

Physical Thinking as Research

Monica Gillette and Stefanie Pietsch

The primary focus for professional dancers is usually to create and perform work for the stage – years of dance training and studio hours guided towards performance. But many dance artists have increasingly begun to ask: What else is this knowledge good for? Can a dance practice lead to outcomes other than a piece of art? Can choreographic logics be applied to other fields? How does one's thinking change through movement and how does one's research change when the body is actively involved? These were just a few of the questions instigating two interdisciplinary projects, which put dance and a *physical thinking* practice at the center of research on the topics of movement and movement disorder, specifically Parkinson's. The following article will be in four parts: (1) a brief history and structure of the two projects (*BrainDance*, 2014 and *Störung/Hafra'ah*, 2015), (2) the research process as developed and experienced by Monica Gillette, a dance artist and co-artistic director of the projects, (3) the reflective questioning process by Stefanie Pietsch, a young researcher and project participant, and (4) a brief conclusion.

PROJECT I – *BRAINDANCE* (2014)

Physical thinking as an approach to research was first developed during *BrainDance*, a collaborative project between Theater Freiburg and University Freiburg within their Excellence Cluster *BrainLinks-BrainTools*. It brought together dancers, neuroscientists, philosophers, dramaturges and people with Parkinson's to analyze movement (disorder) and what it means to lose control over it. The dance artists Monica Gillette and Mia Haugland Habib led the artistic research with the desire to both confront their own artistic practices and to bring their tools and near lifetime of dance knowledge into a new context. For this interest, they created a four part research design:

1. The offering of *weekly dance classes* for people with Parkinson's, built on the training and choreographic tools of the dancers.
2. *Theoretical meetings* with experts in the fields of neuroscience and philosophy.
3. *Studio diaries of physical thinking* where they engaged in a daily practice of going into the studio to physically question what they encountered and were confronted by over the course of the project.
4. *Open practice*, which were evenings open to the public to create a group think tank responding to the physical thinking outcomes from the time in the studio and the theoretical discussions that sprung from it.

PROJECT II – STÖRUNG/HAFRA'AH (2015)

The four track model of research from *BrainDance* was greatly expanded for *Störung/Hafra'ah*.¹ The project was a continuation of the collaboration between Theater Freiburg and University Freiburg, growing to include over 40 dancers, choreographers and young scientists in Germany and Israel in cooperation with Yasmeen Godder Company, Ben-Gurion University Be'er Sheva, Technion Haifa, University Haifa, Weizmann Institute of Science, Bar-Illan University Ramat-Gan and Hebrew University Jerusalem. With this second project, young scientists were included into the concept of physical thinking through regular dance classes based on themes such as embodiment, intention, identity and interactivity. In these dance classes, the theoretical and analytical viewpoints of the scientists were merged with the physical knowledge of the professional dancers to create unique research opportunities, which were body and movement oriented, as well as the joint creation of movement research labs.

The discovery of the benefits of dance classes for people with Parkinson's began at the Mark Morris Dance Group in Brooklyn/New York (Morris, o. J.) in 2001 and has since spread worldwide with national dance and Parkinson's networks now existing in USA, Canada, Holland and England and numerous classes quickly spreading in several other countries. One of the key points of interest and understanding for David Leventhal, co-founder of Dance for Parkinson's (Dance for PD®)² in the United States, was the level of focus and reflection that both professional dancers and people with Parkinson's need to be able to control their movement.

1 | Funded by Kulturstiftung des Bundes, with support from Stiftung Deutsch-Israelisches Zukunftsforum and the Deutsche Forschungsgemeinschaft. See also the blog <https://hafraah.wordpress.com/>

2 | See <http://danceforparkinsons.org/>

People living with Parkinson's and dancers really have the same challenges. We're both presented with choreography, whether that's choreography made up by a choreographer [...] or the choreography of life, the choreography of walking down the street or getting into a car, it's really the same challenge [...] they need the same strategies [...]. If we can have dancers share their thoughts on those [strategies] with people with Parkinson's and have people with Parkinson's share their thoughts about how they have to learn movement anew everyday, and practice it with dancers, then we start to have a fruitful exchange. (Leventhal 2015)

Pamela Quinn, a former professional dancer who was diagnosed with early onset of Parkinson's at the age of forty-two, described her relationship to dance and having Parkinson's as this:

[...] the disease disrupts normal neural circuitry, but it's possible for a person to develop alternative methods – cuing systems – to initiate and control movement. We can substitute conscious activity for what was once automatic movement. Musical and visual cuing, the use of touch, and other forms of sensory feedback are all means of retraining the brain to talk to the muscles. [...] Perhaps most important of all, dance involves the practice of conscious movement every day. A dancer is constantly directing the body, talking to it. (Quinn 2013: 40)

Adding on to this idea that a dancer is in constant dialog and *talking* to the body, we were interested not only to see how a dancer's *way* might enhance movement possibilities for people with Parkinson's, but if that process could also interact with the reflection and analysis skills of the scientists in a new way. Could a dancer's mind body dialogue skills used to control movement not only enable new movement possibilities for people dealing with Parkinson's but also open up new pathways of thinking for the scientists? At the core of physical thinking within these projects is the idea that it is possible to embody a concept and that through questioning with the body in a movement practice, the combining of a corporal knowledge with a theoretical and analytical approach provides a new understanding of movement and movement disorder. As well, that physical thinking can be a vehicle for dialogue between fields and populations. With dance as the unifying element, each field (dancers, scientists and participants with Parkinson's) engaged in a first person discovery of movement, enhanced by a third person study of the body and disease via scientific research.

Photo 1



A DANCER'S PRACTICE IN AN INTER-FIELD AND INTER-GENERATIONAL CONTEXT

For the next part of this essay I, Monica Gillette, will continue in the first person to go deeper into my own experience in these two projects. As mentioned for *BrainDance*, Mia Haugland Habib and I were interested to understand our many years of dance training and choreographic knowledge in another context. We called it a *silent knowledge* as it doesn't typically have visibility in other fields or have applications and outlets beyond making creations for the stage. To prepare for the project, we had several meetings with scientists, doctors and people with Parkinson's and it was initially explored via verbal discussions, reading documentations and entering the other fields' spaces of research. After a while, we were missing our instruments (our bodies) and our research space (the studio), so as part of our research design, we defined one layer as *Studio diaries of physical thinking*. The *diary* part was to signify a daily practice and *physical thinking* to distinguish our body-led approach to questioning the project's themes as opposed to the typically more mind-led thinking in the scientific realm. Without having the pressure to produce a performance and in a context where the *process* was the research, we were able to utilize our choreographic tools in a new way – to question the situation of a movement

disorder and how we deal with disease in society. One of the first experiments we tried was to create movement scores (a set of rules to improvise by and a common choreographic tool) from the Parkinson's symptoms. Initially we were concerned it would be perceived as *taboo* as we did not want to pretend we could ever fully understand the experience of someone who has the disease or be seen as mimicking the symptoms. But with time, we understood the value of trying to come *close*, to build a bridge towards understanding another's physical experience. Parkinson's has a very wide range of symptoms, including tremor, rigidity, freezing and slowness, to name a few. As part of our movement research process, which put the body at the center of questioning, we took the approach of creating movement scores for each symptom as a way to try to embody elements of the disease and to be open to what it could reveal to us. Here I will describe the four tasks for the symptom of slowness score:

1. Select a movement you want to accomplish – For example, to raise your arm or to sit down on the floor.
2. Visualize yourself doing this movement – You can use the first person approach, imagining your body fully doing the action »as if« but not actually moving, or the third person approach, where you see yourself from the outside doing the action like you are watching yourself on video, but with neither are you actually moving.
3. Physically analyze the movement – What has to happen on a mechanical level to accomplish the movement? Do you need to shift your weight to one side? Contract a muscle? Bend one particular joint? It should be as isolated and detailed as possible.
4. Finally begin to move – After these several internal steps, you can now try to finally accomplish the movement in all its details.

But to try to get closer to the Parkinson's experience, we added one more layer. Since one of the main situations of having Parkinson's is that everything in the body shrinks, from movements, to hand writing, to the volume of the voice, each action you will attempt to perform can only be executed 50%. What you will probably discover is that if you had the desire to accomplish a large movement, such as sitting down on the floor, and if you commit to doing all these steps to each individual part of a movement that needs to happen to accomplish the larger movement, you will have to renegotiate all your movement as you go and you will probably find yourself remapping your pathway and arriving somewhere different from your first intention.

