms that the embodied context of choreography holds an intrinsic and important capacity to host a broad ecology of knowledges and to highlight the relatedness of the stories that different disciplines are telling about embodied knowing. At the same time, it affirms that this range of different disciplinary knowledges (embodying particular perspectives across science and the humanities) holds relevance, resonance and generativity for choreographic practices and discourses. Each of the three perspectives on knowledge-generation within this constellationary lens creates bridges between these knowledges and beyond them. Hay offers an understanding (and, importantly, a practice) of an epistemology that is choreographic and intersects most immediately with other knowledges grounded in choreographic practices. Claxton offers an understanding of an epistemology that is

materially embodied and intersects with other scientific knowledges. Warburg offers an understanding of an epistemology that is rooted in art, movement and non-linearity, and intersects with other humanities articulations of non-linear knowing, as well as with the manifold (present and historical) human practices across different cultures that those accounts connect with (including practices of magic, shamanism, alchemy and divination). Collectively, these interwoven bridges embody a substantially wide-ranging meshwork of knowledges. Regarding what this offers to choreographic practices in general and to this research process specifically: this constellationary lens affirms an orientation to choreographic no-how generation that, again, makes a difference to the discernibility and, thus, the accessibility and activation of experiences and imaginaries of choreographic no-how generation.

The second research question asked what approaching ideas of embodied knowledge-generation through the specific lens of choreographic practice can contribute to wider cultural and scholarly understandings of these ideas, given choreography's particular capacity to engage with embodiment as both its material and its subject matter. I contextualise what this question has generated on the basis that this *No-How Generator* choreographic research process, and this written exegesis thereof, offer an individual choreographic perspective. This joins a large corpus of work (in dance/choreography and in other disciplines) that affirms the centrality of embodiment to human knowledge-generation, and the enduring need for this to be more alive within the imaginaries that shape thought and action at individual and collective scales (particularly in relation to a Western cultural context, as section 2 discussed with reference to Claxton, Salami and Haraway).

The insights offered by this research are multimodal and multi-layered. The specific perspective that it is approached from, and the specific layer/s that are attuned to, will offer different layers and different modes of insight to those who engage with it. The emphasis of this research on embodied, experiential and situated ways of knowing also affirms that this research exists as a dynamic and

contingent space: this entails that the research itself always remains in a state of becoming, and that the individual experiences of engagement that others have with it will be co-constituted by them, through the interpretive lens of their own perspective and experience.

This choreographic research offers an experiential, artistic, and intersubjective context for investigation of the relationships between knowing and choreography specifically, and between knowing and embodiment more generally. This is a particular context which offers particular affordances to such investigation, stemming from its consisting in embodied processes of knowing while also holding the capacity to investigate these processes. This choreographic research also offers a multi-layered view into the ways in which I, as one choreographic artist (together with collaborators), work on and through choreography as a form of knowledge-generation, thus embodying a case study of how choreographic artists work in individual, multi-layered and considered ways on this and other subjects. This offers, to people outside of the field of dance/choreography, insight into some of the specific ways in which choreographic practices and choreographic practitioners can understand and investigate embodiment and the embodied basis of knowing, alongside the ways in which choreographic artists and events of choreographic performances invite and afford engagement with these subjects.

The third research question asked how understanding artistic knowledge-generation as *no-how* can inform choreographic and experiential approaches to investigating these ideas and processes. The key role of the term *no-how* in the languaging of this artistic research emerged during the research process, following my encounter with it in Maharaj's writings on (primarily visual) art-as-knowledge, which themselves draw the term from Beckett. This research process has activated this term in a choreographic context and elaborated an individual artistic perspective on its potentials to act as a poetic and heuristic tool within choreographic experiences.

