Moving Bodies, Concepts, and Understanding

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Abstract: *In a post-disciplinary world, how do bodies, concepts and epistemologies move? How might we articulate the transition between artistic and philosophical thought – and the practices that give them shape? In this conversation, artist-researchers Ruth Anderwald, Leonhard Grond and artist and cognitive scientist Stefan M. Schneider approach these questions through the lenses of their respective (and often overlapping) practices in art, somatics, and research, probing scholarly, visual, performative, and conceptual vocabularies.*

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This interview encapsulates elements of an ongoing dialogue between the parties, initiated when Stefan M. Schneider (SMS) and Leonhard Grond (LG) convened at their Feldenkrais training institute, subsequently introducing Ruth Anderwald (RA) to Stefan. It quickly became apparent that the authors overlapping interests and varied disciplinary pursuits cultivate continuous somatic, scholarly, and artistic exchanges that expand during collaborative drawing sessions, Feldenkrais training, and their ongoing conversations.

RA: Our collective reflection aims to explore how bodies, concepts, and epistemologies are in constant movement, which immediately brings to mind the walks that Leo and I take together.

LG: It's true: since we were students, we have taken walks together. Every place that we have lived, we have crisscrossed by foot, deep in thought or conversation, and we also go hiking in the mountains, but it is first and foremost a daily practice we enjoy in our day-to-day life.

RA: These daily walks serve multiple purposes and have evolved into a somaesthetic practice. Living adjacent to a large, forest-like park grants us the privilege of engaging in these walks regularly, primarily for well-being and pleasure. Additionally, they contribute to our emotional balance and foster the discussion and development of new ideas. In an exploration of how to teach reflective thinking, Sarah Elisabeth Döring, in her "Der Spaziergang als Werkzeug der Wissenschaft" [The walk as a tool of science] (2022), proposes the 'walkshop,' a mode of walking for collective learning and thinking that teaches not what is known, but the act of knowing.

She asserts that engaging in walking activities enhances our relationship with the environment by facilitating active engagement. Such social interactions outdoors promote understanding of human nature through community engagement. Additionally, physical movement, such as leaving the seminar room to connect with the surrounding world in a different way, fosters an emotional bond. This bond encompasses the social, mental, natural, and built environments, deepening through reflections during walks and shared experiences. Perception, therefore, means not only observation itself, but also includes the practice corresponding to observation, in the sense of becoming aware of an opportunity or responsibility. But what exactly is walking?

LG: Considering walking from the perspective of our long-term interest in dizziness, and setting aside the importance of health for cognition, we can first observe that walking involves both stable and unstable states. In the lyrics to her 1982 piece *Walking and Falling*, Laurie Anderson formulates:

"You're walking. And you don't always realize it, but you're always falling. With each step, you fall forward slightly. And then catch yourself from falling. Over and over, you're falling. And then catching yourself from falling. And this is how you can be walking and falling at the same time."

As Döring shows in academic contexts, walking serves as a vital practice that fosters reflection, but it also influences our artistic endeavours, deepens our collective research, and enriches our daily lives. It deepens the relation to our natural and built environment, which has been instrumental for artistic work, such as our essay-novel written together with novelist Anna Kim (2026), and it also instigated our antifascist artistic research work (Anderwald, Grond, 2025). What role does walking play in your everyday life? Does it have a role beyond the errands we all need to run?

SMS: I very much like your joint practice, which you also do with others. I don't have so much experience with joint walks like the two of you have cultivated together. But walking has been a constant source of joy for me, as one of the easiest ways to be in contact with me and my surroundings – and my mind apparently enjoys the space that it is given. Things that occupied me, sometimes without even being aware of, surface, and often seamlessly solve themselves or evolve new Gestalts. In that respect, you could speak of " falling" as giving the space for things to "fall into their place". The mind needs these periods where it can organically sort things. I also appreciate the curious feelings on long hikes that it feels both slow and fast when considering the distance one has covered. Speed in slow motion. Consciousness apparently finds a very different way to process experiences. Experiences during walking are slow; you can muse about them, while they are not necessarily analytically scrutinised, as you would do with a tougher task. I wonder how this could affect joint walks, or – on a playful variation of Kleist's famous essay (Kleist, 1805/1878) - "die allmähliche Verfertigung der Gedanken beim gemeinsamen Spazieren" / "the gradual formation of thoughts while walking together." Do you have any ideas?

RA: In 1926, Graham Wallas published his book, *The Art of Thought*, which continues to be frequently cited in psychological literature today. In our cooperation with creativity research, we have also encountered this influential text. In his book, Wallas delineates the creative process into four distinct phases: Preparation, Incubation, Illumination, and Verification.

The Incubation phase is the phase that we understand to be supported by this practice of walking, but for the incubation to work, you have to already be immersed in your work. This means you need to have gained a certain expertise on the topic, you need to be highly motivated and then a relaxed activity or distraction can support the process of incubation.

