Publication Series of the Academy of Fine Arts Vienna VOLUME 24

Dizziness—A Resource

Ruth Anderwald,
Karoline Feyertag,
Leonhard Grond (Eds.)

SternbergPress

Dizziness—
A Resource

Dizziness—A Resource

Ruth Anderwald
Karoline Feyertag
Leonhard Grond (Eds.)

Publication Series of the Academy of Fine Arts Vienna
Eva Blimlinger, Andrea B. Braidt, Karin Riegler (Series Eds.)
Volume 24

SternbergPress

On the Publication Series

We are pleased to present the latest volume in the Academy of Fine Arts Vienna's publication series. The series, published in cooperation with our highly committed partner Sternberg Press, is devoted to central themes of contemporary thought about art practices and theories. The volumes comprise contributions on subjects that form the focus of discourse in art theory, cultural studies, art history, and research at the Academy of Fine Arts Vienna and represent the quintessence of international study and discussion taking place in the respective fields. Each volume is published in the form of an anthology, edited by staff members of the academy. Authors of high international repute are invited to make contributions that deal with the respective areas of emphasis. Research activities such as international conferences, lecture series, institute-specific research focuses, or research projects serve as points of departure for the individual volumes.

All books in the series undergo a single blind peer review. International reviewers, whose identities are not disclosed to the editors of the volumes, give an in-depth analysis and evaluation for each essay. The editors then rework the texts, taking into consideration the suggestions and feedback of the reviewers who, in a second step, make further comments on the revised essays. The editors—and authors—thus receive what is so rare in academia and also in art universities: committed, informed, and hopefully impartial critical feedback that can be used for finishing the work.

We thank the editors, Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, for proposing this volume. We would also like to thank the authors for their contributions, and, as always, we are grateful to all the partners contributing to the book, especially Sternberg Press.

The Rectorate of the Academy of Fine Arts Vienna Eva Blimlinger,
Andrea B. Braidt, Karin Riegler

This is a peer-reviewed publication. We thank the anonymous reviewers for their in-depth comments and advice.

Editors: Ruth Anderwald, Karoline Feyertag, Leonhard Grond
Editorial Coordinator: Iris Weißenböck
Proofreader: Niamh Dunphy
Design: Anna Landskron, Surface, Frankfurt am Main/Berlin
Printing: Holzhausen Druck GmbH, Wolkersdorf
Binding: Buchbinderei Papyrus, Vienna

Cover image: Anderwald + Grond

Supported by Land Steiermark Kultur, Europa, Außenbeziehung, Amt der Kärntner Landesregierung Kunst und Kultur, and Kulturabteilung der Stadt Wien.

ISBN 978-3-95679-521-3

Distributed by The MIT Press, Art Data, and Les presses du réel

Sternberg Press
Caroline Schneider
Karl-Marx-Allee 78
D-10243 Berlin
www.sternberg-press.com

Contents

Transversal Nature of Dizziness

Modes of Creativity Perspectives from Psychology, Innovation Research, and Consulting

Navigating Dizziness

Mode d’emploi

Ruth Anderwald, Karoline Feyertag, and Leonhard Grond

When I came in I was confused, when I came out I was full of ideas.
—Eilean Hooper Greenhill

Slipping into dizzying freefall, sliding into uncertainty, becoming stuck, losing one’s way, and giving up are as much actions as they are occurrences, both active and passive. Dizziness, marked by an increasing feeling of loss of control and vulnerability, is a midway state at the point where everything and nothing seems possible, where certainty and uncertainty are in superposition. What potential lies in being out of kilter? How does a thought, an expression, the emergence of an idea, or an experiment evolve under such a condition? How can this phenomenon of *Taumel*, which translates as “dizziness,” become a resource?

In this book, dizziness is used as a metonym for cognitive, emotional, and physiological processes involving, unbalance, confusion, and disorientation. Moreover, Taumel is pertinent to a physical, mental, and metaphorical frame of references, and is therefore relevant to cross- and transdisciplinary communication. However, the appropriateness of the terms Taumel and dizziness were challenged throughout the trajectory of the artistic research project “Dizziness—A Resource” funded by the Austrian Science Fund (FWF-PEEK, AR 224, 2014–17), that lay the foundation for this publication, evaluating their implications and exploring functionality and appositeness. Through this multidisciplinary confrontation, the project was able to establish dizziness as an operational term for related artistic and scientific research.

Starting with the attempt to call the phenomenon of dizziness by its proper name, this book brings together diverse voices considering the potential of this in-between state from multiple perspectives and in view of different disciplines. With specific attention to moving-image art and post-structural philosophy, reflecting the expertise of the editors, this book assembles essays, interviews, and poetic texts by sixteen artists, artistic researchers, philosophers, scientists, and practitioners from Austria, Canada, France, Germany, Great Britain, Israel, and Poland. Contrasting their respective approaches, *Dizziness—A Resource* aims to reveal the richness of a future field of cross-disciplinary dizziness studies that seeks to understand dizziness from the viewpoints of different disciplines: from sensory input to philosophical and metaphorical dizziness, to artistic and creative processes, to personal, or sociopolitical change processes. The contributing authors share a background of interdisciplinary research that broadens their methodological approaches as well as their practice. Referring to this common background, the use of conversations in this book represents a methodological approach of the underlying artistic research project. This volume can be perceived as the first attempt to outline the emerging field of dizziness studies. Further and ongoing research is to be found on the online repository: http://www.on-dizziness.org.

The book's four sections "Naming Dizziness," "Transversal Nature of Dizziness," "Modes of Creativity," and "Navigating Dizziness" question how and under which conditions dizziness can be regarded a resource. The prelude addresses the reader as a possible "agent of confusion" and confronts her or him with the personification of dizziness. Together, the editors of this book, created the poetic monologue *Dizziness Is My Name* in a collective effort to combine art, philosophy, and artistic research with musical improvisation by trumpet player Anders Nyquist from the Vienna-based orchestra klangforum Wien. Midway between manifesto and sound installation, *Dizziness Is My Name* was employed to lead the visitor through the exhibitions on dizziness at Kunsthaus Graz and U-jazdowski Castle Centre for Contemporary Art in Warsaw.

Drawing on the prelude the first section, "Naming Dizziness," presents different ways to give dizziness a proper name. Ruth Anderwald and Leonhard Grond's essay gives account on the research-creation process of "Dizziness—A Resource" and its starting points, carefully positing dizziness as a resource within "artistic facts," artistic-cinematic practices, philosophical thought, and scientific research. Following this is a conversation with philosopher François Jullien, which laid the foundation of Anderwald and Grond's cooperation with Karoline Feyertag, who added the focus on French contemporary philosophy to the research-creation process. Jullien presents a steady point of reference for the artist duo, well before their research on dizziness set off. Therefore, it deemed logical to explore with Jullien the connection of the dynamics of his thoughts on dizziness as a concept in motion. The conversation revealed some indispensable preliminaries to the reflection of dizziness; namely, linking dizziness to the philosophical terms "ambiguity," "paradox," and "compossibility." The contribution by Jarosław Lubiak, artistic director of U-jazdowski Castle Centre for Contemporary Art Warsaw, is explicitly concerned with naming dizziness and highlights the fact that the phenomenon called dizziness functions as a "proper name," eluding the necessity for narrowly defining the object of study but rather introducing dizziness into Lacan's concept of a "symbolic system." A prospect on this symbolic dimension of dizziness is provided by philosopher Marcus Steinweg in his experimental philosophical essay "Dizzy Thinking" through the mastery of thinking and writing: beginning with Peter Handke, passing by Gilles Deleuze, Félix Guattari, Jacques Lacan, Jean-François Lyotard, Franz Kafka, Edgar Allan Poe's maelstrom, Simone Weil's pain, Robert Walser's Schnori, and closing with Ludwig Wittgenstein's questions on certainty, Steinweg encompasses the proper risk of dizziness when the individual exposes oneself to the act of philosophizing: "No thinking without risk."

The second section, "Transversal Nature of Dizziness," focuses on the cultural, art-historical, architectural, and performative accounts of dizziness. Commencing this section, art historian Oliver A. I. Botar emphasizes the corporeal and artistic pleasures of dizziness from the perspective of Roger Caillois's

ilinx and spatial theories of the early Futurists in regard to aviation, art history, and expanded cinema. Caillois's game theory is subsequently addressed by architectural theorist Davide Deriu and philosopher Sarah Kolb. Their contributions differ in style, but are both concerned with how dizziness offers ways to position oneself outside the societal norm; be it the illegal art of high-wire walking between the urban abyss of the Twin Towers of the former World Trade Center, or challenging scientific boundaries by translating the experience of existential dizziness into philosophical writing as the case of Caillois. Rebekka Ladewig's essay on Jan Evangelista Purkyně's self-experiments in the nineteenth century ties in with her book *Schwindel: Eine Epistemologie der Orientierung* (2017), which considers the significance of vertigo within an epistemology of orientation. Ladewig is also a cofounder of the Berlin-based cultural sciences journal *ilinx*, which proposes and analyzes new and experimental forms of research in cultural studies. The first edition of the journal was an essential catalyst for the artistic research "Dizziness—A Resource." The title, *ilinx*, refers to Caillois's groundbreaking study *Les jeux et les hommes: Le masque et le vertige* (1958).

The third section, "Modes of Creativity," begins with a conversation between Anderwald, Grond, and creativity researcher Mathias Benedek, who became another important contributor to "Dizziness—A Resource." Not only would Benedek and his colleague Emanuel Jauk's psychological creativity research be challenged by the artist duo approaching them with questions about their own creativity, but their cooperation also created new research in the form of a scientific survey that was incorporated into an art competition Living in a Dizzying World. The artwork that won first prize, *Fractal Crisis* (2016) by Viktor Landström and Sebastian Wahlforss, was included in the exhibitions on dizziness. Besides elucidating on the relation of dizziness and creativity, the conversation also testifies to essential questions of arts-based research and research-based art. Indeed, the problem of mutual translation, translatability, and understanding is a visceral one for any cross-disciplinary research and has its specific moulding within the realm of artistic research. In the essay "The Many Facets of Creative," researcher and head of innovation and strategy at a company that provides medical and therapeutic solutions Maya M. Shmailov links the personality of creative boundary-crossers with their ability to risk failure, and to place themselves in states of imbalance to come out with new ideas. What Shmailov researches in the sciences, consultant and philosopher Maria Spindler presents as a practice-based example within management. Like Botar, Deriu, Shmailov, and Alice Pechriggl, Spindler also speaks about the necessary training of specific capabilities in the context of business consulting.

Opening the last section, "Navigating Dizziness," with the interview "Navigating the Unknown," philosopher and psychoanalyst Pechriggl refers to her existential experience of dizziness when speaking about writing her book on acting out

and taking action. Her accident led to the inclusion of a specific phase into her theory of action that refers to mise en abîme, which is the human experience of groundlessness, disorientation, and fear of the abyss. To navigate dizziness as a quandary or predicament equals the necessity to confront fears connected with these personal experiences and to train ourselves "to master vertigo" as Caillois proposed. The conversation that follows between Kunsthaus Graz chief curator Katrin Bucher Trantow and artist and activist Oliver Ressler strengthens the political aspects of dizziness and dissent their potential, but also pushes for radical change, self-empowerment, and solidarity. Finally, Feyertag's essay "Dizziness: From Aporia to Method?" tries to summarize the different and divergent ways in, through, and out of dizziness, asking if dizziness and the artistic research project "Dizziness—A Resource" created a method or rather a *poros*—the way that always has to be traced anew. As there are a lot of individual and collective ways into dizziness, it seems there are as many leading out of or away from dizziness.

In conclusion, the resource of dizziness, like all resources, needs to be activated, explored, and exploited in order to become fertile. The plurality of perspectives on dizziness assembled in this volume is offered as a resource: a resource to profit from and to inspire further artistic and scientific investigation on the topic. In this way, this book does not present an exhaustive systematization of dizziness but introduces dizziness in light of the disciplines that make up the core of the artistic research project.

We are very thankful for the cooperation and the ongoing exchange with scientific, practice-based, and artistic contributors and institutions that have contributed to the development of the project. By questioning different disciplines and modes of expression, we aim to draw an accurate picture of the visceral experience of dizziness, its reflection and observation, and to give an overview of the diverse methods and disciplines engaged in this endeavor. Thus, this book opens a glimpse into what cross-disciplinary dizziness studies could be, and how artistic research contributes knowledge, understanding, and insight on today's dizzying *conditio humana*.

Prelude
Dizziness Is My Name

Ruth Anderwald, Karoline Feyertag, and Leonhard Grond

To understand the resourceful potential of dizziness, we had to let Dizziness speak to us, listen to Dizziness. The process of personalization led to this monologue, that was combined with improvisations by Swedish trumpet player Anders Nyquist for the eponymous sound installation and film.

It's hopeless to find the initials.
Constantly, I digress ...

I'm old and also very young. I'm always already here.
I do not have roots: my root is rootlessness.
I do not have ground: my ground is groundlessness.

Dizziness is my name and I am a pendulum without rope or gravity.
My gravity is movement.

I'm your out-of-body experience. I'm your fall. I'm your hallucination.
I'm your somnambulistic awareness.
I am your voice of reason.
Sometimes.

I am here and I am there, I stagger, I stumble, I stammer, and I twist.
I'm not there.
I am not.
I become.
Constantly, I become.
Constantly, I digress.
Catch me if you can.
I am here.

I'm not your inspiration, thank you very much.
I am awake only in what I love & desire to the point of terror—everything else is just shrouded furniture, quotidian anaesthesia, shit-for-brains, sub-reptilian ennui of totalitarian regimes, banal censorships, and useless pain.
But—I digress ...

Here you are, the artist as the enemy of general sensibilities, the philosopher as the enemy of common sense, the economist as the enemy of balance. We have had our conflicts, our failures, and losses. But let's put that behind us now: a devaluation is direly needed, a trans-valuation, a reevaluation of our relation to the world and to ourselves in order to understand the world anew.

To be sure, we are staggering and will be staggering for some time. But we do not intend to fall, and in this decade we shall set the pace and spiral forward.

Chaos comes before all principles of order and entropy, it's neither a god nor a maggot, its idiotic desires encompass and define every possible choreography, all meaningless aethers & phlogistons: its masks are crystallizations of its own facelessness, like clouds.

Confront your anxiety of the formless, of the faceless and embrace it.
Is it this anxiety that finally will make you fall?

Don't you see, out of your neediness for categories you create bloodless ghosts from ambiguity. Ambiguity and Dizziness: we clear the path to this vast openness, this in-between state of mind, of confusion and combination, of the not-yet, of the "as well," of the compossible—where contradictions and opposites fuse together.

Let us mount our horses of imagination and off with us—in search for possibilities unwanted, unanswered, unfinished, unsought, and unknown.

I've heard surviving pilots tell that free fall triggers a feeling of confusion between the self and the aircraft. While falling, people may sense themselves as being things, while things may sense that they are people. Traditional modes of seeing and feeling are shattered. Any sense of balance is disrupted. Perspectives are twisted and multiplied. Doesn't that sound familiar?

We'll let Aporia guide us. Aporia who seizes us, paralyses us, and drowns us. Aporia, you can bring us to the threshold of compossibility.

Remember, without me you will never be able to fully understand the value of loss and failure, the value of vitality, nor will you be able to find alternatives to success and failure.

Dizziness is my name and I am a pendulum without rope or gravity.
My gravity is movement.

I am here; I'm not there.
I am not.
I become.
Constantly, I become.

I, Dizziness, am not only stumbling and turning—I'm also exploding, spreading all over, and recalling the ephemeral to mind:
I'm in the north and in the south, in the east and in the west, I'm up and down, going up and going down, dragging you with me onto this roller-coaster trip, following you on your vertiginous heights. My breathtaking pace creates new wills as it dispels old, new ignorance, new problems, new dangers. The opening vistas of dizziness promise confusion, hardship, as well as high reward.

Creativity and responsibility have to go hand in hand. Say what you have to say properly and then take responsibility for it.

Artists and philosophers, scientists and inventors, poets, gifted teachers, doctors, economists, talented politicians, and gardeners. My agents of confusion! This is your call of duty!
Watch the things that are not here.
Or not yet.
Go, transform! Confuse! Dream.

It seems you thrive on movement not yet made, on space undefined, unexplained, on things unthought and uncombined. You know that to combine means to confuse—at first. As agents of confusion you precede the agents of change.

Your promise is to grow on disaster as much as on construction, on the useless as much as on the necessary, on the absurd, the arbitrary, and the alien.

You have experienced yourself different situations of dizziness, like being in flow, intoxication, inebriation, or spinning around—complementary and contradictory as they come—but remember: as you enter my cocoon, a certain numbness befalls you; your perception of time changes, as your perception of proportion; think of the sensation of increasing loss of control; of the temporary loss of memory and the growing loss of cohesion, of narrative, of self, even ...

There is no being safe, because being safe in itself is unsafe.
Don't take control; take the next step.
In fact, the idea of control is meaningless on its own.
In a world of rampant inequality and injustice, we can only seize control at the expense of someone else.

Bon courage, ma vieille pirate!
Stagger rhymes with dagger—and you my agents!
You need to move out of yourself to start!
Turn, let lose, let go, embrace your helplessness, and eye to eye with it make way for new possibilities and new impossibilities.

Our big chance is that we acknowledge a part of the still Unknown as unknown (without assimilating the Unknown into the yet Known), and that we become open for what we do not yet know or are not yet able to think and that we free our minds and move, move, move.

Dizziness is my name and I am a pendulum without rope or gravity.
My gravity is movement.

Together, we will reach this intermediate space, where every answer becomes a question and every question becomes an answer; arrive at the crossroads where all journeys merge.
This is a place where roads not only join, but new axes multiply and new directions sprout.
This stage is faraway and very close by, created by ephemeral moments that simultaneously mark a departure and the arrival of the next step. Every arriving is a new departing toward this stage, where everything is compossible and it's only a step made, for other steps to come.

There is no meaning unless this meaning
creates a multiplicity of other meanings.

Here is what I, Dizziness, have to offer you:
confusion guided by a clear sense of purpose.
Leave shattered what was lost.
Hold on to our purpose and hold on to hope!

I am here, I'm not there.
I am not.
I become. And I digress.

Naming Dizziness

Artistic, Linguistic, and Philosophical Starting Points

Dizziness—A Resource?

Ruth Anderwald and Leonhard Grond

There is a dimension, which seems fertile in this moment of dizziness when things become confused because they lose their equilibrium and because they find themselves suspended from the clearness, which allowed thinking them.
—François Jullien

Any art hopes [...] to speak with some cogency of our condition as human beings; [...] Art can accomplish such ends only through accuracy, through exact definition, what Confucius referred to as "calling things by their right names."
—Hollis Frampton

The book *Dizziness—A Resource* is the culmination of a four-year-long, extensive transnational, cross-disciplinary process that encompasses artistic, academic, and practice-based research. It has spawned a blog, two major exhibitions, a series of HASENHERZ film screenings,[1] discussions, workshops, conferences, a survey tied to an art competition, and artistic and academic publications. All this was done in an attempt to more fully define the multidimensional phenomenon of dizziness, and calling it by its "right name." Despite a proclivity toward eclecticism, the project's emphasis was on casting dizziness in a new light, identifying that it has its own field of artistic and interdisciplinary research, and showcasing the creative potential it holds. In the process of metaphorization and *prosopopoeia*,[2] *Dizziness—A Resource* takes advantage of art's potential to integrate not only the contributions of multiple disciplines but to also include the unknown and paradoxical. The latter is essential in this case, because—in the words of Polish curator and scholar Jarosław Lubiak: "Dizziness is the name of what disrupts communication, understanding, comprehension. It suspends beyond all certainty."[3]

Definition

For this endeavor, the German word *Taumel* is translated as "dizziness," but the meanings of both terms are not strictly identical. Taumel describes the positive, negative, and ambiguous feelings of being dizzy, as well as the staggering

1 "HASENHERZ or the Pleasures of the Moving Image and Word" is a screening- and discussion format that simultaneously constitutes a work of art and an instrument of in-depth art examination based on an open exchange between the artist and the audience. By screening the work repeatedly with intermittent discussions including the artist and the audience, it furthers a deeper understanding of film and video art. Its method is appropriated from Arnold Schönberg's practice to perform and communicate new developments in contemporary music.

2 Prosopopoeia is a figure of speech representing an abstract quality or idea as a person or creature speaking and acting.

3 Jarosław Lubiak "Semantics of Dizziness" (lecture, "Balancing Togetherness," Warsaw, December 1, 2017). See also in this volume "Semantics of Dizziness," 66–74.

movement of a body that is about to fall down. Moreover, it is often used metaphorically, for example, in the German expression *im Taumel der Gefühle*, which implies doing something inconsiderate when being overwhelmed by an emotion, such as rage, sadness, or love. In the context of this project, the word "dizziness" is used in a positive, negative, and ambiguous way and is an expansion of the original English meaning of the term. Its ambivalence and disconcerting polysemy, on the one hand, and simple efficiency, on the other, defy the strict categorization attributed to a concept. It emphasizes the ephemeral and unpredictable character of the phenomenon of dizziness, which is understood as the unforeseeable movement or the feeling of such movement that causes a shift from the expected and familiar to the uncertain and unknown.[4] Being subjected to experiences of dizziness can evoke a fearful response, as individuals find themselves lost in turmoil, confounded and unable to trust their senses and reasoning. The experience of dizziness causes feelings equivalent to philosopher Timothy Morton's description of being inside a hurricane: "To be inside a hurricane is to inhabit a 'present' [...]. This is because a hurricane has its own temporality, not ours. We endure it, undergo it, in a nowness that is more like a slightly nauseating feeling of relative motion."[5]

Nevertheless, many people purposefully and joyfully search for states of dizziness, relishing moments of blissful disorientation, self-abandonment, and catharsis.[6] This chapter explores the subject of dizziness concerning the individual in relation to artistic and philosophical sources, and in the wider context of the cultural and natural sciences, underlining the assumption that it can become a source of transformation and creativity. In particular, *Dizziness—A Resource* investigates whether the emergence of dizziness, such as the states it creates and its effects, can be regarded as a resource, and if so, under what conditions. Drawing attention to the creative and generative potential of this in-between state, we propose to reconsider dizziness as a way of thinking about artistic practice and other fields of creative thinking, and as a primary indicator of the possibility for transformation.[7] The research-creation process on *Dizziness—A Resource* started from the hypothesis that states of dizziness in the form of disorientation, unbalance, uncertainty, or confusion are not only a part of the physiology and ontology of being human, but also of artistic and philosophical or even any creative processes.[8] By becoming dizzy, the individual experiences emotional turbulences including shifting and overlapping feelings of insecurity, exhilaration, lightheadedness, perturbation, disarray, and anxiety. Exposure to dizziness increasingly reduces predictability and thus affects our ability to exercise control and hindsight.[9]

In the interview with philosopher Karoline Feyertag in 2015, French philosopher François Jullien, whose book *The Silent Transformations* (2009) was a valuable reference from the very beginning of this project, called our attention to the connectivity of ambiguity, compossibility, and dizziness.[10] Together with Feyertag,

we took his proposition further to expand our understanding of dizziness as a resource within the concept of the compossible space.[11] By creating a compossible space, the unpredictable movement of Taumel discomposes the given and habitual—such as its wants, preconceptions, patterns, disciplines, meanings, or systems—creating space and dynamics in-between established categorization and perceived oppositions, and thus making space for a change of perspective and renewal. As a dynamic motion, Taumel arises situationally, locally, and temporarily, and combines disparate elements: commotion and continuity, dissolution and formation, habitude and evolution, disorientation and momentum. It can clear or obfuscate, cause a great stir—move heaven and earth.[12] According to Plato, dizziness signifies the constitution of all philosophical thought by destabilizing the basis of knowledge to a state of uncertainty: as an ontological state, it indicates a temporal opening toward possible transformation and innovation.[13]

Departing from the conception of dizziness as an underlying and uncontrollable dynamic that dissolves perspectives, meanings, boundaries, disciplines, oppositions, categories, and systems, our research identified dizziness as an agent of confusion. It was defined, named, and characterized, and through prosopopoeia, the voice of an expressive fictional character was created. Furthermore, as well as sharing Hannah Arendt's appreciation of metaphors connecting abstract thinking with the realms of the sensory,[14] and Hollis Frampton's confidence in images being able to cross psycholinguistic and disciplinary

4 See François Jullien, *The Silent Transformations*, trans. Krysztof Fijalkowski and Michael Richardson (London: Seagull Books, 2011).
5 Timothy Morton, "Apologies for the Delay: Time Junction," wall text for "After the End of the World," an exhibition about the present and the future of the climate crisis that took place at Centre de Cultura Contemporània de Barcelona, October 25, 2017–May 1, 2018.
6 Petra, Löffler, *Verteilte Aufmerksamkeit, Eine Mediengeschichte der Zerstreuung* (Zurich: diaphanes, 2013).
7 See Arthur Koestler, *The Act of Creation* (London: Hutchinson & Co, 1964).
8 Rebecca Solnit, *A Field Guide to Getting Lost* (London: Penguin Books, 2005). See also Mathias Benedek, Emanuel Jauk, and Kevin Kerschenbauer, "Creating Art: An Experience Sampling Study in the Domain of Moving Image Art," *Psychology of Aesthetics, Creativity, and the Arts* (2017): 325–34.
9 Isabell Lorey, *State of Insecurity: Government of the Precarious* (London: Verso, 2016), 18.
10 See Karoline Feyertag and François Jullien, "On the Philosophical Potential of Dizziness and Compossible Space," in this volume, 54–64.
11 Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, "The Concepts of Dizziness and the Compossible Space in Research-Creation," *Emotion, Space, Society* (2017): vii.
12 Anna Echterhölter et al., "Wirbel, Ströme, Turbulenzen," in *ilinx—Berliner Beiträge zur Kulturwissenschaft*, no. 1 (Hamburg: Philo Fine Arts, 2010), vii.
13 See Plato, *Timaeus*, trans. B. Jowett, *Elpenor*, http://www.ellopos.net/elpenor/physis/plato-timaeus/default.asp.
14 See Hannah Arendt, *The Life of the Mind* (New York: Harcourt Brace Jovanovich, 1978).

boundaries,[15] we relate our artistic research practice to Polish curator and art theorist Jerzy Ludwiński (1930–2000) and his concept of post-artistic practice. To this effect, it was not ultimately plausible to impose a clear-cut separation between topic and method and applied thinking and working processes. However, reflections along this line show that in the final analysis, the interdependence between all factors can yield an intelligible artistic narrative and increase scientific and popular understanding of the topic, even if the main character, dizziness, remains unstable, unpredictable, vertiginous, and otherworldly.

Artistic Facts, Compossible Space, and Dizziness as a Method

States of dizziness can lead to disorientation, confusion, perplexity, or even paralysis and aporia. Notwithstanding these circumstances, the search for an apposite methodology for our research-creation led us to the consideration of, and experimentation with, dizziness as a method.[16] Thus, we focused on the potential of dizziness as a productive part of creative and artistic processes and on its potential of creating and dynamizing a compossible space.

In his writings, Ludwiński referred to post-art as vulnerable art, ephemeral art, or impossible art to underline "the dialogue that art has with other spheres of civilization while taking into consideration the specificity of that dialogue with our reality."[17] This is not a recent phenomenon, but deeply rooted in the development of the visual arts of the twentieth century. Ludwiński considered the artists' desideratum for a multi- or cross-disciplinary approach as first being caused by the blurring of the boundaries within the arts, and subsequently by the dissolution of boundaries between the arts, cultural sciences, technological developments, and entrepreneurship. Indeed, in this multi- or cross-disciplinary work process, he claims, the "work of art loses its former spatial and temporal structure and no longer conforms to any previously drawn limits. The work of art can appear everywhere and embrace anything and everything. It becomes concrete only in the viewer's imagination. The recording of the creative process is confined either to its prologue—the idea—or its epilogue—the documentation."[18] Therefore, neither the documentation of the process nor the initial idea is apt to transport the entirety of the artistic work, which is rather constituted of an *artistic fact*.[19] Such an artistic fact is nevertheless limited in its potential to account for the social and transformational aspect of shared knowledge formation and imagination that fuel, co-create, and progress the research-creation process.

How much of a resource dizziness actually is was put to the test when it was used as a methodological approach. By drawing on the psychological understanding of creativity as inciting and stimulating a complex network between a multitude of divergents, indeed, even with conflicting information (from

different brain areas),[20] we saw the connection to Jullien's definition of compossibility, as the realm of the foundational non-separation, non-distinction, non-exclusivity where the one (thing, thought, fact, idea) as well as the other are simultaneously existent without excluding each other or making each other impossible. To shape a compossible space, an actual space-time for compossibility and dizziness, we attempted to recreate such a network for our project through the diverse sources and disciplines we involved. In this cross-disciplinary cooperative process, it proved germane to keep the dialogue carefully on topic, and to not focus on disciplinary specifics or taxonomies but rather to keep an open mind for what may still be on the outside of the current focus.

In this way we surrounded the research hypothesis with abundant, diverse, and sometimes contradicting information, enduring the resultant zones of confusion and ambiguity that emerged. To make dizziness resourceful a high tolerance for ambiguity and disarray is needed—what the English poet John Keats termed *negative capability*[21]—as well as the confidence that even disparate parts will "come together because of a propensity inherent in the material" or in the initial question.[22] In this way, dizziness used as a method involves increasing complexity, and that in itself can be confusing and perplexing. How-

15 Hollis Frampton, *Circles of Confusion: Film, Photography, Video: Texts, 1968–1980* (Rochester: Visual Studies Workshop Press, 1983).

16 Research-creation as the combination of arts-based research and research-based art allows for manifold approaches, heterogeneous formats, diverse outcomes, and contradicting methods that Reneé Green has described as modes of "curiosity, sustained questioning, and analysis." As in dizziness, the strength of research-creation resides in its ambiguous, wide-stretched, and diversity-affirming nature." Anderwald, Feyertag, and Grond, "Concepts of Dizziness and the Compossible Space in Research-Creation," i.

17 Jerzy Ludwiński, *Notes from the Future of Art: Selected Writings of Jerzy Ludwiński*, ed. Magdalena Ziółkowska (Eindhoven: Van Abbemuseum, 2007), 45.

18 Ludwiński, 47.

19 "Recently, there has been a tendency to avoid the very term "work of art" and replace it with the term "artistic fact," which is a broader notion. The work of art was the crowning point of the creative process, its apex mattered, while the process itself was of no interest to viewers. Artistic facts, on the contrary, bring viewers much closer to the process of creation. They are the sum of all the possible manifestations of this process. Even they, however, despite their logical and coherent character as the artist's work, hide the artistic process in an artificial way. It is difficult to resist a suggestion that what is happening 'in-between' the artist's activity is equally, if not more important, especially as human thought cannot be fully rendered in any existing language." Ludwiński, 23.

20 R. E. Beaty et al., "Robust Prediction of Individual Creative Ability from Brain Functional Connectivity," *Proceedings of the National Academy of Sciences (PNAS)* 115 (2018): 1087–92.

21 "I mean Negative Capability, that is, when a man is capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason." Keats to his brother, December 1817, quoted in Horace Elisha Scudder, ed., *The Complete Poetical Works of John Keats* (Boston: Riverside Press, 1899), 277.

22 Andrei Tarkovsky, *Sculpting in Time: The Great Russian Filmmaker Discusses His Art* (New York: Knopf, 1987), 117.

ever, dizziness also provides space-time in the form of the compossible space to use ambiguity and confusion dynamically and to keep thinking in motion, that is, "a mode of thinking infused by movement, not relying on fixed points but on moving relations and shifting anchor points."[23]

Furthermore, a number of different artists, curators, researchers, and practitioners were involved in this endeavor of defining dizziness, and this social interaction, exchange, and critique proved to be invaluable. The participants' open-mindedness made it possible to use the dynamics of dizziness, uncertainty, and disorientation to drive the research process. Or, in the words of Ludwiński: "What matters are the tensions created by the collective effort of many individuals which contributes to the making of one system, pulsating with its own life."[24] The project blog (www.on-dizziness.org) can be perceived as an artistic fact in its own right and represents a collection of further artistic facts that draw on a broader picture of the process of artistic, scientific, practice-based, and curatorial investigation.

Synthesizing all the disciplinary languages and ensuing tensions into a voice that portrays dizziness has become the final research-based artistic output. Through this metaphorization of dizziness into an archaic persona, the research-creation's "pulsating life" gradually transformed and gave life to the voice of dizziness. Dizziness' monologue is presented in the prelude to this book and alongside the research-creation's related interviews and academic writing.[25] Moreover, through the aforementioned "tensions created by the collective effort of many individuals" and through the many contributors who wrote texts for this book, the multifaceted potential and impact of dizziness have become manifest.

Experimentation and Artistic Process

In the following section, we will consider dizziness by experiencing and reflecting on the staggering movements of our own dizzy bodies, taking into account that "the structure of the nervous system is such that it is hard to imagine purely sensory or motor or vegetative impulses. The most abstract thought has emotional-vegetative and sensory-motor components. Abstract thinking is possible only in conjunction with a special configuration or pattern or state of the body."[26]

Every morning in the few weeks into this research-creation project, we started with an experiment: we took turns spinning ourselves until we fell. Contrary to nineteenth-century physiologist Jan Evangelista Purkyně's self-experiments that were aimed at categorizing dizziness and vertigo, we were particularly interested in the photographic and philosophical qualities of dizziness.[27]

Figs. 1–6
Ruth Anderwald + Leonhard Grond, *Working on Taumel Issue #1*, 2015

23 Anderwald, Feyertag, and Grond, "Concepts of Dizziness and the Compossible Space in Research-Creation," 2, 8.
24 We have also compared this process of developing research-creation based on different disciplinary strings to Oskar Fischinger's invention of his wax slicing machine and Deleuze and Guattari's "block of sensations." Anderwald, Feyertag, and Grond, "Dizziness—A Resource," 3.
25 See also Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, "Dizziness Is My Name," in this volume, 16–19.
26 Moshe Feldenkrais, *Body and Mature Behavior: A Study of Anxiety, Sex, Gravitation and Learning* (Berkeley: Frog Books, 2005), 36.
27 See also Rebekka Ladewig, "De/centering the Subject: Jan Evangelista Purkyně's Self-Experiments on Vertigo," in this volume, 146–71.

In particular, we focused on capturing the fleeting moment of a spinning person turning and falling simultaneously (see figs. 1–8). It is the turning point, the superposition of balancing upright and falling, in the precise temporal and spatial moment of the superposition of motion and standstill or, as François Jullien suggests, the compossibility of all possibilities and impossibilities of motion and standstill, of balance and fall.[28]

Figs. 7–8
Ruth Anderwald + Leonhard Grond, *Working on Taumel Issue #1*, 2015

As artists working with time-based media, we were intrigued to record compossibility and depict the spatiotemporal moment when falling and moving upright become equally and simultaneously possible. While observing the other person spinning, it soon became apparent when people are staggering and then falling, there are no outward signs to indicate the quality of their momentary experience of dizziness, nor could we predict when or if the staggering person would eventually fall down. Encouraged by these observations, we began to work on data for 3D models (figs. 1–6). With the help of iconic, a leading photogrammetry studio in Istanbul, participants were surrounded by the studio's cage consisting of one hundred cameras while they spun until they fell. After quite a few failed attempts, we were finally able to record snapshots from one hundred different perspectives of each person in this compossible moment, and thus we were able to print two photo-sculpture models from this data (see figs. 7–8).

The female figurine cannot stand. Indeed, the velocity and rotational forces just barely stabilized the moving body into an upright position before she fell down. More generally, this exposes the dizzy person's illusion of being in control over his or her body's movements, when in fact the fall is already underway. It highlights that the *limen* of falling is transgressed before we are even able to recognize it with certainty, neither from the standpoint of the observer nor

from the perspective of the dizzy person. The photographs for the male figure were taken an instant before he fell backward. But even in his stumbling, the figurine's poise appears balanced and stable because the body movements before and after the snapshots cannot be anticipated from this momentary posture, pointing to the unpredictable, processual, conditional, and temporary nature of dizziness and its expression on the body. In essence, these artistic facts are consistent with the medical definition of dizziness as a symptom that has to be described from the experiencing person and cannot sufficiently be described or depicted from the outside alone. Therefore, dizziness requires the communication of the experience from the dizzy person and also the recording and analysis of the observation, the experiencing and its reflection. The following steps of the artistic process saw the adding of reflective layers in the form of poetic language and curatorial reflection.

The Bend

Since it became apparent while working on the figurines that we wanted to address the experience of dizziness, as well as the reflection and remembrance of the experience simultaneously, in each case in a different artistic language, we started the search for a possible narrative description of the erratic and unpredictable nature of dizziness. Yet something else caught our attention: in our spinning experiments we experienced the impression of suspended or accelerated time, as Morton mentioned in his consideration of being inside a hurricane, but we felt that this also applied to other dizzying experiences such as losing one's way, falling in love, or going on a roller-coaster ride. This different experience of time is not perceivable from an outside perspective, of course, but impacts interaction. As a way to accommodate these observations artistically, we put together text and images conveying different perspectives on time for the booklet *The Bend* (figs. 9–10). The images themselves bend time insofar as these pictures were all taken in the same instant, but are laid out in time, treating the pages of the booklet as film frames. In a continuous loop, the poetic text "The Bend" oscillates between different narrative persons (from the first-person singular to third-person plural) and relates their experiences and expectations on a winding, unforeseeable path. On this course, they find themselves stunned and overwhelmed time and time again, eventually coming to terms with their experiences to find themselves paralyzed still by the next turn. When both the images and the text came together, it defined a decisive moment in our artistic process, widening our perception of the possible artistic output and heightening our intention of metaphorizing dizziness.

28 As mentioned beforehand, after Jullien, compossibility involves creating a space-time of ambiguity where established oppositions might lose their inherent antagonism, blur, and fuse to form in a new way. See also in this volume, 54.

The Bend

Here, the bend!
Intersilient—
all of a sudden immeability.
All rigid.

But
her feet
keep moving
almost by themselves,
you keep walking.

He goes on.
Can this really be the right direction?
So different from what they assumed?

Proceeding seems easier now.
And finally, after the bend I will have certainty.

Here, the bend!
Intersilient—
all of a sudden immeability.
All rigid.

But
her feet
keep moving
almost by themselves,
you keep walking.

He goes on.
Can this really be the right direction?
So different from what they assumed?

Proceeding seems easier now.
And finally, after the bend I will have certainty.

Here, the bend!

The Emotional and Corporeal Experience of Dizziness

In the previously described self-experiment, the anticipation of feeling unwell after spinning resulted in a very displeasing start to our daily chores. Due to this, and to the fact that it required too much time to recover from, we ended it. Danish artist Joachim Koester emphasizes how the reflecting of experiences of dizziness, and the memories and emotions we connect to them, shape our preconditions, form beliefs, and thus impact our actual experience.[29] In a similar manner, we realized that the uncomfortable expectation of being unwell afterward increasingly influenced our experience. Nevertheless, dizziness is an experience that extracts from the habitual, also through said change in the dizzy person's perception of time, and thus, whether pleasurable or unpleasant, may present a cathartic or transformative experience.

Figs. 9–10
Ruth Anderwald + Leonhard Grond, *The Bend. Taumel Issue #3*, 2015

The resource rich, and even cathartic, character of dizziness is emphasized in filmmaker Henry Hills's experience. Hills literally used dizziness as a resource to overcome a severe and prolonged crisis in his work. Spinning around, camera in hand, and becoming dizzy enabled him to pull through this difficult situation. Not only did it seem to him that the vertiginous perception of the world matched the uncertainties about going on with his work, but his becoming dizzy also stimulated new sensations, and brought back a dear childhood memory: spinning and falling into the grass while watching the world turning

29 Joachim Koester, in an unpublished conversation with Ruth Anderwald and Leonhard Grond, Berlin, 2014.

around him. This early and positive experience of dizziness and of creating moving images helped him to push through in this troubled period in his life, and he recovered by making a film about spinning. Hills used dizziness not only as his resource, both personally and artistically, but also as his method. His experimental film *Failed States* (2008) investigates dizziness as a reflective and visceral experience, taking into account that "every muscular contraction has an origin and a history, which is also this idea of memory situated in the body, or events leaving sediments in the body, sediments that can be explored or become compulsive as they 'become' in the mind. So, in the mind, memory sits as a kind of premise for this world."[30] Moreover, we need to think about the emotions that dizziness evokes "in terms of ideas and values, that is as judgments about things: To hate or to fear is to have a judgment about a thing as it approaches." However, "thinking about what emotions do cannot be thought about without the sense of being in a body."[31]

Throughout this artistic research, dizziness is considered a phenomenon of embodied knowledge that blurs the boundaries not only between experience, memory, and reflection, but also between perception and conception. Reflecting Giorgio Agamben's thoughts, dizziness is "not properly a modality of being, but it is the being that is always already given in modality, that is its modalities."[32] Defining dizziness started not only by considering dizziness in relation to the linguistics of Taumel, or regarding the creative and artistic process, but also by the investigation of the dizzy body. Disequilibrium is the sensation of being off-balance, and is most often characterized by frequent falls in a specific direction (as described above in our artistic experimentation). One can induce dizziness and disequilibrium by engaging in disorientating activities such as spinning. As mentioned earlier, from a physiological perspective dizziness is considered a symptom, not a sign. As a medical symptom, dizziness is ambiguous and can lead to a multitude of deviating diagnoses. Moreover, it needs to be described by the subject who is experiencing it and cannot be measured objectively (i.e., like blood pressure). Medically speaking, dizziness concerns impairment in perception and stability. It can be used to mean a nonspecific feeling such as giddiness and lightheadedness, as well as presyncope, disequilibrium, or vertigo, and is used to describe the sensation of spinning without moving or having one's surroundings spin around them.

The vestibular system (fig. 12) is the sensory system that affords our sense of balance, gravity, and movement. Together with the cochlea, it constitutes the labyrinth of the inner ear, which is situated in the vestibule of the ear. As our movements consist of rotations and translations, the vestibular system comprises two components: the semicircular canal system, which indicates rotational movements; and the otoliths, which indicate linear acceleration. The vestibular system sends signals primarily to the neural structures that control our eye and head movements, and to the brain and spinal cord, affecting the

Fig. 11
Henry Hills,
Failed States,
2007

muscular structure that steers our poise. The projections to the former provide the anatomical basis of the vestibulo–ocular reflex, which is required for clear and stable vision; the projections to the brain and spinal cord control our body posture, instill our sense of direction and gravity, and allow for quick reflex reactions to both the limbs and trunk to regain balance. The reflexes could be construed as being the corporeal mode of compossibility. When we stagger, our body refers to the spinal cord that orchestrates the reflexes of our legs' movements. In falling, another such reflex puts our hands in front of our head. Under these circumstances we are not consciously self-determined, but on account of our reflexes we stand a chance of regaining balance.

Recent physiological, psychological, and neuroscientific research shows training balance capability to ameliorate cognitive abilities, especially memory

30 Joachim Koester explains this in reference to the famous psychoanalyst Wilhelm Reich, quoted from an unpublished conversation with Anderwald and Grond in Berlin, 2014.

31 Sigrid Schmitz, Sara Ahmed, "Affect/Emotion: Orientation Matters: A Conversation between Sigrid Schmitz and Sara Ahmed," *Freiburger Zeitschrift für GeschlechterStudien* 20, no. 2 (2014): 97–108.

32 Giorgio Agamben, *The Coming Community*, trans. Michael Hardt (Minneapolis: University of Minnesota Press, 2004), Appendix, 92.

and spatial cognition.[33] Psychobiological research suggests a deeper connection between our ability to maintain emotional and corporeal equilibrium and flexibility, further indicating a remarkable comorbidity between anxiety disorders and a deficient sense of balance and orientation.[34] Evidently, the dizzy individual is exposed to an emotional maelstrom involving overlapping feelings of exhilaration, euphoria, anxiety, disorientation, and alienation. Being out-of-kilter can evoke feelings of separation and alienation toward the self and/or the world affecting our senses and *ratio*. At times, the dizzy person is seeing, feeling, and hearing dizziness unfolding without realizing, but is baffled, perplexed, and in denial, since acknowledging dizziness also means admitting to a certain loss of control to precariousness and vulnerability.[35] Clearly, emotional conditions and memories influence the experience and reflection of dizziness in its potential resourcefulness, which points to its situational, temporal, and conditional character. With its physical, mental, and metaphorical implications, dizziness is part of the *conditio humana*, raising questions pertaining to physiological and psychological research, as much as philosophical and artistic considerations.