In this research, the language-form *no-how* offers a paradoxical and oscillatory formulation, one that clearly evokes associations with the term *know-how* and yet also clearly sets itself apart from such certainty of technique by asserting that there can be *no how* to rely on. This term serves to name the particular kind of knowing that I consider this artistic research to be generative of: a form of knowing that is neither conventional "hard-nosed" knowledge nor an absence of knowledge, but rather a generative gesture of hovering and oscillating between these poles. The language-form *no-how* functions as a poetic and heuristic tool within the terrain of experientially and artistically probing imaginaries of choreography's relation to embodied knowledge-generation, both for artists/performers/collaborators and audiences. As an integral part of how this functions, the language-form *no-how* nuances the unfolding of expectation, associating *no-how* with a state of 'non-expectant expectation' (Sperling 2017-2021, 25/2/19) that nurtures and sustains the generativity of the process. This tool has supported navigation within and around the terrain of the choreographic work *No-How Generator*, and can be engaged and adapted by others in relation to their own investigations.

The fourth research question asked how understanding choreographic knowledge-generation as a practice in which *Magic & Science* are continuous with one another can inform choreographic and experiential approaches to investigating these ideas and processes. While the phrase Magic & Science is one that I first encountered prior to starting this artistic doctoral research process, this process has significantly deepened and extended my engagement with it (and with Warburg's thinking and practice, and commentaries thereon by Didi-Huberman and others). Magic & Science has thus come to name the broader epistemological orientation that I situate choreographic no-how generation within. Stemming from Warburg, this phrase names a single category and, thereby, a single ecology of interrelated and complementary ways of knowing, rather than considering magic and science as two fundamentally separate and incommensurable epistemologies. This epistemological orientation of Magic & Science has served a dual purpose within this research: it has

bridged between sets of disciplines or practices, while at the same time bridging between the embodied ways of knowing and embodied cognitive capacities that each of these sets of practices tend to foreground. This phrase thus orientates toward an understanding that human bodies always already incorporate both rational, logical ways of knowing (here characterised as *science*) and more-than-rational, felt-sense, intuitive ways of knowing (here characterised as *magic*). On this basis, it also orientates towards an understanding that the event of choreographic performance inherently incorporates kinships with the breadth of different knowledge practices that can be associated with these ways of knowing.

This epistemological orientation has acted as a heuristic within the choreographic process of creating *No-How Generator*, helping to guide my navigation of choices about which constellation of ingredients and evocations are included in the work. In particular, it has affirmed the integral belonging of those choreographic ingredients that hold associations with magic, magical ways of knowing and magical practices (broadly considered), including the ritual-like and trance-like atmospheres that are present in the work, and the more-than-rational elf ears. This is contextualised within the history of my earlier practice, which (in works including *Do Not Be Afraid* [Sperling 2011-2013] and *Now That We Know* [Sperling 2016]) has tended to frame choreographic knowing primarily through the lens of science (i.e., through narratives and imaginaries of embodied cognition). A key shift that has occurred in my practice through this artistic doctoral research process, then, is the development of my understanding and practice of choreographic knowing as both Magic & Science at once. This hinges on the insight that, in the embodied context of choreographic performance, the subject-object continuity of mind (as experiencing self) and body (as organismic materiality) is also reflected in the continuity of subjective and objective ways of knowing that Magic & Science names. During this artistic doctoral research, I have deepened my conceptual and practical understanding of the validity and generative potentials of these imaginaries of magic in relation to choreographic practice. Alongside this, I have grown my understanding of the

possibility and necessity of magical and scientific ways of knowing (and the respective imaginaries that may be associated with them) having a both/and relationship, rather than an either/or relationship, in practice. It is in the polarity between the magical and the scientific that I now consider the worlding capacity of the embodied-artistic context of choreographic performance to be most dynamically and generatively activated. This artistic research journey has been a process of honing and tuning the constellation of elements and knowledges that cultivate a habitat of Magic & Science for choreographic no-how generation within my experience and within my work. Articulating my thinking and practice of Magic & Science as an epistemological orientation that underlies and guides choreographic no-how generation aims to offer this orientation to others to develop in their own contexts and ways.