LG: Unconscious processing is a fickle and delicate process. It operates most effectively when we engage in activities that promote relaxation, require minimal cognitive effort (with some

permissible effort), and foster a positive affective state. However, individuals must not experience excessive euphoria, but rather a calm sense of well-being. Elevated negative mood states can also impair this process, as negative affect tends to narrow our cognitive focus—an adaptive response signalling the presence of a problem. This heightened focus can be understood as an evolutionary purpose by directing attention toward problem resolution. Conversely, moderately positive emotions facilitate flexible thinking without overtaxing cognitive resources. However, extreme negative emotional states can also consume a significant amount of processing capacity and energy, and thereby hindering our unconscious thought processes.

RA: So, light and pleasant distractions of the conscious, such as engaging in walking or swimming, can help bring about the formation of something new and creative. This incubation phase enables the bringing together of two or more previously unrelated elements. In our research, we have come to refer to this moment as unfolding in a compossible space, which can manifest as a conceptual, mental, and material spacetime (Anderwald, Feyertag, Grond, 2019). Thought, matter, and ideas are present in their initial form but are metastable and inclined to mix, fuse, dissolve and form anew. This demands not only enduring a more divergent way of thinking, but it also needs time, space and energy. Moreover, you need to trust the unconscious mind to process and integrate diverse information over extended periods, highlighting the need for patience, open-mindedness, and tenacity as crucial qualities for creative and artistic practice. I would thus think about Kleist's proposition, as the shaping of thought through speaking, relating to the curious and intelligent questions of his sister, rather at a later stage and in a convergent mode of thinking, in the verification part of the creative or thought practice. Here, the scrutiny of one's thinking by someone else becomes highly advantageous.

SMS: Your mentioning of Wallas' four phases of the creative process reminds me of research in cognitive science on problem solving and the kinds of mental sets that we always entertain – every situation is always understood in a particular way by us. An active preparation phase seems to set conditions - a mental set - for things "to click," and an incubation phase can be supportive of that. Especially considering that sometimes mental sets can become mental ruts – the way one conceives of things also has the potential to get stuck in unproductive thought.

Mathematician Henry Poincaré gave a famous lecture titled "The mathematical invention" (Poincaré 1908), based on his own experience. According to him, solutions to problems that he was actively working on often did not appear through this active work, but came as sudden insights during leisure time, that is, without actively thinking about the problem. He likens these wondrous workings of the unconscious mind to the free floating of bits and pieces of ideas, and connecting in myriad different ways, until eventually they connect in just the right way – and become conscious again as Aha! experiences. So here is a distinction of phases – preparation, incubation - and Poincaré also mentions a follow-up laborious phase of formulating things precisely. And there is an intricate interaction of processes of a more and less conscious nature. What we consciously experience - our stream of consciousness, involving ideas appearing, etc. - seems to be governed by the way these layers interact, but how this exactly works is still a big mystery.

In daily life, these can't be separated into clear phases. But I think that different kinds of practices can be scaffolded in this essentially integrated process with different biases. Taking walks sets a different mindset than writing a conceptual analysis. This is also where somatic practices are very interesting, how they set up their learning environment, a point that I'd like to speak about with you.

LG: While considering Wallas and analysing our walks from a meta-perspective constitutes one aspect of our reflection, it may appear somewhat mechanistic. We have immense pleasure

from taking walks in the Prater, which is also conveniently located nearby. Our motivations for these walks are multifaceted; beyond stimulating our minds and spending time together, we appreciate the sun's warmth on our skin and the variations in temperature and humidity as we enter the wooded sections of the park. These sensory experiences enable us to connect with ourselves, each other, and, most importantly, the surrounding nature. Residing in a densely populated urban environment devoid of trees can diminish one's awareness of the seasons. We remember this from living in a different district. We only saw houses and a bit of grey sky- no way to tell the season or temperature from looking out the windows. Similarly, working in highly regulated spaces where artificial lighting and air conditioning obscure the natural passage of time, weather, and seasonal changes can lead to a disconnect from these cycles. We find it particularly beautiful to observe the changes in lighting now that autumn has arrived. The altered angle of the sun's rays accentuates different colours, elongates the shadows, and transforms previously shaded areas into illuminated spots where the sun now shines into bushes and foliage. As the main thoroughfare is lined with chestnut trees, there is a particular period in autumn when walking can become unpredictable due to rogue chestnuts falling from the trees. [laughs] But this is to say, we become so much aware of our own body and the conditions of the surroundings in relation to it.