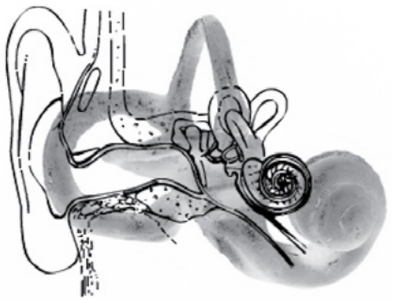


Fig. 12
Ruth Anderwald + Leonhard Grond, *Anatomy of vestibular system with cochlea superimposed*, 2018

The Cinematic Experience of Dizziness and Its Contemporary Artistic Relevance

From its very beginnings, the experience of dizziness was connected to the cinematic experience, which affects first, but not solely, the body, either as an effect consciously sought after or as an unwelcome side effect, such as *cinématophtalmie*, a term coined by French ophthalmologist Thierry Lefebvre in 1909 to communicate the harmful, dizzying effect of cinema to the healthy human being.[36] In his seminal work *Theory of Film* (1960), Siegfried Kracauer

confirms that the cinematic experience affects us first physiologically rather than intellectually, and in the early years of cinema the senso-motoric experience of film was brought into context with dizziness, drowsiness, disorientation, and confusion. Aside from its intellectual impact, the bodily effect of moving-image art is regarded as equally important throughout film history. This concept is epitomized in Peter Kubelka's *Arnulf Rainer* (1960) and Tony Conrad's *The Flicker* (1966). Both films consist only of black-and-white images and are not only hallucinatory and dizzying, but can also be perceived when one's eyes are shut. Not only do we find exceptional artists invested in dizziness, but these groundbreaking films can be read as comment on the nature of film itself, where the ambiguity, the in-between created out of the rush of alternating images, sets the frame for the cinematic experience. Besides, "flicks" and "flickers" were once generic nicknames for films. Consequently, Kubelka's and Conrad's films were said to provide opportunities for viewers to come to understand the nature of film. Koester's *My Frontier Is an Endless Wall of Points (After the Mescaline Drawings of Henri Michaux)* (2007) or Rosalind Nashashibi and Lucy Skaer's *Flash in the Metropolitan* (2006), artists that pertain to a younger generation, serve as contemporary examples of the employment of film's corporeal and dizzying effects of flicker on human perception.

Speaking of visual perception, dizziness can be produced by either abundant visual stimulation, such as the flickering of light used in the abovementioned flicker films, or dizziness can be produced by a deprivation of visual stimuli, as is seen in the phenomenon named "prisoner's cinema,"[37] which is reflected in visual artist Melvin Moti's confrontation for his video work *The Prisoner's Cinema* (2008). It can be evoked by rapid, rotating, or unstable camera movements, as exemplified in Michael Snow's 1969 film *Back and Forth* or in Hills's earlier mentioned work *Failed States*. Dizziness, in its physiological experience, can thus be transmitted to film, and via film to the corporeal experience of the viewer, defining the starting point of our curatorial considerations. Indeed, abundant examples exist already in early cinema, and also presently, in feature and experimental films and video art.[38]

33 E.g., Ann-Kathrin Rogge et al., "Balance Training Improves Memory and Spatial Cognition in Healthy Adults," *Scientific Reports* 7.
34 O. Erez et al., "Balance Disfunction in Childhood Anxiety: Findings and Theoretical Approach," *Journal of Anxiety Disorders* 461 (2002): 1–16. See also S. Shefer, "Progressive Vestibular Mutation Leads to Elevated Anxiety," *Brain Research* 1317 (2010): 157–64.
35 Isabell Lorey, *State of Insecurity, Government of the Precarious* (London: Verso, 2015), 18.
36 Petra Löffler, *Verteilte Aufmerksamkeit, Eine Mediengeschichte der Zerstreuung* (Zurich: diaphanes, 2013).
37 Oliver Sacks, *Hallucinations* (New York: Knopf, 2012), 34–44.
38 For further information, find collected examples of film and video art on the "Moving Image Archive" section of our blog, http://on-dizziness.com/moving-image-archive/.

Contemporary artists such as Hito Steyerl, Joachim Koester, Anna Jeromlaewa, Catherine Yass, or Oliver Ressler, on the other hand, contextualize dizziness within questions of loss of orientation, and collective and individual identity. Steyerl's *In Free Fall* (2010) draws a picture of a society unknowingly in free fall, dangerously defying gravitation as traditional systems of orientation and navigation become obsolete.[39] Koester's artistic research fuses archival findings with personal and fictive narratives and explores dizziness in experimentation with drugs or poisons (e.g., *Tarantism*, 2007), in utopian experiments, such as sectarian or anarchic experiences (e.g., *Of Spirits and Empty Spaces*, 2012), and in the vanishing of explorers (*Message from Andrée*, 2005). Jeromlaewa's body of multimedia work (e.g., *Leninopad*, 2016) mixes dizzying personal and political events, and focuses on our improvisational ways of coming to terms with the paradoxes and changes we face—a human capacity that requires flexibility and adaptability. This capacity is challenged in her work *Trying to Survive* (2000), where roly-poly puppets shake violently from side to side, coming back up only to eventually fall from the frame. In contrast, Catherine Yass addresses dizziness in her filmic and photographic work by focusing on built environments and their dizzying psychological and physiological impact on human beings. Her work is often characterized by unstable and/or floating camera movement, and beyond that, by her curiosity for the condition of the in-between: "I became interested in the time between two exposures, this little gap of movement, of time passed. [...] A kind of vacuum where nothing happened, as though the photographs missed a moment of time. To me that gap became really important. This is reflected in my moving image work." Yass's work, however, reflects this transition differently to the aforementioned flicker films: "When I make films there is always some kind of upside down or backwards going on, which differs from the way you normally treat film, to make you lose your foundation point."[40]

Fig. 13
Joachim Koester, *Tarantism*, 2007

Fig. 14
Catherine Yass, *High Wire*, 2008

The camera movement of her films often mirrors the motion of the subject depicted in her films. In her four-screen video installation *High Wire* (2008), acclaimed tightrope artist Didier Pasquette walks on a rope suspended between two high-rise buildings of the oldest social-housing complex in North Glasgow (fig. 14). Slowly and steadily walking on air, a sudden gush of wind hits him. His surprising response to this precarious moment of unbalance is not to turn around. Instead his feet feel their way backward to his starting point, without ever looking back. We have come to understand that changing the level of stimulation is a possible way to come to terms with dizziness, to increase or reduce complexity or stimuli, or to abstract in order to find a way of navigating. The shutting out of one sense or rather of a possibility is reflected, on a different level, in Oliver Ressler's body of work. He involves the inherent utopian and sociopolitical aspects of joint action in dizzying circumstances, regarding them as chance for processes of positive social and economic change by investigating successful social movements, such as worker-led co-owned factories or the lasting occupation of a piece of land in northern France.[41] Interestingly, Ressler shows struggle, obstacles, paradoxes, dead-ends—but ultimately he never shows failure. In shutting this possibility out of his artistic communication, as much as Pasquette's foregoing of his eyesight, he highlights that centering on purpose is germane to navigate through situations of dizziness. However, dizziness can also become the purpose, as in Hills's filmmaking that is based on the positive memory of his childhood

39 Hito Steyerl and Maria Lind, "Free Fall: A Thought Experiment on Vertical Perspective," *e-flux journal*, no. 24 (2011): 1–11.

40 In conversation with Catherine Yass, London/Vienna, 2014.

41 Katrin Bucher Trantow, "Balancing Togetherness" in this volume, 232–44.

experience of spinning and falling down dizzily. Evidently, the subject of dizziness can be found in a plethora of contemporary and historic works of art, and Oliver Botar's contribution to this book will expound its influence on art history since the early twentieth century.[42]

Process of Metaphorization and Curatorial Approach

Dizziness, in its physiological and emotional sense, can be transmitted by an artwork to affect the body of the viewer. Paul Sharits's experimental film installation *Epileptic Seizure Comparison* (1976), in which he intended to set up an "experiential field," as he called it, so that the audience could move through on their own rather than passively following the development of the work shall be singled out for its impact on our curatorial objective. His film installation is "about an epileptic seizure in flicker style that causes dizziness and can trigger an epileptic fit itself, and in itself signifies an attempt to orchestrate sound and light rhythms in an intimate and proportional space, wherein non-epileptic persons may begin to experience, under 'controlled conditions,' the majestic potentials of conclusive seizure."[43] However, this idea of an experiential field denotes not only the basis of our curatorial considerations, but also of our artistic motivation to metaphorize: What would Dizziness say? How does Dizziness move (through) a space? What does an experiential space created by Dizziness look like?

Fig. 15
Christian Hoffelner, *Taumel Issue #4*, 2016

The development of the spinning 3D figurines and the publishing of the booklet *The Bend* incited the process of metaphorization by transforming the abstract notion of dizziness into an archaic character. Dizziness's insignia was cocreated with graphic designer Christian Hoffelner in the form of a heraldic flag and a font (see fig. 15). Reflection and artistic experimentation along this path led us to try and embody dizziness; to see through dizziness's eyes, and speak with her and his voice. What would dizziness say? Ignited by this question, dizziness's voice grew into a monologue informed by the ongoing research findings and collaging excerpts from relevant literature[44] in order for her or his voice to create "a sphere around it, which includes all its hearers: an intimate sphere or area, limited both in time and space. [...] Words are events, they do things, change things," as Ursula Le Guin noted.[45] Lastly, we asked the renowned Swedish trumpet player Anders Nyquist to perform an improvisation that constitues his understanding of dizziness, which then concluded the production of the sound installation *Dizziness Is My Name* (2016). Dizziness's monologue makes use of "conceptual metaphorical speech," as described by Hannah Arendt, and takes it beyond the realm of thinking and poetry.[46] A means to pervade thought and action in everyday life, conceptual metaphorical speech acknowledges that the terms with which we think and act are already "fundamentally metaphorical in nature,"[47] and that "thought and speech anticipate one another. They continually take each other's place."[48] This meant combining deliberate and unconscious processes in our artistic experimentation, while following philosopher Alice Pechriggl's claim: "The advantage in terms of understanding—in this case doing, somewhere between enacting and taking action—resides in the possibility of making interface between subject and object, between internalization and externalization the point of departure for one's deliberations and exploration of concepts."[49] In keeping with Ludwiński we understand curating an exhibition as the act of connecting displayed objects within an inclusive process that stages compelling creative minds—in order to involve the living energy of people: their ideas, research, processes, and significant activities. In fact, the first curatorial steps took on the form of art conferences where artworks like films, performances, and concerts interchanged with academic, practice-

42 See Oliver A. I. Botar, "The Pleasures of Sensory Derangement and Its Uses in the Art of the Early Twentieth-Century Avant-Garde," in this volume, 92–121.
43 Paul Sharits, "Epileptic Seizure Comparison," *UbuWeb*, http://www.ubu.com/film/sharits_epileptic.html.
44 "Dizziness Is My Name," pp. 16–20.
45 Ursula Le Guin, *The Wave in the Mind: Talks and Essays on the Writer, the Reader, and the Imagination* (Boston: Shambala Publications, 2004), 199.
46 "Conceptual metaphorical speech is indeed adequate to the activity of thinking, the operations of our mind, but the life of the soul in its very intensity is much more adequately expressed in a glance, a sound, a gesture, than in speech." Arendt, *Life of the Mind*, 31.
47 George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980).
48 Arendt, *Life of the Mind*, 32.
49 Alice Pechriggl, in *Taumel Issue #2* (2015), http://on-dizziness.com/booklet-2/.

based and performative lectures and conversations. These encounters included the established practice of HASENHERZ, of repeated screenings with discussions in-between. Conversations with artists and curators, but also with scientists and practitioners formed an important part of our curatorial methodology. These art conferences aim to transcend standard educational symposia or usual Q&A sessions after screenings to yield an experimental and creative realm whereby new and diverse materials, concepts, ideas, and projects are presented, tested, and reflected upon collectively. This experimentation can be understood as the putting into action of the compossible space, and sees the role of curating as a practice to formulate knowledge within an expanded ecology, integrated with academic, educational, artistic, and social practice.[50] Moving forward, these considerations were given particular scrutiny in our prolonged discussion and cooperation with Katrin Bucher Trantow with whom we then developed the

Fig. 16
"Dizziness. Navigating the Unknown," exhibition view, 2017, Kunsthaus Graz
Fig. 17
"Utrata równowagi," exhibition view, 2017, U-jazdowski Castle Centre for Contemporary Art, Warsaw

exhibitions on dizziness. Together we specifically took note of contemporary artworks that discussed or expressed dizziness, or dealt with possibilities of initiating, balancing, navigating and confronting states of dizziness. We then discussed dizziness with the artists in question, as well as exchanging with other

curators, namely, Gareth Evans, Juha van 't Zelfde, Sergio Edelsztein,[51] and Jarosław Lubiak. Our collective curatorial approach can be seen as a form of critical investigation into ways of communicating dizziness and treats the exhibition as an epistemological space. The curatorial gesture at Kunsthaus Graz, with an awareness of the hosting institution as an early artificial intelligence museum building, was to create a network from zones of becoming dizzy, of navigating dizziness and of leaving this state. For each of these zones we staged a theater of objects and contrasted them with the meandering sound installation that pervaded the entire exhibition space, complicating the staged objects with its erratic emergence and disappearance of sounds, shifting their distance and connections.

In order to consider the exhibition as an object of knowledge, we established different possibilities of knowledge transfer. Creating the exhibition as experiential field accentuates the role of experience and allows for the audience to intimately encounter with the phenomenon, its different emotions and states. Sara Ahmet underlines that "emotions don't work simply in a located, bound subject. They move and they are not just social in the sense of mediated, but they actually show how the subject arrives into a world that already has affects and feelings circulating in very particular ways."[52] Artworks link the individual to the collective experience, specifically in the cinema and the exhibition space, and thus further exchange and understanding. Moreover, to take into account the audiences' experience, a voluntary survey among the exhibition visitors was set up. It revealed that visitors had felt the impact of dizziness in their personal life and the resource it provided when they were allowed to be "out of control in a controlled life," inebriated or completely "free from daily constraints." For these visitors, this led to a change of perspective or empowered them to make a decision, but many also recognized they were coming out of the experience with an increased appreciation of their sanity and groundedness.

50 This approach was tested and furthered in the following art conferences: "Taumel: Navigating in the Unknown"; "Navigating the Unknown—Fears and Pleasures of Dizziness"; "Agents of Confusion"; and "Balancing Togetherness." For further information: http://on-dizziness.com/category/chronicle/.

51 Katrin Bucher Trantow is chief curator and deputy director at Kunsthaus Graz. Gareth Evans is a writer, curator, presenter, and film curator of London's Whitechapel Gallery. He conducted a conversation on the project with the authors at mumok Vienna, March 19, 2014. With Dutch DJ, curator, and program director at Sandberg Institute, Juha van 't Zelfde, we discussed Kierkegaard in view of his artistic research "Dread: The Dizziness of Freedom." See http://on-dizziness.com/on-dread/. Sergio Edelsztein is the founder and director of Centre for Contemporary Art (CCA), Tel Aviv, host and cocurator of the art conference "Navigating the Unknown—Fears and Pleasures of Dizziness," CCA, March 21–23, 2016.

52 Sara Ahmed, "Affect/Emotion: Orientation Matters. A Conversation between Sigrid Schmitz and Sara Ahmed," *Freiburger Zeitschrift für GeschlechterStudien* 20, no. 2 (2014): 97–108.

The Source of the Resource

As the comments from the exhibition visitors indicate, the experience of dizziness can pull the proverbial rug out from under our feet and leave us with aporetic feelings of disorientation, anxiety, and groundlessness. Speaking about her work *Descent* (2002), Catherine Yass substantiated that her filmic examinations of falling do imply questions of dizziness relating to balance, ground, and the abyss, but that they also lead to questions of freedom as described by Danish philosopher Søren Kierkegaard: "He whose eye happens to look down the yawning abyss becomes dizzy. But what is the reason for this? It is just as much in his own eye as in the abyss, for suppose he had not looked down. Hence anxiety is the dizziness of freedom, which emerges when the spirit wants to posit the synthesis and freedom looks down into its own possibility, laying hold of finiteness to support itself. Freedom succumbs in this dizziness."[53] In his seminal work *The Concept of Anxiety* (1844), Kierkegaard gives the definition of dizziness as the anxiety caused by the possibility of possibility, and confirms that dizziness can become a resource. Central to his premise is the conception of dizziness as a dual force that can be both destructive and generative. Kierkegaard further argues that our ability to orientate ourselves in states of anxiety and dizziness depends on how we approach these situations.

Following Plato, dizziness' movement engenders the possibility of all philosophical thought by the destabilization of our very basis of thinking to a state of uncertainty. François Jullien characterizes this basis from which we think as the *unthought*. The unthought describes "the thing that I use as the source of my thinking, which I therefore cannot think at the same moment."[54] It determines the underlying source of thinking, that is, knowledge, memories and preconditions on which we unconsciously base our thinking. Speaking about the resource of dizziness, he reflects: "It's only through this act of vacillation that philosophy realizes that it has a basis or foundations. It's these foundations which philosophy takes as evident; [...] it's the implicit choices philosophy makes, which constitute the unthought."[55] Indeed, dizziness can shake us to the core, thus discomposing the unthought. Instead of the philosophical term "unthought," American essayist and activist Rebecca Solnit speaks of beliefs that inherently shape our worldviews and our actions, up to the point where they can become a matter of life and death.[56] Even though their points of reference differ, Jullien and Solnit both draw attention to the underlying basis, the foundation or the ground of our thinking and acting, this tacit and implicit framing of our point of view. Furthermore, Jarosław Lubiak combines the visceral with the philosophical in his reflections on dizziness: "The physiology of balance opens up the possibility of a philosophy of orienting oneself in a situation when the ground slips from under one's feet."[57] Dizziness confuses the source from which we think and act, dissolving and blurring our frames of reference, our perspectives, beliefs, and habits. It confuses, in the very literal

sense of the word, spreading disorder and perplexity. Confusion, however, is rooted in the underlying Latin term *confundere*, meaning to fuse together. Dizziness *con-fuses*—it makes all that seemed clear and definite fuse, blend, become unfinished, unstable, and impermanent. Jullien emphasizes the connectivity of confusion and compossiblity. Further, he assures us that "the phase when it's neither the one nor the other—this phase of confusion/dizziness, when both are possible, compossible, occurs when there is no separation between the two. This is [...] a resource: To think in the mode of confusion and dizziness, and not in the mode of the distinct."[58] Dizziness, the resource, appears as the shaking of the ground, as the source that "maintains itself within the compossible, on this ground/foundation (foncier), which can't be chopped into opposites and, therefore, is apt to expansion." Here, the paradoxal character of the phenomenon becomes obvious. Philosopher Margaret Cuonzo defines paradox in her book as a set of mutually inconsistent claims, each of which seems to be true, but she strengthens the creative possibilities when confronted with a paradox. In the famous words of Niels Bohr: "How wonderful that we have met with a paradox. Now we have some hope of making progress."[59]

Compossible Movements

Whether regarded as ontological concept, paradox or symptom, method or object, sensation or metaphor, dizziness, and its unsettling movement, reshapes coherent, unrelated, and/or mutually exclusive elements. *Dizziness—A Resource* therefore acknowledges the resource-rich potential that the destabilization of the learned and the troubling of the habitual by an agent of confusion can mean. This reasoning can identify dizziness as being initiated by polarities, but also holds the potential to dissolve and transform said polarities. Together with Karoline Feyertag, we have proceeded to define this capacity, the space-time of fecund confusion that dizziness opens, and to name it the "compossible space," describing it as "an actual and theoretical space/time, a situation and

53 Søren Kierkegaard, *The Concept of Anxiety: A Simple Psychologically Oriented Deliberation in View of the Dogmatic Problem of Hereditary Sin*, ed. and trans. Reidar Thomte with Albert B. Anderesen (Princeton, NJ: Princeton University Press, 1980), 61.

54 Jullien François, *Vortrag vor Managern über Wirksamkeit und Effizienz in China und im Westen*, trans. Elisabeth Müller-Lipold (Berlin: Merve Verlag, 2006), 15.

55 See "On the Philosophical Potential of Dizziness and Compossible Space," in this volume, 54–64.

56 See Rebecca Solnit, *A Paradise Built in Hell: The Extraordinary Communities that Arise in Disaster* (London: Penguin Books, 2010).

57 Jarosław Lubiak, "Semantics of Dizziness," in this volume, 66–73.

58 Karoline Feyertag, François Jullien, in this volume, 59.

59 Niels Bohr, quoted in Ruth Moore, *Niels Bohr: The Man, His Science, and the World They Changed* (Cambridge: Cambridge University Press, 1966), 195.

condition" that allows for a productive confusing and transforming of what seemed clear and definite: the given and the lacuna, the possible and the impossible, ground and groundlessness.[60]

Bringing the notion of the compossible space back to its physicality, we propose to consider the peculiar movement of staggering. Staggering triggers reflexes that are located in the lower region of the spinal cord. When staggering, we instantly relax the unsteady leg and simultaneously tense the other leg in an effort to regain balance. This reflex opens a space-time of possibility, a compossible space of simultaneously falling and balancing, analogously to the earlier mentioned work process on the 3D figurines. Within this compossible space, all possibilities are present in their potential, foregoing their exclusiveness—they become *compossible*. Without the reflex of staggering, we must fall, just like when fainting we simply fall. But the compossibility of staggering affords us with additional, albeit uncertain, possibilities; for example, controlled falling to a certain side or being able to slow down the fall, staggering on, or regaining balance. Hence, through the compossible space, we multiply our possibilities. In that sense, the compossible space of staggering is a resource that every healthy human benefits from.

Dizziness is the predefined space of indeterminacy, where possibilities and impossibilities coexist. It is the source, the resource of the compossible, that nurtures the fecund ground of creativity, but at the same time it designates a dismantling of the presupposed, orderly, and classified. Every compossible space as a space-time of ambiguity includes elements of order and elements of disorder. Its diversity is ultimately more than just parallel existing elements, as it contains commingling elements, that possibly intertwine, overlap, block, complement, reinforce, exclude, and destroy each other.[61] Advancing on Kierkegaard's aforementioned notion of dizziness, existential psychologist Rollo May contemplates: "Now creating, actualizing one's possibilities, always involves negative as well as positive aspects. It always involves destroying the status quo, destroying old patterns within oneself, progressively destroying what one has clung to from childhood on, and creating new and original forms and ways of living. [...] But creating also means destroying the status quo of one's environment, breaking the old forms; it means producing something new and original in human relations as well as in cultural forms (e.g., the creativity of the artist)."[62]

In our research-creation, this breaking down, destroying, and decomposing necessary for the creative process brought up the notion of compost (in view of its Latin root *com-ponere*, meaning to construct, arrange together). Indeed, compost can be used as metaphor for the taking up space by and for the procedural fecundity of the compossible space. Compost is formed through the decomposition of organic matter. Corresponding to the nurturing of compost,

a compossible space needs to be maintained, to make this dizzying process of decomposition and letting go fecund, thus engendering the generation of new ground.[63]

Fig. 18
Ruth Anderwald + Leonhard Grond and Anna Kim, *The Future Is Compost* for the public art billboard series *The Frame of the Future™*, 2013–14

60 Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, "The Concepts of Dizziness and the Compossible Space in Research-Creation," *Emotion, Space, Society* (2017): 3.
61 See Ulrich Bröckling et al., *Das Andere der Ordnung: Theorien des Exzeptionellen* (Weilerwist: Velbrück Wissenschaft, 2015).
62 Rollo May, *The Meaning of Anxiety* (New York: W. W. Norton & Company, 2015), 44.
63 See also Maria Spindler's "Growing Transformation and Cocreation Capacities: Two Case Studies in Business Consulting," in this volume, 202–16.

Compost Is

compost is
nature's best mulches and soil

you can use it
all, compost is cheap
you can make it
without spending

compost is and
improves soil

structure, texture, and aeration
are soil's water-holding capacity

compost is
organic
where it takes up space

compost is
material that can be added
to soil to help plants grow

food scraps and yard waste
making compost keeps these materials

compost is and should be
it releases methane, a potent greenhouse gas
composting is nature's process of recycling
anything that was once living will decompose

all compost is cheap
made out of material that can be added
and of the same process nature uses
by composting your organic waste
you are returning nutrients back

basically backyard composting is an acceleration
you can make it
in order for the cycle of life to continue

finished compost looks like soil—

dark,
brown,
crumbly and
smells like a forest floor

structure, texture, and aeration
you added

compost is matter
at the simplest level
you need a heap of wetted organic matter
where it takes up space

methodical composting is a multistep,
closely monitored process
with measured inputs of water, air, and carbon
and nitrogen-rich materials

compost is and should be
without spending

it will have everything you need
and
compost is useful for erosion control,

land and stream reclamation, wetland construction, and as landfill cover
compost is fertile
and
refers not to the actual production of offspring
rather than to the physical capability to produce

all, compost is cheap
you can make it
without spending

but
depletion occurs
when the components which contribute to fertility are removed
and not replaced
and
conditions which support fertility are not maintained.

Conclusion

The multiplication of our potential possibilities through the compossible space references Kierkegaard's conception of dizziness reflecting the possibility of possibility. Its unpredictable movement indicates the potential for renewal and transformation. Therefore, dizziness does not relate to theoretical, artistic, and philosophical concepts only, but remains a phenomenon in the realm of the physical, sensory, mental, and emotional. Its force shakes us to the core, and troubles the patterns, beliefs, actions, and habits that form our thinking and acting. Moreover, the emotional spectrum of dizziness must be considered in order to comprehend its potential as a resource. The experience of dizziness contains ambiguous, disruptive and unpredictable movements and emotions, and, as in the experience of a sudden stagger, it can include an element of surprise, shock, or perplexity. Due to the inherent instability and unpredictability of the process, dizziness cannot be seen as a means of "self-design."[64] In its reflection, dizziness exposes related emotions as propelling the individual into a certain direction or perspective. For filmmaker Henry Hills,

64 See Boris Groys, "The Obligation to Self-Design," *e-flux journal* (2008), https://www.e-flux.com/journal/00/68457/the-obligation-to-self-design/.

memories of being dizzy generated a positive reminiscence of childhood, which helped him to come to terms with an aporetic crisis in his artistic work. However, not all recollections of dizziness necessarily need to have a constructive effect, and this demands further research.

While Oliver Ressler suggests that dizziness can lead to positive social change, practices of inflicting states of dizziness on individuals and groups are not always necessarily positive. On the contrary, there is a dark side to the possibilities dizziness provides. This can be observed, for instance, in the form of torture based on severe and potentially lethal shaking used in military or police interrogation.[65] Israeli artist Meir Tati addresses this method of shaking (*Tiltul*) in his homonymous video work for the artistic-research project "Sharashka" where he himself performs torture and so-called enhanced interrogation techniques. *Tiltulim* in particular is executed by the forceful shaking, back and forth, of the suspect's upper torso repeatedly, in a manner that causes the neck and head to dangle and vacillate rapidly, for instance, by "holding the detainee by the collar of his shirt and violently shaking him."[66] This not only terrorizes, but also confuses, causing the captive to lose spatial and inner orientation. Another art-historical example of affecting a detainee with mental and physical torture through dizziness is Alphonse Laurencic's design for prison cells during the Spanish Civil War (1936–39). Laurencic, an artist and anarchist, designed Bauhaus- and Surrealist-inspired prison cells that tormented the prisoner through intricate coloring and inclined planes, affecting physical and mental instability and pain.[67]

In this artistic research, dizziness became the metaphorization of the unforeseeable dynamic that con-fuses the given and habitual, and establishes a condition of profound and abyssal uncertainty and confusion that can assist the emergence of new possibilities conveying that orientation is situated in the lived experience. It is a phenomenon that remains ambiguous even in its provision as a resource. Voluntary or unconscious recollections of past experiences shape our individual attitude and action toward the idea of dizziness and of being in a state of dizziness. Furthermore, dizziness can provoke surprise, shock or aporia in the affected, thus adding to the disorientation and confusion. Nevertheless, it can lead to a change of perspective as part of a creative, transformative process. But the aporetic element can be used as a manipulative and vicious tool, spreading confusion and installing chronic crisis to conceal, disorient, and devastate—rather than to clear and create, which is why we must take care to scrutinize and reflect further on dizziness, its affects and its (ab)uses. It is of critical importance to discuss, research, and educate on states of dizziness and its related processes, and weigh our options of balancing and navigating states of dizziness individually and as a society. Dizziness can become a resource, but the remaining questions are: Cui bono? Who uses it, to what end and what are the consequences for all of us?

65 Stephen D. Wrage, "Case 273—Tiltulim: Interrogation by Shaking in Israel" (Georgetown University, Washington, DC, case study program, 2001), https://isd-georgetown-university.myshopify.com/products/tiltulim-interrogation-by-shaking-in-israel.

66 See https://www.meirtati.com/interrogation-and-torture.

67 See César Alcalá, *Las Checas del terror: La desmemoria histórica al descubierto* (Madrid: Libros Libres, 2007).

Literature

Alcalá, César. *Las Checas del terror: La desmemoria histórica al descubierto*. Madrid: Libros Libres, 2007.

Agamben, Giorgo. *The Coming Community*. Translated by Michael Hardt. Minneapolis: University of Minnesota Press, 2004.

Anderwald, Ruth, Karoline Feyertag, and Leonhard Grond. "Dizziness–A Resource: The Concepts of Dizziness and the Compossible Space in Research-Creation," *Vertigo in the City*, ed. Davide Deriu and Josephine Kane, special issue, *Emotion, Space and Society* 28 (August 2018): 122–30.

Arendt, Hannah, *The Life of the Mind*. New York: Harcourt Brace Jovanovich, 1978.

Beaty, Roger E., Yoed N. Kenett, Alexander P. Christensen, Monica D. Rosenberg, Mathias Benedek, Qunlin Chen, Andreas Fink, Jiang Qiu, Thomas R. Kwapil, Michael J. Kane, and Paul J. Silvia. "Robust Prediction of Individual Creative Ability from Brain Functional Connectivity." *Proceedings of the National Academy of Sciences (PNAS)* 115 (2018): 1087–92.

Benedek, Mathias, Emanuel Jauk, Kevin Kerschenbauer, Ruth Anderwald, and Leonhard Grond. "Creating Art: An Experience Sampling Study in the Domain of Moving Image Art." *Psychology of Aesthetics, Creativity, and the Arts* (2017): 325–34. doi: http://dx.doi.org/10.1037/aca0000102.

Cuonzo, Margaret. *Paradox*. Cambridge, MA: MIT Press, 2014.

Deriu, D. and J. Kane, eds. "Emotion, Space, Society." *Elsevier* (2017). doi: https://doi.org/10.1016/j.emospa.2017.07.001.

Echterhölter, Anna, Sebastian Giessmann, Rebekka Ladewig, and Mark Butler. "Editorial Wirbel, Ströme, Turbulenzen." *Ilinx*, no. 1 (2010).

Frampton, Hollis. *Circles of Confusion: Film, Photography, Video: Texts, 1968–1980.* Rochester: Visual Studies Workshop Press, 1983.

Groys, Boris. "The Obligation to Self-Design." *e-flux journal*, no. 00 (2008).

Jenkins, Bruce. *On the Camera Arts and Consecutive Matters: The Writings of Hollis Frampton*. Cambridge, MA: MIT Press, 2009.

Jullien, François. *The Silent Transformations*. London: Seagull Books, 2011.

Kierkegaard, Søren. *The Concept of Anxiety: A Simple Psychologically Oriented Deliberation in View of the Dogmatic Problem of Hereditary Sin*. Edited and translated by Reidar Thomte with Albert B. Anderesen. Princeton, NJ: Princeton University Press, 1980.

Koestler, Arthur. *The Act of Creation*. London: Hutchinson & Co, 1964.

Lakoff, George, and Mark Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.

Le Guin, Ursula. *The Wave in the Mind: Talks and Essays on the Writer, the Reader, and the Imagination*. Boston: Shambala Publications, 2004.

Löffler, Petra. *Verteilte Aufmerksamkeit, Eine Mediengeschichte der Zerstreuung*. Zurich: diaphanes, 2013.

Lorey, Isabell. *State of Insecurity, Government of the Precarious*. London: Verso, 2015.

May, Rollo. *The Meaning of Anxiety*. New York: W. W. Norton & Company, 2015.

Moore, Ruth. *Niels Bohr: The Man, His Science, and the World They Changed*. Cambridge, MA: MIT Press, 1985.

Schmitz, Sigrid and Ahmet, Sara. "Affect/Emotion: Orientation Matters: A Conversation between Sigrid Schmitz and Sara Ahmed." *Freiburger Zeitschrift für GeschlechterStudien* 20, no. 2 (2014): 97–108.

Scudder, Horace Elisha, ed. *The Complete Poetical Works of John Keats*. Boston: Riverside Press, 1899.

Steyerl, Hito, and Maria Lind. "In Free Fall: A Thought Experiment on Vertical Perspective." *e-flux journal*, no. 24 (2011): 11/01–11/11.

Solnit, Rebecca. *A Field Guide to Getting Lost*. London: Penguin Books, 2005.

Tarkovsky, Andrei. *Sculpting in Time: The Great Russian Filmmaker Discusses his Art*. New York: Knopf, 1987.

Van 't Zelfde, Juha, ed. *Dread—The Dizziness of Freedom*. Amsterdam: Valiz, 2013.

Wrage, Stephen D. "Case 273—Tiltulim: Interrogation by Shaking in Israel." Georgetown University, Washington, case study program, 2001.

Ziółkowska, Magdalena, ed. *Notes from the Future of Art: Selected Writings of Jerzy Ludwiński*. Eindhoven: Van Abbemuseum, 2007.

On the Philosophical Potential of Dizziness and Compossible Spaces

Karoline Feyertag and François Jullien

The following conversation with the French philosopher and sinologist François Jullien took place in June 2015 in Paris.[1] Jullien claims to take the critical deconstruction of European continental philosophy a step further by juxtaposing the European thought and unthought to a geographical and ideological outside.[2] In his case, this outside happens to be China or, more precisely, "Chinese language-thought."[3] Jullien's philosophy orients to this Chinese way of thinking and therefore elaborates by couples of notions or "double concepts," which means for example that one cannot speak of European hegemony without thinking of the non- or extra-European. The same is true of philosophical concepts that are not based on a single notion but are ambiguous in that they waver between two notions in order to be productive as way of generating new sense and ideas. To say "intelligent" in Chinese, one says "hearing-seeing" (*cong-ming*), putting more weight on the first notion, hearing, but including the notion of sight as well.[4]

Further examples of Chinese "language-thought" operating by double concepts are found in Jullien's *De l'être au vivre: Lexique euro-chinois de la pensée* (From being to living: Euro-Chinese lexicon of thought). This lexicon consists of a list of concepts that constitute the core of Jullien's philosophy; in it there is a selection of these kinds of double concepts: inclination (vs. causality), potential of a situation (vs. initiative of a subject), availability (vs. liberty), obliquity (vs. frontality), silent transformation (vs. sonorous event), ambiguity (vs. equivocalness), in-between (vs. beyond), resource (vs. truth), and so forth. The gap, tension, or distance between each of these double concepts is called "écart" by Jullien, pointing out to the act of distancing and putting into tension a movement that is proper to philosophy itself. Jullien writes: "Philosopher, c'est s'écarter" (to philosophize is to distance oneself).[5] This movement, both corporeal and conceptual, creates an in-between, which Jullien calls *entre*.

1 The long version of the interview can be found online: http://on-dizziness.com/francois_jullien/. For an in-depth discussion of the interview, please refer to my essay with comments by Anderwald and Grond, "Inside/Outside and the Ground beneath Our Feet," http://on-dizziness.com/insideoutside/.

2 François Jullien, *L'écart et l'entre: Le*çon inaugurale de la Chaire sur *l'altérité* (Paris: Éditions Galilée, 2012), 15. Jullien speaks about his project of a "deconstruction from the outside" of Western thought in our interview. Admitting such an "outside" implies a dichotomy between two terms and, finally, between two entities. Jullien has been criticized for speaking about "China" as an entity. I believe that this critique merits some attention. See also Fabian Heubel, "Immanente Transzendenz im Spannungsfeld von europäischer Sinologie, kritischer Theorie und zeitgenössischem Konfuzianismus," *Polylog: Zeitschrift für interkulturelles Philosophieren*, no. 26 (2011): 91–114; and Jean-François Billeter, *Contre François Jullien* (Paris: Allia, 2006).

3 François Jullien, *De l' être au vivre: Lexique euro-chinois de la pensée* (Paris: Gallimard, 2015), 7. Unless otherwise noted all translations are my own.

4 See Jean-Jacques Neuer, "Debate: When China Helps to Better Understand European Identity," *The Conversation*, October 23, 2018, http://theconversation.com/debate-when-china-helps-us-better-understand-european-identity-104651.

5 Jullien, *De l'être au vivre*, 267.

Within this in-between space, it is possible for one and the other to exist together: the familiar and the strange(r), the known and the unknown, the old and the new. This means that their opposition dissolves: in this in-between space opposites might lose their connotations and begin signifying something new.

With regard to these philosophical "tools" that Jullien has defined throughout his work, I asked him to speak about dizziness, to try to locate dizziness as such a tool or concept within his own thinking. Jullien responded extensively to this request, coming up with conceptual correlations and écarts that helped the artistic research to reorient some preliminary assumptions and to sharpen the focus on dizziness as a resource. Resources, in Jullien's sense anyway, are the raw materials of what he finds *outside* and out of which he forges his double concepts. With the input from Jullien's contribution and inspired by his way of thinking, the artistic research team also forged its own double concepts.[6] In the following, I chose significant parts of the interview with Jullien from 2015. Some of them are echoed in my contribution to this book, "Dizziness: From Aporia to Method?"

Karoline Feyertag (KF): You aim at a dismantlement/disturbance on both sides, the European and the Chinese?

> **François Jullien (FJ)**: Yes, on both sides, and this means disturbing and not doubting which is well-known philosophical posture. The word *ébranler* means to question the underpinnings, the basis of thought—it's an activity that is neither critical nor suspicious, in Nietzsche's sense. Ébranler means to shake the foundation. The basis, which one doesn't know—the basis is that which philosophy itself ignores. It's only through this act of agitation that philosophy realises that it has a basis or foundations. It's these foundations that philosophy takes as evident; it's the implicit choices philosophy makes, which constitute the unthought, which are buried (*enfouis*) by rationality.

KF: I also wanted to ask you about the notion of dizziness, which is at the center of our artistic research project, and how you would translate the term into Chinese?

> **FJ**: I'm less interested by the medical term "vertigo." What seems more interesting to me is the moment when confusion comes up and how this confusion can then be productive. The philosophical question I ask is: What could be productive in such a temporary moment of confusion, and what could be its outcome?

> There is one thing I haven't found in your research project that seems important to me. You have considered the moment of transition. But there is a dimension, which seems fertile in this moment of dizziness, when things become confused because they lose their equilibrium and find themselves suspended from clarity—this dimension is ambiguity.[7]

> Within your artistic research project, the moment of dizziness (*Taumel*) puts into suspension all oppositions, which constitute reason, a suspension of the constitutive determinations of reason, and this very fact of dizziness allows going beyond the separation of opposites; it's somehow metaphysical. It's a stage where the opposites are not yet separated and it's fertile because it's a stage when thought can come up with new and different determinations.

> So, there is a moment, a *sas* in French—a moment in transition when the already-constituted oppositions dissolve themselves because they come back to their fundamental ambiguity, that is, their non-separated state, and only afterward is there a realisation of different determinations. [...] A sas is in between two; it's a temporary place. For example, if you want to enter somewhere, there is a double door and in between the two doors, this is a "sas" (a sluice chamber). [...] It's a small and hermetic enclosure in between two different settings/environments. It's something in between the two and it allows passing from the one to the other, but it is at a distance to the one and the other.

> The interesting aspect of dizziness, when it's not a definitive vertigo but a temporary one, is that the determinations, which were valuable before dizziness occurred, are brought back to a fundamental non-separation of opposites—or one is conducted by dizziness, or confusion, to go back to this non-separation (or: beyond separation)—and this makes an ambiguity reappear, which is underlying any opposition, whereby I mean the oppositions of thought. This underlying, fundamental ambiguity resets the field of oppositions, makes it fuse/melt and allows for other oppositions, other determinations to come out of it afterward.

6 "Dizziness and the Compossible Space in Research-Creation" was one output in the form of an article in the journal *Emotion, Space and Society*. Another output was the contribution "Le vértige comme méthode" to the magazine *artpress* 2, no. 46 (August–September 2017) for the special issue, "Des concepts proposés à l'art," which focused on Jullien's philosophy.

7 Jullien distinguishes ambiguity and equivocalness. Chinese thought respects the ambiguity of reality, whereas Greek philosophy tried to ban all equivocalness: the equivocal is located on the level of discourse and language. For Jullien, it's the negative term in contrast to ambiguity, which is the more general term for describing two things at the same time.

This is what I consider a sas—the moment when precedent determinations and oppositions are undone and unravel their fundamental, when they are not yet split (*tranché*) into ambiguity, from which other determinations, other oppositions will result. This is the moment when the precedent determinations and oppositions, by which we have been thinking, are fusing—"con-fusing." From this con-fusion emerges a fundamental ambiguity, the non-separation of opposites that is fertile because it enables an outside of our current oppositions, and from this outside other determinations could result.

I distinguish ambivalence and ambiguity because ambivalence is a Freudian term, coming from Eugen Bleuler to psychoanalysis, and it signifies that within one subject there could be two opposites, for example, like someone could love and hate the same person. This is ambivalence. But ambiguity always contains the "ambi" meaning "both." It means something can be the one as well as the other because they are somehow inseparable. Ambiguity actuates literature in opposition to, at least, classical philosophy because philosophy has banished ambiguity as equivocalness, meaning a confusion of words. In contrast, modern literature and critical thought has exactly considered this ambiguity as something that philosophy has omitted and, therefore, claimed to think like literature, that is, thinking the ambiguity of a feeling, of a life, and so on. Actually, ambiguity is the modern mission of thought and it's often taken into charge by literature against the clarity of thought, which proceeds the expulsion of equivocations, as it was the duty of classical philosophy.

KF: Yes, I've also made this observation: that within classical European thought there is the tendency to decide whether it's this or that, black or white, and not being able to think two opposites at the same time and to acknowledge this gray zone or blandness.[8]

FJ: Yes, it's the gray, the intermediary, the in-between, that is interesting—it's ambiguity that makes us go back to the in-between of the non-separation of two opposites and that cracks our reflection and allows for new possibilities to unfold. This is why China is interesting. Greek thought isn't able to think outside of the gray zone, and classical philosophy still agrees with this perspective. Actually, China is very comfortable with thinking confusion and dizziness. The Tao is dizzy (*confus*)—that is what Laozi says. The only determination of the Tao is: confusion, fuzziness, vagueness, undeterminedness, blandness, indistinctness.

How could we think of being? From the moment we think of being we have to think determination, because it's determination that brings into life the concept of being. Put in a different way, Hegel says being and nonbeing

is the same. It's determination that makes being become being, that actualises being effectively as being.

From the moment when there is a philosophy of being, there is an opposition to confusion and dizziness. The ontological thinking of being is clear and distinct. The interest, which I find in China, is that it makes us step out of the philosophy of being, and move toward a thinking of processes, of the flux, and so forth. China privileges the transition, the *amorce* (lure or trigger) and the phase when it's neither one nor the other—this phase of confusion/dizziness, when both are possible, compossible, occurs when there is no separation between the two. This is why I consider Chinese thought a resource: to think in the mode of confusion and dizziness, and not in the mode of the distinct.

KF: I also want to ask you about the phrase "The great image has no form."[9] What does it mean?

FJ: When reading this sentence, it is important to ask what "great" means. It's obviously not about being big in size. Great means being compossible—being something that can be this and the other as well. In relation to your project on dizziness (*Taumel*), this seems to be the most interesting aspect to me, because in the end, dizziness, which I call ambiguity, is compossibility—the one as well as the other, not separated (cut through). In this sense, I believe that dizziness, when it's productive, makes us vacillate and go back to this compossibility or ambiguity, back to the fact that there is both, the one and the other, because of the non-separation of opposites. So, Laozi's belief that "the great image has no form," is great because it unsettles *(ébranler)* our European thought.

The expression is embedded in the following context: "The great square has no corners." What does the term "great" stand for? Great means what is not limited to its nature of square—it's not a square square; the square is not fully defined by its definition. Obviously, it's not because of its big size that it has no corners. It's because the square is not limited by its definition (of what a square is). Maybe it's round. This means that, basically, the square is not confined within the limitation of what would be its definition.

8 See François Jullien, *In Praise of Blandness: Proceeding from Chinese Thought and Aesthetics*, trans. Paula M. Varsano (New York: Zone Books, 2007).

9 François Jullien, *The Great Image Has No Form, or On the Nonobject through Painting*, trans. Jane Marie Todd (Chicago: Chicago University Press, 2009), 47.

The following formula is even more interesting: "The great work avoids coming about."[10] At this stage of the "just before," of the potential, the ambiguous, the non-separation, the work of art avoids coming about, taking place because if it takes place, it is only this and not that anymore; it becomes exclusive. The great work keeps itself at work, because it keeps itself at this stage of the "just before," "upstream" of a definitive actualisation, which would follow its definition.

Finally, the formula "the great image has no form" means: The image or great work has no form exactly because it is not limited by one single form. It stays within the compossible, on this ground/foundation (*foncier*), which can't be split into opposites and therefore is apt to expansion. I've interpreted this formula in the following sense: an artwork, which claims to be totally finished, is dead. All interest lies in this moment of the "just before," when the artwork is still within the realm of non-separation and elementary ambiguity. It maintains us at this stage of the compossible, which is a kind of a virtuality not yet defined, stopped, limited.

I think this formula is very beautiful, and I dedicated a book to the phrase "the great image has no form" because it does not destroy the concept of the image. The concept of the image in Chinese is very complicated because it means phenomenon as well as image—so there is no idea of mimesis or imitation, the Chinese image is not belonging to the register of representation. I think this is a very fruitful Chinese term: when I say image, it also means phenomenon, it's "phenomenon-image." We are not in the Greek register of bisection in-between reality and its representation, the reproduction of reality, mimesis, and so on. That's why the sentence "the great image has no form" actually means that the phenomenon is much more effective when it hasn't let itself be determined by a particular form.