The fifth and final research question asked how an engagement with critical-theoretical perspectives on political dimensions that intersect with framing artistic practice as knowledge-generation can support the development of choreographic and experiential approaches that engage cogently with these dimensions. Using the framework of this artistic doctoral research process as an opportunity to extend and refine my engagement with political discourses that are relevant to my artistic interests has been a key aim of mine. The shifts and developments that this has helped bring about in my practice and thinking are intimately connected with the above-mentioned shift toward a deepened understanding of practicing Magic & Science at once in choreographic contexts. This correlates with the political salience of the plurality of knowledges that Santos (2014) emphasises (i.e., an ecology of knowledges that is inclusive of not only scientific ways of knowing but also varieties of what I have termed magical ways of knowing), and of the situatedness in lived experience that Haraway (1988) emphasises (i.e., that a meaningful and ethical epistemology requires not only objectively-focused ways of knowing but also individual, subjective, experiential and imaginative ways of knowing). It also correlates with the political implications of the inherent

connectedness that Hayles (2017) articulates between humans and the more-than-human world, via the bridge of nonconscious modes of knowing, cognition and intelligence.

From my process of engagement with critical-theoretical perspectives that these authors have been part of, my practice of choreographic no-how generation has gained a more articulated language and a strengthened meshwork of connections with other discourses. It was through this process that I was able to identify and develop the language-forms *no-how* and *Magic & Science* as apt heuristic tools which (as discussed above) make differences to the creation and experience of the choreographic work *No-How Generator*. The range of critical discourses (including those addressed by Santos, Haraway, Hayles, Maharaj and Didi-Huberman among others) that this process has strengthened my understanding of my choreographic practice's connections with, helps to affirm and expand the articulation of what I experience within processes of choreographic no-how generation.

Alongside strengthening my understanding of the connectedness of my choreographic interests with critical and political discourses, engaging with these discourses has also served to qualify and measure that connectedness. Seeing clearly and honestly what the actual differences are between what a given instance of my practice actually enacts in the world and a given set of political concerns is equally, if not more, important than recognising the parallels (conceptual or otherwise) between them. This, too, can be considered an application of the 'non-expectant expectation' (Sperling 2017-2021, 25/2/19) that I have characterised *no-how* through: it embodies simultaneously holding the clear resonances of my practice's concerns with political discourses, while at the same time never expecting that a given instance of the practice has any automatic or guaranteed claim to making a direct contribution to the politics that those discourses address. All of these developments (growing from my process of engagement with critical-theoretical perspectives) in the context of my own

practice and thinking have the potential to contribute to nourishing and informing that of others working with intersecting interests.

The choreographic work *No-How Generator*, this written exegesis of it, and the meshwork of differences made by these five research questions together embody the contribution to no-how generation offered by this artistic doctoral thesis. The knowledge or no-how generated within and by this thesis is itself characterised by the qualities or attributes of embodied and artistic knowing that this thesis has worked to emphasise and articulate: it holds plurality and multiplicity; it is processual and holds indeterminacy and paradox; it is embodied, felt, experiential and situated; it is grounded in practice and inhabited as lived experience.

In the terrain of no-how generation,

Magic & Science,
imaginaries and materialities,
blossom grafted to a single stem;

motile atlas constellations
well up
in the sensible dimension
of felt-sense seismography;

ways of being
are navigated and worlded
with non-expectant expectation;

learning-without-thinking unfurls
through the back-and-forth
of momentum and perception,
viscerally taking a reading
of what was never written.

A No-How Generator
is a habitat
for sustaining generative states
of not-knowing;

it is an epistemic generator,
alive with a more-than-rational ecology
of strange knowledges.[i]

[i] This concluding poetic text gathers together references to several phrases that have figured in the constellation of this written thesis, which are: In the terrain of no-how (Maharaj, Beckett) generation, magic and science (Warburg), imaginaries and materialities, blossom grafted to a single stem (Warburg); motile atlas (Warburg) constellations well up (Claxton) in the sensible dimension (Didi-Huberman) of felt-sense (Gendlin) seismography (Warburg); ways of being (Sperling) are navigated and worlded with non-expectant expectation (Sperling); learning-without-thinking (Hay) unfurls (Claxton) through the back-and-forth (Sperling) of momentum and perception (Sperling), viscerally (Didi-Huberman) taking a reading (Sperling) of what was never written (Benjamin in Didi-Huberman). A No-How Generator (Sperling) is a habitat for sustaining generative states of not-knowing (Cusa in Santos); it is an epistemic generator, alive with a more-than-rational ecology of strange knowledges (Santos, ecology of knowledges; Maharaj, strange knowledge).

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