RA: There is yet another aspect to it, which we already mentioned, but I would like to expand on it. Taking walks and consciously engaging with our living environment has ignited a curiosity about digging deeper into the history of this small part of the city we inhabit. Maybe it has been sparked by an encounter years ago when we spent whole days with our kids on the playground. One day, we met one of the engineers of the subway in Vienna, and he explained to us that one of the little hills here stems from the subway construction. The city had asked the construction firm to bring it to the park and make a small hill on a spot facing north, so that in winter, the children here would have a place for sledging. Another of our neighbours has researched the streets where our apartment and studio are located, and we could build on her research and our conversations with her. Doing this research and talking with people living around here has been conducive to our practice of Performative Walks around the neighbourhood, which we adapt for different audiences. For instance, in our earlier mentioned European project on resistance against fascism, we took the Croatian, German, and Austrian participants on a walk, highlighting sites of historical significance during and after the Nazi era, such as pointing out the house constructed by the Jewish architect and close friend of Theodor Herzl, Oskar Marmorek, in which Adolf Eichmann and his family resided during his stationing in Vienna. In the building we live in, Jewish resistance fighters Irma Schwager and her husband Zalel Schwager, who had previously fought in Spain, lived just above our apartment. Their grandson, Robert Rotifer, is a renowned singer-songwriter and journalist in Austria, who joined us for this tour, and talked about them and played us the songs he composed for his grandmother. His grandfather was among those transported to Vienna, fleeing the Russian pogroms, as described by Elias Canetti in his autobiography "Die gerettete Zunge." Canetti lived just around the corner during his youth, as did Hanns Eisler, who later composed the music for Alain Resnais's pioneering film "Nuit et brouillard" (1956), about the liberation of the camps and the Holocaust. We could go on and on. Knowing all this has deepened our relationship with our environment and changed the way we move through it. I think we both appreciate this place much more. But this should also serve to say that where we live, and a conscious, sensory, and curious approach to one's surroundings can become very inspirational and has led us to explore new art practices – not only the Performative Walks (Fig. 1), but we're also talking about it in this book that we are now preparing for publishing. It is our first narrative text, interspersed with essayistic parts, which we realised

together with novelist and essayist Anna Kim. In the third part of this book, we experiment with expressing the sensory experience of Feldenkrais sessions and of taking walks, and we have our main character constantly walking different streets around our neighbourhood. Therefore, walking serves as an exemplary daily practice that contributes to maintaining our health and mental well-being, while also fostering our professional development and engagement. It has inspired new methodologies and practices in our work, including the composition of literary texts and Performative Walks, and deepened the connection to our neighbourhood, and it has strengthened our work on resistance against fascism through personal connections. Accordingly, we find it highly pertinent to examine our daily routines. Our identity and agency are influenced not only by the socio-economic, cultural, and political environments, whether real, imaginary, or virtual, but also by the natural and built surroundings in which our daily lives evolve. Thus, they are not just backgrounds, or sceneries, or serve as the experiential background of our lives, but they can unfold as agencies.

Fig. 1: Example of a Performative Walk by Ruth Anderwald and Leonhard Grond for students and artists from Austria, Belarus, Croatia, Germany, Poland, Russia and Ukraine for their project The Arts of Resistance (2024-2025) © Foto: eSeL.at (Robert Puteanu), 2024

SMS: Talking about scrutinising tasks – I was working long on imagination, mostly on the case of complex geometric tasks, using introspection and protocols to gather what I experienced, and analysing it. At a certain point, I had had enough of that and started a daily walk or "Spaziergang" investigation as a contrast – I wanted to see how the mind works when it does not have to uphold the object of its interest through imagination, but casually interacts with an "outside" world. During several months, I did daily walks of the same route, and made notes. Reading my daily notes afterwards was interesting – I found that many observations that I noted repeated themselves, often even thinking that I made them for the first time, while my notes said otherwise. Apparently, we constantly scan stuff that we know, and orientation

evolves slowly, adding bits and pieces here and there. Speaking of orientation – to me it is a very curious thing that we find our way around naturally, without thinking. We must have some metaphorical "cognitive map" (a much researched topic in cognitive science) that guides us, but that map is not something we need to consciously take out, but we just follow it. We are the map, one could say, we are guided by our orientation. And our experience is a seamless amalgam of our cognition and the outside world. Until something fails and we stumble, that is. That brings me to an aspect of your work that I find intriguing, the disorientation and stumbling that I think dizziness involves, and to which you seem to put a more positive spin than I intuitively had thought of. Can you say something how you think about this, and how disorientation, if I get you right, is important?

RA: Orientation is basal; it is already in our conscious or unconscious focus of awareness. If I am aware that I feel disoriented, my focus and attention go there, exploring this disorientation. This insight goes back to the work of Jan Evangelista Purkinje and his research on vertigo and dizziness. Purkinje emphasised that attention is an active physiological process, and as such, attention is subject to the physiological conditions of perception. In his understanding, attention is the free determination of the direction of consciousness. Thus, even when we are dizzy or disoriented, we still have means of finding our position anew. Disorientation is most often an occurrence during transformation and is seldom an endpoint, even when concurrent with a situation of aporia.

LG: You say, 'We are the map; we are guided by our orientation.' This is really interesting, and you are right, of course. The way we think about dizziness and disorientation is very subject-centred. Instability, for instance, is different. It is also relational, of course, but it can be measured from the outside. Thus, we are the map, we are the orientation in the same way, we are also the dizziness, we are the disorientation and the concomitant loss of self and relation to the physical, mental, imaginary and digital surroundings.

RA: In medical settings, obtaining an accurate anamnesis of dizziness presents particular challenges. It cannot be quantified through straightforward measurements, as, e.g., can be done with fever or blood pressure. Instead, it must be described by the individual experiencing it. This introduces cultural, personal, and emotional dimensions into the understanding and expression of the experience of dizziness. Additionally, somatic states are inherently difficult to distinguish and articulate in words. So, in exploring the paradoxical and blurry aspects of dizziness in our research, we encountered various challenges. First, the experience and impact of dizziness cannot be fully comprehended or examined without considering the subjective experience of inhabiting a dizzy body.