In the end, there are two stages: the effective and the determinative. The determinative is damaged and worn off. We need to go back from the determinative to the effective, something that avoids coming about, that avoids determinations to maintain the polyvalence and fundamental ambiguity, this fertile moment of the "just before"/the "upstream." This is what China gives us to think about—this fertile moment before any determination. [...] I mean fertile in the sense of something that is composed of more than that what is known, as something that has not yet come about.

KF: I would like to come to the passage about the happy fish as final point of this interview.[11]

FJ: Oh yes, I looked it up yesterday. But just another word on "occasion." You know, China always thinks in binomials (compounds). So the term for translating "crisis" is *wei-ji* (*wēijī*). *Wei* means danger and *ji* means opportunity. Danger also means opportunity. This is interesting when compared to the idea of dizziness. Because dizziness could mean imperilment and endangerment of vitality or rationality, or something similar. Now how could being endangered be considered an opportunity at the same time?! This is still yet to be understood. This is interesting to think about in Chinese terms: wei is at the same time ji; danger is at the same time opportunity.

About the passage of the Zhuangzi now: when I translate from the Chinese text,[12] it reads: "Look how the minnows are there between the rocks"[13]—the Chinese term is not rocks, it reads more like emerging, evolving completely at ease, at will. The Chinese image—and this is the great theme of the Zhuangzi—is the capacity to evolve. I stick to the French term evolve (*évoluer*): evolve like a fish that comes and goes, without direction, without telos. Evolving in this context means exactly without any destination or intent. Evolving at ease: this doesn't mean "freely" because it's not about liberty, but it means in a completely available (*disponible*) way.[14] Evolving without going somewhere, without tending somewhere—this is the first word of the Zhuangzi. It means to evolve, emerging, evolving, without any aim, at ease, at will. This is the happiness of fish.

The other one, Huizi, answers: "No, as you are not a fish, how do you know about the happiness of fish?" The first one, Zhuangzi, replies: "You are not I, inevitably, so how do you know (that I don't know what makes fish happy)? You don't know me." Zhuangzi's reply to his interlocutor at the end of their conversation is interesting: "Let's go back." In Chinese this reads: "Let's come to what is fundamental!" It's not back; it means the decent (*souche*). I translate it with "Come to the ground (*foncier*)" or "let's

10 Jullien, 70.
11 This passage refers to the happy fish debate between Zhuangzi and Hui Shi (aka Huizi) in "Autumn Floods," a chapter in *Zhuangzi*. Prior to the interview, I asked Jullien to speak about this short dialogue that I only knew in a mediocre English translation.
12 Jullien uses Guo Qingfan's classic edition of the *Zhuangzi, Xiaozheng Zhuangzi jishi*, 2 vols. (Taipei: Shijie shuju). See Jullien, *The Great Image Has No Form*, xxiii.
13 Jullien revises the English translation that I presented: "See how the minnows dart between the rocks! Such is the happiness of fishes." See "Anarchist Anthropology, Happy Fish, and Translation: Where Do You Get That?," https://paper-republic.org/lucasklein/anarchist-anthropology-happy-fish-and-translation/).
14 Jullien, *The Great Image Has No Form*, 164–65.

follow the ground/the fount." When Huizi asks, how to know the happiness of the fish, it's because he already knows that Zhuangzi knows that Huizi would ask him[15]—and afterward Zhuangzi says in your English translation: "As I did know from my own feelings (perceptions/observations) on this bridge."[16]

I think it's much simpler than that: "I know it, I know this on the bridge." There is neither perception nor observation, nothing. There is only "I know, I realize" and the bridge over the river. The only verb is "to know, to realize," but there are no choices in-between feelings, perceptions, or observations. This is the European psychological spectrum.

The Chinese text speaks about the ground, the fundament, the foundation-fount,[17] where there is no distinction between feelings, perceptions, and so forth. On this ground I, Zhuangzi, can know the happiness of the fish. So, this ground is beyond our particular individuations, beyond this "I'm this or that." Here again reappears the connection to ambiguity. Let's go back to the stem, the root—it's in this root that I know that you know that I know that I know—isn't it? So, there is a sort of communication on this ground of things that cannot be grasped by individuations like you, me, fish. It's not like in Buddhism in which individuations are considered illusory. It's more about the insight that individuations are what they are from a ground that makes us communicate. It's exactly on this ground that the singular individuations—you, me, fish—communicate. That's why I can tell about the happiness of fish.

So this ground is just before there are particular individuations, distinctions, and determinations.

KF: ... and it's from there that emerge other ...

FJ: ... other determinations and other individuations. This is what I call *le fond indifférencié*. There is a non-differentiated ground that enables the communication among all differences. Your idea of dizziness—and that's what I find interesting—is that it makes us flourish again, puts us back to this non-differentiated ground of confusion where the differences are fused and melted together and from where other differences could come out as well. It's a kind of melting pot where all differences melt and where reality again communicates beyond its individuations and particular demarcations. The Chinese Tao is this. The Tao is this undivided, non-differentiated ground, from which all differences and divisions emerge.

Maybe the interest of the kind of vertigo, of dizziness as you use it, is to put us back to this ground of seeming confusions, but which is actually

ground of ambiguity, non-separation, and communication of opposites with each other.

KF: Yes, dizziness is also about children spinning around to provoke vertigo, to lose orientation.

FJ: In French we say *déboussolé* when you lose your compass. It's exactly this loss that is not necessarily a trance, but that which results in a loss of orientation and confusion, which can exactly become the moments when this ground reappears. It is the ground that is beyond and before any demarcations, determinations, and oppositions.

Translated from the French by Karoline Feyertag and Fiona Wooton

15 "If I, not being you, cannot know what you know," replied Huizi, "does it not follow from that very fact that you, not being a fish, cannot know what makes fish happy?" See "Anarchist Anthropology, Happy Fish, and Translation."

16 "Let us go back," said Zhuangzi, "to your original question. You asked me how I knew what makes fish happy. The very fact you asked shows that you knew I knew—as I did know, from my own feelings on this bridge." See "Anarchist Anthropology, Happy Fish, and Translation."

17 "The expression I translate as 'foundation-fount' is *fond(s)* which combines two French terms, each with a wide range of meanings. *Fond* means, among other things 'bottom' and 'foundation'; it is also contrasted to *forme* in the form/content binary, and to *figure* in figure/ground. *Au fond* or *dans le fond* means 'fundamentally' and *au fond* may also mean 'deep down.'" Jane Marie Todd, "Translator's note," in Jullien, *The Great Image Has No Form*, xii.

Literature

Billeter, Jean-François. *Contre François Jullien*. Paris: Allia, 2006.

Chuang Tzu [Zhuangzi]. *Wandering on the Way*. Translated by Victor H. Mair. New York: Bantam, 1994.

Heubel, Florian. "Immanente Transzendenz im Spannungsfeld von europäischer Sinologie, kritischer Theorie und zeitgenössischem Konfuzianismus." *Polylog: Zeitschrift für interkulturelles Philosophieren*, no. 26 (Winter 2011): 91–114.

Jullien, François. *De l'être au vivre: Lexique euro-chinois de la pensée*. Paris: Gallimard, 2015.

———. *L'écart et l'entre: Leçon inaugurale de la Chaire sur l'altérité*. Paris: Éditions Galilée, 2012.

———. *The Great Image Has No Form, or On the Nonobject through Painting*. Translated by Jane Marie Todd. Chicago: Chicago University Press, 2009.

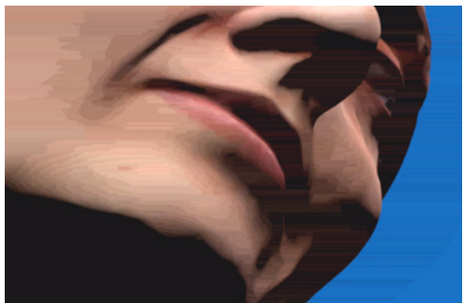
———. *In Praise of Blandness: Proceeding from Chinese Thought and Aesthetics*. Translated by Paula M. Varsano. New York: Zone Books, 2007.

Lao Tzu [Laozi]. *Tao Te Ching: A Book about the Way and the Power of the Way*. Boston: Shambhala Publications, 1997.

Neuer, Jean-Jacques. "Debate: When China Helps Us Better Understand European Identity," *The Conversation*, October 23, 2018, http://theconversation.com/debate-when-china-helps-us-better-understand-european-identity-104651.

Semantics of Dizziness

Jarosław Lubiak



Figs. 19–21
Ruth Anderwald + Leonhard Grond,
Dizziness Is My Name, video, 2016, revised 2019

Dizziness Is My Name

In the video *Dizziness Is My Name* (2016) by Ruth Anderwald and Leonhard Grond, a refrain-like phrase can be heard over and over again: "Dizziness is my name … I am a pendulum without rope and gravity … my gravity is movement …" And then: "Here is what I, Dizziness, have to offer to you … confusion guided by clear sense of purpose … leave shattered what was lost … hold on to our purpose and hold on to hope."[1]

The use of poetry in this video is extraordinary, possibly because Anderwald and Grond used a process of metaphorization of dizziness as the main method in their artistic research. It is, by the way, strictly connected with the phenomenon under analysis.

The first step in this process of metaphorization is to attribute the mulitfaced phenomenon of dizziness with a proper name, and furthermore with a character. This is a tremendous shift. Anderwald and Grond suggest that dizziness is not a concept. It is as if though they are saying: *You shall never understand it. At best you can encounter it. You can find its infinite number of faces, look at them, listen to them, but you will never have the privilege of understanding.* Dizziness is the name attributed to what disrupts communication, understanding, and comprehension. It suspends beyond all certainty. Hence dizziness is not a notion as it gets in the way of comprehending.

Anderwald and Grond use *prosopopoeia* in their film to give dizziness a voice. Dizziness speaks to us in what sounds like a female voice, though we are uncertain whether it is a woman, or even a person for that matter. Dizziness communicates with us in the video; in other situations, it sends us signs, signals, and imposes its symptoms. It reveals some of its countless faces through the images of the exhibitions.[2] Dizziness reveals itself by its own proper name while hiding behind it.

The Semantics of the Proper Name

The semantics of the proper name have always been troublesome from the view point of the theory of meaning. The dispute revolving around the main question, that is, "Do proper names make sense?"[3] can always, as John Searle claims, be boiled down to two options. The first assumes that names have

1 See "Prelude," in this volume, 16–19.
2 "Dizziness. Navigating the Unknown," Kunsthaus Graz, February to May 2017; "Utrata równowagi," U-jazdowski Castle CCA Warsaw, September 2017–February 2018.
3 John R. Searle, "Proper Names," *Mind* 67, no. 266 (April 1958): 166–73.

no sense but a reference only—they denote but do not connote. According to the second option, names do have a sense and the reference appears contingently.[4] It may be assumed that the functioning of a proper name is based on the irresolvable nature of the following contradiction: a proper name carries a deep sense and, at the same time, it acts by means of reference.

Anderwald and Grond strengthen this undecidability. By giving dizziness the status of a proper name, they assign the effects of this name to the phenomenon. Searle analyzes—though he doesn't resolve the dispute between the sense and the reference—the principles on which a proper name functions. First of all, a proper name refers to a single object, without needing to define it or to assign any predicates to it. "But proper names refer without so far raising the issue of what the object is."[5]

Supplementing this kind of logical deliberations on psychoanalytical consequences, Jacques Lacan stressed that a proper name is used, first and foremost, to cover up a shortcoming (such as the impossibility to identify an object). A proper name makes it possible to avoid the question about what an object is in a situation when it is impossible to answer such a question. At the same time, it includes the object, whose full identification is impossible, into a symbolic system to give it significance.

Since a proper name is related to a lack, it is a "moveable function."[6] It is easy to trigger a whole series of shifts with its help. Anderwald and Grond set a whole chain of synonyms in motion with dizziness floating in between: instability, staggering, vertigo, imbalance, uncertainty, confusion, disorientation, extravagation, errancy, falling, crisis, emergence, rising, creating.

Dizziness is not a name for any of these, however, it refers to each one, if only for a moment, before it moves on in its uncertain motion.

Confusion in Translation—The Affinity of Proper Names

One of the key traits that Lacan assigned to proper names is their untranslatability.[7] A proper name indicates a single object, but it is not a word that can be exchanged for a different one. We grappled with this impossibility when preparing the exhibition at U-jazdowski Castle Centre for Contemporary Art in 2017.

The confusion is present from the very beginning. We have to return the status of words to names as a way to shed more light on the mechanics of this confusion. Anderwald and Grond use the German term *Taumel* and the English word "dizziness," though the meanings of both are not identical. The Polish

translation of the word enforces the differences even more. The most obvious Polish equivalent would be *zawrót głowy*, meaning vertigo, however it conveys only one of the senses contained in both the English and German words. Therefore, *rozchwianie*, meaning "instability" or "staggering," would be much closer (though the medical connotation is lost). Furthermore, one of the key meanings of Taumel is gone from both Polish and English equivalents. At the same time, it is a meaning that the Brothers Grimm's dictionary offered as the first and fundamental one: the literal circular movement to and fro, with a later addition: dizziness of the head, instability, and a more metaphorical mental confusion. While both the Polish and English terms denote the state only, Taumel indicates a specific type of movement, a staggering or rather a staggering combined with moving in circles. At the same time, Taumel describes the state resulting from such movement—which is the key element of this entire project. As there is no Polish equivalent that would convey the combination of movement in circles with instability, when translating the title of the exhibition, "Taumel. Navigieren im Unbekannten" ("Dizziness. Navigating the Unknown")—we decided to accentuate the moment that is shared by the movement in circles and the state this can lead to, that is, a moment that triggers reaction and enforces action. Hence *utrata równowagi* actually means a loss of balance.

We could say that the process of translating the title of the exhibition was a way to assign a proper name to the show. Taumel, dizziness, utrata równowagi—the relationship between the names is based on the rule of close affinity but not identity.

"Utrata równowagi" in the Exhibition Program

The exhibition at U-jazdowski was differently edited from the one presented at Kunsthaus Graz (2017) and through the insititutions' different architectures it created a completely different experience. Works by Polish artists Józef Robakowski and Norbert Delman were added. The relations among the artworks were also structured differently. Thus the new proper name of the exhibition in Warsaw (2017–18) was no coincidence. As at the Kunsthaus Graz, it was a meeting with what evades comprehension and therefore it required naming anew.

The mechanisms of metaphorization, which are so important in the artistic research of Anderwald and Grond, continued over the course of the exhibitions. While the video *Dizziness Is My Name* was a prosopopoeia in the literal sense, the sound installation in the exhibition was also one—but much more metaphorically so. They have sought to give a voice to instability, and they have por-

4 Searle, 169.
5 Searle, 172.
6 Russell Grigg, "*On the Proper Name as the Signifier in Its Pure State*," *UMBR(a)* 1 (1998): 77.
7 Grigg, 76.

trayed states of dizziness with the use of different means of visual art. Moreover, it has also been an attempt to reflect on the possibilities of visual art.

For the curators, the exhibition "Utrata równowagi" was an experiment in a research project, which is quite exceptional in comparison to other artistic research endeavors popular in the area of contemporary art in recent years. To my mind, the show's uniqueness lay in the type of methodology used: the never-ending metaphorization that stemmed from the fact that the word Taumel is used to denote motion, first and foremost. Movement is the principal rule of the project.

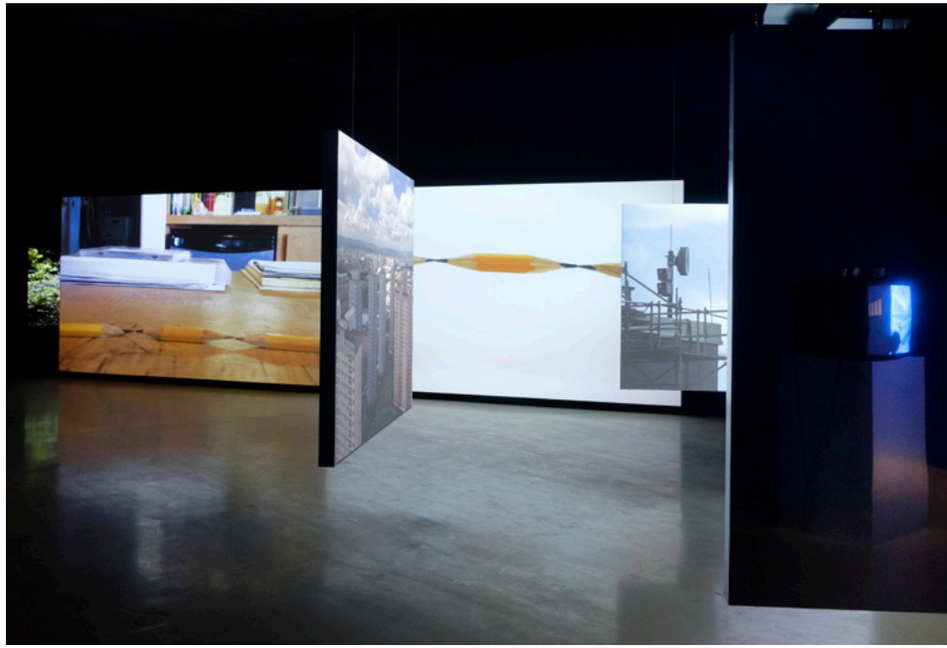
In the U-jazdowski program, "Utrata równowagi" could be seen as a counterpoint to the exhibition "Dust, Public Spirits" and "Gotong Royong: Things We Do Together." In all the three endeavors, the key intention was to introduce a non-European point of view on the most burning issues today, thus creating conditions for a different types of thinking.

Anderwald and Grond's project offers the possibility of a different thinking from inside of the European tradition by introducing a radical shift. And this is its true stake.

What Is at Stake in the Exhibition: A Different Rationale

The key to the artistic research founded in the word Taumel lies in the combination of movement and its effects, the semantic intertwining of staggering with instability that sets up metaphorization. At first glance, the core of the research looks like an arrangement of metaphors, because it is difficult to find any other justification for this surprising movement from the neurology of the brain, the psychology of reception, to the philosophy of compossibility, anthropology of social rituals, or the analysis of political destabilization and economic instability and, further, to the artistic explorations of losing and recovering balance, both in the physical and psychological sense. In any other discipline, it would mean extreme methodological flippancy, but in the artistic research by Anderwald and Grond, the fusion of the research method with the subject of the research and the researching subjects by means of the metaphorization movements is what makes the project such a forceful one.

And force is necessary, because there is much at stake in the project. The project develops and supplements the movements taking place in European (or, perhaps, continental) thought, as seen in the Catherine Malabou's philosophy in particular. She proposes a shift that could be called the "neurologisation of reason," in which the brain and its plasticity can serve as the basis for the materialistic theory of thinking. It leads her to reject the Enlightenment, or classical rationality, which was key to constructing our societies and has doubtlessly fallen into a state of crisis.



Figs. 22–23
"Utrata równowagi," exhibition view, 2017

In one of her recent books on the philosophy of Kant,[8] Malabou postulated the creation of "a different rationality":

> This rationality goes beyond the critique of reason and refuses to legitimate thinking simply on the grounds of the exposition of its intrinsic conditions of possibility: philosophical discourse can no longer result from the consciousness of laws, nor can concepts or judgments be founded on the "spontaneity of thinking." Instead, it is a matter of understanding from which non-conscious, not necessarily human and not programmed, formative instances thinking derives. The philosophical turn from the twentieth to the twenty-first century is thus notable for the in-depth search for the origin of thinking outside of consciousness and will.[9]

Anderwald and Grond question Malabou's search for "the origins of thinking outside of consciousness and will," and are themselves involved in a radical search for a different origin. It could be said that they are going further than Malabou by moving beyond the neurology of the brain—this privileged thinking organ. They seek the sources of thinking in the vestibular system, or sense of balance and orientation. This specific sense that is sensitive to linear and angular acceleration is one that, at the same time, helps us keep our relation with the ground. Obviously, dizziness is interlinked with the sense of sight and the entire nervous system—it would be impossible to maintain balance without this cooperation.

Nevertheless, it is the physiology of vestibular system (or the inner ear) and the studies of its disorders that were the starting points for the entire project carried out by Anderwald and Grond. Beginning with the disorders of the labyrinth and through the process of metaphorization, the artists arrived at the question about the potential of instability in contemporary reality. The physiology of the balance opens up the possibility of a philosophy of orienting oneself in a situation when the ground slips from under one's feet.

When Dizziness tells us in the video that it is free from gravity—the statement could be seen as a call for a type of thinking that is not based on a particular support or foundation, but one that could refer to the possibility of an infinitely erroneous, staggering, and instable movement.

A different thinking will allow for a different rationality.

Translated from the Polish by Centrum Sztuki Współczesnej Zamek U-jazdowski

8 See Catherine Malabou, *Avant demain: Épigenèse et rationalité* (Paris: Presses Universitaires de France, 2014).

9 Catherine Malabou, *Before Tomorrow: Epigenesis and Rationality*, trans. Carolyn Shread (Cambridge: Polity Press, 2016), 34.

Literature

Grigg, Russell. "On the Proper Name as the Signifier in Its Pure State." *Identity/Identification*. ed. Marina de Carneri. Buffalo, UMBR(a), issue *Identity/Identification* (1998): 77.

Malabou, Catherine. *Avant demain: Épigenèse et rationalité*. Paris: Presses Universitaires de France, 2014.

———. *Before Tomorrow: Epigenesis and Rationality*. Translated by Carolyn Shread. Cambridge: Polity Press, 2016.

Searle, John R. "Proper Names." *Mind* 67, no. 266 (April 1958): 166–73.

Dizzy Thinking

Marcus Steinweg

MANHATTAN, DESERT, LABYRINTH, KAFKA, TRUTH, BRIEF THEORY OF INSECTS, MAELSTROM, SCHNORI, PAIN, DANCE OF THE CONCEPTS, CHILDHOOD, PARADISE, CERTITUDO, TURBULENCE

Manhattan

In his essay on fatigue, "Versuch über die Müdigkeit," Peter Handke describes the state induced by a "long-winded" trip from Alaska to New York as a kind of dizziness. He is exhausted, but rather than lie down he gives into the temptation to take a seat "on a café terrace bathed in sunshine," "close to the noisy action and the clouds of gasoline vapor." Joining the crowd, he tries to immerse himself in it: "still dazed, even inwardly teetering from fatigue and jetlag."[1] Handke portrays the shrill good cheer that sets in when one is so exhausted that one can no longer sleep. A unique time then opens before one, a window between two realities that are false and specious. For an instant, the tired subject glimpses the abyss of the world. He becomes aware that nothing is more real than this abyss, the hole or cleft at the heart of reality. In fatigue, the ephemeral realities disintegrate into flimsy figments. The day melts away into the medium of irredeemable exhaustion. The tired poet experiences the inconsistency of his world. For an instant, fatigue is his "friend": "I was back in the world and even—and not because this was Manhattan—at its center." What Handke means is this: the abyss is the Manhattan of our world.

Desert

Since birth, if not before, the subject has been dizzily reeling through a desert that can be characterized as a space of freedom as much as unfreedom. Other deserts extend within it. Through being and acting, he gains access to the latitude of his world. In Gilles Deleuze and Félix Guattari, he is the nomad; in Jean-Paul Sartre, condemned to freedom; in Immanuel Kant, subject to the imperative of the law. In the desert expanse that is the space of his life, he wanders, errant, like a blind animal. Picking up scent after scent, he follows an uncertain trace. The subject of the desert doesn't differ from the desert's other animals. Shadow shelters him from the sun. Fleeing other animals, he joins the collective, aligning himself with hosts, with the horde or pack we customarily call family. In the desert, he tries to find his bearings. He squints at the stars in the night sky. His freedom, in his experience, is forever coextensive with his unfreedom. They are indistinguishable. The experience of freedom, Jean-Luc Nancy knows, can only be one of the growing desert. Its

1 Peter Handke, *Versuch über die Müdigkeit* (Frankfurt am Main: Suhrkamp, 1989), 47. Unless otherwise noted, all translations are by Gerrit Jackson.

outer bounds become indistinct as the horizon, in the shimmering heat, blurs into the ocean. The nomadic subject, Deleuze and Guattari write, adds "desert to desert, steppe to steppe, by a series of local operations whose orientation and direction endlessly vary. [...] There is no line separating earth and sky; there is no intermediate distance, no perspective or contour; visibility is limited; and yet there is an extraordinarily fine topology that relies not on points or objects but rather on haecceities, on sets of relations (winds, undulations of snow or sand, the song of the sand, or the creaking of ice, the tactile qualities of both)."[2] Nancy quotes this passage in sketching the experience of freedom as one of the desert in which the subject must find his way.[3] Like it or not, the coextensiveness of freedom and unfreedom characterizes his situation. It is all he has. That there is no place beyond the desert is to say that here is a multiplicity of deserts the subject experiences as a menacing freedom.

Labyrinth

Jean-François Lyotard says that every philosopher is trapped in "a kind of rational system of delusions."[4] Every philosopher, inevitably, constructs his own cage. The concepts are the building blocks of an architecture that is as precarious as it is audacious. Even Friedrich Nietzsche, who breaks with the system, gets caught in its labyrinth. Self-consistency his not his objective, prompting Karl Jaspers to remark that a reader who does not, for every one of his sentences, come across one that contradicts it somewhere in the oeuvre, has not read him. The philosophers' conceptual cages can be complex architectures. Many are caves in which the subject, dizzy, reeling, loses his way. Perhaps Lyotard calls them rational systems of delusions because reason is itself a delusion, insofar as erring is part and parcel of thinking; it is where evidence is extinguished to let thinking touch on a truth that amounts to the loss of its certainties.

Kafka

The letter dated April 1, 1913, is a document of blazing despair. Franz Kafka confides in Felice. One must read the text in its entirety:

> My one fear—surely nothing worse can either be said or listened to—is that I shall never be able to possess you. At best I would be confined, like an unthinkingly faithful dog, to kissing your casually proffered hand, which would not be a sign of love, but of the despair of the animal condemned to silence and eternal separation. I would sit beside you and, as has happened, feel the breath and life of your body at my side, yet in reality be further from you than now, here in my room. I would never be able to attract your attention, and it would be lost to me altogether when you look out of the window, or lay your head in your hands. You and I would ride past the entire world, hand in hand, seemingly united, and none of it would be true. In short, though you might lean toward me far enough for you to be in danger, I would be excluded from you forever. If this be true, Felice—and to me there seems to be no doubt—then surely I had good reason to want with all my might to part from you six months go, and moreover good reason to fear any conventional bond with you, since the consequences of any such bond could only be the severing of my desire from the feeble forces that still sustain me—who am unfit for this earth—on this earth today. I am stopping, Felice, I have written enough for today.[5]

Kafka as an impotent animal: he fears being an "unthinkingly faithful dog," trapped in the immanence of deceptive feelings. All feelings lie, though fear and pain perhaps only very slightly. Kafka's theory of affect implies an animalization of self, like Nietzsche's, who describes himself as a creature of instinct. It is not an abandonment of rationality but rather grounded in the suturing of reason and emotion. The organization of affects is economic. They have functions. The unthinking animal risks being dispersed among them. Martin Heidegger spoke of captivation (*Benommenheit*). The animal is neither world-making, like man, nor worldless, like the stone. World-poor, harnessed into its environment, it staggers dizzily. Condemned to "silence and eternal separation," it stares into the abyss of the world. A crater opens up. At the center of language: a hole. The animal Kafka understands himself to be must reckon with that hole. In the encounter it experiences distance. Excluded from the zone of complementary feelings, it is incapable of imagining itself as a complement of a fulfilling relationship. What remains to it is apodictic solitude. Kafka's self-portrait reads like a response to the famous section 125 in Nietzsche's *The Gay Science* (1882). With the killing of God, Nietzsche writes, the earth has been unchained from the sun—and so has Kafka: from Felice and the lie of complementarity.

Truth

Lacan already notes the impossibility of speaking the truth in any other way than telling only half of it. As long as truth is in play, the subject grasps at nothing. He touches on the abyss of the inconsistency of his reality. Yet this

2 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: Continuum, 2004), 421.
3 See Jean-Luc Nancy, *The Experience of Freedom* (Stanford, CA: Stanford University Press, 1993), 145.
4 See Florian Rötzer, ed., *Französische Philosophen im Gespräch*, 2nd ed. (Munich: Boer, 1987), 104.
5 Franz Kafka, *Letters to Felice*, ed. Erich Heller and Jürgen Born, trans. James Stern and Elisabeth Duckworth (New York: Schocken, 1973), 233.

implies that he has long revolved around a hole, a circular motion that propels him into a vortex. His desire, his ὄρεξις, his *appetitus* all resemble a dizziness. This is the case, incidentally, not simply for the subject called male. Any subject, the female, the male, the female-male, transsexual, or queer subject, casts himself into the abyss of his inconsistency as soon as he starts to think, which is to say, as soon as he ventures to depart from the space of his factual security to expose himself to the experience of his the contingency of his identity. Such exposure inevitably entails seduction and surrender, and be it self-seduction and self-surrender. The attempt to desexualize the dialectic of thinking, which is a dialectic of desire, of restlessness and fever, is bound to fail. The moment a subject tickles at his origin, he falls into the hole of a truth that is a synonym of his ontological inconsistency. In the end, as Derrida knows, one must resolve to cease to credit the credible. The sexual-theological connotation is eminent. God is dead, meaning: truth has died with him. Even better: the death of God is bound up with the resurrection of a truth other than the truth of fact. Under its sway, the subject with his realities teeters—plunged into the abyss of indeterminacy.

Brief Theory Of Insects

There is no thinking that blinds itself to specters, since the latter have long acted in league with it in order to offer opposition to their invisibility by flying—like dizzy insects—into the light of the fire that consumes them.

Maelstrom

Thinking the subject has been torn from his origin, he tears himself away from himself. This tearing away tears him apart, becoming torn open toward the sphere of his negation. In lurching motion, he opens up to the negative that marks the center of his being (his *soul*). Negation or void, insignificant depth, yawning abyss that represents nothingness in being, or being as nothingness, as evanescence and becoming. Giorgio Agamben cites Walter Benjamin to sketch this maw, which—with Edgar Allan Poe—we call maelstrom, rapacious turbine, vortex of origin, and original vortex, the immaterial call of ultimate inconsistency. Others have spoken of the chaos whose irreducibility is incontrovertible. The hole in being holds it together and annihilates it in one and the same motion. All philosophers have sought to spell out its implications. How is one to live in the face of this force? What is the subject in the vortex? Is he a subject? How to think thinking in relation to the abyssal abyss? Who would vouchsafe for its consistency and cohesiveness? The least we can say is that we have never conclusively dealt with the origin or the void. No one succeeds in leaving them behind. Agamben writes:

> The *arché*, the whirling origin that archaeological investigation tries to reach, is a historical a priori that remains immanent to becoming and continues to act in it. Even in the course of our life, the vortex of the origin remains present until the end and silently accompanies our existence at every moment. At times it gets closer; at other items it distances itself so much that we are no longer able to glimpse it or to perceive its hushed swarming. But, at decisive moments, it seizes us and drags us inside it; we then suddenly realize that we are ourselves nothing other than a fragment of the beginning that continues to spin in the whirlpool from which our life derives, to swirl in it until it reaches the point of infinite negative pressure and disappears—unless chance spits it out again.[6]

Agamben associates the vortex with a black sun. It is a dark attractor, a hole that engulfs. Much earlier, the Platonic idea of the good (ἡ τοῦ ἀγαθοῦ ἰδέα) was already said to be "beyond being" (ἐπέκεινα τῆς ουσίας). It is itself a dark sun, evading the light it emanates. Metaphysical thinking always already revolves around its abyss, which allows it to be and equally pulverizes it. Thinking is the willingness to assimilate to the whirling motion in order to entrust oneself to the hazard of self-loss. It implies dizziness and impotence, for it is grounded in the insight into its groundlessness. The abyss need not be a crater. It is often the impulse of an inadvertent motion that carries the subject into the unknown, where his evidences are extinguished, guiding his thinking toward novel and often disturbing findings.

Schnori

There is a character in Robert Walser's short story called "Schnori" who recalls Kafka's Odradek. It is said that some called him Schnori since he never opened his mouth "for years,"[7] because he was so lazy. What is more is that he "loves to stutter," out of listlessness or to vex his fellow men. He never makes things easy for anyone. Asked a question, Schnori responds with a smile. He resembles an "abyss." "No one rivaled his ability to be ungarrulously loquacious and chattily taciturn." There is something strange about the Schnori. And yet he is an utterly untragic figure. One might think him a dizzily stumbling lucky devil. Still, he is far from dumb. Let others think of him as they please. He laughs about it: "For then life on the whole appeared to him like a not untalented comedian." The Schnori is impossible to ignore—"one would have preferred to overlook him, but to no avail"—and therefore a nuisance.

6 Giorgio Agamben, "Vortexes," in *The Fire and the Tale*, trans. Lorenzo Chiesa (Stanford, CA: Stanford University Press, 2017), 59–60.

7 Robert Walser, "Schnori," in *Es war einmal: Prosa aus der Berner Zeit, 1927–1928* (Frankfurt am Main: Suhrkamp, 1986), 352–54.

His "jocular existifying" is a source of unease. It would be better if he did not exist. Just as Odradek in Kafka's story bothers the paterfamilias with his existence, the Schnori bothers those around him with a smile that is all the more infuriating because it is without scorn. One must poke fun at him. How else to bear him? The Schnori provokes resentment, hatred, envy. He accomplishes "delightful creations," and yet seems not even to care. It is as though he were indifferent to the fact that he is an artist. Odradek is a nuisance by virtue of his unconcern, and so is the Schnori, who could not care less that people call him by the wrong name.

Pain

Pain is not an epiphenomenon of thinking but part of it—its outermost bound. When the bow bends, just before it snaps, so as to seize the cogito and plunge it into madness, an incommensurable pain shoots through it that announces the loss of its certainties. The cogito risks forfeiting the minimal inconsistency that separates it from chaos or the void. It touches on the abyss implicit in it. In pain, it can itself tear apart. In her book *Über-Empfindlichkeit: Spielformen der Idiosynkrasie* (2000), Silvia Bovenschen, concluding a discussion of Paul Valéry, who may be regarded as a Cartesian of pain, quotes Simone Weil: "Physical pain heightened to the extreme, without any admixture of consolation because it is accompanied by utter moral despair, that is the totality of time and space entering into few instants and the diminutive extension of a body and tearing the soul apart."[8] We recognize the experience of the extreme and the outermost bound, the rift that separates the subject from himself. With pain, the inconsistency flashes up that is the true stuff of which the subject is made. Weil calls it physical, but it strikes at the soul, which may be regarded as synonymous with the insubstantial substance that constitutes the void inherent to the subject. The experience of pain is owed to contact with that void. It is self-affection in the guise of other-affection. The void within me threatens to blow me apart if I do not resist it. What we call "life" is one name of this dynamic of resistance in which the subject responds with fabricated consistencies (imaginations, hopes, consolations, chimeras, etc.) to the ontological inconsistency that no knowledge can undo. Hegel was aware of this, as were Lacan and Deleuze. Weil became a mystic of the void by plunging herself into nothingness, as attested, finally, by her death of hunger. Bovenschen is right: "The power of pain is characterized by empty cruelty."[9] Only this is the cruelty of life. It indicates the presence of death within it. In pain, the subject dizzily lurches toward his truth = finitude. To think means neither to contest it nor to submit to it. There is no thinking without pain. That is the least one can say of it.

Dance of the Concepts

Is the concept of creation obsolete? As a category of art, it gestures toward its origin in theology as well as the romantic-masculinist aesthetics of genius. In the world of finance, it stands for value made out of nothingness = monetary metaphysics. And yet Deleuze and Guattari use this concept. They do so to define philosophy as the creation of concepts. They also do so to impel language into complications. The result is a dance of the concepts that opens them up to the nonconceptual with which they have long been in communication. It is the dance of a thinking that demands more of itself than being a record of what is. A minimum of levity is indispensable to any thinking that ventures beyond the confines of established reality to enter into a coalition with chaos. Thinking requires letting oneself in for this dance, which means losing one's head in the most precise manner. That turns into a flirtation with the impossible. It implies the willingness to consent to a dizziness that engenders its own laws. In the vertigo of thinking, the subject affirms the loss of his ground. He begins to soar above himself so as to intensify, in soaring, his contact with what he soars over. Creation is not a romantic category. Creation means loss of orientation, the courage to enter the unknown, paired with the sober-mindedness and discipline of the conceptual athlete who resists the doctrines of his time.[10]

Childhood

Hannah Arendt opens her 1968 essay on Walter Benjamin with an excursus on childhood: a stage of life, she writes, littered with "countless little catastrophes."[11] Children's love of fairy-tale characters, pixies, and monsters is at bottom a heightened realism. Where adults have confidence in the consistency of their realities, the child celebrates their fragility. He experiences his life as a series of inexplicable crises. To parry them, he embraces specters. Benjamin does the same thing. His thinking observes the principles of the child's love of specters,

8 Simone Weil, quoted in Silvia Bovenschen, *Über-Empfindlichkeit: Spielformen der Idiosynkrasie* (Frankfurt am Main: Suhrkamp, 2007), 95.

9 Bovenschen, 261.

10 All that counts in the history of thinking is owed to the scrupulous loss of one's head. This is true also of Immanuel Kant. His *Critique of Pure Reason* (1781) is an excess of sober-mindedness. By fixing the outer bounds of the human cognitive faculties, the book is an affirmation of inevitable transgressions of these boundaries. It is in the nature of reason that it is wrenched above and beyond itself. No philosophy can be spared the excess of reason, or else it would be no more than the administration of established knowledge. To think is to do what one cannot do—but to do it with great precision.

11 Hannah Arendt, introduction to Walter Benjamin, *Illuminations: Essays and Reflections*, ed. Hannah Arendt, trans. Harry Zohn (New York: Random House, 1968), 6.

whence its particular intractability and hardness. Instead of falling for the idealism of false maturity, it plunges into the shadowy realm of contingency, which teems with six-headed dogs, stuttering cats, reeling gnomes. Benjamin shares Robert Walser's hyperbolic attention to what is overlooked. His thinking is guided by the wish to see even the invisible. Arendt insists on narrating Benjamin's life as a "sequence" of "piles of debris." Benjamin, presumably, would not have contradicted her. Does not every one of his texts reflect its labyrinthine quality, its winding passages and sudden turns? In the trope that transforms the author he is into a hare, constantly zigzagging to outrun himself? The "unworldliness" that Arendt, quoting Benjamin, identifies as his defining trait is a symptom of aggressive openness to the world. Benjamin entrusts himself to the share of the unfamiliar in his realities. This lets him remain a marveling child who communicates with specters. The polemical force of his thinking derives from the refusal to see only the visible. His is a doubly critical intelligence at work. We may call it dialectical. It does not hesitate to take aim at itself. Instead of walling itself in among evidence, it sets out for the unknown. There are humans who need guardian angels to master the challenges of their everyday lives. Benjamin is one of them. By turning his intelligence against himself, he opens up a niche at the heart of reality. All children hole up in the intermediary zone between dream and reality. Instead of letting certainties numb him, Benjamin resists the authority of the ordinary. And his resistance is of spectral intensity.

Paradise

The fall from paradise corresponds to the precipitate plunge into insight. It inflicts the infelicity of being a reflective animal. Deleuze and Derrida meditated on dumbness and animal existence. It is a mistake to call animals dumb, yet a persistent theologeme has it that animal life comes with a felicity lost to man: paradisiacal thoughtlessness. In a novella titled *Der Hanswurst*, Robert Walser says of his protagonist that he is "happy in his skin" because he knows "only jollity."[12] Unperturbed by the concerns that vex others, he coasts through the world as though on tracks. The danger of a derailment, it appears, is averted. His jollity grows out of the incapacity to imagine his future as any different from his present. Absorbed in his presence, he knows only felicity. "He is and remains a child, an imbecile, unable to distinguish the significant from the insignificant, what is worthy of esteem from what is worthless."[13] With disconcerting trust in the world, the *Hanswurst* [buffoon] moves through his reality. Animal and child are made to serve as allegories of a present unclouded by reflection.[14] In their ignorance of the serious side of life (or their apparent failure to have even an inkling) of it, their felicity resembles that of the sages, who, as Chinese thinking has it, are "without idea."[15] Walser's Hanswurst is a figure of the coincidence of wisdom and dumbness. He exemplifies the limitation of reflective intelligence as much as the dubiousness of paradisiacal theology.

Certitudo

A minimum of destruction can result in a maximum of freedom. The latter is no doubt not an absolute freedom, which remains a metaphysical-idealistic chimera. It is freedom within objective unfreedom, a particular alteration of one's weaving oneself into the texture of reality. Franz Kafka portrays it as an escape that leads one not into a better world but, in an altered state, into this one. The point is breaking with the evidences. They anaesthetize the subject by presenting themselves as obvious truths to evade being called in question. Hans Blumenberg writes: "Certainties are destructible, and the ones whose obviousness has rendered them unnoticeable and therefore immune to questioning are the frailest."[16] To think means to review all certainties in order to confront them with the ontological inconsistency of the totality we call reality. Certainties are nothing but certainties. They function in relation to a system of reference that lacks ultimate consistency.[17] That is the meaning of Ludwig Wittgenstein's declaration in *On Certainty*: "What I know, I believe."[18]

Turbulence

Thinking entails turbulence. The subject, dizzy, reels. Now and then he crashes. No thinking without risks. The most dangerous option is not always the best one. On the other hand, the one that poses no danger at all is not an option. Art and philosophy have this in common: that they expose themselves to the hazard of not knowing. That is true even of the systems erected by the German idealists. What are the systems Hegel draws up other than a scaffold, sprawling, and coming apart on all sides, under permanent reconstruction?

12 Robert Walser, "Der Hanswurst," in *Kleine Dichtungen* (Geneva: Kossodo, 1971), 138.
13 Walser, 138.
14 See Marcus Steinweg, "Wittgenstein's Animal," in *Inaesthetics 2: Animality*, ed. Wilfried Dickhoff & Marcus Steinweg (Berlin: Merve Verlag, 2011), 35–41.
15 See François Jullien, *Un sage est sans idée, ou, L'autre de la philosophie* (Paris: Seuil, 1998).
16 Hans Blumenberg, *Die Vollzähligkeit der Sterne* (Frankfurt am Main: Suhrkamp, 2011), 318.
17 If philosophy were to entail an appeal, it would that all certainties be subjected to review. That is the skepticism that is constitutive of thinking. It is in league with the affirmation of the inconsistency of the world. No certainty resists its questioning. Rather than nostalgia, as Novalis thought, philosophy is a longing for far-flung places. It opens up to the alien share in reality by calling its meaning in question. Nothing is more uncertain than its purport, whence the ridicule it incurs. Taking it seriously by making fun of it is part of the repertoire of common sense.
18 Ludwig Wittgenstein, *On Certainty*, trans. Denis Paul and G. E. M. Anscombe (Oxford: Basil Blackwell, 1969), 25e.

At the scaffold's center: the absolute = the void. Just as a dead god resides at the heart of all belief, nothingness persists within the system, its negation and by the same token its affirmation. There is no non-architectural thinking. Even thinking in scattered notes has an architecture. It is not an index of the existence of a transcendental signified, or else it would not exist and have no meaning. To think means to approach the inexistence of God. It is only in the willingness to give oneself up for lost that something like a self constitutes itself. Or a subject. As long as by subject we mean the placeholder of his absence. Jean-Luc Nancy speaks of the intoxication of reason turned toward the absolute. It edges its way toward the nameless that has long begun to haunt it. Taking possession of that namelessness can never be the point. It is by definition incapable of being possessed. The point is to recognize its presence as the index of my ontological inconsistency. This same recognition, which can cost me everything, is what we may call thinking.

Translated from the German by Gerrit Jackson

Literature

Agamben, Giorgio. "Vortexes." In *The Fire and the Tale*, 59–60. Translated by Lorenzo Chiesa. Stanford, CA: Stanford University Press, 2017.

Benjamin, Walter. *Illuminations: Essays and Reflections*. Edited by Hannah Arendt, translated by Harry Zohn. New York: Random House, 1968.

Blumenberg, Hans. *Die Vollzähligkeit der Sterne*. Frankfurt am Main: Suhrkamp, 2011.

Bovenschen, Silvia. Über-Empfindlichkeit: Spielformen der Idiosynkrasie. Frankfurt am Main: Suhrkamp, 2007.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. London: Continuum, 2004.

Handke, Peter. *Versuch über die Müdigkeit*. Frankfurt am Main: Suhrkamp, 1989.

Jullien, François. *Un sage est sans idée, ou, L'autre de la philosophie*. Paris: Seuil, 1998.

Kafka, Franz. *Letters to Felice*. Edited by Erich Heller and Jürgen Born, translated by James Stern and Elisabeth Duckworth. New York: Schocken, 1973.

Nancy, Jean-Luc. *The Experience of Freedom*. Stanford, CA: Stanford University Press, 1993.

Rötzer, Florian. ed. *Französische Philosophen im Gespräch*. Munich: Boer, 1987.