One of the inspirations for creating this score was understanding how, for some people with Parkinson's, the level of thought that needs to go into accomplishing a movement can actually be very exhausting and labor intensive. Often the desired action is blocked somewhere between the thought to move

and the actual movement. Mia and I would sometimes engage in these tasks for up to an hour at a time. What arose ranged from nausea to empathy to new questions for our scientific and Parkinsonian partners. Our prior experiences with improvisation had been towards creating new qualities, states or textures in the body to perform movement, as well as to look for meaning in movement that could contribute to a larger performance context. For the purpose of this project, the movement score generated content for inter-field and inter-population reflection and discussion. We brought the experiences and questions that arose in the studio while doing these *symptom scores* into our theoretical meetings with physicians and philosophers, and we brought the physical experiences with us to each encounter we had with our Parkinson's group, which transformed our connection with them and our view on motor control after having gone through such a practice.

DANCERS AS MEDIATORS

Within *BrainDance*, another outcome of our physical thinking material, specifically the slowness task, was to show our physical thinking actions in public during the regular open practice sessions at Theater Freiburg and to hopefully foster a type of community think tank on such topics as disease and research itself. These events, which also included the Parkinson's dance group, opened up a whole new layer of projection space and societal discourse for us. By putting our bodies through the constructed tasks of the symptoms, we were able to create a distance to the disease by making it less personally connected to someone who actually has it. We observed people being able to comment on Parkinson's more easily after seeing it performed via the movement score on our bodies. It became a type of role change for everyone present, which seemed to generate a freer and more open discussion about the experience of dealing with the disease itself. Most importantly, the people with Parkinson's quickly became experts of movement rather than people to have pity for or to keep an awkward and uninformed distance from. They were able to speak freely and openly about what we had performed and share experiences about living and dealing with the movement disorder. Eventually the public grew in courage to ask the people with Parkinson's questions directly. The scientists present also saw their research from another angle as they were no longer looking at *patients*.

From these sessions with the public, I began to wonder if the score was also teachable. In the last year, I have now taught this task in several settings and have been inspired by the discussions that follow once people have dealt with the concept of a movement disorder directly in their own body rather than on a theoretical or abstract level. Without a doubt, the questions and comments

following the movement task involve a deeper level of empathy, curiosity and understanding than the discussions about the disease and our project prior to the physical involvement. Involving the body in one's thinking process opens up new ways of seeing.

MIRROR, TOPIC, QUESTION – MOVING AND THINKING IN PARTNERSHIP

Another task that came from an artistic residency in the context of *Störung/Hafra'ah* is one I developed in collaboration with the dancer and choreographer Clint Lutes. Interested to bring the research of the scientists more into the studio, we worked in private sessions with some of them, searching for ways to try to pour ideas from their various fields into the studio space and to hopefully set up an interplay between their movements and thoughts. After much trial and error, we arrived at a task we later called *Mirror, Topic, Question (MTQ)*. As a base for movement, we utilized *mirroring*, which is an improvisation task common in many performing art forms and a tool often used in dance classes for people with Parkinson's worldwide. It involves two people facing each other, often beginning with the hands forward, mirroring each other's movements. The idea is not to have a single leader, but rather to co-create the movement together without verbally agreeing upon it beforehand or during. For our *MTQ* task, once two people are engaged in the mirroring activity, one person gives a topic relevant to the project content (such as disorder, identity or tremor), and either participant can respond to the topic with questions about that topic. No statements are allowed, only questions. What often unfolds are questions ranging from serious to banal to playful, but regardless the tone, or maybe specifically because of the range of tones, there is a journey that occurs where the body and mind are active in moving and thinking together in partnership with another person. The participants often find themselves in new territories of their topics, which they had not previously thought of.

When we use the mirroring task in the dance classes for the people with Parkinson's, we have witnessed how much the interactivity with another person and co-creation of movement can bring some of them out of a more internal or *blocked* moment. We often witness them opening up, increasing range of motion and a transformation of mood. Clint and I were curious to see if these same outcomes could be found and used as a context for discussion with the other interdisciplinary participants in the project. To try to not only unblock movement and the body, but also the way of thinking, we created the rule of being able to respond to the given topic with questions only, removing the possibility to answer. We had found in our private sessions, that when the scientists began to speak about their research while moving, it often became a

well-prepared monologue and the movement became very reduced and tight. Hence, the togetherness, the joint physical thinking with a partner, opened up not only the body, but also new angles to view topics that prior to the physical actions had felt familiar and *known*.