Another challenge in our work on dizziness was determining how to develop an artistic research concept that can evolve and transform over time. We started from the hypothesis that states of dizziness can be a resource, but everything else was open. Our artistic and research practices are deeply rooted in conceptual art. So, creating a concept was imperative for both the artistic output as well as the research. However, we recognised the need to develop a concept that remained malleable and could be enriched over time, thereby exposing our heteromorphic research approach, which includes both inductive and deductive reasoning, as well as their testing and interpretation through artistic means.

Having started our collaborative and co-creative work with experimental filmmaking, time-based practices do play an essential role in our work. Walking could be just another example of that: an exploration of spacetime.

LG: Already in our early work, particularly in our experimental film work influenced by American avant-garde cinema and the *camera stylo*, we aimed to translate visual thinking into

sequences of images and imagination, into flow and rhythms, treating the camera like a brush leaving traces on a canvas. Our driving questions concerned what we perceive when we have an insight or idea, or when we forget something. While examining the visuality of thinking and imagination, we then considered and reflected on the concept of visual thinking. If we take this research on visual thinking seriously, how should we approach the art that is its outcome? Can art be regarded as an insight-producing, reflexive activity that manifests through aesthetic expressions? But if so, shouldn't our analysis start with the processes we engage in – the art-making, the thinking about, with and alongside art – which ultimately leads to the artwork?

RA: Artistic disciplines have been developing research-based arts. Most notably, because they have reflexive and epistemic interests, as is the case in conceptual art, art-activism, or social art; also, because the methods of knowledge genesis have been diversifying throughout the academic landscape, and because of the visual culture that has become dominant, requiring a more nuanced examination from the visual field itself, which offers itself as a subject area for artistic research. However, not only visual but also performative and participatory art comes into focus, if not exclusively, then especially as an object of reflection for epistemological aesthetics, as Anke Haarman notes. Reflexive art practice, critique of knowledge, performativity, and (visual) media culture are the main parameters to gauge the practice of art as research. (Haarman 2019) The political factors responsible for the academisation of artistic research started aligning when we were at the end of our studies, in the late 1990s. I recall how amazed I was by Renee Greene. She was in my Diploma committee, and I remember discussing my burgeoning interest in Gilles Deleuze's writing on film with her. She was one of the first artists I encountered who advocated for an artist's theoretical engagement and capability.

For us, experimental cinema, its theorisation, and exploring the topic of visual thinking in our films ultimately sparked the journey of becoming artist-researchers. These hyphenate beings know how to navigate different terrains of knowledge and prefer to stay "ignorant generalists," as Luis Camnitzer writes, without ever belonging to any specific discipline they may engage with (Camnitzer 2024).

Are people who are visual thinkers imagining the world differently than, e.g., people more prone to auditory sensory input and imagination? Does the differentiation even play a role in your work and thinking?

SMS: I'm not sure yet if I am understanding what artistic research means or is. I've heard that it is filled with different meanings currently, i.e. the field of artistic research has some opposing strands? I always considered art as coming from a curiosity of some kind, maybe to produce something of a certain aesthetic, maybe to bring forth a thought, perception or feeling that one wants to express, maybe to gather people. My interest in art for a long time was to produce – it was basically just fun to do it, and to come up with "inventions;" but then I started to think about one of the (many) preconditions of creation, in my case, I was interested in the underlying cognition that brings forth art – an epistemological interest. So I started to research, and at a certain point, creating art did not help me any more to follow this interest, and I turned to, let's say, more empirical-philosophical work in cognitive science, and more text-based work. An interpretation of the term "artistic research" that makes sense to me is "doing research with artistic means" - more than "research with artistic output," maybe this sometimes feels a bit conceptual. Research with artistic means would be really interesting, because it involves ways of thinking, exploration, and creation that can differ deeply from scientific research. How would you think of your artistic work? Maybe let's talk about some examples?

I am also not sure what you mean by visual thinking, but that's the cognitive scientist talking who, amongst other topics, specialises in imagination and mental imagery. Things get tricky if

you're starting to scrutinise this, and philosophers, psychologists or neuroscientists rarely have a clear idea of imagination (apart from formal definitions or psychological operationalizations). I'll come to that later. But I am widely used to everyone having an opinion about themselves, some saying they are visual thinkers, some saying they aren't. Much like some say they can or can't draw. I've been sometimes called a non-visual thinker, even though, as an artist, I am constantly composing pictures in my imagination, sometimes more than physically painting or sketching. These attributions and self-attributions seldom hold scrutiny, maybe because no one really knows what is meant, but also because we can't directly compare our experiences. And some may interpret their experience very positively as of a visual nature and indulge in it, while others see how much imagination lacks in visual clarity. So it's also a matter of one's attitude. But, as becomes more and more clear, imagination, and I'd probably say this relates to visual thinking, is also a matter of skill. Meaning, it's not simply a talent that one has or one hasn't, but an interest that one has honed to a certain level of expertise. Imagination is very much skill-based: We can imagine what we know of much better than what we rarely know. For example, expert climbers can imagine how they move their bodies much better than novices and thus are better in route planning.