Steinweg, Marcus. "Wittgenstein's Animal." In *Inaesthetics 2: Animality*, edited by Wilfried Dickhoff and Marcus Steinweg, 35–41. Berlin: Merve Verlag, 2011.

Walser, Robert. "Der Hanswurst." In *Kleine Dichtungen, Prosastücke, kleine Prosa*, edited by Jochen Greven, 138. Geneva: Kossodo, 1971.

Walser, Robert. "Schnori." In *Es war einmal: Prosa aus der Berner Zeit, 1927–1928*, edited by Jochen Greven, 352–54. Zurich and Frankfurt am Main: Suhrkamp, 1986.

Weil, Simone. *Cahiers*, vol. 3. Munich: Hanser, 1996.

Wittgenstein, Ludwig. *On Certainty*. Translated by Denis Paul and G. E. M. Anscombe. Oxford: Basil Blackwell, 1969.

Transversal Nature of Dizziness

The Pleasures of Sensory Derangement and Its Uses in the Art of the Early Twentieth-Century Avant-Garde

Oliver A. I. Botar

[*Ilinx* games] are based on the pursuit of vertigo and [...] consist of an attempt to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind. In all cases, it is a question of surrendering to a kind of spasm, seizure or shock which destroys reality with sovereign brusqueness.
—Roger Caillois[1]

We must look at the world through the wrong end of the telescope as well as the right one, see things inside out and backwards, in bright and dim light. In this philosophy space proliferates with points of view.
—Friedrich Nietzsche[2]

Art is the reinforcement of the capacity to endure disorientation so that a real and significant problem may emerge.
—Morse Peckham[3]

We begin with pleasure: Who has not tried to derange their senses? We spin ourselves with small steps, disabling our vestibular-ocular reflex,[4] and affecting audio visual as well as internal (vestibular, proprioceptive, interoceptive) senses until, dizzy, staggering, losing our balance, we collapse, and finally stationary, relish the passing feelings of spinning, of floating, even of losing a sense of our position in the world.[5] We discover the pleasures of vertigo, of dizziness, of disorientation. From whirling on our feet we graduate to the foot-propelled merry-go-round and swings that induce the delights of pendular movement, or their delicious combination, the tire swing. We insert ourselves into amusement park rides, purpose built for intense, vertigo-inducing experiences. Our pleasure increases to the degree that our equilibrioception is impaired, our proprioception toyed with, our interoception made alarmingly conscious, our orientation deranged, our sense of connection the earth and its gravity

1 Roger Caillois, *Man, Play and Games*, trans. Meyer Barash (Urbana: University of Illinois Press, 1961), 23.
2 Quoted in Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge, MA: Harvard University Press, 1983), 150.
3 Morse Peckham, *Man's Rage for Chaos: Biology, Behavior, and the Arts* (Philadelphia: Chilton Books, 1965), 314.
4 This is a reflex of eye movement that attempts to stabilize images on the retina when the head moves, by sending the eye in the direction opposite to that of the head's turn, thereby maintaining the image at the center of the visual field. See, e.g., Ernst Mach, *Contribution to the Analysis of the Sensations*, trans. C. M. Williams (Chicago: Open Court, 1897), 65ff.
5 There is a degree of confusion and conflation in the terminology of what some call internal, haptic, or somatosenses: the vestibular sense of "equilibroception," which, based on our inner ear structures regulate our balance and orientation; proprioception (synonymous with "kinaesthesia"), sensory knowledge derived from nerves related to our muscles, tendons and other structures, letting us know about our bodily movements and positioning; and interoception, sensations of our inner organs. To confuse matters, senses are often referred to in combination, e.g., "audio-visual," and "vestibular-ocular reflex."

riven, and all is intensified when in pure terror we close our eyes or our conveyance—such as a roller coaster—enters zones of darkness. We rediscover these feelings when we induce them with alcohol and other drugs.[6] In all these ways we take pleasure in what French writer and philosopher Roger Caillois has referred to as *ilinx*.

Fig. 24
Max Krajewsky, *Elevator Shaft of the Grünefeld Department Store*, Berlin, 1928

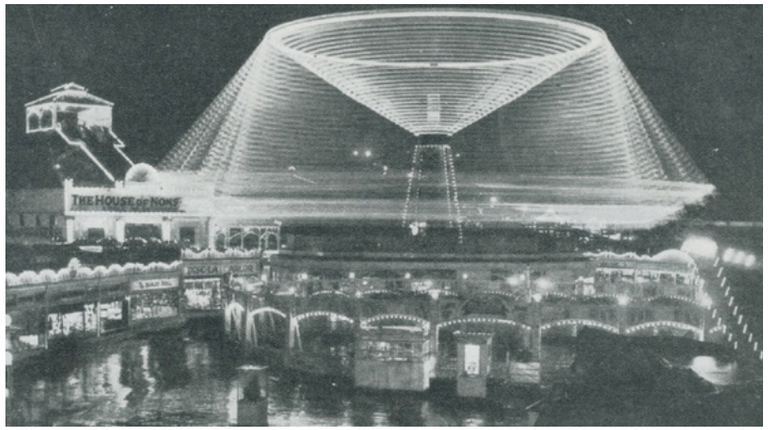


Fig. 25
László Moholy-Nagy, *untitled (Aeroplane Swing, Brighton)*, 1935–37
Fig. 26
Nightime view of a lit merry-go-round in movement, Blackpool, England, 1929

6 See, e.g., the remarkable description of sensory disorientation in Henri Michaux's "Les effets de la mescaline," in *L'infini turbulent* (1957) (Paris: Gallimard, 1994).

Caillois discusses ilinx within the framework of a theory of play. It was Arthur Rimbaud's insight to link it to art, when in 1871 he wrote that to be a poet, one should "arriver à l'inconnu par le dérèglement de tous les sens."[7] Symbolist theater followed Rimbaud in attempting "to alter the audience members' normal states of perception" and in addition to defamiliarization, the Surrealists' surely meant sensory disorientation with the term *dépaysement*.[8] The aestheticization of ilinx is a marker of a larger trend, a shift in the sense of our senses, the conception and range of our sensory experience. Sara Danius has argued that "from, roughly, 1880 to 1930 [...] modernist aesthetics [...] is an index of a technologically mediated crisis of the senses [...] that ultimately cuts across the question of art. [...] The specific aesthetics of perception on which so much of classical modernism turns is tightly bound up with modern machine culture."[9] As communication and conveyance technologies were introduced that affected our perception, a crisis of the senses was induced with, as Peckham suggests, profound implications for art.

Though the amusement park has a long history, by the late nineteenth century entrepreneurs were specifically catering to the popular desire for ilinx play. The first roller coaster was built at Coney Island, Brooklyn, in 1884. The Ferris wheel was introduced at the 1893 World's Columbian Exposition in Chicago. A particularly lively and competitive culture of amusement park innovation developed at Coney Island in Brooklyn starting in 1895, with the establishment of Paul Boynton's Sea Lion Park. The owners of Steeplechase Park, Luna Park, and Dreamland vied with each other to introduce ever-newer devices of eccentric physical movement invoking vertigo, and satisfying the public's seemingly insatiable desire for sensory novelty and stimulation, particularly of the internal vestibular and proprioceptive senses, that is, for dizziness.[10]

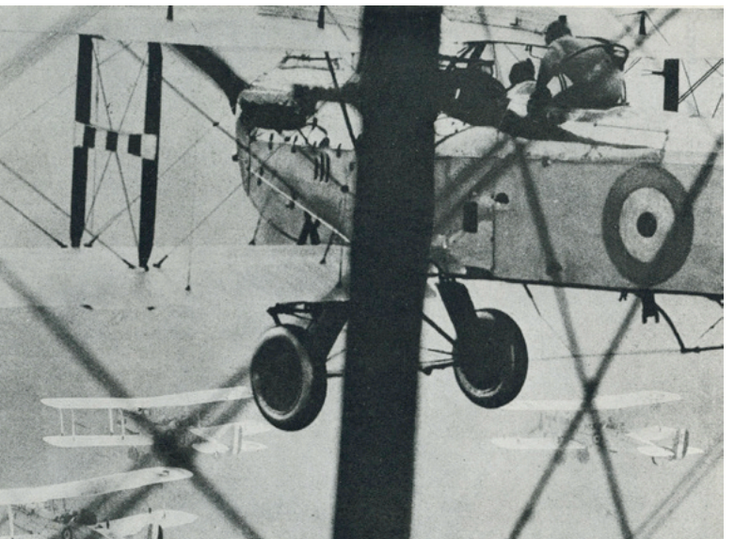


Fig. 27
Englisches Flugzeuggeschwader, 1925
Photograph: Sportspiegel

The development of aviation was contemporaneous with the intensification of amusement park ride culture in the early twentieth century, culminating in the emergence of First World War fighter pilots who perfected the techniques of flight in a space of spherical coordinates, thereby subverting the steady horizon of balloon flight and the bird's-eye view. As Charlotte Douglas phrases it:

> The spreading craze for flight early in the new century led people [...] to find themselves strangely unhooked from the earth, and ever more often gazing down upon the abstract patterns of towns, fields, and rivers. But flight brought more than views from above [...] Flight seemed to do away with all the nineteenth century mechanics of weight, direction, and firm destinations: even the notion of time began to seem pedestrian.... Artists, as well as aviators, experienced a sudden sensation of multitudes of directions. The compass became spherical, rather than flat, and one could range around in unmarked space, assume any angle, observe any orientation.[11]

In addition to an unprecedented freedom of movement, flight was the source of a hitherto unknown type of sensory derangement, "pilot vertigo," in which perceptual orientation ceases to accord with reality, resulting in "non-visual," that is, vestibular and proprioceptive illusions, particularly when the horizon is indistinct. Antoine de Saint Exupéry wrote: "Horizon? There was no longer a horizon. I was in the wings of a theater cluttered up with bits of scenery. Vertical, oblique, horizontal, all of plane geometry was awhirl. [...] For a single second, in a waltzing landscape like this, the flyer has been unable to distinguish between vertical mountain sides and horizontal planes."[12] We came to realize that our senses evolved on earth and could not be trusted during our longed-for, dreamed-of escape from it. As artist and theorist György Kepes phrased it: "All our senses—sight, hearing, touch, taste, smell, temperature sensitivity, balance, kinesthesis—are elementary. We are creatures of evolution, equipped with senses which are naturally sensitive only to those aspects of nature which

7 Arthur Rimbaud, Lettre à George Izambard, May 13, 1871, in Arthur Rimbaud, *Oeuvres complètes* (Paris: Pleiade, 1972), 249.

8 Serena Keshavjee, "L'art inconscient: Imaging the Unconscious in Symbolist Art for the Théâtre d'art," *RACAR* 34, no. 1 (2009): 62. In his article "L'oeil de l'ilinx: Les avant-gardes à Luna Park," Clément Chéroux discusses the Surrealists' fascination with the amusement park. In *Dreamlands: Des parcs d'attractions aux cités du future*, ed. Didier Ottinger and Quentin Bajac (Paris: Centre Pompidou, 2010), 84–87.

9 Sara Danius, *The Senses of Modernism: Technology, Perception and Aesthetics* (Ithaca, NY: Cornell University Press, 2002), 1–2.

10 On this, see *Dreamlands* and Michael Immerso, *Coney Island: The People's Playground* (New Brunswick: Rutgers University Press, 2002).

11 Charlotte Douglas, "Aero-Art, the Planetary View: Kazimir Malevich and Lazar Khidekel," in *Lazar Khidekel and Suprematism*, ed. Regina Khidekel (Munich: Prestel, 2014), 27–34.

12 Antoine de Saint Exupéry, *Wind, Sand and Stars* (1939), quoted in György Kepes, *The New Landscape in Art and Science* (Chicago: Paul Theobald, 1956), 81.

once were significant for biological survival."[13] Thus, "spatial disorientation" as it came to be known, led to the "graveyard spin" and crashes that would have come as deadly surprises to pilots certain they had been flying horizontally.[14] In addition to being creative (Rimbaud) or pleasurable (ilinx), sensory disorientation was now known to be deadly.

As well as new technologies, this sensory crisis was rooted in destabilized conceptions of space, time, orientation, and of our perception of them early in the twentieth century that unfolded as the culture of fairground rides and aviation did. Stephen Kern has recounted that after Einstein declared an "infinite number of spaces in motion with relation to each other" in 1901,[15] scientists such as Elias de Cyon, Henri Poincaré, Jakob von Uexküll, and Róbert Bárány built on Austrian physicist Ernst Mach's earlier research in basing our concepts of time, space, and orientation in the physiology of our bodies, of our sensorium, including not only vision, hearing, and touch, but also our "muscle" and "equilibrium" senses, as Mach referred to the somatosenses.[16] Mach went so far as to propose that "bodies do not produce sensations, but [rather] complexes of sensations [...] make up bodies."[17] Belorussian psychiatrist and philosopher Alexander Bogdanov, a Machian, argued for social construction, that is, the relativity of time and space.[18] This striving was often rooted in popular concepts of the *Fourth Dimension*. Linda Henderson points to P. D. Ouspensky's potential "sensations of infinity" and Charles H. Hinton's citation of freedom from gravity and conventional orientation, as steps toward perceiving the *Fourth Dimension*.[19] As she writes of Hinton's project to train us to perceive the *Fourth Dimension*, "first [...] perception that was to be 'cast out' was the sense of gravity." But "since Hinton's goal was a totally free and reversible perception, the sense of left and right also had to be overcome."[20] Hinton's training regimen resonated with the avant-garde as they promoted preparation for the sensory onslaught of modernity.

Of course the ultimate sensory onslaught of modernity was the "storm of steel," as Ernst Jünger phrased it, of the Great War: "The earth shook, the sky seemed like a boiling cauldron. Hundreds of heavy batteries were crashing [...] innumerable shells criss-crossed hissing and howling over our heads. All was swathed in thick smoke, which was in the ominous underlighting of colored flares. Because of racking pains in our heads and ears, communication was possible only by odd, shouted words. The ability to think logically and the feeling of gravity, both seemed to have been removed."[21] This ultimate, deadly *Gesamtkunstwerk* was the collective experience of those who went to war or to whom the war came. Is it any wonder that an aesthetic concern with sensory derangement intensified after the cessation of hostilities in 1918?

It was out of the Golden Age of early twentieth-century amusement park ride culture, through the technological progress of military aviation, and from the

new sensory and spatial theories, that sensory derangement as an aesthetic strategy, an art of ilinx, emerged. And, inasmuch as sensory derangement was a by-product of the overload induced by technologies of modernity, it was the Futurists who were the first to engage with it. Even before the Great War, prior to their focus on flight, these young artists expressed an interest in the components of the ilinx drive, that is, in speed and simultaneous experiences of movement in opposing directions. "Futurism is grounded in the complete renewal of human sensibility brought about by the great discoveries of science," wrote Filippo Tommaso Marinetti.[22] "Looking at objects from a new point of view, no longer from in front or behind, but from above—that is to say, foreshortened—I was able to break the old logical shackles and the plumb-lines of the old understanding."[23] Meanwhile Umberto Boccioni pondered absolute and relative movement in space, that is, the impossibility of motionlessness.[24] He and Gino Severini developed the notion of a non-Euclidean, "spherical expansion in space," which inevitably knows of simultaneous multiple centrifugal and centripetal directionalities.[25]

This de-orientation had implications for the production of art. Marinetti dreamed of a theater that "destroys all our conceptions of perspective, proportion, time, and space."[26] Russian Futurist poet Alexander Kruchenykh posited a "10th Land" in his Futurist opera *Victory over the Sun,* produced at the St. Petersburg Luna Park in 1913 in collaboration with Kasimir Malevich and Mikhail Matiushin, in which "normal perceptions of space and time [were] destroyed completely since not only does darkness reign but the logic of the four dimensions ceases

13 De Saint Exupéry, 102.
14 Fred H. Previc and William R. Ercoline, eds., *Spatial Disorientation in Aviation* (Reston, VA: American Institute of Aeronautics and Astronautics, 2004).
15 Quoted in Kern, *Culture of Time and Space*, 136.
16 Mach, *Contribution to the Analysis of the Sensations*, 73ff.
17 Mach, 22.
18 Kern, *Culture of Time and Space*, 135–37. On Bárány, see Previc and Ercoline, *Spatial Disorientation in Aviation,* 5–6.
19 Linda Dalrymple Henderson, *The Fourth Dimension and Non-Euclidean Geometry in Modern Art* (Cambridge, MA: MIT Press, 2013), 216, 384.
20 Henderson, 380.
21 Jünger, *Storm of Steel* (1920), trans. Michael Hoffman (London: Penguin, 1961), 95. The many damaged inner ears and severed body parts of its survivors no doubt also inspired renewed research on the somatosenses.
22 F. T. Marinetti, "Destruction of Syntax—Imagination without Strings—Words-in-Freedom" (1913), in *Futurist Manifestos*, ed. Umbro Apollonio (London: Thames and Hudson, 1973), 96.
23 Marinetti, *Technical Manifesto of Futurist Literature*, 1912, as quoted in Pontus Hulten, *Futurism and Futurisms* (New York: Abbeville, 1986), 423.
24 Umberto Boccioni, "Absolute Motion + Relative Motion = Dynamism" (1914), in Appolonio, *Futurist Manifestos*, 150–54.
25 Gino Severini, "The Plastic Analogies of Dynamism—Futurist Manifesto" (1913), in Appolonio, 124.
26 Marinetti, "The Variety Theatre" (1913), in Appolonio, 129.
27 Kruchenykh is quoted and translated in Hubertus Gassner, "Tight Rhythms: Unstable Constructions in Russian Constructivism," *Dædalos* 20 (September 1990): 65. On the Luna Park siting, see Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge MA: MIT Press, 2010), 11–12.

to apply."[27] Of their thinking at this time, Hubertus Gassner writes: "Perception of space has lost its orientation. [...] Malevich saw his Suprematist paintings as pointing the way forward for perception in the darkness of this hitherto unknown Tenth Land. Subdividing space into an above and a below, a right and a left, an interior and an exterior they were intended to convey to the observer the feeling of floating and thus the transcendence of terrestrial gravity."[28] This orientationlessness was suggested by the geometric shapes floating in Malevich's horizonless paintings. Documentary photographs of these paintings nearly always show some of them hung upside down or sideways, a strategy (if it indeed was one on Malevich's part) that was codified in his protégé Lazar El Lissitzky's *Proun: Eight Positions*, which, as its title indicates, could be hung in eight alternative orientations or displayed horizontally so that a viewer could choose an almost infinite variety of angles of view.[29] Malevich went as far as to posit that matter itself "is the product of rotating energy," the cosmos consisting of "an infinite number of fields of force turning around their centres of excitation."[30] Gassner posits that Latvian Suprematist Gustav Klutsis's painting *Dynamic City* was an attempt to illustrate this idea of the genesis of matter, particularly in its collage version, in which the placement of collage elements of buildings and people make it clear that the black disk at the center of the work and its attendant architectonic elements are meant to rotate.[31]

Theorists held that the dimensions we perceive were functions of our (imperfect) sensory apparatus, and so at a certain point the mere *depiction* of the new spatiotemporal concepts was felt to be passé. Artists started to ponder both *having* and *offering the public experiences* of the new spaces. Such experiences would allow the artists and their publics to engage corporeally with the crisis of perception/orientation, and to train people to live with it, that is, with Modernity. Morse Peckham argues that "there must [...] be some human activity which serves to break up orientations [...] to prepare the individual to observe what the orientation tells him is irrelevant, but what very well may be highly relevant. That activity, I believe, is the activity of artistic perception."[32]

The Futurists' derangement of the senses was to be induced by viewers' experiences of paintings, sculpture, the proscenium theater, and sound. Senses other than the audiovisual perception were sidelined. It was after the outbreak of war and the discovery of flight that in their *Futurist Reconstruction of the Universe*, Giacomo Balla and Fortunato Depero called for "PLASTIC-MOTOR-NOISE MUSIC IN SPACE and the LAUNCHING OF AERIAL CONCERTS above the city."[33] This idea was realized in the spring of 1918, when Fedele Azari, a Futurist painter and pilot of the Italian air corps introduced his "elementary aerial theater" in the sky above Busto Arsizio. Erkki Huhtamo points out that "for Azari, flight was an aerial version of Marinetti's *parole in libertà*, free movement through space, unrestricted by grammars or syntaxes."[34] It is notable that in his discussion of Azari, Huhtamo refers only to the audio-visual, that is,

spectacular aspect of Azari's project. And yet it is clear that Azari was fascinated by the invocation of our somatosenses through flight. In April of 1919 he scattered his manifesto, "Théâtre Aérien Futuriste," while flying over the streets of Milan.[35] The sheets floating down declared "Flight as an Artistic Expression of States of Mind." Note that it is the act of flight itself that is declared to be art, an activity that involves the full somatosensory participation of the pilot.[36] Azari continues by citing experience of the Great War: "The Italian aviator who has conquered the better-armed enemy, surprising him with more inventive and amazing maneuvers, has created a style of marvelous, fantastic, unsurpassable aerial acrobatics."[37] Invoking acrobatics, Azari underlines the embodied, experiential aspect of the activity:

> We Futurist aviators, we love to roar up perpendicularly and dive vertically into the void; to turn in the intoxication of yaws with our bodies glued to the small seats by centrifugal force, and to abandon ourselves to the whirl of spirals that press around the spiral staircase embedded in the void; to turn over two, three, ten times in an increasing happiness of loops and to lean over in whirling barrel rolls; to swirl, skidding; to rock ourselves into long falls like dead leaves or to stun ourselves with a breathless series of spins; in short, to rock, to roll, to flip over on the invisible trapezes of the atmosphere, to form with our airplanes a great, aerial pinwheel. We Futurist aviators today are able to create by means of flight a new artistic form [...] analogous to dance, but [...] infinitely superior to it because of its grandiose background [...] its superlative dynamism, and the greatly varied possibilities that it permits.[38]

With the emergence of *Aeropittura* during the 1920s, and the turn toward aerobatic air shows, this Futurist moment of the inner senses passed. The focus returned to the *spectacle* of flight on the one hand, and to the painterly *depiction* rather than *experience* of ilinx, on the other.[39]

28 Gassner, 64–65.
29 Gassner, 69. See Lazar El Lissitzky, *Proun: 8 Stellungen* [Proun: 8 Positions], ca. 1923, oil and gouache with metal foil on canvas, 139.3 × 139.3 cm (National Gallery of Canada Inv. no. 17640).
30 Quoted in Gassner, 69.
31 Gassner, 70. Klucis, *Dynamic City*, ca. 1919–21, oil with sand and concrete on wood, 87 × 64.5 cm (SMCA–Costakis Collection, Thessaloniki); Klucis, *Dynamic City*, 1919, collage, unknown location.
32 Peckham, *Man's Rage for Chaos*, xi.
33 Quoted in Appolonio, *Futurist Manifestos*, 199.
34 Erkki Huhtamo, "The Sky Is (Not) the Limit: Envisioning the Ultimate Public Media Display," *Journal of Visual Culture* 8, no. 3 (December 2009): 18.
35 Michael Kirby, *Futurist Performance* (New York: Dutton, 1971), 150.
36 On flying as an artform, see Steve Poleskie, "Art and Flight: Historical Origins to Contemporary Works," *Leonardo*, 18, no. 2 (1985): 72.
37 Kirby, *Futurist Performance*, 218–20.
38 Kirby, 218–20.
39 Azari later collaborated with Mino Somenzi on aerial spectacles and died in a plane crash in 1930. Margaret Fisher, *Ezra Pound's Radio Operas: The BBC Experiments, 1931–1933* (Cambridge, MA: MIT Press, 2002), 49.

The arena within which sensory reorientation was now invoked, was theater and—most radically—in sensorially challenging immersive environments. Enrico Prampolini began thinking about an essentially new theater in his manifesto on Futurist scenography of 1915 and developed it in 1924 when he declared the "polydimensional Futurist stage." As Oliver Grau describes it, "The traditional, box-shaped horizontal stage, seen from one direction only and with a clearly delineated area for the audience's attention, was to give way to 'spherical expansion.' The stage would contain 'new vertical, oblique, and polydimensional elements' that are set in motion electromechanically. These would enlarge the perspectival view of the horizontal, which, in concert with the light elements, would move 'in simultaneous penetration toward a centrifugal irradiation of infinite visual and emotional angels of scenic action.'"[40] That the Futurist theatrical experiments were pedagogical is indicated by their statement that "every night the Futurist theatre will be a gymnasium to train our race's spirit to the swift, dangerous enthusiasms made necessary by this Futurist year."[41]

Lazar El Lissitzky and Klucis also sought to transcend the two-dimensional or painterly representation of the new, "alogical" space (as in Malevich's work) intending, rather, to posit structures, or rather anti-structures that would embody these notions.[42] For El Lissitzky, "this dynamic architecture creates a new theatre of life."[43] Lissitzky and Klucis proposed a revival of *Victory Over the Sun* involving a scaffold that was, in Gassner's phrasing, to float "above the Earth free of gravity and devoid of a floor in an empty space and without any anchorage. [...] The electro-mechanically driven machinery used to create movement, light and noise was. [...] designed for the rhythmic subdivision of urban space and movement within it, and scarcely for the creation of a stable, statically sound structure."[44] While this was clearly an unrealizable project, Lissitzky's accomplished drawings for its figures indicate the seriousness with which he too the proposal.[45]

In Berlin during the 1920s, László Moholy-Nagy was also thinking in terms of offering people experiences in order to train their senses for modernity.[46] These ideas were first put forward in the manifesto "Dynamisch-Konstruktives Kraftsystem" (Dynamic-constructive energy system), written with the Hungarian art historian, Alfréd Kemény in 1922.[47] In 1921 Kemény had attended the Third Comintern Congress in Moscow where he encountered the thought of Bogdanov through the Constructivists he was meeting.[48] I have argued elsewhere that the "Dynamic-constructive Energy System" is Bogdanovian in nature.[49] Kemény and Moholy-Nagy articulate Bogdanov's notion that reality is composed of energy relationships, an understanding of which leads to the "science of building," or "architectonics" (*Tektologiia*), an early form of Systems Theory, which is evidently what the two Hungarians wished here to apply to the production of art, using the term *Konstruktivität* (constructivity): "Vital constructivity is the form in which life appears, and the principle of all human and cosmic development.

Fig. 28
Fédèle Azari, *Untitled (Propaganda Drop over a Boulevard)*, gelatin silver print, n.d. [ca. 1914–19]

Fig. 29
Fédèle Azari, *Untitled (Airplanes)*, gelatin silver print, n.d. [ca. 1914–29]

40 Oliver Grau, *Virtual Art: From Illusion to Immersion*, trans. Gloria Custance (Cambridge, MA: MIT Press, 2003), 143–44.
41 F. T. Marinetti, Emilio Settimelli, and Bruno Corra, "The Futurist Synthetic Theatre" (1915), in Appolonio, *Futurist Manifestos*, 183. Given the later relationship between what was the nascent Fascist movement in 1915, and the Futurists, it is worth pointing out here that it is precisely in states of altered sensory perception that the potential for political manipulation is possible.
42 Gassner, *Tight Rhythms*, 65.
43 El Lissitzky, "The Suprematism of the Construction of the World" (1920), quoted in Gassner, 65.
44 Gassner, 65–66.
45 Published as *Die Plastische Gestaltung der Elektro-Mechanischen Schau Sieg über die Sonne* (Hanover, 1923).
46 Oliver Botar, *Technical Detours: The Early Moholy-Nagy Reconsidered* (New York: Art Gallery of the Graduate Center of the City University of New York, 2006), 170ff.
47 *Der Sturm*, no. 12 (December 1922): 9–12. Kemény and Moholy-Nagy had been at law school together in Budapest; but Kemény switched to art history.
48 On Bogdanov and the avant-garde, see Jarolsav Andel, "The Constructivist Entanglement: Art Into Politics, Politics Into Art," in *Art into Life: Russian Constructivism 1914–1932* (New York: Rizzoli, 1990), 225–26; and Charlotte Douglas, "A Lost Paradigm of Abstraction: Alexander Bogdanov and the Russian Avant-Garde," in *The Russian Avant-Garde: Representation and Interpretation*, ed. Yevgenia Petrova (St. Petersburg: Palace Editions, 2001).
49 Oliver Botar, *Természet és Technika: Az Újraértelmezett Moholy-Nagy 1916–1923* (Budapest: Vince Kiadó, 2007), 192ff.

Translated into art, this today entails the activation of space by means of dynamic-constructive energy systems, that is, the construction into each other of energies that are actually at tension in physical space, a space (tension) that also functions as energy." A critique of the sculpture and painting of contemporary avant-garde efforts is followed by the statement that "this is why we must replace the *static* principle of *classical art* with the *dynamic* principle of universal *life*. In practical terms: instead of static material constructions [...] dynamic construction (or vital constructivity, i.e. the *relation* of energies) must be involved, in which the material is employed only as the *carrier of energies*." The result, according to the authors, might be the "Dynamic-constructive Energy System, whereby a person, up to that point merely receptive in his observation of works of art, experiences an intensification of his capabilities like never before, and himself becomes an active factor in the unfolding energies." They go on to relate this new paradigm of art to "the problem of freely floating sculpture as well as of film as a projected spatial movement. The first attempts at dynamic-constructive energy systems can be only experimental demonstrations testing the connections between matter, energy and space. [Only] then follows the use of these experimental results for the design of works of art free from mechanical-technical movement."[50]

Dynamisch-konstruktives Kraftsystem

Fröhliche Weihnachten

Fig. 30
László Moholy-Nagy and Alfréd Kemény, "Dynamisch-konstruktives Kraftsystem" (Dynamic-constructive energy system), in *Der Sturm*, 1922

It is important to note their call for the eventual dematerialization of the artwork into an unspecified form of pure energy—free as they put it, from "mechanical-technical" movement, a free-floating art involving the active participation of (presumably) equally free-floating participants. Moholy-Nagy dates his conception of two key projects to the time of the formulation of this manifesto: the "Lichtrequisit einer elektrischen Bühne" (Light prop for an electric stage) and the "Kinetisches konstruktives System: Bau mit Bewegungsbahnen für Spiel und Berförderung" (Kinetic constructive system). Structure with movement

tracks for play and conveyance). The reference in the manifesto to "film as a projected spatial movement" also makes it clear that it was in 1922 that Moholy-Nagy began to formulate his ideas for what he later referred to as *Polykino* (poly-cinema).

In his first Bauhaus book, *Malerei, Photographie, Film* (*Painting, Photography, Film*, 1925), and in subsequent texts Moholy-Nagy asked questions concerning the projection of films, the paradigmatic medium of the era. His response was the proposal for an environment, the "simultaneous or poly-cinema," within which a *dispositif* of multiple projectors fastened to machine-driven pivots or equipped with tracking mirrors would project several moving films simultaneously onto large concave and other kinds of surfaces, textured, convex, geometrical solids, etc., thus making "new demands on our optical organ of perception, the eye and our center of perception, the brain" in emulation of modern urban life, which has "increased the capacity of our perceptual organs for simultaneous acoustical and optical activity."[51] Moholy-Nagy's friend Sergei Eisenstein described this experience of metropolitan urbanity: "All sense of perspective and realistic depth is washed away by a nocturnal sea of electric advertising. Far and near, small (in the foreground) and large (in the background), soaring aloft and dying away, racing and circling, bursting and vanishing—these lights tend to abolish all sense of real space, finally melting into a single plane of colored light points and neon lines moving over a surface of black velvet sky."[52] While Moholy-Nagy was never able to realize the poly-cinematic emulation of the city, this section of *Painting, Photography Film* is one of the first theoretical texts on and proposals for what would later be termed "expanded cinema."[53]

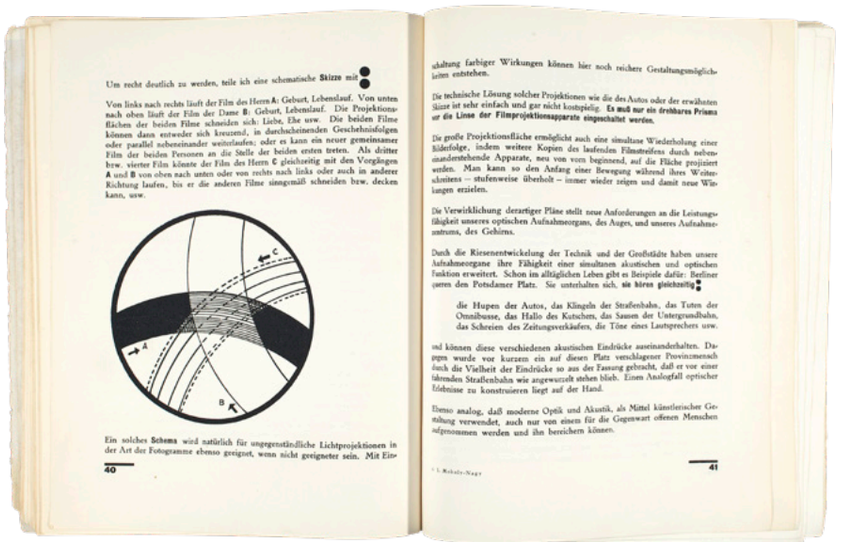
50 László Moholy-Nagy and Alfréd Kemény, "Dynamisch-Konstruktives Kräftesystem: Manifesto der kinetischen Plastik," in Der Sturm, no. 12 (December 1922): 9. Unless otherwise stated, all translations are my own.

51 László Moholy-Nagy, *Malerei, Photographie, Film* (Munich: Albert Langen, 1925), 35. He developed these ideas in other publications, e.g., "Probleme des neuen Films," *Telehor*, no. 1 (1936): 122–26. On Moholy-Nagy's program for an education of the senses, see Oliver A. I. Botar, *Sensing the Future: Moholy-Nagy, Media and the Arts* (Zurich: Lars Müller, 2014), 17ff.

52 Sergei Eisenstein, *The Film Sense* (New York: Harcourt Brace, 1942), quoted in Kepes, *New Landscape in Art and Science*, 80. Note that Kepes quotes this text as part of his presentation of scientific photography revealing realms "in a sequence from very large to very small" in which "a world of sense patterns is projected which contains spatial and temporal structures different from anything to which men are accustomed" (p. 104). Our orientationlessness within the spaces imaged by technologies of modernity is, however, a subject that will have to be dealt with elsewhere. For a start, see Oliver Botar, "György Kepes' 'New Landscape' and the Aestheticization of Scientific Photography," in *The Pleasure of Light: György Kepes, Frank Malina*, ed. Nina Czeglédy and Róna Kopeczky (Budapest: Ludwig Múzeum, Museum of Contemporary Art, 2010), 124–43.

53 For an attempt at a realization of the poly-cinema concept, see Lancelot Coar and Patrick Harrop, with Oliver Botar, *Polycinema*, 2014 (after the ideas of László Moholy-Nagy), shown at the exhibition "Sensing the Future: Moholy-Nagy, Media and the Arts," Bauhaus-Archiv, Museum für Gestaltung, Berlin, 2014–15; see also Botar, *Sensing the Future*, 104ff and 167.

Moholy-Nagy did realize a motorized light projection device, a kind of poly-cinema projector without films. While he conceived of this idea in 1922, it was not until 1930 that, with his studio assistant, the Hungarian architect István Sebök, he had the opportunity to realize this project as the "Lichtrequisit einer elektrischen Bühne," a "light prop for an electric stage" that, though originally conceived to be placed in a box with round openings, could project moving light, reflections, and shadows in one or all directions, thereby transforming a room into a dynamic space of kaleidoscopic vision, a forerunner of the psychedelic light shows of the 1960s. Moholy-Nagy was able to fund its manufacture by presenting it as a device to animate the stage, but he also expressed a desire for is mass-production and remote activation via radio broadcasts.[54] He emphasized that the light prop was merely an intentionally simplified "first step," because "most people are not prepared for or practiced" in being able to perceptually take in a more intense display.[55] It is important to note that it was the space (within the box or in a room) transformed by the machine, or rather, the visual-kinaesthetic *experience* of this transformed space, that was to be the "work of art," rather than the device itself, thereby realizing the intention expressed in the manifesto "for the design of works of art free from mechanical-technical movement." Because the prop was so beautifully made (using glass, chrome, and steel), and as the notion of kinetic sculpture gained momentum with the work of Alexander Calder during the '30s, and particularly during the


Um recht deutlich zu werden, teile ich eine schematische Skizze mit

Von links nach rechts läuft der Film des Herrn A: Geburt, Lebenslauf. Von unten nach oben läuft der Film der Dame B: Geburt, Lebenslauf. Die Projektionsflächen der beiden Filme schneiden sich: Liebe, Ehe usw. Die beiden Filme können dann entweder sich kreuzend, in durchscheinenden Geschehnisfolgen oder parallel nebeneinander weiterlaufen; oder es kann ein neuer gemeinsamer Film der beiden Personen an die Stelle der beiden ersten treten. Als dritter bzw. vierter Film könnte der Film des Herrn C gleichzeitig mit den Vorgängen A und B von oben nach unten oder von rechts nach links oder auch in anderer Richtung laufen, bis er die anderen Filme sinngemäß schneiden bzw. decken kann, usw.

Ein solches Schema wird natürlich für ungegenständliche Lichtprojektionen in der Art der Fotogramme ebenso geeignet, wenn nicht geeigneter sein. Mit Ein-

40

schaltung farbiger Wirkungen können hier noch reichere Gestaltungsmöglichkeiten entstehen.

Die technische Lösung solcher Projektionen wie die des Autos oder der erwähnten Skizze ist sehr einfach und gar nicht kostspielig. Es muß nur ein drehbares Prisma vor die Linse der Filmprojektionsapparate eingeschaltet werden.

Die große Projektionsfläche ermöglicht auch eine simultane Wiederholung einer Bilderfolge, indem weitere Kopien des laufenden Filmstreifens durch nebeneinanderstehende Apparate, neu von vorn beginnend, auf die Fläche projiziert werden. Man kann so den Anfang einer Bewegung während ihres Weiterschnittes – stufenweise überholt – immer wieder zeigen und damit neue Wirkungen erzielen.

Die Verwirklichung derartiger Pläne stellt neue Anforderungen an die Leistungsfähigkeit unseres optischen Aufnahmeorgans, des Auges, und unseres Aufnahmezentrums, des Gehirns.

Durch die Riesenentwickelung der Technik und der Großstädte haben unsere Aufnahmeorgane ihre Fähigkeit einer simultanen akustischen und optischen Funktion erweitert. Schon im alltäglichen Leben gibt es Beispiele dafür: Berliner queren den Potsdamer Platz. Sie unterhalten sich, sie hören gleichzeitig

die Hupen der Autos, das Klingeln der Straßenbahn, das Tuten der Omnibusse, das Hallo des Kutschers, das Sausen der Untergrundbahn, das Schreien des Zeitungsverkäufers, die Töne eines Lautsprechers usw.

und können diese verschiedenen akustischen Eindrücke auseinanderhalten. Dagegen wurde vor kurzem ein auf diesen Platz verschlagener Provinzmensch durch die Vielheit der Eindrücke so aus der Fassung gebracht, daß er vor einer fahrenden Straßenbahn wie angewurzelt stehen blieb. Einen Analogfall optischer Erlebnisse zu konstruieren liegt auf der Hand.

Ebenso analog, daß moderne Optik und Akustik, als Mittel künstlerischer Gestaltung verwendet, auch nur von einem für die Gegenwart offenen Menschen aufgenommen werden und ihn bereichern können.

L. Moholy-Nagy

41

Fig. 31
Schematic diagram for the "Simultaneous or Poly-Cinema," in László Moholy-Nagy, *Malerei, Photographie, Film*, 1925

golden age of kinetic sculpture in the '50s and '60s, Moholy-Nagy's prop came to be seen as a pioneering kinetic sculpture, obscuring its originally intended function, though it inspired experiments of similar intention, such as in the work of Otto Piene.[56]

In "Theater, Zirkus, Varieté," Moholy-Nagy's awareness of the Futurists' "Theater of Surprises" is indicated by his insistence on the mechanization of traditional theater to open it up from a mainly horizontal to a more vertical orientation, incorporating devices such as film, cars, elevators, airplanes, and mirrors.[57] Developing Futurist ideas as well as those expressed in "Dynamic-constructive Energy System," Moholy-Nagy insists that "in today's theater the STAGE AND AUDIENCE are too separate and too divided into activity and passivity to be able to secure creative contact and tension. An activity must finally come to pass, which rather than leaving the masses to observe in silence, grabs them, draws them in, and [...] allows for a liberating ecstasy to flow together with the action on the stage."[58] In order to effect this integration, he proposed a proscenium extending deep into the viewers' space, operable bridges, and platforms at various levels linked by a cylindrical elevator shaft. Farkas Molnár illustrated Moholy-Nagy's ideas with his plans for a "U-Theater." Molnár's drawing-photomontage of the U-Theater in dizzying action has figures jumping, diving, and climbing in space, making it appear as though these performers and perhaps audience members were moving without or in spite of gravity, recalling El Lissitzky's ideas for *Victory over the Sun*.[59]

Moholy-Nagy conceived of the integration of audience and performer in his proposal for a *Kinetic-Constructive System*, a "structure with movement tracks for play and conveyance" (henceforth, "structure"). Rather than a *theater* (which it is *still* mistakenly identified as), this was to be an *environment* in which the "audience" could become "actors," that is, they could participate in ludic physical activity. It was this "play," moreover, this activity involving the proprioceptive, vestibular, tactile, and visual senses that would constitute the "art," rather than the structure itself, which, after all, remained a "system" and a "structure," in other words, a mere scaffold for activity. Though a sketch exists for the *Kinetic-Constructive System* dating it to 1922, the designs for these proposals were only finalized in 1928, with Sebök's technical assistance. The

54 Moholy-Nagy, "Lichrequisit einer elektrischen Bühne," in *Die Form* (Berlin: Verlag Hermann Reckendorf, 1930), 297–99.
55 Moholy-Nagy, 297.
56 At some point after Moholy-Nagy's death in 1946, probably around 1969, it was rechristened the *Light Space Modulator*, a move that cemented its new status as a work of art, and a name that has stuck. On this, see Botar, *Sensing the Future*, 112ff.
57 László Moholy-Nagy, "Theater, Zirkus, Varieté," in Moholy-Nagy, Oskar Schlemmer, and Farkas Molnár, *Die Bühne im Bauhaus* (Munich: Albert Langen, 1925), 54.
58 Moholy-Nagy (my translation).
59 Moholy-Nagy, 62.

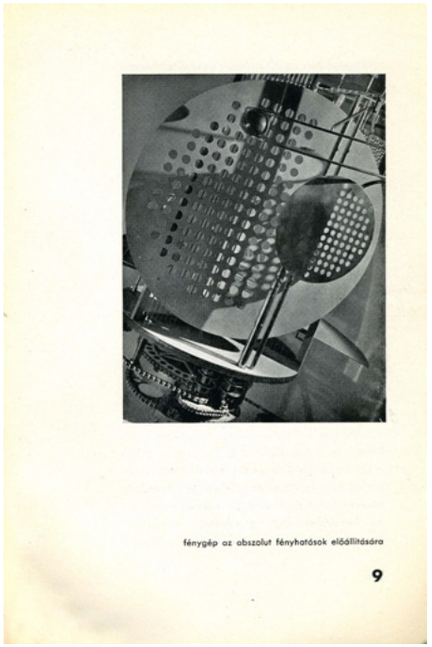
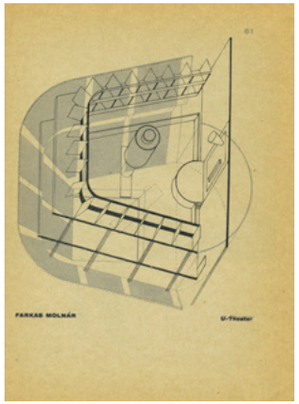
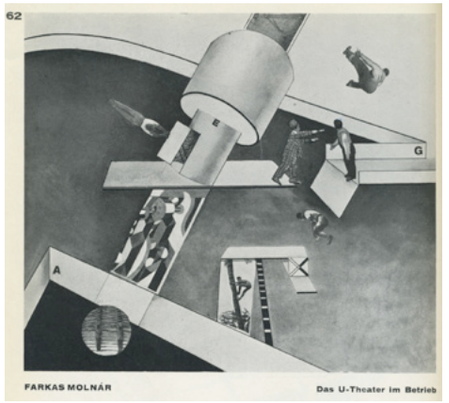


Fig. 32
Kálmán Brogyányi,
A Fény Művészete (The art of light), 1932

photomontage elements depicting people moving within the structure on the beautiful planometric oblique projection of 1928 drawn by Sebök recall the collaged photographs in Klutcis's *Dynamic City* and Molnár's rendering of the U-Theater in use. This underlines both the genealogy of Moholy-Nagy's conception of dynamic art within the Russian avant-garde, and his close collaboration with Molnár and Sebök, collaborations that helped Moholy-Nagy work out some of the practical and conceptual issues of this proposal.