A RESEARCHER'S PERSPECTIVE ON PHYSICAL THINKING AND RESEARCHING

In the following part of this essay, I, Stefanie Pietsch, as one of the young scientists in this project, would like to focus on the following question with a qualitative approach: What might dance as an embodied artistic form give to researchers and what could they give to dance? For us, as young scientists from various fields, the possibilities to engage in the project were to meet on a *physical thinking level* while joining the two weekly classes for scientists and people with Parkinson's, to conduct our *own research project* and to generate new questions through exchange with one another. This meant we were observers and participants, researchers and dancers at the same time. Coming from a qualitative point of view, Lisa Klingelhöfer (another young scientist) and I conducted narrative interviews with each of the groups (dancers, people with Parkinson's and young scientists) to examine how all of the participants in the project perceive themselves in relation to dance, illness, research and movement disorder as well as in how far these experiences of physical thinking influence their professional and daily lives. The use of the qualitative interviews opened a deeper understanding of the environments the participants live in and served as a *tool for understanding* and as a research method at the same time.

The diverse experiences and tasks offered by the different dancers in the dance classes for scientists combined movement, thinking, performing, writing, etc. and fed various artistic and scientific questions (e.g.: Does disorder exist in dance? How are movements related to our human identity and emotions? How does our specific understanding of movement disorder affect our understanding of disease?). Combining research questions with body-oriented tasks challenged and broadened my research focus helped me to understand the topic of movement disorder in a more holistic way, introduced me to the role of interaction/collaboration within research and confronted me with my personal and bodily attitude as a researcher. This left me with five main themes that I want to elaborate on.

1. The (Invisible) Body of the Researcher

What meaning does the body hold for the researcher and research? The body of the researcher is imbedded in a paradoxical relationship: Firstly, the researcher has his or her own body, which is (desired or not) present with all senses in the research process. Secondly, the body of the researcher is negated, its existence is being rejected (Gugutzer 2015: 137; Schnicke 2013: 212). Franz Breuer wrote that, »The body is seen as irrelevant and, programmatically, is a non-problem in scientific self-reflection, which is simultaneously an articulation and aspect of the problem.« (2005: 101) The dissociation of human beings in the natural sciences has its analogy partially in the social sciences and humanities: »The ideal aim is to gain *disembodied* insights.« (Breuer 2005: 104f.)³ I was particularly struck by Breuer's description of researchers attempting to act like non-persons or how they take on a presence that acts as if covered in a cloak that renders them invisible. He states that the tendency for objects of research to react to the researcher's presence as so undeniable that it renders this act of disembodied knowledge production problematic. He describes the researcher's general attempt to deal with the problem is to try to control or minimize the disturbance, or to simply ignore their impact (Breuer 2005: 111).

2. The Role of the Scientist's Body as a Source of Perception, or: Can I be a More Holistic Researcher when I Integrate a Physical Approach?

I wonder what it means for researchers to involve their bodies in their specific research context. Does it open new perceptions concerning their own thinking process and research? Does it enable new analytical possibilities? In scientific research, we often think in variables (data) and sometimes lose focus on the actual people. Dance, which is in my point of view closely associated with a qualitative approach, allows me as a researcher to analyze with the whole body and contribute to greater understanding of the complexity of human existence, people's perceptions and actions. What could it mean at a university level to allow our research questions to be body-led as opposed to primarily thought-led, process-oriented and not goal-oriented? How can there be a shift from the seen-only body to the perceived body and how can the analytical description be broadened by a perceived introspection? How can we learn to not only include content and logic in an interview on a cognitive level, but also on a physical level? This means, is it possible to observe oneself in the research process and to feel what is initiated within oneself while interviewing someone? (see

3 | See also von Braun 2008; Breuer 2000; Biagioli 1995; Knorr Cetina 2002; Schnicke 2013; for natural sciences see Kutschmann 1986.

Abraham 2002: 188) In a nutshell, including body-affected aspects could be used as an additional factor of analysis, which could create a new relationship to the generated data. The use of the body as a source of knowledge would mean to observe the body in the daily research process and to reflect upon the meaning the corporal-affected resonance could have. For the epistemological, methodological and methodical field, this would mean the following: to promote key tasks about reflections on bodily recognition and understanding on a theoretical level, to identify and discuss advantages and disadvantages, opportunities and restrictions of the body as mediums for knowledge, to analyze the relationship between body and speech, to create concrete instructions of how the body can be used as a research subject in a controlled way and design practical workshops for this matter (see Gugutzer 2015: 141ff.).