RA: A few years ago, prior to the initiation and realisation of our collaboration with creativity research, we held a keen interest in another aspect of differential psychology: the study of giftedness. Visual thinking, as we comprehend it, is based on Howard Gardner's theory of multiple intelligences, which critiques our often limited and narrow conception of intelligence and advocates for a more comprehensive approach (Gardner 1993). Visual thinking is defined as the capacity to think in images and pictures, and to visualise both accurately and abstractly, which, of course, is a very inclusive definition. Drawing from a remarkable capacity for imagination, visual-spatial giftedness is characterised by a desire for novelty and holistic thinking, challenging linear structures and thinking in terms of movements and relationships. It encompasses the ability to create artistic images, employ metaphorical language, and communicate abstract thoughts through concrete images and visualisation, as wonderfully exemplified by your reference to Poincaré.

SMS: That's a wonderful aspect that you are mentioning – the capacity for holistic thinking and its potential basis in imagination. It's well known that metaphors are often simple, inherently, but can represent a higher-order understanding of a certain domain or topic. Research in Cognitive Linguistics has shown this with striking clarity. George Lakoff and Mark Johnson, in *Metaphors We Live By*, argued that our conceptual system is fundamentally metaphorical: we understand abstract domains through embodied experiences.

An anthropological example can be found in studies of ritual and healing practices. Among the Maya, for instance, health and illness are conceptualised through hot–cold metaphors: illness may be understood as "heat rising" or "cold entering," treated with plants and practices that restore balance (Messer 1987). These are not merely figurative, but embodied imaginative frameworks that guide concrete action. Similarly, Csordas (1994) has shown how ritual healing among Catholic charismatics organises attention through somatic metaphors — participants describe being "filled," "opened," or "carried" in ways that directly structure bodily experience and agency. Such cases support what Kirmayer (1992) called the *body's insistence on meaning*: Metaphor is not only linguistic representation but a mode through which experience demands and acquires form.

These examples resonate strongly with somatic practices I have studied. In Taijiquan, imaginative metaphors such as "sinking," "expanding," or "floating" become directly enacted in movement (Frank 2006). In Feldenkrais, pedagogical cues often rely on imaginative redirections

of attention — "lengthening," "softening," "turning the breath" — which transform how movement is felt and organised (Kimmel 2015). In both ethnographic and somatic contexts, imagination is not confined to making pictures in the mind, but structures embodied practice and perception in context-sensitive ways. I would like to talk about what it means to you that we are living in a post-disciplinary world. What does this mean to you, what do you consider important about it, what effects does it have?

RA: As you have asked about artistic research, I would shortly comment on that first. Following the groundbreaking shift that happened in fine arts through conceptual art, our practice builds on the understanding of the theorist and curator Jerzy Ludwinski, who founded an institute for artistic research already in the 1970s. He goes even further, claiming that we have lost sight of what art is and have now come to a place where art has become so wide and almost all-encompassing that we have yet to understand its capacities. He called this art beyond art "post-art" and uses this notion as the umbrella term for conceptual art, ephemeral art, artistic research and all the other revolutionary forms of making art of that time. In a conversation with curator Philippe-Alain Michaud, he stated that he believes the sole purpose of art is to broaden the notion of art, and we wholeheartedly agree with him. We always try to approach and understand things from their limits. We have been criticised for our approach to artistic research, being perceived as too topical. We are interested in a topic and open to using different artistic and scholarly ways of exploring it. Another classification of this approach would be post-disciplinary. There are, naturally, different approaches to artistic research, as well as various terms: the North American notion of research creation, research-based art, and practice-based research… Artistic research is a term mainly used in the German-speaking area. These terms carry different connotations in terms of process, methodology, mode of reflection and outcome. We are rather fond of this inherent openness and opposed to any sort of orthodoxy that might limit the expansion and explorative nature that is still prevalent in artistic research.

SMS: Something related, but maybe not the same, is interdisciplinarity. My studies and research in cognitive science made me think within different disciplines, such as artificial intelligence, cognitive psychology, neuroscience, linguistics, philosophy, and even mathematics, developmental psychology and ethnography. It's tough to find common ground between these disciplines, and the "project" of cognitive science is not at all homogeneous (e.g. Boden, 2006). Actually, there has been a recent debate about whether it was successful at all in its interdisciplinary impetus. The most integrative attempts that I have seen are people working on cognitive architectures, such as Dietrich Dörner (Bauplan für eine Seele, 1998) and Joscha Bach (Principles of Synthetic Intelligence, 2009) – building machines that not only mimic cognition (or intelligence), but try to integrate relevant findings from all other disciplines – an idealistic project towards a unifying framework!