While, like El Lissiztky's design for the revival of *Victory over the Sun*, the 1922 and 1928 renderings seems to have been meant more as conceptual diagram than as bases for the eventual generation of construction blueprints, had the structural and mechanical details been worked out and the structure built, it would have stood about twelve stories high, with a fixed, tubelike elevator shaft at its core akin to the one that Molnár had drawn for the U-Theater and that would have extended from near the Structure's apex, down to about its midpoint. The Structure's principal component would have been a spiral ramp equipped with handrails that would have defined its (otherwise unclad) exterior. While it would have been the building's main structural support, this outer ramp would have itself rotated, corkscrew-like, thereby spinning the entire assembly around its own axis. The visual equivalent of this axis, the fireman's pole, which would have extended from the top platform of the Structure to the ground





Figs. 33–34
Farkas Molnár, overhead view of design for an U-Theater
(present whereabouts unknown), with translucent fold over page

level, would have been fixed at its top but movable at its base, rendering the entire structure a dynamic, seemingly unstable assembly especially since it was, as Peter Yeadon has determined, to have been a "frustrum," that is, a "leaning" tower.[60] On the inside of the structure, nested within the exterior ramp, there would have been another spiraling ramp "of the steepest practicable incline, for the use of more athletic visitors."[61] This one would have extended from the ground up to and beyond the top of the exterior ramp, ending in a third platform at the Structure's pinnacle.

Friedrich Kiesler's *Raumbühne* (Spatial stage), realized at the center of the Wiener Konzerthaus in 1924 for the International Exhibition of New Theater Techniques, also consisted of a spiral ramp, a circular stage platform at top, and had originally been intended to have a lift on its central axis to move the actors to the various levels.[62] In all these ways it is a kind of simplified version of the *Kinetic-Constructive System*. But it was, after all, a stage. A closer parallel was to be found in Kiesler's "Railway Theater" proposal of that same year, in which the audience would have been conveyed "electromechanically" *around* a spherical theater space on a turning, spiral viewing ramp, much like

60 Canadian architect Peter Yeadon prepared a digital model of the Structure in 2006, called the *Kinetic Re-constructive System*, and commented on its structural nature. See Botar, *Technical Detours*, 173ff.

61 Quotations are from Moholy-Nagy's explanatory text, in *Von Material zu Architektur* (Munich: Albert Langen, 1929), 205.

62 Barbara Lesák, "Visionary of the European Theatre," in *Frederick Kiesler*, ed. Lisa Phillips (New York: Whitney Museum of American Art, 1989), 39.

the external ramp of the *Kinetic-Constructive System* that would have spun participants around its interior elements.[63] That Kiesler was inspired by the "Dynamic Constructive Energy System" manifesto is evident from his own manifesto "Vitalbau-Raumstadt-Funktionelle Architektur,"[64] in which he announced that in this new architecture, "we want" (among other things) "to be let free of the earth," to "abandon the stationary axis" and, rather than foundations and walls, "a system of spans (tension) in open space."[65]

Similar in form to Kiesler's stages was Andor Weininger's proposal for a Spherical Theater (1926–60s) that, had it been built, would have provided the possibility of viewing the circus-like acrobatic action taking place on the hanging spiral and other contraptions at the centre of the building from below, the sides, or from above, depending on where one sat. Weininger himself emphasized the sensory-educational function of the new theatrical space: "Situated along the inner wall of a sphere, the spectators experience a new relationship to space; due to the total view, due to the centripetal force, they experience a new mental, optical, acoustic situation: they face new possibilities of concentric, eccentric, polydirectional, mechanical space-stage events [...] objective: to educate people to new modes of viewing by confronting them with new rhythms of movement."[66] This would have caused sensory challenges to audience members, but these challenges would have been tame when compared to those of visitors to the *Kinetic-Constructive System*. Just as in the Spherical Theater there would have been views in all directions, but rather than a central, suspended spiral, in Moholy-Nagy's Structure these views would have revealed as a dense, Piranesian complex of interconnecting spiral ramps and tubes. The more "athletic visitors" careening down the steeper spirals or descending the fireman's pole would have been observed by those on the external ramp, itself spinning around the daredevils' ramps; a complexity of dizzying sensory input, visual, vestibular and proprioceptive, conducive to ilinx. This would also force the participants to enact the angles of vision that were central to Moholy-Nagy's conception of "New Vision" (bird's-eye view, worm's-eye view, vision in motion, etc.) whereby the less "normal" views of the world would be privileged in photography and film in order to defamiliarize it, thereby rendering our perception of it more conducive to change, and easing our adaptation to that change.[67] Unlike Kiesler's and Weininger's closely related proposals, in the *Kinetic-Constructive System* visitors would have become "active factors" in coming to understand the relations between space, gravity, and their sensoria. In an important early theoretical article, "Production—Reproduction" (1922), the text Moholy-Nagy developed with the help of Lucia Moholy, we find a passage that reads: "Man is the synthesis of all his functional apparatuses [Funktionsapparate], i.e. at his various stages [in seiner Periode] he will be most perfect [vollkommendste] when he is most fully conscious of the functional apparatuses—cells just as much as the most complex of organs—of which he is comprised, and when these apparatuses are trained to the limits of their capability

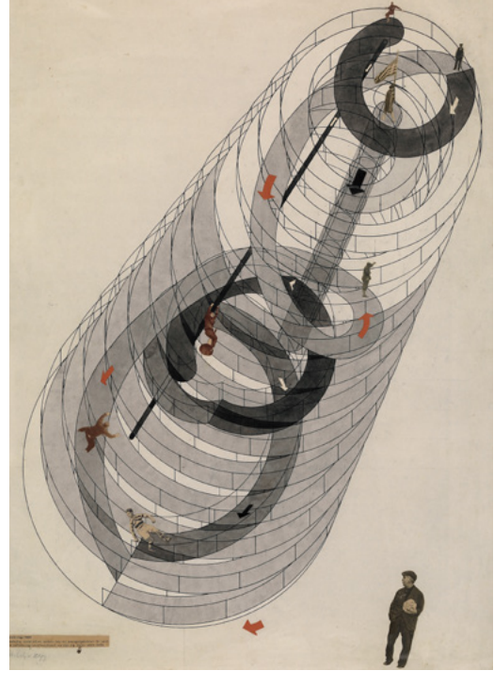


Fig. 35
László Moholy-Nagy, with István Sebök, *Kinetisches konstruktives System: Bau mit Bewegungsbahnen für Spiel und Beförderung* (*Kinetic-Constructive System: Structure with Movement Tracks for Play and Conveyance*), 1928

Fig. 36
Detail of fig. 35

[bis zur Grenze ihrer Leistungsfähigkeit]."[68] Given the potential dangers and thrills of the *Kinetic-Constructive System*, its participants would have been pushing their bodies to such limits and they would have been employing their vestibular-proprioceptive systems to sense these "cells" and "organs" in motion or imbalance. Rather than a towering artwork or work of architecture, in the *Kinetic-Constructive System*, Moholy-Nagy would have offered people, *opportunities* to have visual, proprioceptive, and vestibular experiences.

As has been pointed out by Klaus Weber and Barbara Lesák,[69] the *Kinetic-Constructive System* resembles a fairground ride. Given that Moholy-Nagy's Berlin

63 "Railway Theater," in Kiesler, ed., *Internationale Austellung Theatertechnik* (Vienna: Konzerthaus Wien, 1924), 11.
64 *De Stijl*, nos. 10–11 (1925): 435–37. Cited in Lesák, "Visionary of the European Theatre," 168, 170, 173.
65 Kiesler, "Vitalbau – Raumstadt – Funktionelle Architektur," in Lesák, 170 (my translation). On the question of Kiesler's "fields of energy," see also Lisa Phillips, "Environmental Artist," in Phillips, Kiesler, 114.
66 Andor Weininger, "Das Kugelteather," *bauhaus*, no. 3 (1927): 2. Jiři Svestka and Katherine Jánszky Michaelsen, eds., *Andor Weininger: From Bauhaus to Conceptual Art*, trans. Jürgen Riehle (Düsseldorf: Kunstverein für die Rheinlande und Westfalen, 1991), 113 (translation modified).
67 On Moholy-Nagy's new vision as a means of sensory training, see Botar, *Sensing the Future: Moholy-Nagy, Media and the Arts* (Zurich: Lars Müller, 2014),
68 "Production-Reproduction," *De Stijl* 5 (July 1922): 98–100 (my translation).
69 Klaus Weber, "Kinetisches konstruktives System 1922," in *Experiment Bauhaus*, ed. Magdalena Droste and Jeannine Fiedler (Berlin: Bauhaus-Archiv – Museum für Gestaltung, 1988), 374; and Lesák, "Visionary of the European Theatre," 168.

Fig. 37
Friedrich Kiesler, *Raumbühne*, Vienna, 1924

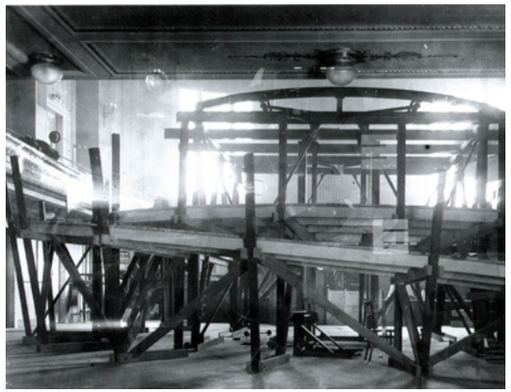
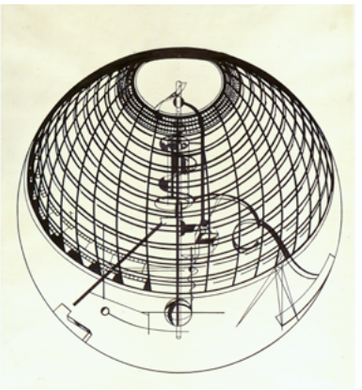


Fig. 38
Andor Weininger, *Kugel-Theater* (Spherical theater), 1926



residences were located in the western part of the city, near Luna Park, then the largest amusement park in Europe,[70] it comes as no surprise that in "Filmváz: A nagyváros dinamikája" the first, Hungarian-language version of the "film script" "The Dynamics of the Metropolis" (1922–24), Moholy-Nagy included an ecstatic description of its pleasures: "Fireworks in the Luna Park / Ride on the / R o l l e r C o a s t e r / Speeding / FERRISwheel / Funhouse / Distorting mirrors / Other gimmicks."[71]

Moholy-Nagy was not alone among avant-garde artists of the 1910s and early-to-mid-1920s in his fascination with the pleasures of ilinx. While, apart from Max Pechstein and Rudolf Belling's Expressionist decorations of peep-show structures at Luna Park executed between 1919 and 1920, and the wildly expressionistic exterior of the main roller coaster at that park dating from the same period,[72] I have come across no evidence of artists actually designing amusement-park rides, but as Lesák has remarked, there was a fascination with them among avant-garde artists during the 1920s.[73] During an extended stay between 1911 and 1912, Joseph Stella, an Italian who emigrated to America, discovered Cubist and Orphist paintings of the Parisian avant-garde as well as the work of the Italian Futurists. After his return to New York late in 1912, he painted an astonishing series of works depicting the Coney Island amusement parks between 1913 and 1914.[74] In 1915 Giacomo Balla and Fortunato Depero proposed a kind of theme park or amusement park in their *Futurist Reconstruction of the Universe*, involving kinetic assemblages of various materials ("complexes"), "aerial concerts," the "roto-plastic noise fountain," and so on. They wrote: "We will find abstract equivalents for all the forms and elements of the universe, and then we will combine them according to the caprice of

our inspiration, to shape plastic complexes (rotating on one axis) which we will set in motion."[75] Moholy-Nagy's fellow *Bauhausler* Max Buchartz called for the reform of Luna Park in 1924, invoking all the senses discussed here:

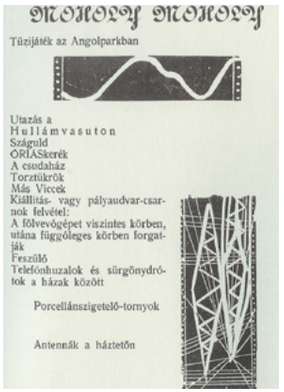
> The joy in in intense movement (flywheels alongside sleds and swings); the pleasure in surprise and sensation; the daring of bold skill; the delight in watching action, form, and color. [...] Direct the large slideways above, through and around the main restaurants (take advantage of differences in the levels of the existing buildings). [...] Design of the directional possibilities of standstill and movement, of fast and slow, of sudden and gradual as well as of horizontal and vertical, of up and down, of forward and backward, of rotating and swinging. [...] Distinction should be made between machines that are compelled to carry out particular courses of movement and those that call for active participation in mastering one's balance.[76]

Lesák has observed the resemblance of the mobile audience ramp of Kiesler's "Railway Theater" proposal of 1924 to a roller coaster,[77] and that same year the Danish artist Knud Lönberg-Holm, then teaching at the University of Michigan, Ann Arbor, took his students on roller-coaster rides "in order to experience modernity."[78] Perhaps it comes as no surprise that as an editor, with Walter Gropius, of the Bauhausbücher series, Moholy-Nagy had planned to publish volumes by Burchartz, Kiesler, and Lönberg-Holm around 1926, if not earlier.[79]

According to Linda Henderson, Marcel Duchamp, in his notes for *The Large Glass* (1915–23), was thinking about gravity and the need to rid ourselves of an orientation system of up/down and left/right.[80] In his manifesto "Présentism"

70 Bodo-Michael Baumunk, "Luna-Park und Metropol," in *Berlin, Berlin: Die Ausstellung zur Geschichte der Stadt*, ed. Gottfried Korff and Reinhard Rürup (Berlin: Nikolai, 1987), 412.
71 Moholy-Nagy, "Filmváz: A nagyváros dinamikája," *Ma*, "Musik und Theater," 9, nos. 8–9 (September 15, 1924): unpaginated.
72 Baumunk, "Luna-Park und Metropol," 411. I have not been able to confirm that, e.g., Belling, Pechstein, or another Expressionist artist was responsible for the exterior of this roller coaster, but it does seem to have been painted by an artist of the German avant-garde.
73 Lesák, "Visionary of the European Theatre," 54.
74 See *Dreamlands*, 60–61; and Barbara Haskell, *Joseph Stella* (New York: Whitney Museum of American Art, 1994), 40ff. On Stella's stay in Europe and his contact with the Futurists, see Haskell, 27–39.
75 Appolonio, *Futurist Manifestos*, 197–98.
76 Burchartz, "Luna Park," *G* (June 1924): 138–39. Translation in Detlef Mertins and Michael W. Jennings, eds., *G: An Avant-Garde Journal of Art, Architecture, Design and Film, 1923–1926*, trans. Steven Lindberg with Margareta Ingrid Christian (Los Angeles: Getty Research Institute, 2010).
77 Lesák, "Visionary of the European Theatre,"52.
78 Marc Dessauce, "Against the Style," *Casabella* (September 1993).
79 The list, published as a promotional brochure by Albert Langen Verlag in Munich around 1926 (the year of the latest book in the series that had appeared up to that point) is reproduced in Lesák, "Visionary of the European Theatre," 169.
80 These remarks are contained in notes published as *A l'infinitif* in New York in 1966. Henderson, *Fourth Dimension and Non-Euclidean Geometry*, 280.

of 1921, Raoul Hausmann writes that "we want to be hurled around and torn asunder by the mysterious dimension, our sixth sense, motion. In this way we may be conscious of living, of living today! And so we want to dissolve the rigidly concentrated look at one thing."[81] In his discussion of space, time, and our ability—or rather our inability—to perceive them as anything but three-dimensional and one-dimensional, respectively, El Lissitzky is very specific about the senses involved in their perception: "A transition from the third into the fourth dimension can be comprehended neither by our visual sense nor by touch."[82] Given that this vein of early twentieth-century art engaged the vestibular, proprioceptive, and interoceptive senses so saliently, senses that had—apart from dance—never previously been thought of as the bases for aesthetic production, why did the artists fail to mention them? The reason


MOHOLY MOHOLY

Tüzijáték az Angolparkban

Utazás a
Hullámvasuton
Száguld
ÓRIÁSkerék
A csodaház
Torztükrök
Más Viccek
Kiállítás- vagy pályaudvar-csarnok felvétel:
A fölvevőgépet viszintes körben, utána függőleges körben forgatják
Feszülő
Telefónhuzalok és sürgönydrótok a házak között

Porcellánszigetelő-tornyok

Antennák a háztetőn

Fig. 39
Detail showing rollercoaster sequence, storyboard for *A nagyváros dinamikája* (Dynamics of the Metropolis)

Fig. 40
László Moholy-Nagy, *Waterslide, Zurich*, vintage silver gelatin print, n.d.

seems to have been a combination of a lack of awareness as much as a lack of vocabulary. Research on the internal (also "motor" or "haptic") senses (by Mach, Cyon, and Poincaré) was both recent and obscure, and most importantly its terminology had not penetrated the popular or even intellectual imagination. Except for "kinaesthesia," the terminology we now have in place for the proprioceptive and vestibular systems was not yet in use.[83] Though one writer of the time described dance as "an unbridled dynamism, the sensually turbulent ecstasy of movement in the frenzied lunge towards the Immeasurable that is our life," turning to research by Jaques-Dalcroze, Rudolf von Laban, and Vsevolod Meyerhold into recording, describing and systematizing bodily movement would not have helped, for these pioneers also lacked the relevant vocabulary, besides which they sought to describe and control proprioception rather than derange it.[84] Hausmann, together with László Péri (Peter Lazlo), an erstwhile actor and one of Moholy-Nagy's closest artist friends in Berlin, proposed the "PRÉ" theater, in which they aimed to "realize the absolute regularity and clarity of space-time movement within the unitary form of body, surface and sound: a new type of dance, stage and music."[85] This must have been one of the first manifestos by artists for proprioceptive performance, but again, they lacked the terminology to describe all the senses thus invoked. Thus, though the artists engaged the inner senses to make art, these attempts have been overlooked because they described them or invoked them rather than naming them. As a result, modernism tends to be seen as exclusively ocular-centric. Jennifer Fisher, a Canadian art historian of the "tactile, kinaesthetic and proprioceptive senses" holds that "the challenge [...] is to move beyond modernism's preoccupation with the singularity of the visual, to pose a more immanent and relational aesthetics: an aesthetics which refers to experiences as well as objects."[86]

81 Raoul Hausmann, "PRÉsentismus: Gegen den Puffkeismus der Teutschen Seele" (Présentism: Against the Philistinism of the Germanic Soul), quoted in Andreas Haus, *Moholy-Nagy: Photographs and Photograms* (New York: Pantheon, 1980), 10.

82 Lazar El Lissitzky, "A. and Pangeometry," in *Europa Almanach*, trans. Carl Einstein and Paul Westheim (Berlin: Gustav Kiepenheuer Verlag, 1925), 352. The translation is from Lissitzky, *Russia: An Architecture for World Revolution* (1930) (Cambridge, MA: MIT Press, 1984), 147.

83 The *Online Etymological Dictionary* dates the usage of "proprioception" in English to 1906 (http://www.etymonline.com). However even the 1959 edition of *The Shorter Oxford English Dictionary* (Oxford: Clarendon Press) doesn't include it. While the earliest usage of "kinaesthesia" is dated to 1880, I have not come across the term in the period literature I have reviewed. The 1991 edition of *Webster's Dictionary* (New York: Lexicon Publications) does list "proprioceptive" and "kinesthetic," but not "vestibular." As we have seen, Mach employed "muscle sense" and "sense of equilibrium."

84 Wolfgang Graeser quoted in Karl Toepfer, *Empire of Ecstasy: Nudity and Movement in German Body Culture, 1910–1935* (Berkeley: University of California Press, 1997), 13. The index of this exhaustive survey includes not a single sensory term. Toepfer writes that the "Labanotation" system "showed that the dancing body produced such complex disturbances of perception that empirical analysis of dance was much more difficult than almost everyone realized" (106). He also points out that "body culture was hardly lacking in enthusiasm for system" (12) and that Dalcroze's was "an eminently rational vision of bodily movement" (16). See also Salter, *Entangled*, 228–32.

85 Hausmann and Péri, "Die Absichten des Theaters PRÉ, *Der Sturm* 13, no. 9 (September 1922): 138 (my translation).

86 Jennifer Fisher, "Relations Sense: Towards a Haptic Aesthetics," *Parachute*, no. 87 (Summer 1997): 4–11. See also Salter's introduction for an account of current thinking on performativity. Salter, *Entangled*, 228–32.

Fisher's discussion marks a shift in recent decades that takes full account of the somatosenses. While Stephen Blundell has advocated their reconsideration in the making of three-dimensional art,[87] Barbara Montero claims that "proprioception is an aesthetic sense and that one can make aesthetic judgments based on proprioceptive experience."[88] Following and extending upon the ideas of John Dewey, who shifted the locus of art from the object to experience, Loke and Robertson write that "the kinaesthetic is an important aspect of aesthetic experience."[89] There is at least one study of our aesthetic enjoyment of nature that sidelines visual and auditory perceptions "that are so abundant and evident when we act in or move into nature." The philosopher and theologian Joseph H. Kupfer focuses instead on vestibular, kinaesthetic, and proprioceptive sensory input in his discussion of the aesthetic experience of nature. Fisher has enumerated and discussed a number of artworks (mostly of the 1990s) that she sees as evincing the incorporation of the "haptic" senses (proprioception, kinaesthetics, equilibrioception).

And what of the more contemporary art of "sensory derangement," of ilinx experiences? This would take more space than is available to me here. Suffice to mention that the camera work and lack of narrative in Stan Brakhage's early films, such as *Dog Star Moon* (1961–64) or Carolee Schneemann's *Fuses* (1967), approach the disorientation or rather reorientation of the art of the early twentieth century described above. Perhaps the most radical expression of this impulse was the three-hour-long dismantling of our common-sense orientation enacted by Michael Snow on the earth's surface no less, in his 1971 video installation *La Région Centrale*, filmed by a specially constructed robot that *could* rotate the camera in all directions, at all angles, and *does* so. Described as "an avant-garde equivalent of an amusement park simulator ride [...] the film begins as a slow, soothing meditation on the otherworldly textures of the Canadian wilderness, but gradually morphs into a dizzying, terrifying freakout, a relentless spinning gaze that pummels the equilibrium of the human eye."[90] Snow himself described it in his application for funding to the Canadian Film Development Corporation in 1969 as "a kind of goodbye to Earth."[91]

Eduardo Kac has written of "gravitropism in art beyond its biological origin, to underscore the fact that forms and events created in zero gravity to be experienced in the same environment might be radically different."[92] In his *Inner Telescope*, assembled by French astronaut Thomas Pesquet on the International Space Station in March 2017, Kac took the first step toward such an art. Pipilotti Rist has made her audience comfortable on couches and carpets, only to bombard them with spatially disorienting but pleasant filmic assaults on their sensoria.[93] Olafur Eliasson has been mounting a concerted assault on our senses, working self-consciously in the tradition of Moholy-Nagy.[94] Carsten Höller has realized aspects of Moholy-Nagy's Structure in his giant slide works, most recently in his twenty-eight-meter-tall structure at the Aventura Mall

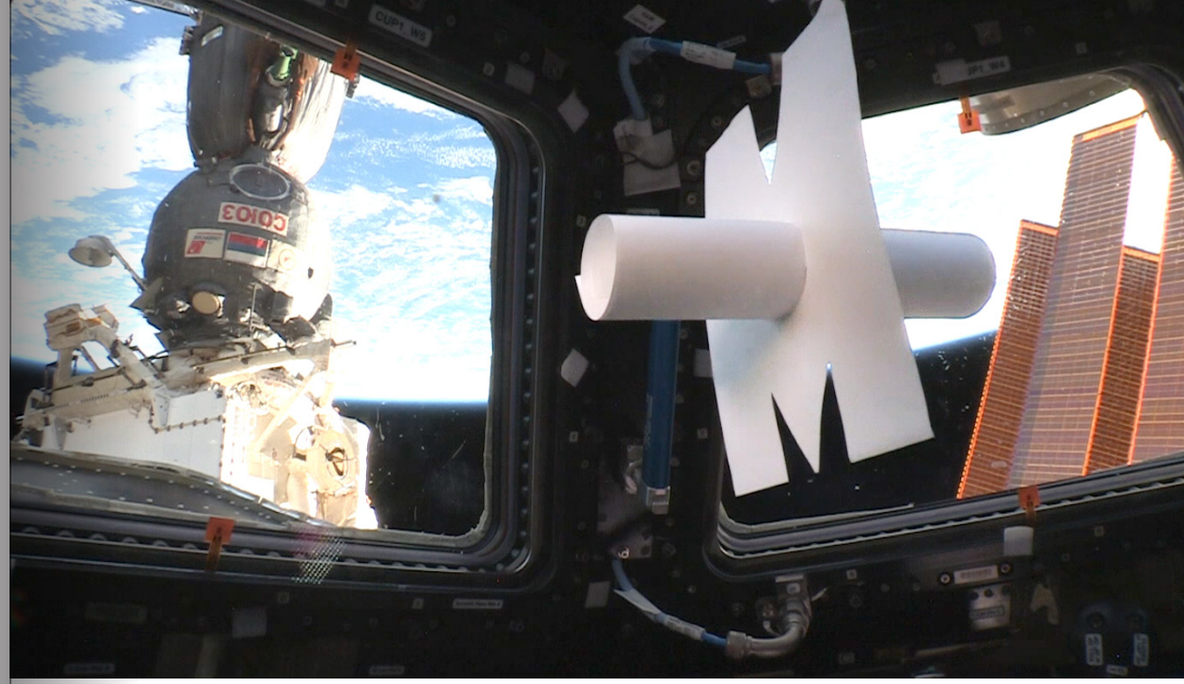


Fig. 41
Eduardo Kac, *Inner Telescope*, 2017

87 Stephen Blundell, "The Forgotten Sense – Proprioception," a paper given at "Uncommon Senses: An Interdisciplinary Conference on the Senses in Art and Culture," Lonergan College, Concordia University, Montreal, April 27–29, 2000. See the *Abstracts*, 92.

88 Barbara Montero, "Proprioception as an Aesthetic Sense," *Journal of Aesthetics and Art Criticism*, 64, no. 2 (Spring 2006): 231–42. She even claims that "proprioception is not merely sensory but represents objects in the world" (232).

89 Lian Loke and Toni Robertson, "Studies of Dancers: Moving from Experience to Interaction Design," *International Journal of Design*, 4, no. 2 (August 2010): 39–54. November 9, 2012, http://www.ijdesign.org/index.php/IJDesign/article/view/714/302. See John Dewey, *Art as Experience* (New York: Minton, Balch, & Company, 1934).

90 Brandon's Movie Memory, June 25, 2011, http://deeperintomovies.net/journal/archives/6290.

91 Michael Snow, in *The Collected Writings of Michael Snow,* ed. Snow and Louise Dompierre (Waterloo, ON: Wilfred Laurier University Press, 1994), 55.

92 Eduardo Kac, "Against Gravitropism," *KAC*, http://www.ekac.org/levitation.html.

93 See, e.g., Sjarel Ex, ed., *Elixir. The Video Organism of Pipilotti Rist* (Rotterdam: Museum Boijmans van Beuningen, 2009).

94 See, e.g., Olafur Eliasson, *Your Engagement Has Consequences—On the Relativity of Your Reality* (Baden: Lars Müller, 2005). On Eliasson and Moholy-Nagy, see Eve Blau, "The Third Project," in *Olafur Eliasson: Your Chance Encounter* (Baden: Lars Müller, 2010), unpaginated.

in Miami. Tomás Saraceno has, with his installation *On Space Time Foam*, succeeded in creating an "installation, a multi-layer transparent surface accessible to visitors, suspended at a height of 20 meters and covering 1200 square meters on three levels [... transforming] architecture into a living organism, one that breathes thanks to the movements of those who cross it, visualizing the infinite relationships that tie us to space." This makes it possible for visitors to experience something like weightlessness, in three dimensions.[95]

We have seen that the technologies of modernity and a resultant crisis of the senses, as well as the playful pleasures of vertigo, the deliciousness of dizziness, have led to a desire on the part of artists to train our sensorium, to engage in an aesthetics of sensory derangement, an art of ilinx, a realization that the internal senses may be the source of artistic expression and aesthetic delectation. All these tasks have been carried out intuitively by artists starting early in the twentieth century. We now have a vocabulary for them, even the beginnings of a formalized aesthetics. Let us take pleasure in this.

95 The text is quoted from the official press release, e-flux, November 10, 2012. The show opened at HangarBicocca, Milan, October 2012.

Literature

Apollonio, Umbro, ed. *Futurist Manifestos*. London: Thames and Hudson, 1973.

Botar, Oliver A.I. *Technical Detours: The Early Moholy-Nagy Reconsidered*. New York: Art Gallery of the Graduate Center of the City University of New York, 2006.

Botar, Oliver A. I. *Sensing the Future: Moholy-Nagy, Media and the Arts*. Zurich: Lars Müller, 2014.

Caillois, Roger. *Man, Play and Games*. Translated by Meyer Barash. Urban: University of Illinois Press, 1961.

Eisenstein, Sergei. *The Film Sense*. New York: Harcourt, Brace, 1942.

Eliasson, Olafur, ed. *Your Engagement Has Consequences. On the Relativity of Your Reality.* Baden: Lars Müller, 2005.

Danius, Sara. *The Senses of Modernism: Technology, Perception and Aesthetics*. Ithica, NY: Cornell University Press, 2002.

Dalrymple Henderson, Linda. *The Fourth Dimension and Non-Euclidean Geometry in Modern Art*. Revised edition. Cambridge, MA: MIT Press, 2013.

Dewey, John. *Art as Experience*. New York: Minton, Balch & Company, 1934.

Droste, Magdalena and Fiedler, Jeannine eds. *Experiment Bauhaus*. Berlin: Bauhaus-Archiv – Museum für Gestaltung, 1988.

Fisher, Jennifer. "Relations Sense: Towards a Haptic Aesthetics," *Parachute*, no. 87 (Summer 1997): 4–11.

Gassner, Hubertus. "Tight Rhythms: Unstable Constructions in Russian Constructivism." *Daidalos*, September 20, 1990.

Grau, Oliver. *Virtual Art: From Illusion to Immersion*. Translated by Gloria Custance. Cambridge, MA: MIT Press, 2003.

Haus, Andreas. *Moholy-Nagy: Photographs and Photograms*. New York: Pantheon, 1980.

Huhtamo, Erkki. "The Sky Is (Not) the Limit: Envisioning the Ultimate Public Media Display." *Journal of Visual Culture* 8, no. 3 (December 2009): 329–48.

Hultén, Pontus. *Futurism and Futurisms: Futurismo and Futurismi*. New York: Abbeville, 1986.

Jünger, Ernst. *Storm of Steel*. Translated by Michael Hoffman. London: Penguin, 1961.

Kepes, György. *The New Landscape in Art and Science*. Chicago: Paul Theobald and Co., 1956.

Kern, Stephen. *The Culture of Time and Space 1880–1918*. Cambridge: Harvard University Press, 1983.

Khidekel, Regina, ed. *Lazar Khidekel and Suprematism*. Munich: Prestel, 2014.

Kirby, Michael. *Futurist Performance*. New York: Dutton, 1971.

Loke, Lian and Robertson, Toni. "Studies of Dancers: Moving From Experience to Interactive Design." *International Journal of Design* 4, no. 2 (August 2010): 39–54.

Mach, Ernst. *Contribution to the Analysis of the Sensations*. Translated by C. M. Williams. Chicago: Open Court, 1897.

Mertins, Detlef, and Michael W. Jennings, eds. *G: An Avant-Garde Journal of Art, Architecture, Design and Film, 1923–1926*. Translated by Steven Lindberg with Margareta Ingrid Christian. Los Angeles: Getty Research Institute, 2010.

Moholy-Nagy, László, Oskar Schlemmer, and Farkas Molnár. *Die Bühne im Bauhaus*. Munich: Albert Langen, 1925.

Ottinger, Didier, and Quentin Bajac. *Dreamlands: Des parcs d'attractions aux cités du futur*. Paris: Centre Pompidou, 2010.

Peckham, Morse. *Man's Rage for Chaos: Biology, Behavior, and the Arts*. Philadelphia: Chilton Books, 1965.

Phillips, Lisa ed. *Frederick Kiesler*. New York: Whitney Museum of American Art, 1989.

Previc, Fred H., and William R. Ercoline. eds. *Spatial Disorientation in Aviation*. Reston, VA: American Institute of Aeronautics and Astronautics, 2004.

Rimbaud, Arthur. "Lettre à George Izambard, May 13, 1871." In Arthur Rimbaud, *Oeuvres complètes*, Paris: Pleiade, 1972.

Salter, Chris. *Entangled: Technology and the Transformation of Performance*. Cambridge, MA: MIT Press, 2010.

Toepfer, Karl. *Empire of Ecstasy: Nudity and Movement in German Body Culture, 1910–1935*. Berkeley: University of California Press, 1997.

Taming Vertigo
Philippe Petit and the Subject of High-Wire Walking

Davide Deriu

Fig. 42
Jerome Robbins, *Descent of Madame Saqui, surrounded by fireworks*, 1822

On the high wire, the very heart of prowess and the only aim is to master vertigo.
—Roger Caillois, *Man, Play and Games*

Tell me, am I wrong to mock vertigo from summit to abyss, to reveal the world as I see it?
—Philippe Petit, *To Reach the Clouds*

Dangerous Crossings

It is hard to find in history a figure that encapsulates the pursuit of balance more vividly than the funambulist.[1] The art of rope walking, formerly known also as rope dancing, evokes a feeling of liberation from gravity that sums up the human longing for weightlessness. This acrobatic art, whose origins date back to Ancient Greece, flourished as a form of entertainment in Europe during the Middle Ages and went on to become a regular feature of the modern circus. With the industrial revolution, the tightrope came to symbolize the human drive to conquer nature. Hemp ropes were gradually replaced by metal wires, first made of copper then steel, allowing ever more audacious stunts to be carried out over gorges and rivers, as well as urban gardens and squares. By the mid-nineteenth century, wire walking had become one of the most favored types of public spectacle.

A watershed was marked on June 20, 1859, when the French celebrity high-wire walker known as the Great Blondin (born Jean-François Gravelet) was the first to cross Niagara Falls. In the process, Blondin also traversed the invisible borderline between two countries, the United States and Canada.[2]

In his book *Falling* (2003), Garrett Soden explores the desire to master gravity that pervaded the nineteenth century, which he dubs "the gravity century."[3] While a plethora of machines were engineered to induce the thrill of controlled fall, as epitomized by the roller coaster, at the same time embodied practices that played on the dangers of gravity, like high diving and parachuting from balloons became popular forms of open-air entertainment. That is also when funambulism had its peak of popularity. Blondin performed at Niagara Falls over two seasons, in 1859 and 1860, carrying out ever more challenging stunts—

1 The terms "funambulism" and "funambulist" (from the Latin *funis*, "rope," and *ambulare*, "to walk") denote respectively the art of tightrope walking and the artist who performs it.
2 Blondin's crossings made also symbolic reference to the history of slavery in North America. See Barbara Penner, "Niagara: It Has It All," *Places Journal* (September 2009), https://doi.org/10.22269/090924.
3 Garrett Soden, *Falling: How Our Greatest Fear Became Our Greatest Thrill* (New York: W. W. Norton & Co, 2003), 74.

blindfolded; on stilts; with his manager on his back; and so on. Although a number of aerialists sought to emulate his feats, only a few of them attained the status of gravity heroes: notably, Maria Spelterini, William Hunt (aka "The Great Farini"), and Henri L'Estrange, the balloonist-cum-funambulist who earned himself the epithet of the "Australian Blondin."

Fig. 43
George Barker, Blondin's rope ascension over Niagara River, n.d.

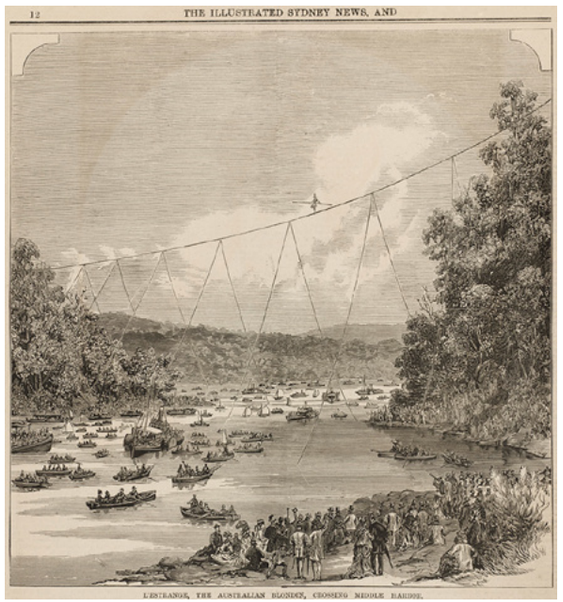


Fig. 44
Henri L'Estrange, tightrope walker, crossing Middle Harbour [in Sidney], 1877, State Library of New South Wales

Amid the feats and achievements of the "gravity century," the figure of the funambulist acquired new allegorical meanings. In the prologue of Nietzsche's *Thus Spoke Zarathustra* (1883), the modern prophet harangues a crowd assembled in a market square where a rope is hanging between two towers. "Man is a rope stretched between animal and overman—a rope over an abyss"—he says to deaf ears.[4] An aerialist begins to walk over the square with the aid of a balancing pole, only to be chased by a malign jester who makes him fall to the ground. Zarathustra then consoles the dying man by praising his attempt at the "dangerous crossing"—a graphic image of the Nietzschean will to power. Of this text, Steven Connor observes: "The tightrope walker enacts the tense passage between worlds."[5] Time and again, this passage has been associated with a spiritual journey. The tightrope designates a perilous crossing that pushes the boundaries of human ability: a balancing act that brings people together to contemplate the fine line between life and death.

After reaching its climax of popularity in the second half of the nineteenth century, this performance art began to lose its appeal. All endeavors to rival Blondin's formidable stunts were ultimately seen as less of an achievement. Hence the "noble gravity daredevil" largely retreated into the circus.[6] Meanwhile, the modern metropolis was shaped into a place of artificial mountains and canyons, as the advent of steel frame construction—coupled with the invention of the elevator—ushered in the skyscraper era. While high-rise buildings provided a glaring expression of the modern will to power, the birth of aviation seemed to have forever fulfilled the human dream of flying.

Although the imaginative force of the tightrope gradually wore out, the art of funambulism was kept alive by myriad lesser-known performers over the twentieth century. The outstanding figure was Karl Wallenda, a high-wire artist hailing from a German circus family who moved to the United States in the 1920s and led his own progeny to legendary status—"The Flying Wallendas." In the mid-'60s, he sky-walked across natural gorges in a bid to revive the feats accomplished by his famous precursor a century earlier. Wallenda's final walk took place in 1978, when he dramatically fell to his death during a publicity stunt on a wire, battered by heavy winds, between two hotel buildings in San Juan, Puerto Rico. According to Soden, this tragic event, which was recorded on camera, ended the era of "gravity heroics" epitomized by the figure of the wire-walker.[7] Although Wallenda went down in history as the "last of the circus's 'great' gravity performers," his demise did not spell the end of

4 Friedrich Nietzsche, *Thus Spoke Zarathustra: A Book for All and None*, trans. Adrian Del Caro (Cambridge: Cambridge University Press, 2006), 4. "Overman" here translates Nietzsche's term *Übermensch*.
5 Steven Connor, "Man Is a Rope," in *Catherine Yass—High Wire* (London: Artangel, 2008), n.p.
6 Soden, *Falling*, 133.
7 Soden, 137.

funambulism.[8] It might be argued, in fact, that a new phase began in the 1970s; one that climaxed with Philippe Petit's extraordinary high-wire walk between the twin towers of the World Trade Center in New York City on August 7, 1974.

Fig. 45
Jean-Louis Blondeau, *Philippe Petit walks on wire across the twin towers of the WTC*, 1974

In the aftermath of 9/11, Petit's legendary "coup" gained renewed acclaim through a flurry of representations that invigorated the image of the wire-walker. Aside from the story of a young man chasing his dream, the World Trade Center walk revealed how funambulism was reborn as an urban art that confronted the vertiginous depths of the city. Vertigo is a theme that inevitably crops up in various accounts of that event. Yet, it received diverse treatments in Petit's autobiographical book, *To Reach the Clouds*, and in its subsequent cinematic adaptations. The remainder of the essay unpacks the dizzying perception of space that was associated with that act and discusses how vertigo was variously expressed, evoked, and simulated through different media.

Tightrope and Vertigo

Before delving into the crux of the essay, it is useful to elaborate on the notion of vertigo. As Lucy Yardley explains, this is an ambivalent term that takes up different meanings in the scientific discourse and in common language:

> In everyday use, the word vertigo most commonly describes a fear of heights, although it is sometimes also used to refer to generalised feelings of giddiness, faintness, confusion, anxiety or insecurity, regardless of the precise nature and cause of these sensations. However, "vertigo" is strictly defined medically as an illusion of movement of the self or of the environment. [...] In the medical context, the term "vertigo" is therefore simply a technical label for the symptom of perceptual disorientation, which can be due to a wide variety of causes.[9]

In short, perceptual disorientation occurs when the sensory inputs that our body sends to our brain in order to manage our posture and self-motion are discordant. These inputs are processed by three sensory systems whose integration is essential to maintain an overall sense of balance: the vestibular, visual ("optokinetic"), and proprioceptive ("somatosensory") systems. Yardley notes that "when an apparent mismatch occurs between the different sensory inputs to the balance system, the perceptual uncertainty this creates is itself experienced as a sensation, which may be described as dizziness, disorientation, or vertigo."[10]

Medical research deals mostly with the vestibular apparatus, whose malfunctioning is responsible for the majority of balance-related disorders. Ordinary sensations of dizziness, however, can also be caused by a discrepancy between

8 Soden, 133.
9 Lucy Yardley, *Vertigo and Dizziness* (London: Routledge, 1994), 1–2.
10 Yardley, 8–9.

the inputs of the visual and proprioceptive systems. A typical scenario is the experience of high places where the perception registered by our propioceptors does not match the one registered by our eyes (e.g., looking down below while sensing the ground with our feet). Naturally, this kind of short circuit is experienced in different ways by different individuals, and the levels of perceptual disorientation that result also depend on a complex set of psychological as well as physiological factors.[11] We can, nonetheless, begin to draw a connection between the biomedical notion of vertigo, an illusion of movement that often has little to do with altitude, and the popular association of this term with the "fear of heights"—also known as acrophobia.[12]

This link is not only a semantic one. Neurological research has investigated the spectrum of "visual height intolerance," which ranges from conditions of minor ("non-phobic") discomfort to severe acrophobia.[13] The experience of heights is notoriously polarized: it attracts some people as much as frightens others. Hence, terms such as height dizziness and height vertigo have multiple connotations that might evoke feelings of thrill and elation as well as anxiety and panic. The full spectrum encompasses subjects who cope well with the exposure to altitude, and extends to those who find pleasure in it and keenly embrace the related risks: "Height-tolerant individuals perceive the physical danger of heights but compensate either by habituation or a comfort level with their sense of physical danger. Height-seeking individuals actually enjoy the sense of physical danger when exposed to heights."[14]

Tightrope walking is often regarded as the activity that best embodies this height-seeking drive, or acrophilia.[15] If the voluntary exposure to danger is a trait that funambulists share with other height practitioners, such as free climbers, the ethereal and seemingly effortless act of walking on a wire marks it out as a unique art. It is not surprising that Petit's performances, which include symbolic gestures and dancing routines, have been likened to a theatrical form.[16]

Moving from biomedical discourse back into the realm of art and culture, it shall be useful now to consider a classic theory that regards vertigo as a structure of human play, and the tightrope as its quintessential manifestation. In his 1958 book, *Man, Play and Games*, Roger Caillois adopted the ancient Greek word *ilinx* (whirlpool) to describe the voluntary pursuit of vertigo. Building on the seminal work of Johan Huizinga, whose *Homo Ludens* investigated the role of the play element in culture, Caillois studied a typology of "vertigo games" previously neglected by Huizinga because of their alleged lack of cultural values. These are games "which consist of an attempt to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind."[17] Although ilinx is defined as "a pure state of transport," this does not mean that rule and discipline find no place

in such games.[18] In fact, they inform those ludic practices whose specific aim is to counter the loss of balance by setting up new stability challenges: "The desire to overcome an obstacle can only emerge to combat vertigo and prevent it from becoming transformed into disorder or panic. It is, therefore, training in self-control, an arduous effort to preserve calm and equilibrium. Far from being compatible with ilinx, it provides the discipline needed to neutralize the dangerous effects of ilinx, as in mountain climbing or tightrope walking."[19]

Among the games of vertigo, the latter is the one that exemplifies a meticulous quest for equilibrium. "The tightrope," writes Caillois, "is the profession corresponding to ilinx."[20] He continues: "On the high wire, the very heart of prowess and the only aim is to master vertigo. The game consists expressly in moving through space as if the void were not fascinating, and as if no danger were involved."[21] This theory appeared a century after Blondin's Niagara walk, at a time when funambulists had largely retreated into the circus. Later on, in the early 1970s, the intimation to master vertigo became a core principle of Petit's performances, as the young Frenchman breathed new life into the wire.