3. First and Third Person Perspective in the Research Process, or: The Dance of Distance and Proximity within Research

I have been wondering why researchers emphasize their distance to their subject in order to stress the credibility of their studies. Sometimes it seems that behind research results there are no people, but only cases. Why is it that sometimes the researcher and his or her individuality and body are invisible in their research, and why does academia teach that it is a setback to use the word *me* in a scientific paper? What does it mean to research when researchers do not hide themselves in objective bubbles, but use the word *I* while presenting research results? Siri Hustvedt has commented on this issue in her book *living, thinking, looking*:

My use of the first person represents a philosophical position, which maintains that the idea of third-person objectivity is, at best, a working fiction. Third-person, 'objective' research and writing is the result of a collective consensus – an agreement about method, as well as shared underlying assumptions about how the world works, be it in neuroscience or journalism. No one can truly escape her or his subjectivity. There is always an I or a we hiding somewhere in a text, even when it does not appear as a pronoun. I want to implicate myself. I do not want to hide behind the conventions of an academic paper, because recourse to my own subjective experience can and, I think, does illuminate the problems I hope to untangle. (Hustvedt 2012: 11)

Anke Abraham adds that research is subjective in the first place, because every perceiver has their own biographic pilling of experiences, which leads the objective research repertoire (see Abraham 2002: 186).

We always think of the other in terms of our Selves. There is no contact without such affinities and fusions – regardless of whether the particular subject/object intends it,

whether he/she concentrates his/her attention on it, or whether he/she realizes it. (Breuer 2005: 106)

This is not necessarily a disadvantage, but rather means that the more comprehensive the experience of the interpreter, the more sophisticated will the analysis of the subject matter be.

4. Presenting Research with Performative Methods

How can artistic tools be used more within scientific research and influence the methods and the way of presenting thoughts? Currently in my field there are two articulated artistic formats, which follow different aims: Firstly, formats which focus on the public understanding of science in an entertainment way (like Science Slams), secondly, formats which focus more on emotional and practical aspects of knowledge (like Lecture Performances or Action Teaching) (see Gauß/Hannken-Illjes 2013; Lange 2006). There is a recent stream in social sciences, the so called *performative social science* or *Auto/ethnography*, in which the researcher reflects on their own practice and accompanying emotions and attitudes during the research process. This approach is discussed controversially (Gauß/Hannken-Illjes 2013).

„Performative“ in the widest sense of the word, has become a „working title“ for the efforts of social science researchers who are exploring the use of tools from the arts in research itself and/or using them to enhance, or move beyond, PowerPoint conference presentations or traditional journal submissions in their dissemination efforts. (Guiney Yallop/Lopez de Vallejo/Wright 2008)

With mostly social-constructivist meta-theories as a basis, this approach defies forms of realistic representations, and rather experiments with formats which can be useful and relevant for a construction of socio-scientific worlds (see Gergen/Gergen 2011). It could be interesting to focus more on the creation of new performative formats for presenting research results in academia (which can be influenced by the arts) as well as to focus more on the question of how to develop a more performative presence on a bodily level as a researcher.

5. The Use of Scientific Research Methods in Dance Classes

This last aspect evolves around the question of how far it would make sense to integrate research methods into artistic and dance pedagogic practice. How can scientific research paradigms and theories be implemented in artistic research processes? Or, to what extent may actual artistic research benefit from scientific research methods? For example, is it possible to use, like in my case, narrative

interviews for performing tasks to substantiate one important moment from the interview and transfer it into movement? Meaning, that research methods not only focus to produce results, but also use different research approaches and impulses for cognitive reflection and also take it to a movement level; that means to experiment, play, reverse, test or to specify these personal (not objective) self-reflection insights from interviews in the body.

Photo 2



CONCLUSION – BODY LED DISCOVERY

A major contribution from these projects to the field of dance for people with Parkinson's was the use of improvisation. The type of improvisation used, which had a strong impact on discovering new movement pathways and confidence in the Parkinson's dancers, can be distinguished as *movement*

research where they themselves, through physical exploration, could find new possibilities in their bodies. A parallel could be drawn with the scientists who also found new pathways in their thinking through exploring movement in their own bodies. By offering movement proposals to each group to physically explore with, their bodies could lead the way to new discoveries of movement and thought. Often the same tasks and movement proposals were offered to both groups, but sometimes with a different intent. Whether it was to access new movement possibilities or approaches in thinking, making the body the *search engine* revealed endless potential.

The use of the body in the research process also created a unifying effect as each participant had the same tool (a body) and could create a unique language together which spanned disciplines and disorders. If the concept of a rehearsal is to search for new movements to create a choreography and to repeat the movements to make them ready for the stage, then in this project, the search for movement and its repetition were used to create comfort in the uncomfortable – comfort to exist in the unknown. We rehearsed the stamina to be unstable, to step out of our comfort zones, to invest in the process rather than the product, to be both the subject and the observer and to challenge our thinking through movement.

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