But everyone finds their own way to implement an interdisciplinary mix, depending on their interest – sometimes more selective or focused on one area, up to sometimes embracing the full picture. Cross-overs are often happening between two or three disciplines, for example, lots of philosophy of cognition bases the analysis not on intuitions and logical arguments (although this always plays a role, too), but on reading up what cognitive psychology and neuroscience found out about a subject of their interest. Phenomenologist philosopher Shaun Gallagher is a great example of this. In his book "How the body shapes the mind" (2005), he traces many influences that, as he calls them, "non-conscious" processes have on consciousness. I think he uses the term "non-conscious" to sidestep the psychoanalytic concept of "unconsciousness" to avoid confusion. Unconscious processes, such as memories or background feelings, have the potential to become conscious. Gallagher is interested in bodily processes that typically do not

enter awareness, yet play a constitutive role in shaping consciousness, such as proprioception, motor control, hormonal regulation. Gallagher tries to understand how they do so by looking into neuroscience and psychology, as these disciplines have the methods to investigate non-conscious processes. He explicitly rejects a purely introspective or philosophical approach, instead advocating a phenomenology that dialogues with the sciences. It's interesting how Gallagher continues to talk about how the body comes into consciousness. Shall we talk a bit about that, and what do you think of this question?

But I'd like to address a related topic that runs even deeper, and that connects science, art, and somatic practices. It's that different kinds of thinking all play a role. If you are coming from art, and even more so, from somatics, you probably prioritize experience. In science, you will prioritise analysis and objective empirical work. I think it's important to connect these. What do you think of this, and how does it influence your work? Do you see other ways of thinking or acting that come into the picture, too?

RA: Concerning the prioritisation of scientific or artistic methodologies, there exists a well-documented anecdote concerning a meeting between Roger Caillois and André Breton in 1913, which is frequently cited in this context. Both individuals recall the event differently; however, upon their meeting, a disagreement ensued. Caillois was eager to join the Surrealists and met with Breton for a discussion. Nonetheless, when they observed a bean dancing, their immediate reactions diverged. Following Caillois' account, Breton was opposed to dissecting the bean to examine its internal structure; instead, he preferred to speculate about the reasons behind its peculiar behaviour. Caillois did not view this incident lightly and, in a letter sent the following day, accused Breton of favouring intuition over analysis, subsequently cutting ties with Breton and the Surrealists. In the realm of artistic research, this story is often cited to emphasise that the discipline values both scientific dissection and analysis, alongside poetic and speculative approaches. It is the balance between these diverse methods of meaning-making that Caillois advocated, which is central to the values guiding artistic research. It is not about preferences or prioritising one in order to disregard another aspect, but about a keen and curious understanding of how they might enact different findings, outcomes and ensuing questions, and what to learn from them in which context (Caillois 2003).

LG: To answer your question in a more practical way, I would like to revisit our filmmaking practice. In this practice, we are frequently asked to elucidate our methods of filming and the preparatory processes involved. Typically, we select a theme, situation, or location upon which to focus. During the preparatory phase, we diligently aim to gather comprehensive information about our topic. This stage functions as a research phase, whereby we explore various sources, interdisciplinary connections, or historical references until we establish a robust epistemological foundation. Subsequently, we initiate filming, improvising based on the knowledge and attention we have at the very moment of filming. This interaction is a somatic moment in which we decide together what section to film, at what speed and for how long. We have occasionally referred to filming as a form of free improvisation, as practiced in Jazz music. This improvisational approach is then documented on film.

RA: But coming to your work, which is focused on imagination. How do you conceptualise imagination? Recognising its central role in your scientific research, it seems pertinent to consider your background in art, specifically expressive painting – a physically engaged form of art making. We hypothesise that you experienced the coincidence of imagination and somatic movement while painting and their reciprocal influence. Was this conceptualisation of imagination evident in your early work? Did it evolve from your initial artistic pursuits?

SMS: Imagination has been a throughline in my work, but my understanding of it has

changed considerably over time – owing to the profound influence of my professor and mentor Oswald Wiener whom I first met at the arts academy in Düsseldorf. In 2000, Wiener published a collection of his lecture notes on imagination (Wiener, 2000), in preparation to a full book - which was never published. Wiener passed away in 2020, having consistently worked on the topic, as did I and a group of likeminded researchers around him. It's simply staggering how complex the topic reveals itself to be: imagination cannot be isolated from memory, embodied orientation, movement skills, constructive thought, intuition, and more – while simultaneously being obscured by folk-theoretical assumptions, such as its supposed similarity to perception and the notion of "images in the mind". The process of exploring this topic alongside Wiener and my fellow researchers has been profoundly enriching, leading to several collaborative publications (Eder et al., 2015; Eder et al., 2023), and I remain deeply grateful for the intellectual companionship on this shared journey.

In my beginnings as a painter, imagination was something I experienced as interleaving the perception-action cycle – allowing me to go beyond "mechanical" output. I pushed this to an extreme in a series of paintings where I was literally sitting in front of the white canvas, playing with what my mind could come up with, and observing myself on the patterns of ideas coming up. I there discovered certain limits of imagination - that fantasy often worked by recombining what I already knew. The results on the canvas could get stranger, more inventive, but the underlying process was less free than I had assumed. Do you know of Libet's experiments on free will? They basically found through neuropsychological experimentation that every conscious awareness follows an earlier, but unconsciousness, determination within the nervous system (Libet et al., 1983). This did not wonder me at all, as my self-study has shown to me that I don't know where sudden ideas are coming from, just that I can decide after the fact what I want to do with them. This mirror's the wonderful statement "Between stimulus and response there is a space. In that space is our power to choose our response. In our response lies our growth and our freedom." (often attributed to Victor Frankl, but originally Stephen R. Covey speaking of Frankl).