Gravity Outlaw

Although the story of Petit's Twin Towers coup has been told in numerous books, interviews, and films, it is worth summarizing the circumstances that led up to it. The event was preceded by two other performances—at Notre-Dame de Paris (1971) and at the Sydney Harbour Bridge (1973)—in which the funambulist cut his teeth at building what he later described as "ephemeral bridges" across major landmarks. These were not only illicit stunts that invariably resulted in him being arrested by local polices but also, significantly, urban performances that engaged with towers of varying heights. Petit's acrobatics

11 Danielle Quinodoz, *Emotional Vertigo: Between Anxiety and Pleasure* (London: Routledge, 1997).
12 The relationship between vertigo and acrophobia is discussed more extensively in Gavin J. Andrews, "Spaces of Dizziness and Dread: Navigating Acrophobia," *Geografiska Annaler: Series B, Human Geography* 89 (2007): 307–17.
13 See, for instance, Doreen Huppert, Eva Grill, and Thomas Brandt, "Down on Heights? One in Three Has Visual Height Intolerance," *Journal of Neurology* 260 (2013): 597–604.
14 John R. Salassa and David A. Zapala, "Love and Fear of Heights: The Pathophysiology and Psychology of Height Imbalance," *Wilderness & Environmental Medicine* 20 (2009): 380.
15 Jim LeBlanc, "The Acrophobe and the Funambulist: Existential and Cinematic Perspectives on the Phenomenology of Extreme Vertical Space," *Emotion, Space and Society* 4 (2011): 1–7.
16 Kurt Wurmli, "Theater in the Sky: Philippe Petit's Unique Art of Theatrical Highwire Performance," *Journal of American Culture* 20 (1997): 117–23.
17 Caillois, *Man, Play and Games*, 23.
18 Caillois, 31.
19 Caillois, 31.
20 Caillois, 137.
21 Caillois, 137.

derived from a distinctive combination of self-taught street art and poetic reverie, which he characterized as a mode of "writing in the sky."

After the early exploits which culminated in the 1974 coup, Petit became a recognized high-wire artist and throughout the 1980s and '90s was invited to perform at various locations around the world, such as Paris, Tokyo, Jerusalem, and Frankfurt as well as in his adopted home of New York City. By the turn of the twenty-first century, Petit was in all likelihood the most renowned living funambulist. A long-standing artist-in-residence at the Cathedral of Saint John the Divine in Manhattan, he had several books to his name too. The main one, *On the High Wire* (1985), was translated from the French by Paul Auster, who had accidentally witnessed Petit's Notre-Dame walk while living in Paris and later befriended him in New York. Championing his friend's treatise, Auster called for wire walking to be taken seriously as an art form on account of its unique aesthetic force:

> The high-wire walker's job is to create a sensation of limitless freedom. [...] No art, it seems to me, so clearly emphasizes the deep aesthetic impulse inside us all. Each time we see a man walk on the wire, a part of us is up there with him. Unlike performances in the other arts, the experience of the high wire is direct, unmediated, simple, and it requires no explanation whatsoever. The art is the thing itself, a life in its most naked delineation. And if there is beauty in this, it is because of the beauty we feel inside ourselves."[22]

As mentioned above, the figure of the funambulist had long inspired thinkers and writers, including eminent philosophers like Goethe and Kant.[23] Auster's commentary laid stress on the enduring power of this art in the age of skyscrapers, an art that found in Petit an eloquent narrator as well as a skillful performer. By walking back and forth on a wire rigged between the tallest towers in the world, without any harness, he momentarily occupied the sky over the city: for about forty-five minutes, his body reclaimed the vertical space of Manhattan.[24] Thereby, as Auster noted, this fragile figure somehow managed to humanize the colossal, corporate architecture he had conquered with the help of his accomplices. After the Twin Towers collapsed, the collective memory of that act acquired a new significance as its aura was magnified by a poignant sense of nostalgia.

In the aftermath of 9/11, Petit set out to write a tribute to what he called "his towers." The ensuing memoir, *To Reach the Clouds* (2002), tells the story of the coup in an engaging style that blends lyricism with humor. Republished six years later in paperback edition as *Man on Wire*, the book became the subject of an award-winning documentary, issued under the same title with the added tagline: "1974. 1350 feet up. The artistic crime of the century."[25] The idea

that the greatest high-wire walk of all times was carefully devised and executed like a bank robbery is central to Petit's narration. He had been arrested several times before, first while working as a street artist then after his clandestine high-wire walks in Paris and Sydney, and his memoir refracts the image of a rebellious young man willing to defy the law for the sake of his art.[26]

To Reach the Clouds offers a captivating account of how the 1974 coup was prepared over eight months, then finally staged at the World Trade Center on the morning of August 7. Petit and his partners in crime managed to break into the towers with heavy and cumbersome gear, then spent the night rigging the wire amid all kinds of delays and difficulties. As in the two previous walks, trespassing was necessary in order to accomplish the "artistic crime." The funambulist's ultimate violation, however, was committed against the law of gravity. If Blondin's Niagara walk dared to defy nature at the point of its grandest fall, Petit's Twin Tower coup transposed the challenge onto the peaks of urbanized nature. By stepping into what he called "no man's land," the funambulist revealed the newly created abyss of the city in all its vertiginous depth, achieving in the process a remarkable case of *counter-vertigo*.

How did that episode unfold? Petit himself writes about the gradual habituation to the void he gained through a series of reconnaissance missions on the south tower prior to the walk. When he had an opportunity to explore the edge of the rooftop and the adjacent ledge at the lower level, he resisted the temptation to let his gaze plunge:

> Then I lean over the edge [...] so I can look straight down. I do not. [...] I had not dared to reach the ledge, had not risked looking down. It was enough to look across.[27]

22 Paul Auster, "On the High Wire," in *Collected Prose* (London: Faber & Faber, 2003), 302. *On the High Wire* later appeared in French as *Traité du funambulisme* (1997) with a preface by Auster.

23 Steven Miller, "The Coup: Behind the Scenes of the Act with Philippe Petit," *Differences: A Journal of Feminist Cultural Studies* 28 (2017): 119.

24 Although the first World Trade Center was surpassed in 1973 by Chicago's Sears Tower, the WTC complex had the tallest twin towers in the world until the Petronas Towers were unveiled in Kuala Lumpur in 1998.

25 *Man on Wire* was an international box-office hit and won several awards, most notably the Grand Jury Prize at the 2008 Sundance Film Festival; the 2009 BAFTA award for Outstanding British Film; and the 2009 Academy Award for Best Documentary Feature.

26 This idea is also reflected in other books written by Petit, such as *L'Art du Pickpocket* (Arles: Actes Sud, 2006) and the more recent *Creativity: The Perfect Crime* (New York: Riverhead Books, 2014).

27 Petit, *Reach the Clouds*, 17.

Figs. 46–47
Jean-Louis Blondeau, *Philippe Petit walks on wire accross the twin towers of the WTC*, 1974

The day after, he found his way up one more time:

> Again, I consider climbing down to the lower edge, where the sheer aluminum cliff initiates its vertiginous descent. Yesterday I dared not. Today I must. [...] It cannot be done all at once. To overpower vertigo—the keeper of the abyss—one must tame it, cautiously.[28]

The confrontation with the "almighty void" posed a stern challenge:

> Ah, yes, my mind registers, far, far down, the ground, the streets—but my eyes refuse. Yet I breathe in voluptuously the unknown that eddies below. I keep fighting.[29]

The battle against "the keeper of the abyss" was not over until he stepped on the wire. Even then, the initial moments were fraught with hesitation. It was only after completing the first crossing, from the south to the north tower, that fear was entirely overcome:

> As I move along the edge [...], I can't resist the visual dive: I glide in, feel the width of the abyss, I slide down and taste its depth, with delight I brush by the marble plaza at street level, then I hurtle back up along the silver facades onto the dazzling surprise of my sight landing exactly where it started.[30]

It is as though the first crossing had allowed the funambulist to own the space in all its magnitude. Now he could finally look down, and the sight was no longer a source of anxiety but of pleasure. Soon he was off again, lured by the irresistible call of the wire. As his steps became easier he could embrace the view in a state of serene control, sit on the wire, and salute the city: "*I stare proudly at the unfathomable canyon, my empire.*"[31] The abyss had been conquered and freedom now filled the air.

28 Petit, 18.
29 Petit, 19.
30 Petit, 175–78.
31 Petit, 179.

The Smell of Balance

The fact that high-wire walking is often considered to be one of the most acrophilic activities, and one that presupposes an absolute mastery of vertigo, may falsely suggest that performers are somehow immune to emotions of fear or anxiety engendered by heights. The reality is far more complex. Petit described the tension that pervades the funambulist at the end of his treatise, *On the High Wire*. The incipit of the final chapter, "Fear," sums up the pressure that needs to be withstood when facing the abyss: "A void like that is terrifying. Prisoner of a morsel of space, you will struggle desperately against occult elements: the absence of matter, the smell of balance, vertigo from all sides, and the dark desire to return to the ground, even to fall. This dizziness is the drama of high-wire walking, but that is not what I am afraid of."[32]

As we have seen, the sensation of vertigo caused by exposure to heights derives from an individual's psychic as well as physical states, and their complex relationship explains why the level of height tolerance in the same person may well vary through time. The idea that particular ethnic groups might be immune to vertigo is a contested one. A relevant case in point is the popular credence that has long surrounded the supposedly "fearless" Mohawk ironworkers who built many of New York's skyscrapers.[33] While native Americans hailing from southern New England embraced, since the late nineteenth century, dangerous building tasks that caused many accidents and casualties, their ability to cope with heights was due to a process of cultural habituation that involved practicing at altitude rather than to an innate absence of fear.[34] Interestingly, this myth also comes up in a conversation that Petit, disguised as an architectural journalist, had with the World Trade Center's head when he sought permission to interview the builders on the roof of the south tower under construction. The man reportedly told him about the workers: '"They're famous for their absence of vertigo, you know."'[35] This passing comment, which would have been commonplace in 1974, serves Petit to draw an analogy between the coup plotters and the so-called sky-framers "who assemble steel at dizzying heights."[36] Neither the ironworkers nor the wire walkers are shielded from the paralyzing effects of heights: both have to develop ways of coping with them.

Petit's account of the coup illustrates Caillois's point about the importance of cultivating discipline and self-control in order to impede the potential consequences of ilinx: "The tightrope walker only succeeds if he is hypnotized by the rope, the acrobat only if he is sure enough of himself to rely upon vertigo instead of trying to resist it. Vertigo is an integral part of nature, and one controls it only in obeying it."[37] The painstaking training that allowed Petit to tame vertigo and perform in such extreme conditions takes up a substantial part of the story narrated in his memoir and subsequent adaptations. Endowed with new significance in the aftermath of 9/11, the Twin Towers act revived not only

the time-honored figure of the funambulist but also its cultural significance as an allegory of the human longing for balance. The popular reception of this "artistic crime" indicates that its riveting beauty transcends the aesthetic expression of the performance itself and arouses responses that pertain to the moral and existential spheres. In this respect, Auster's comment about the "sensation of limitless freedom" evoked by the funambulist can be read as praise of a life-affirming act rather than of a death-defying feat.[38]

This crucial difference has also been highlighted by psychoanalysts. Notably, Danielle Quinodoz takes Petit as a reference point in her wide-ranging study *Emotional Vertigo*, which devotes a chapter to "dangerous games with vertigo." For Quinodoz, the funambulist's painstaking training, in which nothing is left to chance, exemplifies the work of various practitioners—such as extreme climbers and mountaineers—who take calculated risks to achieve goals that look impossible at first sight. These individuals do not toy with self-destruction, as one might think, but rather seek a vital affirmation by striking a balance between life and death drives. The search for equilibrium, argues Quinodoz, depends on the ability to reconcile the inner voices that speak in the conflicting registers of "omnipotence" and "realistic power."[39] Whereas the former is the legacy of an infantile drive, the latter countervails it with the rationality of the evolved self.

Petit's performances are in equipoise between these opposite tendencies. The ability to *de-idealize* one's limits and the obstacles they pose allows the funambulist, as well as like-minded players of "dangerous games," to keep vertigo at bay: "It seems plain, in fact, that if they do not have vertigo it is because they design their game very carefully instead of seeking illusory magical victories likely to let them down; they aim for triumphs that are both spectacular and attainable: that is, brilliant but in no way magical."[40] In the case of the Twin Towers walk, the intent of accomplishing a seemingly impossible feat was realized through careful preparation. Petit managed to balance his drive to omnipotence with a grounded awareness of his human limits, and thereby achieved success on the wire. If he appeared to Auster "as if suspended magically in space," this was not by means of illusory tricks but as a result of a human, all too human, act of supreme composure.[41]

32 Philippe Petit, *On the High Wire* (New York: Random House, 1985), 109.
33 See in particular the exhibition "Booming Out: Mohawk Ironworkers Build New York," held at the National Museum of the American Indian, New York, April 26–October 24, 2002.
34 David Weitzman, *Skywalkers: Mohawk Ironworkers Build the City* (New York: Roaring Brook Press, 2010).
35 Petit, *Reach the Clouds*, 67.
36 Petit, 67.
37 Caillois, *Man, Play and Games*, 138.
38 On the difference between "act" and "feat" in this context, see Miller, "The Coup," 121.
39 Quinodoz, *Emotional Vertigo*, 171.
40 Quinodoz, 171.
41 Auster, "High Wire," 301. This passage refers to Auster's impression of Petit's high-wire walk at Notre-Dame, but may well apply by extension to his subsequent walks at greater heights.

From Sensation to Sensationalism

As mentioned above, the great deal of attention that has surrounded Petit's coup in the first two decades of this century was catalyzed by the tragic events of 9/11. His memoir provided a narrative account that in turn inspired two cinematic adaptations: the documentary *Man on Wire* (2008), directed by James Marsh, and, subsequently, the fictional film *The Walk* (2015), directed by Robert Zemeckis.[42] These call into question Auster's comment on the "unmediated" quality of the wire-walker's experience. While the aura of Petit's performance was mainly enshrined for nearly three decades in the memories of those who witnessed it, and in news reports, the event gained new drawing power through its twenty-first century's representations.

Marsh's documentary features Petit as the main narrator and remains largely faithful to his memoir. The images are drawn from a disparate range of sources complemented by the partial reenactment of topical scenes. For the walk itself, the filmmaker pieced together the limited footage available from a police helicopter with the photographs that were taken by Petit's accomplices from the towers' rooftops. None of these pictures is ostensibly dizzying per se. As Jim LeBlanc notes, "There are no dolly zoom, vertigo shots in *Man on Wire*, although cameras do occasionally point straight down seemingly bottomless staircases and gaze both up at the funambulist and down from the top of the structures between which Petit performs."[43] Rather than seeking to visualize the event through unsettling views, Marsh chose to evoke it mainly through interviews with the protagonists. Working through the gaps between words and images, the documentary adheres to Petit's account of the coup and espouses his tribute to the towers while refraining from any comments on what they signified.[44] If a sense of vertigo is conveyed, it derives from the emotional impact of the story rather than from dizzying camera work.

Quite the opposite happens in Zemeckis's fictional adaptation. This film, which reconstructs the coup through stunning visual effects, was released in 2015 for IMAX 3D as well as 3-D and 2-D cinemas.[45] The lead actor, Joseph Gordon-Levitt, was trained by Petit himself to walk on a wire at low height and his steps—combined with those of an acting funambulist—were then composited in a computer-generated model of the Twin Towers and New York's cityscape.[46] As the walk unfolds, the climactic sequence displays a gamut of vertigo-inducing shots of the man on the wire from above and from below, interspersed with improbable point-of-view shots from his feet and zooming shots plunging down to the street and back up to the towers' rooftops, in an immersive experience that seeks to replicate Petit's own perspective. Unlike Marsh's treatment of the subject, Zemeckis's does not evoke the imagination of heights but replaces it with a hyperrealistic picture that induces in the spectator the thrill of vicarious ilinx.[47] Reviewing the film in the *New Yorker*, critic Richard Brody

aptly observed: "The 3-D views of the street below as seen from above are somewhere between exhilarating and terrifying, depending on a viewer's tendency to acrophobia. But Zemeckis, in indulging his own propensity to thrill and delight, in emptying onscreen his own bag of cinematic tricks in the course of a sequence that's intended to realize what Petit considers a work of exalted beauty, betrays and degrades that very beauty. [...] Zemeckis reduces—or, rather, inflates—the walk from sensation to sensationalism."[48]

This inflation was echoed by a publicity campaign that extolled the film's high-tech wizardy with the slogan "Experience the impossible." By casting the protagonist as an idealized character similar to a gentle superhero, the film transposes on the sphere of magic what in fact belongs to the human realm. A poetic and transformative act is digitally fictionalized as a record-breaking feat. By so doing, the film contradicts the fundamental principle of funambulist practice with regard to vertigo, as noted by Quinodoz. Not only is the beauty of the walk devalued by an orgy of digital simulation, but the subject of high-wire walking, too, is transformed in the process from a figure of counter-vertigo to an agent of thrill simulation. It is as though the dynamic imagination inherent in Petit's attempt *to reach the clouds* had been lost to a simulacrum powered by cloud computing. By striving to recreate a perception of the coup through special effects, the filmmaker appropriated the poetic image of the funambulist and effectively obliterated its imaginative élan.[49]

42 The story was also adapted by American artist Mordicai Gerstein to an illustrated children's book, *The Man Who Walked between the Towers* (2003), which was later turned into a short animated film.
43 LeBlanc, "The Acrophobe," 5.
44 For a critique of this film as a manifestation of American "victory culture," see Chris Vanderwees, "A Tightrope at the Twin Towers," in *Recovering 9/11 in New York*, ed. Robert Fanuzzi and Michael Wolfe (Newcastle: Cambridge Scholars, 2014), 228–47.
45 *The Walk* was awarded the IPA Satellite Award 2015 for best visual effects..
46 Reportedly, this intensive rendering work required the "largest use of cloud computing in the history of cinema." See Ross A, Lincoln, "'The Walk' VFX Reel: A Tense Look at the Making of the Film," *Deadline*, December 3, 2015, http://deadline.com/2015/12/the-walk-exclusive-vfx-reel-1201651978/.
47 Similarly to *Man on Wire*, *The Walk* has also been criticized for appropriating Petit's coup to the post-9/11 national narrative that eulogises the Twin Towers. See Gwyneth Shanks, "The Politico-Aesthetics of Groundlessness and Philippe Petit's High-Wire Walk," *Performance Matters* 2 (2016): 43–62.
48 Richard Brody, "'The Walk' Falls Short of Artistry," *New Yorker*, September 30, 2015, https://www.newyorker.com/culture/richard-brody/the-walk-falls-short-of-artistry.
49 For an extensive discussion of the dialectic between perception and imagination with regard to flight, see Gaston Bachelard, *Air and Dreams: An Essay On the Imagination of Movement*, trans. Edith R. Farrell and C. Frederick Farrell (Dallas: Dallas Institute Publications, 1988).

Furthermore, this image-making operation had an interesting architectural offshoot. In preparation for the launch of *The Walk* in Australian cinemas, in October 2015, a new design feature was added to the Skydeck of Melbourne's Eureka Tower: a glass box jutting out of the eighty-eighth floor and hanging over the void. The attraction, called The Edge, consists of "a specially constructed green screen set that gives guests the illusion that they are crossing a tightrope suspended high above the city of Melbourne."[50] This gimmick reflects a wider trend for vertigo-inducing experiences that, since the late noughties, have become rife across spatial and visual cultures alike. The ongoing craze for high-level glass floors and sundry "skywalks" evidences a widespread pursuit of ilinx that manifests itself through various states of suspension.[51]

As glass platforms become common features of high-rise buildings around the world, the embodied act of "walking on air" is simulated within environmentally controlled spaces for the benefit of thrill seekers. This phenomenon, whereby the encounter with the abyss is reduced to a vicarious experience, signals a shift in the cultural significance of the tightrope. The human longing for weightlessness, that age-old dream personified by the funambulist, has been appropriated by an entertainment industry that caters for, and in turn produces, a distinct type of subject: the consumer of ever-new thrills that, for a few instants, give the illusion of an unlimited degree of freedom. With *The Walk* and its related virtual experience, the act of liberation performed by Petit was commodified to suit the predominant neoliberal subjectivity.

Conclusion

Summing up, Petit's role in the history of funambulism appears to straddle the line between performance and mediation. If, on the one hand, he revived the glorious tradition of high-wire walking by casting the vertical city as the modern-day nature to be conquered, on the other he came to embody a new figure of funambulist-cum-artist that combines dexterity on the wire with a penchant for storytelling. Having conceived of wire-walking as a poetic form of "writing in the sky," Petit then revealed in his words the world as he saw it. Thereby, the last of the romantic funambulists inspired the formation of a whole mythography in which his most legendary performance was documented, reproduced, and simulated through an array of media. Having overpowered vertigo on the highest of wires, Petit became the subject of a popular narrative driven by artistry and ingenuity—his labor of passion providing a pure incarnation of the American dream for the post-9/11 period.[52]

The Twin Towers coup and its representations show that the funambulist continues to stage "the tense passage between worlds": in this case, a passage from the realm of poetic imagination in which *the keeper of the abyss* is

evoked and momentarily tamed, to the realm of hyperreality in which vertigo is artificially simulated, and stimulated, through immersive technologies. As the status of high-wire walking shifts from a performance art to an ersatz attraction for thrill-seekers, its mystical aura gradually dissipates into an artificial cloud. And yet, beyond the fog of pixels generated by the film studios, the coup remains an extraordinary event to behold and reflect upon: a significant moment in the time-honored art of funambulism but also in the history of urban perception. By reviving an ancient practice on the wane, Petit transposed onto the sky of Manhattan the gravity challenge Blondin had brought on Niagara Falls, thereby redefining the experience of the abyss for the urban age. Later on, he played a key role in shaping the collective imagination of a performance act that still embodies, perhaps more than any other, the human impulse to master vertigo.

50 The Walk Experience was advertised with the slogan: "Take vertigo to the next level at Eureka Skydeck!": https://www.eurekaskydeck.com.au/news/the-walk-experience/.

51 Davide Deriu, "Skywalking in the City: Glass Platforms and the Architecture of Vertigo," *Emotions, Space and Society* (August 2018): 94–103.

52 Vanderwees, "A Tightrope," 242–43.

Literature

Andrews, Gavin J. "Spaces of Dizziness and Dread: Navigating Acrophobia." *Geografiska Annaler: Series B, Human Geography* 89 (2007): 307–17.

Auster, Paul. "On the High Wire." In *Collected Prose*. London: Faber & Faber, 2003.

Caillois, Roger. *Man, Play and Games*. Urbana: University of Illinois Press, 2001.

Connor, Steven. "Man Is a Rope." In *Catherine Yass—High Wire*, n.p. London: Artangel, 2008.

Deriu, Davide. "Skywalking in the City: Glass Platforms and the Architecture of Vertigo." *Emotions, Space and Society* (August 2018): 94–103.

Huppert, Doreen, Eva Grill, and Thomas Brandt. "Down on Heights? One in Three Has Visual Height Intolerance." *Journal of Neurology* 260 (2013): 597–604.

LeBlanc, Jim. "The Acrophobe and the Funambulist: Existential and Cinematic Perspectives on the Phenomenology of Extreme Vertical Space." *Emotion, Space and Society* 4 (2011): 1–7.

Miller, Steven. "The Coup: Behind the Scenes of the Act with Philippe Petit." *Differences: A Journal of Feminist Cultural Studies* 28 (2017): 116–33.

Nietzsche, Friedrich. *Thus Spoke Zarathustra: A Book for All and None*. Translated by Adrian Del Caro. Cambridge: Cambridge University Press, 2006.

Petit, Philippe. *On the High Wire*. New York: Random House, 1985.

———. *To Reach the Clouds: My High-Wire Walk between the Twin Towers*. London: Faber & Faber, 2002.

Quinodoz, Danielle. *Emotional Vertigo: Between Anxiety and Pleasure*. London: Routledge, 1997.

Salassa, John R., and David A. Zapala. "Love and Fear of Heights: The Pathophysiology and Psychology of Height Imbalance." *Wilderness & Environmental Medicine* 20 (2009): 378–382.

Soden, Garrett. *Falling: How Our Greatest Fear Became Our Greatest Thrill*. New York: W. W. Norton & Co, 2003.

Vanderwees, Chris. "A Tightrope at the Twin Towers." In *Recovering 9/11 in New York*, edited by Robert Fanuzzi and Michael Wolfe, 228–47. Newcastle: Cambridge Scholars, 2014.

Weitzman, David. *Skywalkers: Mohawk Ironworkers Build the City*. New York: Roaring Brook Press, 2010.

Wurmli, Kurt. 'Theater in the Sky: Philippe Petit's Unique Art of Theatrical Highwire Performance." *Journal of American Culture* 20 (1997): 117–23.

Yardley, Lucy. *Vertigo and Dizziness*. London: Routledge, 1994.

Dizziness as Method
Roger Caillois and the Lure of Material Space

Sarah Kolb

A person who has never felt distraught is lacking something.
—Roger Caillois, *Le fleuve Alphée*

Even if the history of civilization has undoubtedly brought forth many philosophers and artists who knew how to use dizziness as a creative resource and an instrument of emancipation, only few knew to put it to the test in their own work and to push it to its limits on a theoretical level as effectively as the French philosopher and literary theorist Roger Caillois (1913–1978). In his autobiographical work *Le fleuve Alphée*, which was published in 1978 in search of his "true sources"[1] and only a few months before his death, he looks back on what might be considered an "insignificant episode" in the life of a child that grew up during World War I, but which nonetheless had the "most decisive influence" on him: "It sowed the seed of panic in me," remembers Caillois, "that every child feels at a moment of ecstasy or horror that is difficult to predict, those delightful or devastating raptures that seem to shake what I cannot not call the visceral soul. It is shaken to its core and seems to uproot all hope for even the merest stability in its confusion. This shock that only affects the bodily organs also rattles the consciousness the consciousness."[2] What had happened to Callois that not only challenged and unhinged his physical existence to such an extent, but also his conscious mind? "On the edge of the destroyed town a military airfield was left standing; there were burnt-out hangars and runways that had suffered more from the rigors of the weather than from the artillery. A rusty pole stood out there. One day I decided to climb it. The iron ladder that led to the top was almost undamaged. Halfway up, I had my first experience of dizziness, that terribly heightened emptiness that comes ever closer, that you cannot resist and that forces you to counter it. What is left is only the horrible feeling of not being able to climb, neither up nor down. I forced myself to continue on my way up, both out of fear and obstinance. After I had regained my composure, I made my way down again, my eyes fixed on the sky above me, my feet feeling for the support of the next rung with every step. This misadventure left me with a feeling of unease and triumph. I have subsequently encountered many different forms of dizziness in my life. It is not always physical; it can also be moral or intellectual. What absurdities can the consequences of a daring decision lead to? What is the highest wager to defy misfortune? What is the greatest risk to challenge caution? To deliberately dare to go a little too far down a slope, to come a little too close to a system of gears near to the point where your speed makes it impossible to turn around?"[3]

1 Roger Caillois, *Le fleuve Alphée* (Paris: Gallimard, 1978), 11. On Caillois's "true sources," see also the afterword of the German edition: Sarah Kolb and Anne von der Heiden, "Caillois' geheime Elixiere," in Roger Caillois, *Der Fluss Alpheios*, trans. Rainer G. Schmidt, ed. Anne von der Heiden and Sarah Kolb (Berlin: Brinkmann & Bose, 2016), 175–86.
2 Caillois, 42–43. Unless otherwise noted, all translations by Christopher Hütmannsberger.
3 Caillois, 43–44.

This first experience of such fundamental uncertainty obviously made a deep and lasting impression on Caillois. He was literally caught up in a certain need to push his individual experience to its limits, causing him to become a member of the esoteric literary circle *Les Phrères simplistes* and the Surrealist movement in the following years. After critically distancing himself from his early fascination for the irrational, he would even go further and question the boundaries of knowledge itself with his concept of "Diagonal Sciences," which he formulated in 1959 based on his earlier writings dating back to the mid-1930s.[4]

The category of *ilinx*, with which Caillois ranks dizziness among the four main types of games in his seminal 1958 book *Man, Play and Games*,[5] not only addresses the "intentional disturbance of physical balance" that one experiences in dances, roundabouts, carnival attractions, or extreme sport, but also "any danger or challenge that, with full knowledge, includes the possibility of loss of intellectual, moral, or emotional balance, if not of the whole of existence itself."[6] According to Caillois, ilinx is characterized by a "confusion that is simultaneously accepted and suffered" in that it goes hand in hand "with the uncertain expectation, then with the elation, to reattain those praised goods, incalculable in a moment, left up to sheer coincidence, at the very last moment through pure daring."[7] As Caillois underlines, such "ambivalent desire," which bears a "metaphysical challenge" and even risks survival itself just for the sake of an "interchangeable temptation," not only affects human beings, but can also be found in the animal kingdom; it is evident not only in rites and passions, in the "ecstasies of eroticism," or in the consumption of drugs,[8] but can also be seen in instinctive drives, and even in physical traits that, far from only safeguarding further existence, can be a pure, and in some cases even "dangerous luxury" with the potential to threaten life itself.[9]

It is important to note that Caillois had come to this conclusion already in his early text "Mimicry and Legendary Psychasthenia," which was published in the Surrealist magazine *Minotaure* in 1935. By establishing a cross connection between entomology and psychoanalysis, he calls attention to certain striking parallels between the mimicry strategies of certain insects and the psychological disposition of humans suffering from schizophrenia. As Caillois argues, due to a disorder in the perception of the self and the concomitant "*drive to self-abandonment*,"[10] both the insects and the schizophrenic fall prey to a "real *temptation by space*,"[11] or, to be more precise, a veritable "lure of material space."[12] In other words, both are subject to a "*depersonalisation through assimilation to space*": "To these dispossessed souls, space seems to be a devouring force. Space pursues them, encircles them, digests them in a gigantic phagocytosis. It ends replacing them. Then the body separates itself from thought, the individual breaks the boundary of his or her skin and occupies the other side of his or her senses. He tries to look at *himself from* any point whatever in space.

He feels himself becoming space, *dark space where things cannot be put*. He is similar—not similar to something, but just *similar*. And he invents spaces of which he is 'the convulsive possession.'"[13] Thus, according to Caillois "the ultimate problem turns out [...] to be that of *distinction*: distinctions between the real and the imaginary, between waking and sleeping, between ignorance and knowledge, etc.," and "there is assuredly none more clear-cut than that between the organism and its surroundings."[14] But as immediate the distinction, as immediate is the need to resist it and to abandon oneself to that "*temptation by space*," which in turn can result in a loss of identity, be it temporary or fundamental: the yearning to transcend bodily boundaries, finiteness, and evanescence, and to blossom in the "absolute Other"[15]—much like in the case of the Phyllia that imitate leaves so successfully that they eventually end up devouring each other.[16]

Against the background of this truly existential experience that goes along with the physical and psychological extravagances of certain individuals, it

4 See Roger Caillois's articles "La Mante religieuse: De la biologie à la psychanalyse," *Minotaure* 5 (1934): 23–26; "Mimétisme et psychasthénie légendaire," *Minotaure* 7 (1935): 5–10; "Sciences diagonales," *Nouvelle Revue Française* 76 (April 1959): 679–83, also contained in *Méduse et Cie*, (Paris: Gallimard, 1960), 9–18. English versions contained in *The Edge of Surrealism: A Roger Caillois Reader*, trans. Claudine Frank and Camille Naish, ed. Claudine Frank (Durham, NC: Duke University Press, 2003); "The Praying Mantis: From Biology to Psychoanalysis," 66–81; "Mimicry and Legendary Psychasthenia," 89–103; "A New Plea of Diagonal Science" (1970), 343–47. See also the English version of "Mimicry and Legendary Psychasthenia," *October* 31 (Winter 1984), trans. John Shepley, 16–32.

5 Roger Caillois, *Les Jeux et les hommes: Le Masque et le vertige* (Paris: Gallimard, 1958). English edition: *Man, Play and Games*, trans. Meyer Barash (Urbana: University of Illinois Press, 2001). Caillois subsumes the various kinds of play and games under the categories *agôn* (competition), *alea* (chance), *mimicry* (simulation), and *ilinx* (dizziness). As for ilinx, see Caillois, 23: "Ilinx. The last kind of game includes those which are based on the pursuit of vertigo and which consist of an attempt to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind." With ilinx, Caillois refers to activities like "Children 'whirling' / Horseback riding / Swinging / Waltzing / Volador / Traveling carnivals / Skiing / Mountain climbing / Tightrope walking" (Caillois, 36).

6 Caillois, *Le Fleuve Alphée*, 44.

7 Caillois.

8 Caillois, 45.

9 Caillois, "Mimicry and Legendary Psychasthenia," 25.

10 Caillois, 32.

11 Caillois, 28.

12 Caillois, 31.

13 Caillois, 30.

14 Caillois, 16.

15 According to Jacques Lacan, the "absolute Other" is the counterpart to the subject, the place of language where subjectivity is constituted. See Jacques Lacan, *Book II: The Ego in Freud's Theory and in the Technique of Psychoanalysis* (1954–55), ed. Jacques-Alain Miller (New York: Norton, 1988). It is interesting to note in this context that Lacan emphasized how much he owed to Caillois's concept of "morphological mimicry as an obsession with space in its derealizing effect" with regard to his own theory of the mirror stage that he developed in 1936. Jacques Lacan, "The Mirror Stage as Formative of the Function of the *I* as Revealed in Psychoanalytic Experience," in Jacques Lacan, *Écrits. A Selection*, trans. Alan Sheridan (London: Routledge, 2001), 4.

16 See Caillois, "Mimicry and Legendary Psychasthenia," 25.

is not surprising that towards the end of his life, Caillois rediscovered the "metaphysical challenge" of dizziness also within inert material, and particularly within the realm of stones and minerals.[17] The clear dividing line that is usually drawn between nature and culture, between what is alive and what is dead, is utterly artificial to Caillois.[18] Therefore, after his "long detour through the ocean of sciences"[19] that had led him to such diverse subjects as entomology, sociology, geography, literature, and art, and many more,[20] he focused on the fascinating world of stones and minerals, began to collect them with a passion, and went on to make them a central theme in his work.[21] In 1966 he published his first book on *Stones*,[22] a "quasi-mystic text" in terms of an "areligious" and "almost materialistic mysticism," characterized by a metaphysics of nature and its unity.[23] Within the realm of stones, of dead and inert materials, of that great and sudden abyss we are confronted with through the promising luxury of dizziness, Caillois rediscovers what had always been so fascinating to him about humans, animals, and plants: "I speak about stones as algebra, vertigo, and order; stones as hymns and quincunxes; stones as stings and corollas, on the brink of dreams, catalyst and image; about this stone, a cascade of hair, opaque and stiff, a drowned person's strand, dripping on no temple; in which the sap becomes more visible and vulnerable in the midst of a blue vein; about those stones, similar to de-crumpled paper, noncombustible and sparkled with uncertain sparks; or, to the most hermetic vase in which a liquid dances, leveled behind absolute walls, and whose preservation would have required cumulated miracles. I speak about stones older than—and which outlast—life itself, standing on the cold planets on which they came to being. I speak about stones that do not even have to wait for death and that have nothing to do besides letting sand slide on their surfaces, along with rain shower, backwash, storm, and time."[24] As they are "neither independent nor sensitive," Caillois notes, "it takes a lot to move them: blowtorch and electric arc's temperatures, violence and earthquakes, volcanoes' convulsions. This, before mentioning the vertiginous passing of time."[25] It is structures that are "molded and ennobled by the harshest actions" and as such only subjected to "the law of balance," to the free game of "unstable and approximate compensations, which slowly put an end to the jolts of a solidifying star" in order to get a moment of consistency out of the grand ups and downs of existence: "There may be no better signs of true beauty than the immersed shapes of large acrimonies."[26] Those acrimonies can well be seen as Caillois's own, as the pains of the writer who aspires to find words for the chaos of the world while realizing that in his attempt he is actually only losing ground. So when Caillois turns to stones, it is least to get to the bottom of his work despite all the staggering and doubting: "I struggle to picture them in my mind at the exact moment of their genesis. This brings me a very specific kind of excitement. I sense myself taking on parts of the nature of stones. And at the same time, I bring them close to mine, giving them unexpected qualities, speculating both with precision and carelessness, in a narrative where dream and the chain

of knowledge melt. There, the building up and ceaseless crumbling of fragile edifices is, perhaps, necessary. The metaphor assists (or corrupts) the syllogism; visions feed (or mislead) precision. Between the fixity of stone and mental frenzy, a type of stream flows, memorable indeed, where I find, for a moment, wisdom and comfort."[27] Within the realm of stones, Caillois hopes to find "the possible burst of an unknown and paradoxical kind of mysticism," causing his soul "to dissolve in some inhuman immensity" that indeed is anything but esoteric or otherworldly: "But that abyss would have nothing of the divine, it would be pure matter, only matter, active, turbulent matter of lava and fusion,

17 Whereas a mineral is an inorganic, crystalline formation that has a fixed structure and that occurs naturally in the earth, a stone is more generally defined as a concretion of earthy or mineral matter. Hereinafter, the term "stones" can be understood in the comprehensive sense of both stones and minerals.

18 See Roger Caillois, *Méduse et Cie* (Paris: Gallimard, 1960), hereinafter quoted from the German edition: *Méduse & Cie*, trans. Peter Geble (Berlin: Brinkmann & Bose, 2007), 48–49 (English trans. Christopher Hütmannsberger): "A form of reflex pushes the scientist to think it sacrilegious, a scandal, even ludicrous, to compare the regrowth of living tissue to that of crystals. And yet it is a fact that crystals, just as other organisms, recreate what was damaged, and that the affected area displays an excess of regenerative activity in order to compensate for the damage, the imbalance, the dissymmetry produced by the wound. Is this really nothing but a deceptive analogy, a simple metaphor? We must not forget that the regular condition of the mineral, just as that of the animal, is recreated through intense activity. Of course, I am aware of the abyss that separates living and unliving material. And yet, I could well imagine that both the one and the other do show characteristics that ensure the intactness of its structures in the end—no matter if we are dealing with living or unliving material. [...] It is almost impossible to ignore that living organisms, plants, and stars are bound to the same laws."

19 Caillois, quoted in "Entretien avec Jean-Louis Ézine (April 27, 1978)," in *Les Cahiers de Chronos: Roger Caillois. Témoignages, études et analyses, précédés de 39 textes rares ou inédits de Roger Caillois*, ed. Jean-Clarence Lambert (Paris: Éditions de la Différence, 1991), 138. See also Caillois, *Le Fleuve Alphée*.

20 See in particular Roger Caillois, *Cases d'un échiquier* (Paris: Gallimard, 1970). See also Sarah Kolb, "Einführung: 'Eine Form des Wunderbaren, die das Wissen nicht scheut': Roger Caillois als Grenzgänger zwischen Literatur, Philosophie und Wissenschaft," in *Logik des Imaginären. Diagonale Wissenschaft nach Roger Caillois*, vol. 1: *Versuchungen durch Natur, Kultur und Imagination*, ed. Anne von der Heiden and Sarah Kolb (Berlin: August Verlag, 2018), 25–77.

21 See Roger Caillois, *La Lecture des pierres*, preface by Massimilano Gioni and afterword by Henri-Jean Schubnel (Paris: Muséum National d'Histoire Naturelle and Éditions Xavier Barral, 2015). This richly illustrated volume does not only contain large-size images of many of the stones and minerals from Caillois's private collection, but also three of Caillois's writings on stones: *Pierres* (1966), 89–237; *L'Écriture des pierres* (1970), 239–367; and "Agates paradoxales" (1977), 369–85.

22 Roger Caillois, *Pierres* (Paris: Gallimard, 1966). English edition: *Stones*, trans. Valentine Umansky, ed. Maja Asshaq and Benjamin Gaydos (Detroit: DittoDitto & goodgood for Flint Magazine, 2018). Special thanks to Maia Asshaq for providing the English translation.

23 Caillois, quoted in Odile Felgine, *Roger Caillois. Vie et Œuvre, 1913–1978*, in *Œuvres*, by Roger Caillois, ed. Dominique Rabourdin (Paris: Gallimard, 2008), 68.

24 Caillois, *Stones*, 23.

25 Caillois, 30.

26 Caillois, 36.

27 Caillois, 88–89.

earthquakes, orgasms, great tectonic ordeals; and motionless matter of the longest quietude. Nothing prevents meditation from turning into vertigo or into ecstasy."[28]

When Caillois thus comes to the conclusion that it is only the free play of imagination and with it the "entire spectrum of the poetical and the fantastical," "myths, images, situations of stumbling, dreams or games, passions or cruelties" that can give meaning to his life as a writer,[29] in his late work this conclusion is not only confirmed, but also substantiated in its contradictory nature. In his dreamlike explorations of the "logic of the imaginary," he not only delves into the impervious nature of stones, but also finds room for such sensitive creatures as the octopus.[30] Within the exuberant maelstrom of imagination, dizziness gives way to a deep understanding, the realization that all becoming and fading, all living and dying holds the potential for crystallization:

> Nature helps countless bubbles that pop as soon as they are formed to attain an uncertain, fleeting, floating existence. They are almost nothing but ideas, which teem and swarm, only to disappear again, washed away by the uninterrupted fermentation that forms them in a ballet of atoms. They dissolve immediately. However, some are given the chance to become distinct, to attain contours. Thereby they gain a temporary, fragile solidity. They linger in the memory, shadows that are reflected in the mind and become part of it, in its first durability. [...] They were evaporating foam, void turbulence. Now they carry weight, impact, productivity. Those that bloom become ideas, myths, beliefs, stories. Their allies are sensibility, intelligence, art. They have attained that impalpable, flowing solidity which is immanent in objects of thought, wells of emotions, focal points of fascination.[31]

Translated from the German by Christopher Hütmannsberger

28 Caillois, 89.
29 Roger Caillois, "Intervention surréaliste (Divergences et connivences)," in *Cases d'un échiquier*, by Caillois, 212.
30 See Roger Caillois, *La Pieuvre: Essai sur la logique de l'imaginaire* (Paris: La Table Ronde, 1973). German edition: *Der Krake: Versuch über die Logik des Imaginativen*, trans. Brigitte Weidmann (Munich: Hanser Verlag, 1986). See also the section "Logique de l'imaginaire," in *Cases d'un échiquier*, by Caillois, 21–49.
31 Caillois, *Der Krake*, 139–40 (English trans. Christopher Hütmannsberger)

Literature

Caillois, Roger. *Stones*. Translated by Valentine Umansky, edited by Maja Asshaq and Benjamin Gaydos. Detroit: DittoDitto & goodgood for Flint Magazine, 2018.

———. *Le Fleuve Alphée*. Paris: Gallimard, 1978.

———. *La Lecture des pierres*. Paris: Xavier Barral, 2015.

———. *Man, Play and Games*. Translated by Meyer Barash. Urbana and Chicago: University of Illinois Press, 2001.

———. *Mimicry and Legendary Psychasthenia*. Translated by John Shepley. Cambridge, MA: MIT Press, 1984.

———. "Intervention surréaliste (Divergences et connivences)." In *Cases d'un échiquier*, by Roger Caillois, 209–22. Paris: Gallimard, 1970.

———. *Méduse et Cie*. Paris: Gallimard, 1960. German edition: *Méduse & Cie*. Translated by Peter Geble. Berlin: Brinkmann & Bose, 2007.

———. *La Pieuvre: Essai sur la logique de l'imaginaire*. Paris: La Table Ronde, 1973. German edition: *Der Krake: Versuch über die Logik des Imaginativen*. Translated by Brigitte Weidmann. Munich and Vienna: Hanser Verlag, 1986.

Felgine, Odile. "Roger Caillois: Vie et Œuvre, 1913–1978." In *Œuvres*, by Roger Caillois, edited by Dominique Rabourdin, 31–80. Paris: Gallimard, 2008.

Kolb, Sarah, and Anne von der Heiden. "Caillois' geheime Elixiere." In *Der Fluss Alpheios*, by Roger Caillois, translated by Rainer G. Schmidt, edited by Anne von der Heiden and Sarah Kolb, 175–86. Berlin: Brinkmann & Bose, 2016.

Kolb, Sarah. "Einführung: 'Eine Form des Wunderbaren, die das Wissen nicht scheut': Roger Caillois als Grenzgänger zwischen Literatur, Philosophie und Wissenschaft." In *Logik des Imaginären: Diagonale Wissenschaft nach Roger Caillois*, Vol. 1: *Versuchungen durch Natur, Kultur und Imagination*, edited by Anne von der Heiden and Sarah Kolb, 25–77. Berlin: August Verlag, 2018.

Lacan, Jacques. *Book II: The Ego in Freud's Theory and in the Technique of Psychoanalysis (1954–55)*. Edited by Jacques-Alain Miller. New York: Norton, 1988.

———. "The Mirror Stage as Formative of the Function of the *I* as Revealed in Psychoanalytic Experience," in *Écrits: A Selection*, by Jacques Lacan. Translated by Alan Sheridan. London: Routledge, 2001.

Lambert, Jean-Clarence, ed. *Les Cahiers de Chronos. Roger Caillois: Témoignages, études et analyses, précédés de 39 textes rares ou inédits de Roger Caillois*. Paris: Éditions de la Différence, 1991.