LG: This space is truly fascinating, as it can play a central role in somatic learning processes such as Awareness Through Movement lessons. In our theoretical work, we think of this space as a compossible space through the conversations with Karoline Feyertag and François Jullien. Like in a sluice chamber, a spacetime opens where many things seem possible simultaneously, and the outcome is uncertain. Of course, Covey looks at it from a different perspective, the perspective of delaying an initial response by an individual to a situation and pausing for reflection. Our perspective is rather zoomed into this space, looking at the potential mingling, dissolving and transforming.

RA: Somatically, we have compared it to the movement of staggering. When you stagger, this reflex opens up more possibilities than just falling. However, you still might fall, there is no certainty to its ambiguity. Nonetheless, it affords you with what Kierkegaard (1980) calls "the possibility of possibility", which, of course, includes Blanchot's "impossibility of possibility" in our understanding (Blanchot, 1993). By the way, this is exactly what we love to do: combine abstract reasoning with artistic work and concrete somatic movements and explore if and how they connect in the different individuals.

SMS: A different perspective opened later, outside of art and not yet in cognitive science, when I began practising Taichi. Here, imagination became immediately embodied, expressed through movement - whether in spatial forms or in gestures charged with metaphorical qualities. This sparked a lasting interest in somatic practices more broadly. In Feldenkrais, for example, the quality of embodied sensing became central, adding further layers to how imagination and movement intertwine. The deep sensory awareness and gentle practising space opened in

Feldenkrais Awareness Through Movement classes brought forth so many imaginative evocations that my paintings shifted towards depicting such deeply integrated, somatic experiences (Fig. 2).

Fig 2.: Painting inspired by the tumbling sensation and curious playfulness while practicing Judo rolls. Courtesy: Stefan Schneider

These practices were personally transformative, but also deeply informed my research interests in cognitive science, and I shifted my research focus from less body-related (but not disembodied!) modes of cognition, such as problem solving and mathematical thinking, toward the dynamics of mind and body as they unfold and integrate in movement practices. We recently, for example, published an extensive account of how new metaphors are gradually becoming embodied realities in movement and somatic practices (Kimmel et al., 2024) (Fig. 3). We argue that it needs a truly integrative approach to bridge all involved facets – from linguistic understanding to imagination, to embodied sensing and bodily movement. For me, imagination is not reducible to one of these perspectives. It involves mental construction, but can also come in through autosymbolic intuitions, tethers out organically into embodied expression, and is a process that thus has the potential to cut across domains. My work aims to hold these strands together: artistic, somatic, and scientific.

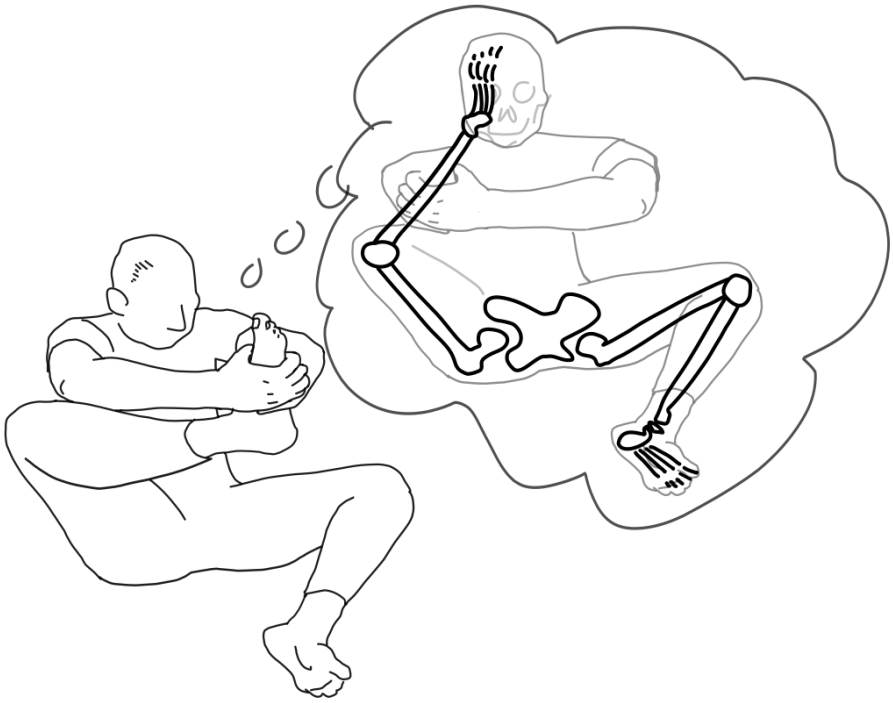

Fig 3: The movement instruction to "put your foot on your forehead" is supported by the imagination that a skeleton without muscles and tendons could easily do it. Example from a Feldenkrais "Awareness Through Movement" lesson. Image from Kimmel et al., 2024.

This might be a good point to connect back to our starting point with leisure walks, or to your artistic work, and your interest in finding reflexivity as well as making this reflexivity an integral part of your art. You recently published an article on artistic reflection, associated with a video overlaying daily views out of a window with other visuals. I very much like what you say there, that "it is important for the artist-researcher to simultaneously get lost in thought and stay on track" (Anderwald, Grond 2024, p. 219). This touches a thread running through our conversation, namely the integration of different facets of human experience.

RA: Yes, we are referring to Alain Ginsberg here and his thinking and teaching of the relation between artistic and epistemic processes (Ginsberg 1974). The integration of different facets of human experience is important in our artistic research, but we do not regard this integration as finding a final form or reducing it to a formula. In our work on dizziness, we must repeatedly employ a wide variety of perspectives and scales, ranging from individual to systemic levels, and thus also across disciplines. Dizziness is paradoxical, unpredictable and cannot be encapsulated in a single concept or discipline. This moment of unpredictability, unbalance and precarity always strikes the human experiencing it anew. It always attacks us unexpectedly, engendering a sense of precariousness and vulnerability. In our workshops, we conduct balance training sessions, which involve assigning participants various movement tasks in a group setting, such as standing on one leg with eyes closed. Subsequently, we discuss the experience of losing and regaining balance. In this sessions, at least, one of the participants describes feeling exposed and vulnerable. What does this precarity do with us, with the way we hold our bodies and the

way we build and (re)imagine our societies? To date, we have not thoroughly investigated the relationship between imagination and dizziness satisfactorily. Thus, we are eager to continue our conversation and learn more about your definition or conceptualisation of imagination.

SMS: Regarding the definition of imagination you are asking for, I can tell you a bit about my research and how it is situated within cognitive science. Imagination is a tricky topic, and some have called it a hallmark of understanding how the mind works (Gallagher 2017, Clark & Toribio 1994). Imagination has often been likened to perception (and its multi-modal variants: visual, kinesthetic, auditory, etc.), and there is something very true about this, but also something strongly misleading. In cognitive science, there are different conceptualisations — and with them, different research paradigms for how the phenomenon is investigated. On one side are representational accounts: Stephen Kosslyn and others argued for a pictorial account, where mental images are literally like pictures in the mind (Kosslyn, 1981; Kosslyn et al., 2006). In contrast, Zenon Pylyshyn defended a propositional or descriptive account, closer to structured symbolic descriptions (Pylyshyn, 2003) — an approach closely related to artificial intelligence research of that time. They directly addressed each other in an argumentative back-and-forth in what has been called the "imagery debate."

Lawrence Barsalou's simulation theory (Barsalou, 2009) can be seen as bridging these positions. Like Kosslyn, he emphasises that imagery involves perceptual systems, but rather than assuming static inner pictures, he argues that we *simulate* perceptual and motor states in a context-dependent way. Imagination, in this view, is the partial reactivation of the same neural and cognitive systems that operate in perception and action. Later, when phenomenology and the embodied mind trend gained traction, even these representational debates were put into question. Much recent research in embodied cognition suggests that imagination is less about conceiving internal images and more about conceiving one's *possible actions* in a hypothetical situation.

That still leaves the question: how does imagination work? Representational theories (pictorial, descriptive, or simulation) view it as the manipulation of internal analogues of external objects or images. Embodied-enactive theories, by contrast, see it as the actualisation and coordination of actions. The debate thus plays out as an object–subject opposition: one camp insists imagination is about objects, the other that it is about the subject's actions.

I think both got something right – and both get something quite wrong in their radical negation of the counterpart. My research shows that we imagine our actions, but we also sometimes invest a lot into imagining the object counterparts of these actions. But basically, imagination is a dynamic process, and nothing is stable there. When you do a bit of self-observation on your imagination, you'll find that your stream of consciousness is ephemeral - as William James famously asserted - images appear and disappear, and much effort goes into trying to stabilise what you want to "picture." I've therefore come to the conclusion that imagination is a performative activity, in which both fleeting constructs, i.e. imaginary stand-ins for objects, and covert actions mutually shape one another. And what emerges is not a picture, but a context-sensitive readiness for action, a way of orienting ourselves toward what is possible (Schneider 2013, 2015, 2026).

And when you look at the whole picture again, the organism in its environment, perceiving, imagining, acting, I would argue that imagination is like perception in some ways, insofar as some (but not all) of the same cognitive structures are recruited. But I would propose a reversal of the relation - not to think of imagination as a kind of "internalised perception," but rather to see perception itself as always imbued with imagination. Imagination is not the production of inner pictures; it is the establishment of cognitive structures that shape how we look at, and can

act within, the world.

I need to add an important point here, which traces back to where we started, how bodies, concepts and epistemologies are in constant movement. The kind of imagination that I characterised here testifies to how fragile this process is, and how much its stabilisation – if intended – (through cognitive but also social pressure) builds on and uses (sometimes abuses) all the organic and cognitive functions our evolution brought with it. The way thinking has been understood in early cognitive science, as disembodied information processing, certainly does not hold. "Living thought," as Piaget calls it, relies on all the layers of our embodied being. And this being is a dynamic one, in constant interaction, in constant engagement with changing circumstances and thoughts. I think this reflects the topic of dizziness very well, and the value you attribute to metastable states.

LG: This seems like a good statement to leave the conversation for now…

RA: …only to pick up on it soon again! Let's walk home for now.

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