De/centering the Subject

Jan Evangelista Purkyně's Self-Experiments on Vertigo

Rebekka Ladewig

This subject, too, has no few difficulties, requires such a delicate sensitivity, yet such a calm mastery of inner attention, which is not obfuscated, even during stormy movements of the senses and the mind, not carried away, is also based on one's own, natural or methodological development, so that it should still be taken as a happy coincidence for the present, if a talent of this kind comes for training.
—Jan Evangelista Purkyně

Looking Inside: Self-Observation, Self-Experimentation, and Subjective Empiricism

Jan Evangelista Purkyně's contributions to the research and experimentalization of vertigo have played a pivotal role in this field of the history of science. Situated on the threshold between the Romantic-idealistic tradition of physiology and its modern, positivist orientation, the works by the Czech physiologist mark the transition to the paradigm of subjective sensory physiology.[1] This is linked to an epistemological reconfiguration, which was characterized by an increased focus on empiricism and experimentation. Purkyně owes his special historiographical status to the methodological virtuosity and precision of his self-experiments, which identifies him as the founder of *exact subjectivism* and thus as one of the pioneers of the natural scientific approach in nineteenth-century physiology.[2]

This was exhibited even in the methodological outline of his practice: in one of his lecture manuscripts from the 1840s, Purkyně described the methodological approach of *physiological psychology* as "subjective empiricism in self-observation," the object of which was an investigation into "the effectiveness of the mind under organic material conditions."[3] The liminal area between the physical and the psychological addressed here defined a field of research that was already outlined in Purkyně's early sensory physiological works and was subsequently proposed as an independent discipline. As early as 1819, when he published his dissertation *Beyträge zur Kenntnis des Sehens in subjektiver Hinsicht* (Contributions to the knowledge of vision from a subjective perspective), he was centrally concerned with expanding the subject area of sensory

1 See Karl. E. Rothschuh, *Geschichte der Physiologie*, ed. Wilhelm Trendelenburg and Erich Schütz (Berlin: Springer, 1953), 105.
2 See Armin von Tschermak-Seysenegg, "Joh. Ev. Purkyne als ein Begründer des exakten Subjektivismus," in *In Memoriam J. Ev. Purkyne* (Prague: Purkynova Spolecnost, 1937), 76–96; and Otto Grüsser, *Purkyne's Contributions to the Physiology of the Visual, the Vestibular and the Oculomotor Systems*, *Human Neurobiology* 3 (1984): 129.
3 Jan Evangelista Purkyně, "Vorlesungen zur physiologischen Psychologie," in *J. E. Purkyne and Psychology with a Focus on Unpublished Manuscripts*, ed. Josef Brozek and Jiri Hsokovec (Prague: Academia Praha, 1987), 77. Unless otherwise noted, all translations are my own.

physiology and thus, as he wrote, "to also gain a subjective view in addition to the present, merely objective sphere."[4] Inspired by Johann Wolfgang Goethe's theory of color, Purkyně examined all sorts of phenomena of subjective vision—sensory phenomena that would also play a role in the first study on vertigo, which was published just one year later.

Purkyně was aware that in the process of analysis he was sometimes operating at the limits of what could be reconciled with the objective standards of explanation used in sensory physiology.[5] The fundamental premise of his approach was therefore following the theoretical assumption that "every modification of the subjective within the sensory sphere always corresponds to one in the objective."[6] The qualitative or categorical difference between the two spheres was subordinated to a view that recognized the senses or sensory organs as an "interzone between the outer material world and the inner intellectual world" and as a transition between the subjective and objective spheres.[7] If Purkyně understood the senses both as "the finest and most excitable instruments and agents of the qualities and relations of the matter belonging to them,"[8] this points to the significance of the senses in the context of this new experimental configuration: unlike in previous experiments on vertigo, which primarily focused on the phenomenon of afterimages, and in Purkyně's case it is the senses themselves that are of central epistemic interest.[9] As he emphasized, "Every single sense [....] represents to a certain extent an individual [reality]"—namely an 'individual' that had to be examined and described "through observation and experiment both in his own life and in his idiosyncratic reaction to the outside world."[10] By means of observation and experimentation, the hypostasis of the senses could be grasped in the first place, perceived in its own right—as a "modification of the subjective"—and, in a next step, placed in a causal relation with the corresponding "objective modification." With this relation in mind, Purkyně spoke of "artificial conditions" that must be created experimentally, and at the same time he described the experimental procedures of subjective empiricism as "devotion to the inner operations" of organic life: "We first reflect, empirically, on the active and passive processes and states of the subjective in our organism, and follow these observationally and experimentally by bringing the organs of the same into artificial conditions or devoting ourselves to their internal operations in order to research them more thoroughly. Our procedure is therefore physiological in the most real sense of the word, and we do not spurn any of the aids that could grant us the knowledge of the material organism."[11]

The self-experiment was thus conducted here with the aim of undertaking a disciplined self-observation; both went hand in hand and conditioned each other mutually. However, this positioning also represents a clear distinction from the self-experiments of a romantic character. For although Purkyně's experiments on vertigo emerged from this tradition, the epistemological difference is obvious: while the latter had pursued the production of involuntary and possibly unknown sensory perceptions in excessive ways, including a marked preference for galvanic body-battery circuits,[12] Purkyně linked his self-experiment with a program of controlled production and systematic manipulation of sensory experiences by active intervention (i.e., by excitation, inhibition, or disturbance of a specific perceptual event).[13]

This also indicates the direction of experimental physiology, which formed itself in the first three decades of the nineteenth century in opposition to the vitalist traditions of Romantic natural philosophy. The German physiologist Ignaz Döllinger formulated the decisive epistemological turn in his 1824 speech "Von den Fortschritten, welche die Physiologie seit Haller gemacht hat" (On the progress physiology has made since Haller). According to him, involuntary and random events should no longer determine the focus of scientific observations. Döllinger argued that "a natural science that has to wait for chance to grant it the opportunity to observe can progress only slowly; the height to which all natural sciences have reached, therefore, is owed to the violent initiation of the phenomena to be observed—the ex-

4 Jan Evangelista Purkyně, *Beyträge zur Kenntnis des Sehens in subjectiver Hinsicht* (Prague: Johann Gottfried Calve, 1819), 8.

5 At that time Purkyně was apparently still uncertain about the disciplinary location of his investigation. Thus, he wrote in his introduction: "The object of study, which is located at the outer limits of empiricism, could be better classified in descriptive natural history. There would also be a natural history of the senses and a realm of senses within which the sensations would be developed in harmonious groups positioned opposite each other in their various relationships." Purkyně, 6.

6 Jan Evangelista Purkyně, *Beobachtungen und Versuche zur Physiologie der Sinne: Erstes Bändchen: Beiträge zu Kenntnis des Sehens in subjectiver Hinsicht* (Prague: Reimer, 1825), 30.

7 Jan Evangelista Purkyně, "Beiträge zur Physiologie der menschlichen Sprache," in *Opera Omnia*, vol. 12 (Prague: Academiae Scientiarum Bohemoslovenicae, 1973), 48.

8 Purkyně, *Versuche zur Physiologie der Sinne*, 30.

9 In the late eighteenth century, Scottish physician and natural scientist William Charles Wells conducted systematic experiments with afterimages, by means of which he determined the direction of movement of spatial vertigo. For more information on this see Rebekka Ladewig, *Schwindel: Eine Epistemologie der Orientierung* (Tübingen: Mohr Siebeck, 2016), 159–69; and Rebekka Ladewig, "Augenschwindel: Nachbilder und die Experimentalisierung des Schwindels um 1800," in *Nachbilder: Das Gedächtnis des Auges in Kunst und Wissenschaft*, ed. Werner Busch and Carolin Meister (Berlin, Zurich: diaphanes, 2011), 107–29.

10 Purkyně, *Versuche zur Physiologie der Sinne*, 4.

11 Jan Evangelista Purkyně, "Rezension von Johannes Müller, Zur vergleichenden Physiologie des Gesichtsinnes des Menschen und der Thiere," *Jahrbücher für wissenschaftliche Kritik* I (1827): 190–228. Reprinted in Jan Evangelista Purkyně, *Opera omnia*, vol. 5 (Prague: Academiae Scientiarum Bohemoslovenicae, 1951), 31.

12 See Stuart Walker Strickland, "The Ideology of Self-Knowledge and the Practice of Self-Experimentation," *Eighteenth-Century Studies* 31, no. 4 (1988): 453–71.

13 See Michael Hagner, "Psychophysiologie und Selbsterfahrung: Metamorphosen des Schwindels und der Aufmerksamkeit im 19. Jahrhundert," in *Aufmerksamkeiten*, ed. Jan Assmann and Aleida Assmann (Munich: Fink, 2001), 241–63.

periment."[14] How Purkyně's experimental practice met the methodological requirements of this vision of a "progressive" physiology in the sense of Döllinger down to the last detail, can be demonstrated by his experiments on the phenomenon of vertigo.

Measuring Vertigo: "In the Beginning You Feel Light and Cheerful in Your Head ..."[15]

Only a year after the publication of his dissertation on subjective vision, which had brought Purkyně to the attention of experts and earned him the admiration of Goethe, among others, his first study on vertigo appeared. Inspired by the observations and experiments on vertigo that the English natural scientist Erasmus Darwin, Charles Darwin's grandfather, had conducted,[16] Purkyně undertook a systematic typologization of the subject matter.

By examining the forms of physiological vertigo, he focused exclusively on those types of vertigo that were "given to the control of the heautognostic experiment" and could be observed as "subjective illusory movements in various modifications in the subordinate sensory circles."[17] One decisive factor for his introspective, or heautognostic research was the definition of vertigo as "an illusory movement of sensory phenomena caused by subjective states, which is transferred to the objective by illusion."[18] This definition implied, on the one hand, that his concern was not only with the accompanying optical phenomena of vertigo, some of which had also been the subject of the research into subjective vision; instead, Purkyně's scientific interest focused on grasping the phenomena of vertigo in its sensual diversity—in the spheres of seeing, touching, hearing, and feeling[19]—and in observing and analyzing these phenomena in their specific interactions with the body. On the other hand, the psychophysical phenomenality of vertigo clearly emerged in this definition: for Purkyně, vertigo represented a subjectively conditioned sensory phenomenon, a disorientation that was objectified in the process of perception, that is, perceived *as if* it was an objective phenomenon. The sensory event of vertigo thus revolved essentially around the illusion itself, around an *as if* that took effect in vertigo, manipulated the senses, and made them believe that the subjective vision was an objective phenomenon, specifically: that the objects of the external world had started to move, while—in most cases—it was the eyes that moved. In Purkyně's work, this illusion became the central focus of attention as an explanandum in itself and was linked to the methodological issue of connecting the subjective sensory phenomena of vertigo to their objective foundations and thus linking the field of psychological knowledge with that of physiology. The systematic approach underlying Purkyně's self-experiments was already evident in the ways in which vertigo was experimentally produced, which were linked to a typological categorization of various "forms of vertigo." The

types in question were "those created by active and passive movements of the body; then vertigo by galvanism; vertigo caused by disturbance of blood circulation; furthermore, height vertigo and vertigo caused by narcotica, finally temporal vertigo."[20]

The fact that the description and analysis of Purkyně's rotation tests and thus the forms of vertigo induced by active and passive movement took up the greater part of the account is first and foremost the result of simple and comprehensible experimental arrangements. In fact, Purkyně placed a "more or less known experience" at the heart of his investigation—life-world experiences, so to speak, whose experimental realization "could be reproduced and understood in the imagination without necessitating some odious post-experimentation."[21]

Thus Purkyně's account began by describing a variety of rotation experiments that, as "motion vertigo," were categorized as a form of spatial vertigo:[22] "If one turns around the axis of one's own body evenly with a head held vertically and a eyes directed immediately forward," according to the basic experiment, "the visible objects seem to move only slowly in the opposite direction of the turning motion, then with continued rotation move ever faster until their contours flow half into one another."[23] Based on this experiment, a number of variants were derived, including rotation with the head tilted up and down; rotation with the head lowered laterally onto the right and left shoulders; rotation with the upper body bent forward; and rotation with the head tilted upward, with each rotation being made around both the right and left body axes respectively. Despite their similarity to older experimental procedures, significant differences emerged. Even after the first attempt at rotation—an ordinary rotation around the body axis—Purkyně observed a variety of symptoms. In this form of rotational vertigo, he noted,

14 Ignaz Döllinger, *Von den Fortschritten, welche die Physiologie seit Haller gemacht hat: Eine Rede* (Munich: Lindauer, 1824), 15.
15 Jan Evangelista Purkyně, "Beiträge zur näheren Kenntnis des Schwindels aus heautognostischen Daten" (1820), in *Opera Omnia*, vol. 2 (Prague: Academiae Scientiarum Bohemoslovenicae, 1937), 19.
16 See the chapter "On Vertigo" in Erasmus Darwin, *Zoonomia, or, The Laws of Organic Life*, vol. 1 (London: J. Johnston, 1774); and on this point see Ladewig, *Schwindel, Epistemologie der Orientierung* (Tübingen: Mohr Siebeck, 2016), 141–68.
17 Purkyně, "Beiträge zur näheren Kenntnis des Schwindels aus heautognostischen Daten," 16.
18 Purkyně, 15.
19 See Purkyně, 22.
20 Purkyně, 16.
21 Purkyně, 17.
22 Drawing on Kant's spatial forms of intuition, Purkyně distinguished between spatial and temporal vertigo, whereby the former was defined as "vertigo in its relation to the outside world," whereas temporal vertigo was defined as vertigo in relation to "imagining purely temporal subjects." See Purkyně, 15–17.
23 Purkyně, 16.

> the head is taken captive (as if it were tied with a cloth), one feels an unpleasant pulling in the temples, the forehead, the eye sockets, the crown, and the occiput, and a sensation of nausea appears in the vagus nerve and the nearby connections. If one now suddenly stops, and (if necessary) stops oneself, the visible objects always seem to move in the same direction; in the body an alien force seems to prevail, which still strives to turn it in the same direction with force, and which can only be resisted by muscle exertion when standing still, since the movement in the direction of prior motion is greatly facilitated and can be continued half by itself. The intoxication of the head increases for a while; the hearing is dimmed by a slight anaesthetic; a feeling of nausea spreads from the vagus into the branches of the nerves of the muscle and skin. In the region of the heart, fear and anxiety are felt in the thoracic cavity. There is also a pulsating throughout the body, above all in the head and hands, which are the most sensitive of all. Sweat often breaks out on the entire surface of the skin or on individual areas of the skin, disproportionate to previous movements.[24]

The description of the sensory experiences provided here is not just remarkable because of the stimulus reactions it records; what distinguishes it beyond that is the categorization of these reactions according to the respective physiological and anatomical connections, which testifies to a profound knowledge of organic functions and their interactions. Purkyně thus brought a spectrum of sensory qualities into view whose concomitant appearance with vertigo had until that point remained largely unconsidered. Of particular importance was the observation of the actual movements or illusory movements caused by vertigo—those phenomena that were connected with the "alien power" prevailing in the body and which Purkyně later distinguished as "true" and "illusory" movements in "real" or "ideal" space. The ideal space perceived by the senses, as this distinction vis-à-vis the illusory perception of vertigo could be described, thus turned within real space—and it turned with its own regularity: the direction of the post-rotatory illusory movements, Purkyně derived from his observations, was determined by the situation and position of the head during rotation. "In general, the direction of vertigo is different each time," he noted at the end of the series of tests, "depending on the position of the head during the previous rotations; also the direction of the vertigo changes when one puts the head in different positions after the rotation. The rule in all these phenomena is this: *that the average of the head (as a sphere), around whose axis the first movement occurred, invariably determines the vertigo at each repeated position of the head.*"[25]

Purkyně thus described vertigo as a regular phenomenon of sensual perception, as "disorientation," according to Michael Hagner, "which was not chaotic, however, but depended on the position of the head in space."[26] This applied

to the seemingly gymnastic attempts at rotating—Purkyně summarized them as types of "curvilinear vertigo"—as well as to the subsequently discussed forms of "rectilinear vertigo," which he illustrated using an example of (accelerated) backward movement already cited by Erasmus Darwin earlier on.[27]

But this example, in which an everyday worldly spatial experience was once again conceived of as an experimental situation, is not the only way in which Purkyně referred to Darwin; the explanatory approach cited in this context was also based on Darwin's attempt to explain vertigo with the topos of physical movement habits. "Among the ordinary experiences of common acquaintance is this [vertigo]," Purkyně wrote, "which people who are weak in nerves or otherwise unaccustomed to such movement suffer when they are driven backwards or even forwards in a coach. Because we are hardened by life-long forward movement; however, it becomes noticeable when we are set into a straightforward movement, the speed of which exceeds the normal speed."[28]

It was only later, in Ernst Mach's more technically advanced experimental research from the 1870s that it became clear that the cause of the vertigo motions described here was not their speed, but rather their positive or negative acceleration.[29] Unlike Mach, Purkyně still resorted to the well-known means of counteracting vertigo already passed down from Darwin: he discovered that after stopping rotation, the illusory movements associated with vertigo could be interrupted by placing an object close to the eyes and fixating on it. However, Purkyně was not primarily concerned with suppressing vertigo. Instead, he derived from this observation of the post-rotatory "palpable and visible

24 Purkyně, 16–17.

25 Purkyně, 18 (emphasis mine). "Purkyně's law of vertigo" is derived from Vladislav Kruta's biography of Purkyně. See Vladislav Kruta, *J. E. Purkyne: Physiologist J. E. Purkyne: Physiologist* (Prague: Academia Praha, 1969), 26.

26 Hagner, "Psychophysiologie und Selbsterfahrung," 255.

27 Darwin had suggested various forms of unusual movements as a possible cause for vertigo, including driving backward in a carriage: "When first an European mounts an elephant sixteen feet high, and whose mode of motion he is not accustomed to, the objects seem to undulate, as he passes, and he frequently becomes sick and vertiginous [...]. Any other unusual movement of our bodies has the same effect, as riding backwards in a coach, swinging on a rope, turning round swiftly on one leg, seating on the ice, and a thousand others." Darwin, *Zoonomia*, 331.

28 Purkyně, "Beiträge zur näheren Kenntnis des Schwindels aus heautognostischen Daten," 18.

29 See Ernst Mach, "Physikalische Versuche über den Gleichgewichtssinn des Menschen," in *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften: Dritte Abteilung, Sitzung vom 6. November*, vol. 68 (1873), 124–40; and Ernst Mach, *Grundlinien der Lehre von den Bewegungsempfindungen* (Leipzig: W. Engelmann, 1875), 25. See also Rebekka Ladewig, "Apparaturen des Schwindels: Zum psychiatrischen, populären und wissenschaftlichen Einsatz von Drehvorrichtungen im frühen 19. Jahrhundert," *ilinx: Berliner Beiträge zur Kulturwissenschaft* 1 (2010): 261–65.

movement of the eyeballs," a "basic phenomenon of vertigo of motion,"[30] which at the same time provided him with an explanation for the illusory movements: Purkyně attributed them to a "battle of unconscious, involuntary muscular action and more deliberate conscious action in the opposite direction."[31] To illustrate, he noted with a view to eye movement: "If [...] a point is fixed on with attention, and one gently presses the eye with a finger from any side, the image of the point moves from the place of clear vision and goes in the opposite direction; but since attention has not been deliberately turned away from the image, it is captured by indirect vision, and because attention follows the moving image, its movement is also noticed."[32]

The external pressure stimulus thus caused the retinal image to shift or jump from the central field of vision into the peripheral field of vision, whereby attention was focused on the movement of the image. Purkyně thus emphasized that attention was an active physiological process and as such also subject to the physiological conditions of perception. The theoretical significance of attention as a manipulable factor in self-experimental practice is particularly evident in the lectures Purkyně later gave, in which he defined it as a "free determination of the direction of consciousness." At the same time, the constitutive function of attention for the practice of self-observation becomes clear here:

> The first moment of awareness of an object in its specifics through determinacy of the direction of consciousness is *perception*. The ability of free directional determination of consciousness is *attention*. The attention is tensed, relaxed, collected, scattered, awakened, withdrawn, sharpened, blunted, etc. All these modifications are modifications of consciousness, are purely formal, the content is not relevant to them. [...] Another modification of consciousness is *observation*. A self-aware conscious registering of objective processes, either in the external, natural world as an observation of nature, or in our inner being as self-observation; it is a more passive state of consciousness, we give ourselves to the object in order to receive it as it is without wanting to make something of it.[33]

It is clear that this economy of attention did not arise in a theoretical vacuum, but was empirically grounded, that is, derived from practice and tested and exercised in concrete experimental situations. For example, the withdrawal of attention mentioned above can be illustrated in the transition from visual vertigo to "tactile vertigo," as Purkyně's second basic phenomenon of vertigo was described. To obtain observations of tactile vertigo that were "purer and clearer," one simply had to "keep one's eyes closed," as Purkyně remarked incidentally.[34] The phenomena perceived under these conditions were organized in exact analogy to the phenomena associated with visual vertigo: resting objects also appeared to the sense of touch to have moved as a result of the physical rotational movement, the reflexive connection between deliberate

and involuntary muscle movements, which in the case of visual vertigo led to abrupt shifts in the objects of the visual field, manifested itself in tactile vertigo in the "involuntary unconscious tendency of the muscles to move in certain directions."[35]

What makes the statements about tactile vertigo even more significant is the fact that Purkyně first speculated about the organic causes of vertigo in this context.[36] Insofar as the direction of tactile vertigo was correlated with the respective position of the brain in space, he believed that the specific modifications of this form of vertigo could be traced back to a "peculiar affliction of the brain."[37] From this hypothesis, Purkyně also deduced his later explanation for illusory vertigo movements in "ideal space." He identified their causes as lying in an irritation of the brain, or more precisely. In the effect of mechanical momentum on the brain mass: "The laws of momentum have an unconditional generality in the physical world," he wrote in his attempt to explain it, thereby making Newtonian inertia the natural cause of the sensory event of vertigo.[38] Purkyně also imagined the effect of rotation on the brain in analogy to a container filled with liquid that is set in rotation and shifts in its mass proportions due to the effects of shear forces. This process disrupted or irritated the impressions of the brain that "in the usual positions and movements of the body" are always perceived as the "influence of gravity," and that thus serve "as regulatory of movement and the maintenance of the body's balance."[39]

30 Purkyně stated: "The vertigo is therefore based on an oscillation, as one can already notice in one's own eye by touching it gently, and on another's." Purkyně, "Schwindel aus heautognostischen Daten," 15–37.
31 Purkyně, 23.
32 Purkyně, 23.
33 Purkyně, "Vorlesungen," 52 (emphasis in original).
34 Purkyně, "Schwindel aus heautognostischen Daten," 23.
35 Purkyně, 25.
36 This is not surprising inasmuch as tactile vertigo was considered to be "the most important phenomenon of all motion vertigo." The phenomena observed in the *sense of hearing*, in the *sense of feeling*—the most subjective of all, as Purkyně emphasized—and even in the *sense of sight* are indeed of importance if the specific manifestation of vertigo could be observed here in their different sensual qualities; but—and this particularly applies also to the detailed descriptions of the visual perceptual phenomena—all these senses participate substantially in the views of the sense of touch. Purkyně, 28.
37 See Purkyně, 25–27. In fact, the brain irritation described here provided a first explanation not only of the forms of motion vertigo, but also of those types of vertigo produced by the "suppression of blood circulation" or by "narcotics" or "other poisons." See Purkyně, 30.
38 "Everything material that is caused by a constantly newly acting force of movement proceeds with accelerated speed, and remains, when the original force has ceased, by dint of its passivity (inertia), until this is stopped by other opposing forces." Purkyně, 35.
39 Purkyně, 37.

Torturing (Oneself): Self-Experiments and Animal Experiments by Jan Evangelista Purkyně and Marie-Jean-Pierre Flourens

Purkyně maintained this explanatory approach to vertigo in his 1827 study "Ueber die physiologische Bedeutung des Schwindels und die Beziehung desselben zu den neuesten Versuchen über die Hirnfunctionen" (On the physiological meaning of vertigo and its relation to the most recent experiments on brain function); and, what's more, he deepened it. In addition to the "effect of continuous rotational movements on the brain" addressed by the study, Purkyně researched the influences of linear, progressive movements,[40] the influence of galvanism, and the "effect of one-sided accumulations and leakages of the blood." Only on one point, namely, the investigation of the "effect of immediate injuries" of the brain, did the new experiments considerably differ from previous ones.

In fact, the experimentally produced brain injury had nothing in common with an introspection in the sense of the heautognostic experiment—a "healthy gazing into oneself'" or a "pure act of looking into the unexplored depths," as Goethe admiringly wrote about Purkyně's self-experimental practice.[41] The occasion for this renewed engagement with the phenomenon of vertigo was, specifically in view of this deviation, less Purkyně's own experimental work on the sense of sight and hearing, as Czech physiologist Vladimír Haškovec suggested,[42] but rather the experimental studies that had in the meantime been conducted by French neurophysiologist and anatomist Marie-Jean-Pierre Flourens in his book *Eigenschaften und Verrichtungen des Nervensystems bei Thieren* (Characteristics and performance of the nervous system in animals).[43]

Indeed, Flourens's work was important not only for Purkyně and for the physiology of the sense of balance, but for the early phase of experimental physiology as a whole. In his two-volume *Handbuch der Physiologie des Menschen* (Handbook of human physiology, 1833–40), Johannes Müller referred to Flourens's work, a number of times,[44] and, with reference to his study published in 1824, underlined that Flourens was the first to emphasize the "importance of the cerebellum for movement and as an organ of balance."[45] In Müller's depiction, the vivisectional orientation of Flourens's experiments emerges particularly strong. Müller wrote that "[Flourens] found that the animals showed no sensations when the small brain was removed."[46] And further:

> When he took away the small brain from the birds piece by piece, a weakness of the muscle movements and lack of coordination of these manifested. After the superficial and middle positions had been removed, the animals became restless without going into convulsions; they made violent and irregular movements, but saw and heard. When the last layers were taken away, the animals lost the ability to jump, fly, walk, stand, to maintain their balance. When a bird in this condition was placed on its back, it could not stand up; it fluttered constantly and showed no signs of stupefaction; it saw the trick that one wanted to pull and wanted to avoid it. It thus still possessed will, sensation, consciousness; only the strength and ability to connect the movements of the muscles in groups to local movements in a purposeful way was lost, and its efforts to maintain balance were like those of a drunk man.[47]

Evident at first sight, this brief description reveals the difference that separated Flourens's experimental approach from that of Purkyně. It marks out Flourens and Purkyně as representatives of two opposing trends in the experimentation in the early nineteenth century: while Purkyně's self-experimental practice developed from the tradition of Romantic natural philosophy, Flourens's investigations took up Albrecht von Haller's theories of irritability.[48] This approach manifested itself in particular in surgical interventions performed on living animals: "The separation of forces through the separation of organs is in fact the purpose of all this work," Flourens noted in the introduction to his study.[49] Through the layer-by-layer ablation of the cerebellum, which he performed in this case on pigeons and frogs,[50] Flourens succeeded in distinguishing the irritable from the non-irritable regions, and in showing that sentience and ability to move were independent of one another. The fact that in this and in

40 Purkyně repeated the self-experiments already employed in the 1820 study of vertigo. See Purkyně, "Ueber die physiologische Bedeutung des Schwindels und die Beziehung desselben zu den neuesten Versuchen über die Hirnfunctionen," *Magazin für die gesammte Heilkunde* 23 (1827): 287 and 294.

41 Johann Wolfgang Goethe, "Das Sehen in subjectiver Hinsicht, von Purkyně," in *Sämtliche Werke nach Epochen seines Schaffens*, vol. 12, ed. Karl Richter et al., (Munich: Hanser, 1985), 346.

42 Haškovec wrote: "Ses traveaux sur la vue et l'ouïe, ses traveaux pharmacologiques donneérant naissance à de nouvelles études sur le vertige." Vladimír Haškovec, "Ce que donna J. Ev. Purkyne à la neurologie et la psychiatrie," in Vladimir Haškovec, *In memoriam J. Ev Purkyne* (Praha, Purkynova Spolecnost: 1937), 15.

43 See Marie-Jean-Pierre Flourens, *Versuche und Untersuchungen über die Eigenschaften und Verrichtungen des Nervensystems bei Thieren mit Rückenwirbeln*, trans. G. W. Becker (Leipzig: Reinsche Buchhandlung, 1824).

44 See Peter Schmidt, *Zu den geistigen Wurzeln von Johannes Müller (1801–1858): Eine quantitative Analyse der im Handbuch der Physiologie von J. Müller (1840–1844) zitierten und verwerteten Autoren* (Münster: Universität Münster, 1972), 50, 213.

45 See Johannes Müller, *Handbuch der Physiologie des Menschen für Vorlesungen*, vol. 1 (Coblenz: Hölscher, 1837), 824.

46 Müller, 849. Cf. the corresponding passages in Flourens, *Versuche und Untersuchungen*, 34.

47 Müller, *Handbuch der Physiologie*, 849.

48 Albrecht von Haller's *Von den empfindlichen und reizbaren Teilen des menschlichen Körpers* (1752) was of decisive importance for the physiology of the eighteenth century. Here, Haller first made the distinction between nerve sensitivity and muscle irritability.

49 Flourens, *Versuche und Untersuchungen*, xix.

50 Depending on his research interest, Flourens experimented on different animals, including frogs and pigeons (Flourens, 28), as well as dogs (12), cats (11), and rabbits (13).

Flourens's subsequent studies the complex connections between nervous system and motor function were also investigated can be explained by the fact that the motoric disorders caused by surgery were observable and therefore easily objectifiable phenomena.

It is evident that Purkyně's interest was above all in movement disorders. The similarity to the familiar phenomena of spatial or tactile vertigo in Flourens was too clear for him to have overlooked the connection between these results and his own vertigo experiments. Inspired by Flourens's study, Purkyně repeated the experiments described herein and concluded that the "apparently inexpedient movements" that arose as a result of the local injuries to the brain were undoubtedly "to be addressed as vertigo, and"—Purkyně jumped here in the same sentence back to the level of his self-experiments "emerge from a disturbance of spatial perception, whereby the individual becomes confused about the position of his own body, and therefore loses equilibrium in it. The subsequent movements are nothing more than efforts to regain balance, although it is disturbed each time anew by the erroneous view of space."[51]

The change of level that took place within this argument, the jump between the observation of one's own life and the life of another—between *self-experimentation and animal experiment*—is symptomatic of this second work on vertigo, which was both a justification of the self-experimental method and probably also a reflection on its limits—limits Purkyně was nevertheless concerned with defending. "It would sound like an exaggeration," he wrote on the first page of his study, "that five years ago a lone observer subjected a live brain, and even his own brain, albeit not directly wounding it, to related mechanical and dynamic influences, which resulted in similar, albeit not as violent, phenomena in the systems of movement as the recent experiments of Flourens, with the incomparable advantage that he could at the same time account for the changes of the inner sense; this, I say, would sound like an exaggeration, and yet it is so."[52]

Purkyně was obviously aware of the scope of his claims, but also that of his self-experiments. He contrasted Flourens's characterization of the motor-functional "signs of paralysis" of his experimental animals with the qualitative descriptions of the vertigo experience—the "changes in the inner sense" that his self-experiment, unlike Flourens's animal experiments, allowed him to establish. What Flouren's surgical point of view did not grasp, and could not grasp, was the psychophysical unity of vertigo, which Purkyně understood with reference to the causal connection between movement disorder and spatial disorientation. Thus, with a view to the reluctant tendencies of movement during rotational vertigo (the feeling that the body was seeking to move in one direction and the reflex-like balancing movements of the muscle system in the opposite direction), he wrote, in clear contrast to Flourens, that it was not "merely quantitative affliction of one side and the other [...] as if a paralysis-like

affliction had occurred here and there," but "on both sides, it is a positive expression, only in different directions, whose original determination is to be sought out in the *centris* of the movement organs themselves."[53] To put it another way, while Flourens would have spoken of a "left-sided paralysis" after an intervention in the right hemisphere of the cerebellum,[54] Purkyně would recognized a right-rotating vertigo in this observation. Nevertheless, he was anxious to present his self-observations as objective scientific knowledge, and he did so in connection with the results provided by Flourens. "Finally, the effect of the immediate wounding of the brain led us to a complete knowledge of the physiological significance of vertigo,"[55] Purkyně stated, and if he had already anticipated the brain as the central organ of vertigo in 1820, this assumption was now confirmed and further specified. The cerebellum was now conceived of as operating as a double switching point that, on the one hand, regulated the relationships with the muscle system—the observable bodily activities manifested as deliberate motoric movement—and, on the other hand, in its basic, organic relationship to the cerebrum through the combination of sensations and perceptions produced the views of space.[56] Purkyně's focus on the psychophysical unity thus apparently remained effective at the level of organic functional relationships. Having experienced these connections in his own body was for him at the same time the essential prerequisite for obtaining a "complete knowledge" of vertigo. That Flourens had not thought of recognizing the phenomenon of vertigo in the tumbling movements of his experimental animals may therefore also be due to the fact that it was not his own senses that registered these sensations. Purkyně underlined the importance of self-experimentation when he wrote:

> The formula by which [Flourens] conceives of the phenomena by attributing the ordering activity of movements to the cerebellum is very apt, but too general. The fact that he sometimes speaks of an intoxicating state is not yet specific enough. His way of removing the cerebellum in layers has probably given rise to this indeterminacy by irritating both the middle and the two side parts at the same time, thus confusing the determinations for movement left and right and backwards; a composite vertigo develops, which, if one has not learned of it earlier from similar experiments as ours, is hardly ever recognized as such by anyone from the irregular movements of the animal.[57]

51 Purkyně, "Schwindel und neueste Versuche über die Hirnfunktionen," 300.
52 Purkyně, 285.
53 Purkyně, 289.
54 In fact, Flourens spoke of "paralysis." He also found a symmetrical correlation between the brain injuries and the resulting paralysis on the opposite side of the body. See Flourens, *Versuche und Untersuchungen*, 37.
55 Purkyně, "Schwindel und neueste Versuche über die Hirnfunktionen," 306.
56 Purkyně, 309.
57 Purkyně, 307.

Although Purkyně had to admit the lasting influence of the operative method, sensual personal experience remained decisive for interpreting his observations. As Emil Starkenstein emphasized with regard to Purkyně's self-experiments, their "special value [...] was less in the objective assessment of the visible than in the subjective perception, especially as far as it refers to the sensory sphere."[58] In this sense, self-experimentation represents a complement to vivisectional animal testing. Starkenstein's account also shows that Purkyně did not consider himself to be a suitable subject for experimentation from the very beginning; rather, he made himself "suitable in accordance with the demands that arose, through repeated practice."[59] The body was not inherently receptive to recording sensory phenomena. It only became so through ongoing practice and the disciplining of attention. The extent to which Purkyně knew how to instrumentalize his own body for the purpose of self-observation is quite exceptional. While many of his self-experimenting contemporaries commonly developed nervous or physiological symptoms as consequences of their own bodily experiments,[60] Purkyně brought to his experiments a congenital visual impairment, which he cultivated in the course of his optical self-experiments. Thus, as Armin von Tschermak-Seysenegg pointed out, his left eye "had almost a central blindness," which Purkyně "later used to methodically compare his far-sighted, unaccomodative left eye, and his extremely short-sighted, accommodative right eye."[61]

Goethe's (if only temporary) enthusiasm for Purkyně's experimental talent was mainly due to this special ability. He immediately recognized the "unheard effort and sacrifice" underlying Purkyně's self-experiments and therefore described him as *a heauton timorumenos* (self-tormentor).[62] But Goethe was not referring to the excessive quality that characterized the self-experiments of the Romantic kind against which Purkyně also distinguished himself at times,[63] but to the form of experimental discipline that he saw at work in Purkyně's case. Goethe thus emphasized the very aspect that Ignaz Döllinger had called the methodological imperative of the new "progressive physiology:" the violent creation of the objects to be observed and their experimental manipulation. The program of physiology aimed to examine the body itself and its performances, to make it speak, to transform it into a "living dossier."[64]

Instrumentalizing Rotation: Swing and Rotating Chairs in the Physiological Experimental Setup

"In order to decide these questions, devices are required with which one can control the acceleration of locomotion, which can be graduated and calculated, and whose movements are gentle and noiseless. [...] One of the most comfortable devices is the swing. There are no bumps, no noise; acceleration, which can be made appreciably large, and which can be calculated for each moment according to the formulas for the pendulum."[65]

The questions that the French embryologist Yves Delage had in mind in the 1880s and intended to research using adjustable swinging and rotating apparatuses revolved around the dizzying connection between head position and sensory illusion. He stated: "Whether greater accelerations or accelerations observed under special conditions can be perceived, to what sensations they could give rise, and what illusions the abnormal positions of the head produce."[66]

However, in Delage's remarks, one of the most striking features is the possibility not only to precisely regulate, but also to calculate these movements or accelerations by means of instrument-based techniques. The historical-epistemological context in which such exact measurability became possible only opened up in the last third of the nineteenth century—at a time when the connection between vertigo and balance had been experimentally researched and had given rise to a largely exact physiological explanation with the theories of equilibrium presented by Ernst Mach, Josef Breuer, and Alexander Crum Brown. An explanation must be added here, which was based, among other things, on the use of mechanical turning devices.

58 Emil Starkenstein, "Die pharmakologischen Selbstversuche Purkynes und ihre Beurteilung nach dem heutigen Stande der Wissenschaft," in *In Memoriam J. Ev. Purkyne*, 57.
59 Starkenstein, 57.
60 These still persisted from the tradition of Romantic natural philosophy into the introspective experimental practices of the 1820s. Johannes Müller, one of the founding figures of scientific physiology, suffered from the subsequent effects of his self-experiments.
61 Von Tschermak-Seysenegg, "Exakter Subjektivismus," 77–78.
62 Johann Wolfgang Goethe, "Tag- und Jahreshefte als Ergänzung meiner sonstigen Bekenntnisse," in *Goethes Werke*, ed. under the orders of Duchess Sophie of Saxony I. Abt.: Goethes Werke, vol. 36 (Weimar, 1893), 218. See also Jutta Müller-Tamm, "Farbe bekennen: Goethes Farbenlehre und die Berliner Wissenschaftspolitik um 1820," in *Wechselwirkungen Kunst und Wissenschaft in Berlin und Weimar im Zeichen Goethes*, ed. Ernst Osterkamp (Bern: Lang, 2002), 193–209.
63 Probably with a view to the increasingly critical reception of Romantic experimental practices, Purkyně clarified his own experiments: "In the end, there is not as much danger as the garrulous conversation and exaggerated imagination of the inexperienced makes of it; on the contrary, a multiplicity of specific stimuli, not used excessively or continuously, hardens and smoothens the nervous system and simultaneously increases its independence and strength with prudent sensitivity." Purkyně, quoted in Starkenstein, "Pharmakologische Selbstversuche," 57.
64 See Philipp Sarasin and Jakob Tanner, eds., "Einleitung," in *Physiologie und industrielle Gesellschaft: Studien zur Verwissenschaftlichung des Körpers im 19. und 20. Jahrhundert* (Frankfurt am Main: Suhrkamp, 1998), 19.
65 Yves Delage, "Versuche über die statischen und dynamischen Täuschungen in der Richtung zur Bestimmung der Funktionen der halbzirkelförmigen Kanäle des inneren Ohres," in Hermann Aubert, *Physiologische Studien über die Orientierung* (Tübingen: Verlag der H. Laupp'schen Buchhandlung, 1888), 83.
66 Delage, 83.

For apart from Breuer, who had derived his explanatory approach from rotational experiments that were limited to the active rotational movement of the body, both Crum Brown and Mach integrated self-constructed apparatuses into their experimental setups that released the body from its own movement.[67] As indicated above, Mach based his experiments with rotating chairs on what Purkyně had described some fifty years earlier as the result of his self-observations. Mach apparently only took note of Purkyně's investigations into vertigo after he had already fully developed his own theory of balance and the sensations of movement. In this respect, he stated: "The experiments have already been carried out in part by Purkyně and, if I had known Purkyně's treatise at the very beginning of my work, I could have spared myself some effort. But I probably wouldn't have started many new experiments."[68]

In fact, the technical-instrumental configuration of vertigo that Mach's experiments were based and that Delage also planned were already in place in Purkyně's time. References to this remarkably early experimental use of technical and mechanical arrangements can already be found in Purkyně's first study on vertigo from 1820, in which he cited popular vertigo setups of his time: he began his discussion of the forms of "movements in a large circle" by stating: "I have conducted several modified, often repeated experiments with precise self-experimentation on the carousel."[69] Here, the carousel became an integral part of the experimental design, the object of which was self-experimental research into rotational vertigo. As Purkyně observed, the effects of horizontal rotation of the body (with the position of the head in the center of rotation) were particularly turbulent. "In the beginning one feels light and cheerful in the head," he reported in this context, "then follows cold and pallor in the face, and a slight feeling of fainting; the breath is eased, the pulse rate becomes slower, soon the feeling of nausea arises in the stomach."[70]

Fig. 48
Georg Emanuel Opitz, *Swings in the Viennese Prater*, 1805

Among the mechanical devices that Purkyně was able to operationalize for self-experimental purposes was also the "ordinary swing, as it is commonly used for popular amusement."[71] The experiments carried out by means of these ordinary swings are important, firstly, because Purkyně used the effects of the rocking movement to establish a connection to seasickness—and thus to one of the initial scenes of the scientific description of vertigo. Moreover, they shed light on the physiological cause of vertigo: the effect that the rocking movements exerted on the brain. "When swinging, the brain is pushed a little against the back part of the skull wall as it moves forward," Purkyně explained. He continued: "When moving backward it is pushed against the front wall, when moving sideways against one side or the other, and on each occasion, it suffers a slight pressure that may determine the motion force of the brain on one side or the other. Seasickness, also, is one of these forms of vertigo, since it is caused by rocking movements, only that they are much more intense, and since rocking usually is very irregular and persistent, much more confused and persistent."[72]

As in the case of circular movements, Purkyně observed a slow transition from a consistently positive, pleasurable to an increasingly unpleasant spectrum of sensations: at the beginning he felt "cheerfulness of the senses" and "eased breathing," a "pleasant feeling in the middle flesh and in the underbelly." However, as the movement continued, "the feeling rose out of the underbelly toward the stomach and turns into nausea," and "gradually the head is also taken over by the same feeling that accompanies the nausea in general."[73] The following passage shows how unpleasant the child's initial joy of swinging can become in an experimental context: "When I stopped swinging, I couldn't perceive any visual vertigo, but the nausea increased. I wanted to keep on rocking until the feeling of nausea turned into vomiting; but I had no disposition, and it did not materialize, even after an hour and a half of rocking, although the nausea and the head affliction became more and more unbearable."[74]

This experimental scene obviously has nothing to do with flights of fancy of the senses and pleasure anymore. Instead, Purkyně draws a clear picture of the "unheard-of effort and sacrifice" described above, which Goethe saw at work in these self-experiments and which may have induced him to describe the self-experimenter whom he so admired as a "self-tormenter."

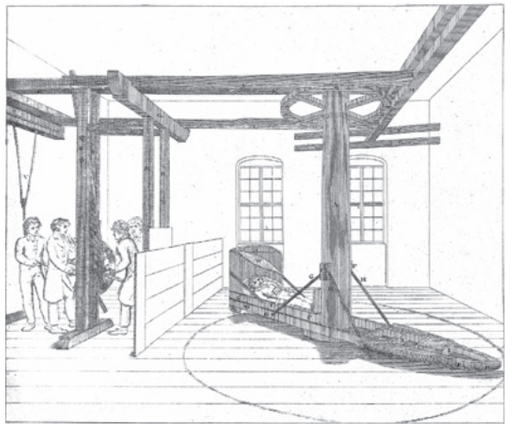
67 Mach's rotating chair is particularly well known in this context. See Mach, *Grundlinien*, 24; and Nicholas Wade and Benjamin W. Tatler, *The Moving Tablet of the Eye: The Origins of Modern Eye Movement Research* (Oxford: Oxford University Press, 2005), 102.
68 Mach, 24.
69 Purkyně, "Schwindel aus heautognostischen Daten," 17.
70 Purkyně, 19–20.
71 Purkyně, 20.
72 Purkyně, "Schwindel und neueste Versuche über Hirnfunctionen," 292.
73 Purkyně, 292.
74 Purkyně, "Schwindel aus heautognostischen Daten," 20.

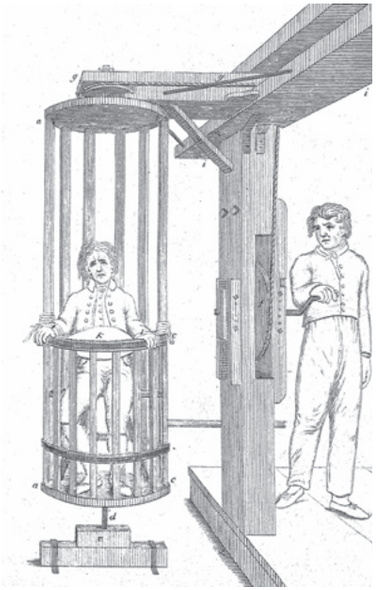
A scenario that can literally be described as torture from today's perspective also provides a perspective on another field that Purkyně opened up a few years later in the course of his self-experimental practice. Evidence of this can be found exclusively in a short bulletin from 1925, which Hermann Aubert included and reprinted in his 1888 study "Physiologische Studien zur Orientierung" (Physiological studies on orientation).[75] Regarding the connection between eye movements and the illusory movement of external objects it is said:

> 2) If the eye is moved quickly over the mass so that the consciousness cannot follow the movement, the compensation balance between subjective movement and the location-determining activity of the sense of space cannot take place completely, and the illusory movement is then transferred into the objective. 3) This happens even more when the eye ends in a deliberate movement, as for example in vertigo, where the whole muscle system and with it also the muscular apparatus of the eye is engaged in abnormal activity. [Purkyně] has not only become convinced through self-observation, but also through the madmen who have been turned in a rotating chair, that the eyes are taken by the fastest convulsive movement. Here, too, the general rule applies that the unconscious subjective movement transfers to the object, which is the reason for the illusory movement.[76]

This passage from the *Mitteilungen* is remarkable in two respects. First, it shows that Purkyně tried to explain the question of the distinction between his own body and the surrounding space as early as 1825 on the basis of an independent sense organ, namely, the "sense of space" postulated here. What is decisive, however, is the remark mentioned under point three in which Purkyně states that he did not come to this explanatory approach solely on the basis of self-experimentation, but also made his observation in a psychiatric context, so to speak with a "test person." When the anonymous author of the *Mitteilungen* here speaks of a "mad man" who was apparently treated in a rotating chair, he was referring to a psychiatric "treatment method" that was quite common in the early 1820s. Purkyně had convinced himself of their effectiveness at the Charité in Berlin, a university hospital, after taking note of the report by the psychiatrist Ernst Horn, who propagated the rotating chair method as part of his reform of psychiatric approaches.[77]

The rotating chair and the revolving bed, which Michel Foucault also mentions in his *History of Madness* (1961) and whose earliest form can be traced back to the construction drawing of a so-called rotative couch in the *Zoonomia* (1794) by Erasmus Darwin,[78] were recommended by Horn as "indirect psychological remedies" for a whole series of "mental ailments:" seizures of raving madness would be limited or shortened by it; periodically recurring manias would be successfully interrupted; those who were seriously depressed, stubborn, or disobedient would be drilled to order and obedience; "suicidal lunatics" would be "positively shaken up and persuaded," while the quiet and passive sick would be awoken.[79]





Figs. 49–50
Rotational bed and rotational chair, in use at Charité Berlin, 1818

75 See Purkyně, "Mittheilungen über Scheinbewegungen und über den Schwindel aus den Bulletins der Schlesischen Gesellschaft von 1825 und 1826" (*Viertes Bulletin der naturwissenschaftlichen Sektion der Gesellschaft für vaterländischen Kultur im Jahre 1925*; and "Zehntes Bulletin der naturwissenschaftlichen Sektion der Gesellschaft für vaterländischen Kultur im Jahre 1925)," in Aubert, *Physiologische Studien über die Orientierung*, 118–22.

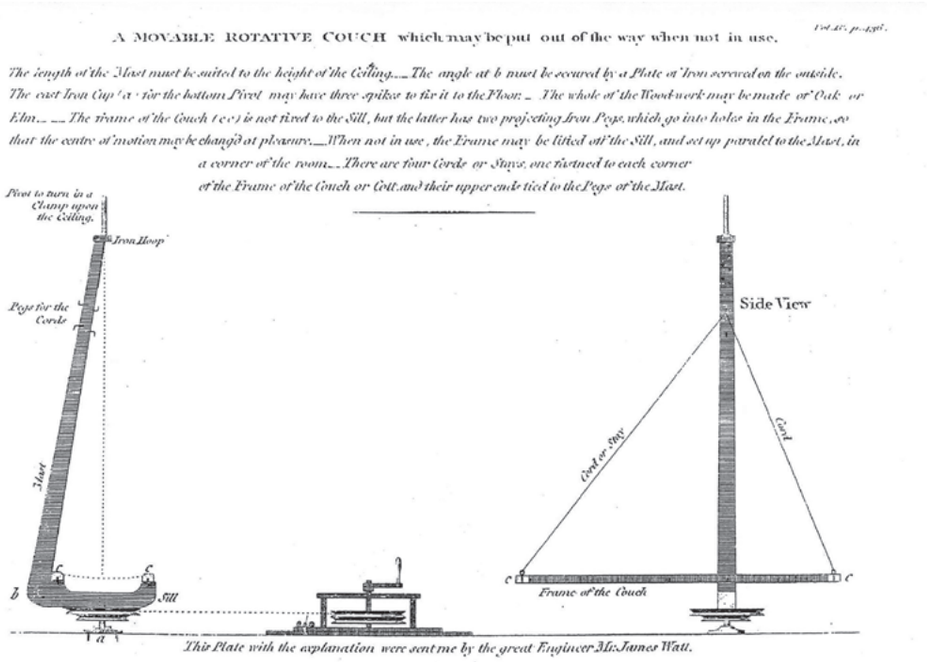
76 Purkyně, in Aubert, 116–17.

77 In his presentation of Purkyně's life and work, Vladislav Kruta cited the same illustration of a rotating chair, which can be found in the article by Ernst," "Beschreibung der in der Irrenanstalt des königlichen Charitékrankenhauses zu Berlin gebräuchlichen Drehmaschinen, ihrer Wirkung und Anwendung bei Geisteskranken," *Zeitschrift für psychische Aerzte* 2. Vierteljahresschrift (1818): 219–31. See also Kruta, *J. E. Purkyne: Physiologist*, 42.

78 See Michel Foucault, *Wahnsinn und Gesellschaft: Eine Geschichte des Wahns im Zeitalter der Vernunft* (Frankfurt am Main: Suhrkamp, 1969), 325. Foucault mentions the swinging chair described by Joseph M. Cox. See Joseph M. Cox, *Practical Observations on Insanity* (London: 1804), 138–40; on this point, see Nicholas Wade, "Cox's Chair: 'A Moral and Medical Mean in the Treatment of Madness'," *History of Psychology* 16, no. 1 (2005): 73–88; and Ladewig, "Epistemologie der Orientierung," 248–60. For more on the rotative couch, see Erasmus Darwin, *Zoonomia; or, The Laws of Organic Life*, 3rd ed. (London: J. Johnson, 1801), 437. Darwin proposed the "movable rotative couch," which he had illustrated with a design drawing of his friend James Watt, for the treatment of fever. See Ladewig, "Apparaturen des Schwindels," 265.

79 Ernst Horn, "Beschreibung der in der Irrenanstalt des Königlichen Charitékrankenhauses zu Berlin gebräuchlichen Drehmaschinen, ihrer Wirkung und Anwendung bei Geisteskranken," *Zeitschrift für psychische Aerzte*, 2. Vierteljahresheft, Leipzig (1818): 223–24.

Fig. 51
James Watt, *Movable Rotative Couch*,
construction drawing, 1801



Purkyně also experienced and tested the violent effect of the psychiatric rotating chair on his own body, as the *Mitteilung* revealed:

> The vertigo once present in the spatial perception can thus assume a variable direction if the head is quickly moved into different positions during the horizontal rotations of the body. One can easily convince oneself of this, albeit in a somewhat horrible way, if one turns around in a rotating chair, as is used to tame the mad, without the head and neck being fixed in their vertical position. At first, the head holds itself upright and horizontal vertigo sets in; however, gradually, by the force of the machine, with reduced contemplation, a funnel-shaped swaying occurs, so that the head alternately falls backward and downward against one and the other shoulder. It is not described what confusion comes into view in this way, in that the entire outer space seems to take on a different direction of movement at any moment.[80]

In place of the carousel and swing, which were integral parts of popular amusement around 1800 and were used by Purkyně to induce vertigo, the emergence of the psychiatric rotating chair gave experimenters an apparatus whose rotational forces exerted an incomparably stronger effect on the sensory and motor system.

If this experimental scene primarily confirmed the previously postulated physiological regularity of vertigo with regard to the visual process of perception or its complete dissolution into aperspectivity, it also provided information about the effect of rotation on the constitution of the brain. Purkyně noted that:

> a soft, delicate, coherent mass [such as the brain] if it is moved continuously outwards in one direction, or in circles, or around its diameter in different circles (progressive or rotational movements), according to the laws of gravity and inertia, partly in its inner substance, partly in the distortions in its connecting parts, and through the walls of the vessel surrounding it, to which it is pressed by movements, must suffer unilateral pressures. [...] There can be no doubt that it must suffer due to violent or straight twisting movements, inner, however inconspicuous distortions, which can be thought to be increased to the highest degree, which in such a living substance will not be without influence on all life phenomena, and in general must be similar to those reactions which otherwise have mechanical effects on the brain.[81]

Purkyně's description from the field of physiological experimental practice can thus also be read as a contribution to understanding the effects and side effects of rotating chair treatments, the discussion of which constituted a blind spot in psychiatric practice. The latter, on the other hand, provided the technical equipment with which the phenomena of rotational vertigo could be studied and precisely tested in their full spectrum and under ideal conditions.

Against this backdrop, which brings together vertigo arrangements from the field of bourgeois amusement, the carousels and ship swings of the funfairs, as well as the rotating chairs and beds used in psychiatric practice as integral components of physiological experimental culture around 1820, it can be stated with a view to the apparatuses designed by Delage in 1888 that these do not "merely come out of the blue; are not suddenly invented," as Sven Dierig emphasized in his study "Physiologie und Psychologie im Kontext: Labor, Stadt, Technik" (Physiology in context: Laboratory, city, technology).[82] Instead, the

80 Purkyně, "Schwindel und neueste Versuche über die Hirnfunktionen," 292.
81 Purkyně, 288.
82 Sven Dierig, "Physiologie und Psychologie im Kontext: Labor, Stadt, Technik," *MPI Preprint* 120 (1999): 25.

experimental arrangements used to generate knowledge represent the "result of a constructive process of adaptation, imitation, reassembly, and repurposing of objects and practices from other areas of knowledge."[83] The mechanical devices used in the psychiatric and bourgeois-popular practices of vertigo were particularly suitable for these translations and migrations into the physiological experimental setups of the early nineteenth century. They thus became an integral part of an experimental design that—in line with the research interest—had refined, modified, and reconfigured research on the sensory physiology of the sense of balance by the end of the century.

83 Dierig, "Physiologie im Kontext," 25.

Literature

Aubert, Hermann. *Physiologische Studien über die Orientierung*. Tübingen: Verlag der H. Laupp'schen Buchhandlung, 1888.

Darwin, Erasmus. *Zoonomia, or, The Laws of Organic Life*, vol. 1. London, J. Johnson, 1774.

Döllinger, Ignaz. *Von den Fortschritten, welche die Physiologie seit Haller gemacht hat: Eine Rede*. Munich: Lindauer, 1824.

Flourens, Marie-Jean-Pierre. *Versuche und Untersuchungen über die Eigenschaften und Verrichtungen des Nervensystems bei Thieren mit Rückenwirbeln*. Translated by G. W. Becker. Leipzig: Reinsche Buchhandlung, 1824.

Foucault, Michel. *Wahnsinn und Gesellschaft: Eine Geschichte des Wahns im Zeitalter der Vernunft*. Frankfurt am Main: Suhrkamp, 1969.

———. "Das Sehen in subjectiver Hinsicht, von Purkyně." In *Sämtliche Werke nach Epochen seines Schaffens*, edited by Karl Richter, Herbert G. Göpfert, Norbert Miller, Gerhard Sauder, and Edith Zehm, 345–55. Munich: Carl Hanser Verlag, 1985.

———. "Tag- und Jahreshefte als Ergänzung meiner sonstigen Bekenntnisse," In *Goethes Werke*, ed. under the orders of Duchess Sophie of Saxony, I. Abt.: Goethes Werke, 36th vol. Weimar, 1893.

Grüsser, Otto. "Purkyne's Contributions to the Physiology of the Visual, the Vestibular and the Oculomotor Systems." *Human Neurobiology* 3 (1984): 129–44.

Hagner, Michael. "Psychophysiologie und Selbsterfahrung: Metamorphosen des Schwindels und der Aufmerksamkeit im 19. Jahrhundert." In *Aufmerksamkeiten*, edited by Assmann, Jan, and Assmann, Aleida, 241–63. Munich: Wilhelm Fink Verlag, 2001.

Kruta, Vladislav. *J. E. Purkyne: Physiologist: A Short Account of His Contributions to the Progress of Physiology*. Prague: Academia Praha, 1969.

Ladewig, Rebekka. "Augenschwindel. Nachbilder und die Experimentalisierung des Schwindels um 1800." In *Nachbilder: Das Gedächtnis des Auges in Kunst und Wissenschaft*, edited by Werner Busch and Carolin Meister, 107–26. Zurich: diaphanes, 2011.

———. "Apparaturen des Schwindels." *ilinx: Berliner Beiträge zur Kulturwissenschaft* 1 (2010): 261–84.

———. *Schwindel: Eine Epistemologie der Orientierung*. Tübingen: Mohr Siebeck, 2016.

Mach, Ernst. "Physikalische Versuche über den Gleichgewichtssinn des Menschen." In *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Dritte Abteilung, Sitzung vom 6. November*, vol. 68 (1873): 124–40.

———. *Grundlinien der Lehre von den Bewegungsempfindungen*. Leipzig: W. Engelmann, 1875.

Müller, Johannes. *Handbuch der Physiologie des Menschen für Vorlesungen*. Coblenz: Hölscher, 1837.

Osterkamp, Ernst, ed. *Wechselwirkungen. Kunst und Wissenschaft in Berlin und Weimar im Zeichen Goethes*. Bern: Peter Lang, 2002.

Purkyně, Jan Evangelista. *Abhandlung über die physiologische Untersuchung des Sehorgans und des Hautsystems* (1823), *Acta Historica Leopoldina* 11, Halle, 1979.

———. "Beiträge zur näheren Kenntnis des Schwindels aus heautognostischen Daten" (1820). In *Opera Omnia*, vol. 2. Prague: Academiae Scientiarum Bohemoslovenicae, 1937.

———. "Beiträge zur Physiologie der menschlichen Sprache." In *Opera Omnia*, vol. 12. Prague: Academiae Scientiarum Bohemoslovenicae, 1973.

———. *Beyträge zur Kenntnis des Sehens in subjectiver Hinsicht*. Prague: Johann Gottfried Calve, 1819.

———. *Beobachtungen und Versuche zur Physiologie der Sinne: Erstes Bändchen: Beiträge zu Kenntnis des Sehens in subjectiver Hinsicht*. Prague: Reimer, 1825.

———. "Rezension von Johannes Müller, Zur vergleichenden Physiologie des Gesichtsinnes des Menschen und der Thiere." In *Jahrbücher für wissenschaftliche Kritik* I (1827). Reprinted in *Opera omnia*, vol. 5, 1951, 190–228.

———. "Vorlesungen zur physiologischen Psychologie." In *J. E. Purkyne and Psychology with a Focus on Unpublished Manuscripts*, edited by Josef Brozek and Jiri Hsokovec. Prague, Academia Praha, 1987.

Rothschuh, Karl. E. *Geschichte der Physiologie*. Edited by Wilhelm Trendelenburg and Erich Schütz. Berlin: Springer, 1953.

Philipp Sarasin and Jakob Tanner. "Einleitung." In *Physiologie und industrielle Gesellschaft. Studien zur Verwissenschaftlichung des Körpers im 19. und 20. Jahrhundert*, edited by Philipp Sarasin, Jakob Tanner, 12–43. Frankfurt am Main: Suhrkamp, 1998.

Schmidt, Peter. *Zu den geistigen Wurzeln von Johannes Müller (1801–1858): Eine quantitative Analyse der im Handbuch der Physiologie von J. Müller (1840–1844) zitierten und verwerteten Autoren*. Münster: Universität Münster, 1972.

Starkenstein, Emil. "Die pharmakologischen Selbstversuche Purkynes und ihre Beurteilung nach dem heutigen Stande der Wissenschaft," in *In memoriam J. Ev Purkyne* (Prague: Purkynova Spolecnost, 1937), 54–65.

Strickland, Stuart Walker. "The Ideology of Self-Knowledge and the Practice of Self-Experimentation." *Eighteenth-Century Studies* 31, no. 4 (1988): 453–71.

Tschermak-Seysenegg, Armin. "Joh. Ev. Purkyne als ein Begründer des exakten Subjektivismus." In *In memoriam J. Ev. Purkyne*, edited by Purkynova Spolecnost. Prague: Academia, 1937, 76–96. *In memoriam J. Ev Purkyne* (Prague: Purkynova Spolecnost, 1937), 54–65.

Wade, Nicholas. "Cox's Chair: A Moral and Medical Mean in the Treatment of Madness." *History of Psychology* 16, no. 1 (New York: Springer, 2005): 73–88.

Modes of Creativity

Perspectives from Psychology, Innovation Research, and Consulting

Dizziness, Creativity, and the Artist at Work

Ruth Anderwald, Mathias Benedek, and Leonhard Grond

Fig. 52
Viktor Landström and Sebastian Wahlfross,
Fractal Crisis, 2016

Creativity researcher Mathias Benedek is a senior scientist at the Institute of Psychology at Karl-Franzens-University, Graz. He investigates the cognitive and neural basis of creative thought and explores predispositions that are fundamental for creativity.

For the project "Dizziness—A Resource," Ruth Anderwald and Leonhard Grond discussed with Mathias Benedek and his team, Emanuel Jauk, and Kevin Kerschenbaumer the notion of *Taumel* (dizziness) in relation to creativity. In 2015 the artists and scientists designed a survey, which was tied to an art competition, and the winning artwork would be included in the exhibition on Taumel at Kunsthaus Graz. The goal of the study was to learn more about the specifics of the artistic work process, to identify indicators of dizziness that occur during the creation of art, and to examine the relevance of dizziness for the creative process. In 2017 the findings of this transdisciplinary endeavor were presented in an article published in *Psychology of Aesthetics, Creativity, and the Arts*, and were discussed in the wider context of the artistic research project in an article published in *Emotion, Space and Society*. In the following conversation, the creativity researcher and the artists reflect on their transdisciplinary cooperation, as such cocreation situates the inquirers in an ecology of ideas, languages, and open questions.

Resources and Circumstances of Creativity

Ruth Anderwald and Leonhard Grond (RA + LG): Creativity is an umbrella term describing creative behavior and creative thinking and its patterns, as well as the outcome, the creative work. In your work you are searching for the neurophysiological development of the new idea, the new thought. The creation of the new is associated with creative ability. In a recent study, you were able to depict and describe the differences in ideation by comparing the networking process of a highly creative person's brain with that of a person who is less creative. What is creativity from your point of view? How is creativity defined in the context of your research field?

Mathias Benedek (MB): Creativity has many meanings in everyday language. In the context of psychological research, an idea or product is considered *creative* when it is both novel/original and meaningful/effective.[1] *Creative ability* refers to the potential or predisposition to come up with creative ideas, whereas *creative achievement* refers to accomplished

1 See Mark A. Runco and Garrett J. Jaeger, "The Standard Definition of Creativity," *Creativity Research Journal* 24 (2012): 92–96.

creative work. Creativity research differentiates between little-c, Pro-c, and Big-C creativity.[2] Little-c creativity denotes everyday creative behaviors that people engage in their leisure time. Pro-c creativity reflects creative accomplishments by professionals who draw on extensive domain-specific training or experience. Finally, Big-C creativity denotes the realm of eminent creative genius. These basic definitions already illustrate the very different possible perspectives on creativity.

While research has historically been very interested in biographical analyses of eminent genius, recent empirical research mainly focuses on the investigation of little-c and Pro-c creativity. For example, in our research we explore the attentional and memory processes involved in the generation of creative ideas. Moreover, we study the brain processes during creative idea generation by means of electroencephalography (EEG) and functional magnetic resonance imaging (fMRI). These investigations help us to understand the neural basis of creative thought and to gain a better understanding of the brain in general. The findings of recent research challenge basic myths of creativity, such as the belief that creativity resides in the right hemisphere or that creative accomplishments are the sole result of either ingenuity or serendipity. It is also implausible to localize a single brain region responsible for creative thought. Rather, research suggests that creativity is related to characteristic patterns of brain connectivity, that is, increased coupling between regions in the default mode network and executive control networks.[3] Moreover, the generation of a creative idea is associated with states of internally directed attention, which is reflected in EEG alpha activity and assumed to shield imaginative processes from sensory distraction.[4]

RA + LG: Today the word "creative" seems omnipresent, and we even see the notion of creativity being promoted as the panacea to all ills and problems, political, societal, financial, or other. In our art education in the late '90s, the word "creative" was rarely used and to some extent pejorative, as it was understood to be more akin with mastering skills of arts and crafts in contrast to the more intellectual or intuitional process of making fine art that was associated with questioning, learning, and transforming knowledge into an artwork. It seemed that ideas of creativity and giftedness had been removed from the identity of the artist and the artistic work process, as pertaining to the somewhat outdated version of the "lone genius artist." Moreover, the idea of giftedness seemingly resounded with the Nazi ideology of the superior race, from which artists clearly wanted to distance themselves.[5] Today the term "creative" has become increasingly popular as it is seen as a desirable personality trait, and not only in German-speaking countries. Even more, creativity is associated with an almost alchemistic potential—the possibility of making a silk purse out of a sow's ear. However, in our daily artistic practices, we recognize that creativity needs resources, at least energy and a "room of one's own and money," as Virginia Woolf so famously put it.[6] Researcher of giftedness James Webb speaks of "gifted behavior" to describe a potential for giftedness that can only be realized in an enabling environment.[7] Does this translate to creativity? From your point of view, can we always be creative, no matter what the circumstances and resources?

MB: The creative process is highly unpredictable in the short term. We cannot know in advance, what the outcome will be, or when exactly (or whether at all) it will bear fruits. It is more like a stochastic process that can be predicted on average, but not in the single case.[8] This unpredictability represents a risk and challenge not only to the investors in art, but especially to the artists themselves. Who is willing and able to endure the unpredictability of the creative process, particularly when it is paired with substantial structural imponderables such as income insecurity?[9] In the realm of science, I could not image scientists working effectively without proper remuneration that is independent of the outcome of their research. And similar to artists, many scientists often do not require much more than a room and money, which are typically provided by the universities.

A recent large-scale survey explored the life and working conditions of the roughly fifty thousand professional artists in Australia. Eighty-one percent of artists work as freelance or self-employed workers in their principal artistic occupation, a rate that has continuously increased over time. Asked for the single most important factor restricting artists' professional development throughout their careers and the most common reasons are the lack of financial return from creative practice (29 percent) and lack of time to do creative work due to other pressures or responsibilities, such as the necessity to take on other paid work (19 percent).

2 See James C. Kaufman and Ronald A. Beghetto, "Beyond Big and Little: The Four C Model of Creativity," *Review of General Psychology* 13 (2009): 1–12.

3 R. E. Beaty et al., "Creative Cognition and Brain Network Dynamics," *Trends in Cognitive Sciences* 20 (2016): 87–95.

4 Mathias Benedek, "Internally Directed Attention in Creative Cognition," in *The Cambridge Handbook of the Neuroscience of Creativity*, ed. Rex E. Jung and Oshin Vartanian (Cambridge: Cambridge University Press, 2010), 180–94.

5 The National Socialist race policies included attempts to breed giftedness. Due to this instrumentalization, the word "giftedness" has a negative connotation in Austria and Germany until today, contrary to creativity.

6 Virginia Woolf, *A Room of One's Own* (London: Penguin Books, 2004), 128.

7 James T. Webb, *A Parent's Guide to Gifted Children* (Tucson: Great Potential Press, 2007), 120.

8 D. K. Simonton, "Creativity and Discovery as Blind Variation: Campbell's (1960) BVSR Model after the Half-Century Mark," *Review of General Psychology* 15 (2011): 158–74.

9 See Frank Berzbach, *Kreativität aushalten. Psychologie für Designer* (Mainz: Verlag Hermann Schmidt, 2010).

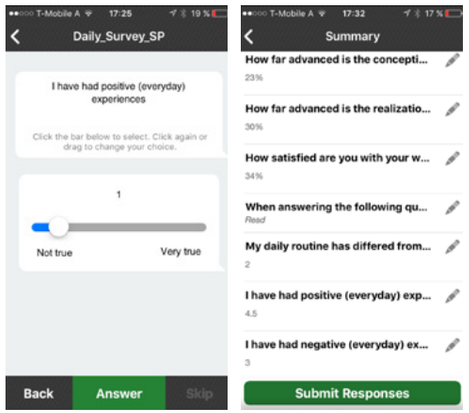
On the other hand, the factors perceived as most important to advance artists' professional development were hard work and persistence (23 percent), and passion (21 percent).[10] Similar findings were obtained in a survey on the social situation of artists in Austria, which showed that and artist's quality of life is most strongly affected by worries about social security and income.[11] Again, these problems seem closely related to the precarious job situation, which is equally prevalent in the Austrian arts sector.[12] Together, these findings highlight that creativity not only depends on having creative ideas, but also faces critical external barriers such as economic and time constraints.

Taumel and Creativity

RA + LG: When we started to design our project "Dizziness—A Resource," we understood that we needed to learn more about the creative process. However in comparison to scientific research, artistic work is mostly connoted with intuition and spontaneity, which both occur in many artists' work processes. But we realized in our own working process that an optimal artistic outcome was more affective when intuition was combined with a deliberative, rational mode of working. With this experience, the need to exchange and cooperate with creativity research became apparent, to reach a better understanding of creativity, its resources, and the needs of the artistic working process. We specifically initiated our cooperation to inquire about possible positive or productive sides of *Taumel* (dizziness, uncertainty) that we associate with our own creative practice. In psychology, dizzy and uncertain states are hardly seen as positive, as these are states of mind one would rather like to avoid. However, this moving into uncertainty demands the invention of a mode of thinking and behaving that may be novel or unknown to the individual. From this perspective, Taumel enables and embraces creativity in the sense of creative behavior. Therefore, in the process of finding a common understanding we identified Taumel with divergent thinking and later included divergent-thinking tests into our survey, "Living in a Dizzying World."

Could you explain in a few words what divergent thinking is and how it relates to artistic work process?

MB: The concept of divergent thinking goes back to J. P. Guilford, who aimed to map all human cognitive capacities in his structure-of-intellect model. His model includes the operation of divergent thinking in which we think "in different directions, sometimes searching, sometimes seeking variety."[13] Divergent thinking is required for problems that have no single solution, but rather many different ones that vary in quality. It is in opposition to convergent thinking, which leads to a recognizable best or conventional



Figs. 53–54
Mathias Benedek, Emanuel Jauk, and Kevin Kerschenbaumer, multilevel analysis and daily questionnaire "Living in a Dizzying World," 2016

answer. Divergent thinking tasks are often used as test of creative cognitive potential, whereas convergent thinking tasks are typically found in intelligence tests. For an artistic work there obviously is no single correct solution or possibility, and thus the working process crucially relies on divergent thinking. Dual process models of creativity, however, acknowledge that in complex creative work, divergent thinking will alternate with phases of convergent thinking. The latter is needed to screen out less relevant attempts to find a solution and focuses on more promising options before reengaging in divergent production.[14]

RA + LG: The survey "Living in a Dizzying World" comprises many questions related to different interests. As mentioned before, we tested divergent-thinking abilities, but also personality traits, and we asked the participants to disclose their emotions when creating their artworks. In a second step, the jury,[15] which ranked the artworks and chose one work for the inclusion to

10 David Throsby and Katya Petetskaya, "Making Art Work: An Economic Study of Professional Artists in Australia," *Australia Council for the Arts*, November 12, 2017, http://www.australiacouncil.gov.au/research/making-art-work/.

11 Susanne Schelepa, Petra Wetzel, and Gerhard Wohlfahrt, *Zur sozialen Lage der Künstler und Künstlerinnen in Österreich* (Vienna: L&R Sozialforschung, 2008), https://www.kunstkultur.bka.gv.at/documents/340047/693984/studie_soz_lage_kuenstler_en.pdf/6bb93c1d-981b-4d77-8e79-c27c5c18b0f5.

12 Clemens Christl and Markus Griesser, *Unselbstständig: Selbstständig: Erwerblos* (Vienna: Kulturrat Österreich, 2017), http://kulturrat.at/agenda/sozialerechte/studie2017.

13 J. P. Guilford, "Three Faces of Intellect," *American Psychologist* 14 (1959): 469–79.

14 Mathias Benedek and Emanuel Jauk, "Spontaneous and Controlled Processes in Creative Cognition," in *The Oxford Handbook of Spontaneous Thought: Mind-Wandering, Creativity, Dreaming, and Clinical Conditions*, ed. Kalina Christoff and Kieran C. R. Fox (Oxford: Oxford University Press, 2018): 3, doi: 10.1093/oxfordhb/9780190464745.013.22.

15 Members of the jury were Katrin Bucher Trantow, chief curator at Kunsthaus Graz and cocurator of "Dizziness. Navigating the Unknown," artist Anna Jermolaewa, and Sergio Edelsztein, director of the Center for Contemporary Art, Tel Aviv.

the exhibition, was asked to disclose its decision-making process so we could learn more about the factors that may predict the success of an artwork. Could you summarize the settings of our study on artistic work processes, and the specific challenges it entailed from your side?

MB: In this study, we set out to analyze the creative process when making artistic work with a focus on the role of dizziness. A first challenge represented the definition and operationalization of dizziness in the context of psychology. We concluded that dizziness is conceived as creating feelings of uncertainty that might be characterized by marked variability of subjective progress over time. Another major challenge was to devise a valid examination of the creative process that meets the requirements of empirical research. Empirical research aims for controlled observation conditions in order to be able to discover general mechanisms that apply independent of contextual factors. However, we could not simply ask artists to perform a predefined task in our lab, as this would have little to do with their actual artistic practice. Therefore, together we decided to launch an open international art competition at the Kunsthaus Graz, inviting artists to create a time-based visual artwork of less than ten minutes on the topic "living in a dizzying world." During the two-week working period, the artists answered twenty brief questions each day on their process via online assessment (e.g., experience sampling software installed on their mobile phone). As you mentioned, artists also completed an online survey consisting of established tests of personality structure and creative potential. This procedure allows for an observation of the creative process in a largely standardized setting, while keeping interference with individual work to a minimum. The resulting study was one of a kind because it examined the creative process in a large Pro-c sample with sound empirical methods. The study was made possible by the joining of forces between artists and psychologists and because of the support from relevant art and science institutions.

RA + LG: Philosophers like Maurice Merleau-Ponty or Gilles Deleuze have observed and theorized the artistic work process from a phenomenological and philosophical points of view.[16] However, the understanding of the specifics of the artistic work process is incomplete. Our survey was an attempt to come to a more profound and holistic understanding of dizziness with regard to the artistic process. Moreover, as artists we intended to gain a better understanding of the process artists undergo: the emotions, needs, and conditions that come with it, and what kind of support is relevant and helpful. The expectation was that the outcome of the study would place emphasis on the potential of building a better environment for the needs of the artistic community. One of the participants noted that she felt "comforted by the idea that other artists were reflecting on their process at the same time [...].

It made [her] realize that the challenge of art making is not unique—it is difficult for all [artists] and can lead to different emotional states, etc."[17] She felt supported because she became increasingly conscious of not being the only one undergoing this process. As part of our study, "Living in Dizzying World," we inquired about work-related behaviors and feelings in relation to the artistic work processes. What behavior or emotion can be a resource for creativity? And do artists differ from nonprofessionals?

MB: Creativity can be a very idiosyncratic process. Yet, research has revealed a number of behaviors and traits that appear to represent influential resources for creativity. First of all, complex creative work seems to benefit from the interplay between goal-directed and spontaneous processes. Evidence of this is seen in the daily rituals of eminent creative figures, who ensured that their days included focused work but also work breaks.[18] This notion is further supported by empirical research showing that breaks can serve as incubation periods that mitigate mental fixation effects and give room to unconscious problem solving.[19] At the personality level, creativity is consistently related to people who are open to new experiences.[20] The individual disposition to regularly step out of one's comfort zone can foster mental flexibility and provide a source of inspiration. Another relevant trait is perseverance, which is the ability to stick to one's goals despite setbacks.[21] This characteristic that is likely relevant to achievements in all domains but may particularly discriminate between artists and nonprofessionals. Finally, research links creativity to positive affective states.[22] Many studies in nonprofessionals and professionals find that creativity is higher on active and happy days. To be sure, there are two possible routes of causality: positive emotions may drive creativity, and creativity can also drive positive emotions. Yet, these findings clearly challenge the popular belief that real creativity needs to be born from states of torment.

16 See Maurice Merleau-Ponty, *Sense and Non-sense* (Evanston, IL: Northwestern University Press, 1964); and Gilles Deleuze, *Francis Bacon: The Logic of Sensation* (London: Bloomsbury, 2003).

17 Quoted in Mathias Benedek et al., "Creating Art: An Experience Sampling Study in the Domain of Moving Image Art," *Psychology of Aesthetics, Creativity, and the Arts* 11 (2017): 8, http://on-dizziness.com/wp-content/uploads/2017/06/Benedek-et-al-2017-PACA-Creating-art-An-experience-sampling-study-in-the-domain-of-moving-image-art.pdf/.

18 Mason Currey, *Daily Rituals: How Artists Work* (New York: Random House, 2013).

19 Ut Na Sio and Thomas C. Ormerod, "Does Incubation Enhance Problem Solving? A Meta-analytic Review," *Psychological Bulletin* 135 (2009): 94–120.

20 G. J. Feist, "A Meta-analysis of Personality in Scientific and Artistic Creativity," *Personality and Social Psychology Review* 2 (1998): 290–309.

21 M. G. Grohman et al., "The Role of Passion and Persistence in Creativity," *Psychology of Aesthetics, Creativity, and the Arts* 11 (2017): 376–85.

22 Matthijs Baas, Carsten K. W. De Dreu, and Bernard A. Nijstad, "A Meta-analysis of 25 Years of Mood-Creativity Research: Hedonic Tone, Activation, or Regulatory Focus?," *Psychological Bulletin* 134 (2008): 779-806.

RA + LG: Personality traits of high openness, and the connection of positive emotions to the creative process may also challenge the idea that dizziness, here defined as uncertainty, is a solely negative experience in the creative process. Going toward an uncertain outcome may be frightening as much as exciting and invigorating, depending on a person's perspective and personality. In relation to personality, the divergent-thinking test in our study was not that well received because some artists refused to complete it. In our article, we stated: "It is interesting to note that divergent thinking ability (creativity and fluency) was also negatively correlated with jury evaluation of artworks. The negative correlation between divergent thinking fluency and creative top achievement may indicate that highly achieved artists cared less to respond and hence did not score well in this task."[23] However, research implies that "improvisation performance is related to divergent thinking ability and working memory capacity."[24] Given the possibility to do another survey, would it be important to gain insight into the divergent thinking ability of (visual) artists and what could be learned from it?

MB: Divergent thinking tasks are a highly common approach in the psychometric assessment of creative cognitive potential in little-c populations (i.e., nonprofessionals). In the so-called alternate uses task, participants are asked to find creative uses of everyday objects, such as a car tire. All ideas given within three minutes are scored for fluency (i.e., the number of ideas) and creativity (i.e., the rated creative quality of ideas). These tasks are largely domain-general, that is, they do not rely on domain-specific expertise and are known to predict creative accomplishments to a moderate extent in little-c populations. Therefore, we were curious whether divergent-thinking ability is also relevant creative professionals (i.e., Pro-c populations). However, the employed divergent-thinking tasks in our study were not well received by professional visual artists: especially, more accomplished artists provided very few responses, which precluded a proper scoring. We are aware that artists often oppose the idea that creativity can or should be measured. Moreover, if the artists got the impression that divergent-thinking tasks aimed to assess their artistic creativity, they could easily get offended by the simplistic nature of the tasks, and with very good reason. As mentioned before, divergent-thinking tasks do not attempt to measure artistic creativity in any way but to measure, rather, a basic predisposition of mental flexibility. We presumed that visual artists would generally score high on these tasks compared to the general population; low mental flexibility may not be helpful in artistic work, while, to be sure, high mental flexibility does necessarily make a good artist. To date, we cannot tell whether divergent-thinking tasks are useful measures in the context professional creativity. Maybe professionals approach these tasks in completely different ways, which impede straightforward comparison of task performance across different levels of creative achievement.

RA + LG: The study focused on the individual's creative process. Surprising to us was to learn that an artwork's quality (indicted by the jury's evaluation of the work) was decided on by the artist's former achievements and the personality trait of lower agreeableness. On the one hand, it seems that personality traits play a germane part in the creative process; on the other, previous high achievements may predict future accomplishments. From our own experience as artists, when one starts to work on a new piece of work, he or she is confronted with the metaphorical white page, a blank sheet that "evokes a zero degree of the creative imagination."[25] To describe the ensuing feelings of uncertainty and ambiguity involved in a creative process and in categorizing its (uncertain) outcome the English poet John Keats coined the term "negative capability."[26] How does creativity research relate to the uncertainty of the creative process? Here, we refer to previous studies that "found that artworks, which are ultimately judged higher in quality, showed a more jagged gradient of quality over time. This suggests that more creative work evolves in a less linear, predictive way because it may involve more radical and risky revisions rather than small incremental changes."[27]

MB: Creating art can be considered an uncertain and risky process. Kozbelt and colleagues examined the quality of emerging artworks over time.[28] In one study, nonartists and art students judged the twenty-two in-progress states of Henri Matisse's great 1935 painting *Large Reclining Nude*.[29] The different stages varied considerably in their appeal to the beholders. Interestingly, "non-artists judged the painting as getting generally worse over time, consistent with the increasing abstraction of the image. In contrast, art students' judgments showed a jagged trajectory with several peaks (including the finished version), suggesting an interactive hypothesis-testing process that gradually transformed the image." These temporal dynamics appear to reflect a nonlinear form of progress rather than a linear advancement toward a clear goal.

23 Benedek et al., "Creating Art," 330.
24 Beaty et al., "Role of Domain-General Cognitive and Creative Abilities in Jazz Improvisation," 262.
25 Davide Deriu, "Carte Blanche," in *Forty Ways to Think about Architecture: Architectural History and Theory Today*, ed. Iain Borden, Murray Fraser, Barbara Penner (New Jersey: John Wiley & Sons, 2014), 78.
26 Horace Elisha Scudder, ed., *The Complete Poetical Works of John Keats* (Boston: Riverside Press, 1899).
27 Benedek et al., "Creating Art." See also Aaron Kozbelt, "Dynamic Evaluation of Matisse's 1935 'Large Reclining Nude,'" *Empirical Studies of the Arts* 24 (2006): 119–37.
28 Aaron Kozbelt and Joanna Serafin, "Dynamic Evaluation of High- and Low Creativity Drawings by Artist and Non-artist Raters," *Creativity Research Journal* 21 (2009): 349–60.
29 Kozbelt, "Dynamic Evaluation of Matisse's 1935 'Large Reclining Nude,'" 119.

In our study, we made similar observations when looking at the development of the artwork from the perspective of the artist. While artworks generally advanced over time, each process took a different and often nonlinear course. It requires substantial self-confidence, independence, and perseverance to believe that the journey will come to a fruitful end within reasonable time.[30]

Go Together, Go Far?

RA + LG: Having focused on the creative process of the individual, it is noteworthy that the winning artwork of the competition was created by an artist duo. We also have been working as a duo since 1999. Nowadays, we can see an increase of artists working in duos, groups, and of temporal co-operations of otherwise individually working artists (e.g., Jonathan Monk and Ariel Schlesinger, who contributed to the exhibitions on dizziness in Graz and Warsaw). Could you provide an overview on how cocreation work processes are different from individual processes? What resources does a prolific co-creative work process need, and what risks are involved?

MB: There is not much empirical research on the role of cocreation in art. From research on creative group processes, we know that they involve process gains and losses.[31] On a cognitive level, the direct exchange of ideas can be stimulating and engaging, but listening to others can also induce cognitive interference, making it hard to follow one's own train of thought. On a social/motivational level, interaction typically results in social facilitation processes that increase motivation and persistence, but it may also induce evaluation apprehension and pressure for conformity. Studies suggest that process losses are attenuated when interaction occurs in asynchronous ways rather than face-to-face. Moreover, cocreation may benefit from heterogeneous, complementary partners. Finally, for practical reasons, cocreation may work better in some art domains compared to others (e.g., music versus literature). Taken together, it will clearly depend on the specific constellation of individuals to what extent they achieve to harness process gains at little costs of process losses.

RA + LG: To conclude, our cooperation revealed that dizziness may be a factor in artistic work processes, but the experience of dizziness in the creative process is tied to personal experience and personality traits.[32] Sharing dizziness, as much as sharing creativity is an even more complex and yet underresearched topic.

30 See Feist, "A Meta-analysis of Personality in Scientific and Artistic Creativity."

31 See P. B. Paulus and V. R. Brown, "Toward More Creative and Innovative Group Idea Generation: A Cognitive-Social-Motivational Perspective of Brainstorming," *Social and Personality Psychology Compass* 1 (2007): 248–65.

32 See also Shmailov, "The Many Facets of Creatives" in this volume, 188–200.

Literature

Baas, Matthijs, Carsten K. W. De Dreu, and Bernard A. Nijstad. "A Meta-analysis of 25 Years of Mood-Creativity Research: Hedonic Tone, Activation, or Regulatory Focus?." *Psychological Bulletin* 134 (2008): 779–806.

Beaty, R. E., M. Benedek, P. J. Silvia, and D. L. Schacter. "Creative Cognition and Brain Network Dynamics." *Trends in Cognitive Sciences* 20 (2016): 87–95.

Beaty, R. E., B. A. Smeekens, P. J. Silvia, D. A. Hodges, and M. J. Kane. "A First Look at the Role of Domain-General Cognitive and Creative Abilities in Jazz Improvisation." *Psychomusicology: Music, Mind, and Brain* 23 (2013): 262–68.

Benedek, Mathias. "Internally Directed Attention in Creative Cognition." In *The Cambridge Handbook of the Neuroscience of Creativity*, edited by Rex E. Jung and Oshin Vartanian, 180–94. Cambridge: Cambridge University Press, 2010.

Benedek, Mathias, and Emanuel Jauk. "Spontaneous and Controlled Processes in Creative Cognition." In *The Oxford Handbook of Spontaneous Thought: Mind-Wandering, Creativity, Dreaming, and Clinical Conditions*, edited by Kalina Christoff and Kieran C. R. Fox, 285–98. Oxford: Oxford University Press, 2018. doi: 10.1093/oxfordhb/9780190464745.013.22

Benedek, Mathias, Emanuel Jauk, Kevin Kerschenbauer, Ruth Anderwald, and Leonard Grond. "Creating Art: An Experience Sampling Study in the Domain of Moving Image Art." *Psychology of Aesthetics, Creativity, and the Arts* 11 (2017): 325–34.

Berzbach, Frank. *Kreativität aushalten: Psychologie für Designer*. Mainz: Verlag Hermann Schmidt, 2010.

Christl, C., and M. *Griesser. Unselbstständig: Selbstständig. Erwerblos*. Vienna: Kulturrat Österreich, 2017. http://kulturrat.at/agenda/sozialerechte/studie2017

Currey, Mason. *Daily Rituals: How Artists Work*. New York: Random House, 2013.

Deleuze, Gilles. *Francis Bacon: The Logic of Sensation*. London: Bloomsbury, 2003.

Feist, G. J. "A Meta-analysis of Personality in Scientific and Artistic Creativity." *Personality and Social Psychology Review* 2 (1998): 290–309.

Grohman, M. G., Z. Ivcevic, P. Silvia, and S. B. Kaufman. "The Role of Passion and Persistence in Creativity." *Psychology of Aesthetics, Creativity, and the Arts* 11 (2017): 376–85.

Guilford, J. P. "Three Faces of Intellect." *American Psychologist* 14 (1959): 469–79.
Kaufman, J. C., and R. A. Beghetto.

James C. Kaufman, and Ronald A Beghetto. "Beyond Big and Little: The Four C Model of Creativity." *Review of General Psychology* 13 (2009): 1–12.

Kozbelt, Aaron. "Dynamic Evaluation of Matisse's 1935 'Large Reclining Nude.'" *Empirical Studies of the Arts* 24 (2006): 119–37.

Kozbelt, Aaron, and Joanna Serafin. "Dynamic Evaluation of High- and Low Creativity Drawings by Artist and Non-artist Raters." *Creativity Research Journal* 21 (2009): 349–60.

Merleau-Ponty, Maurice. *Sense and Nonsense*. Evanston, IL: Northwestern University Press, 1964.

Paulus, P. B., V. R. Brown. "Toward More Creative and Innovative Group Idea Generation: A Cognitive- Social- Motivational Perspective of Brainstorming." *Social and Personality Psychology Compass* 1 (2007): 248–65.

Runco, M. A., and G. J. Jaeger. "The Standard Definition of Creativity." *Creativity Research Journal* 24 (2012): 92–96.

Schelepa, Susanne, Petra Wetzel, and Gerhard Wohlfahrt. *Zur sozialen Lage der Künstler und Künstlerinnen in Österreich*. Vienna: L&R Sozialforschung, 2008). https://www.kunstkultur.bka.gv.at/documents/340047/693984/studie_soz_lage_kuenstler_en.pdf/6bb93c1d-981b-4d77-8e79-c27c5c18b0f5.

Scudder, Horace Elisha, ed. *The Complete Poetical Works of John Keats*. Boston: Riverside Press, 1899.

Simonton, D. K. "Creativity and Discovery as Blind Variation: Campbell's (1960) BVSR Model after the Half-Century Mark." *Review of General Psychology* 15 (2011): 158–74.

Sio, Ut Na, and Thomas C. Ormerod. "Does Incubation Enhance Problem Solving? A Meta-analytic Review." *Psychological Bulletin* 135 (2009): 94–120.

Throsby, David, and Katya Petetskaya. "Making Art Work: An Economic Study of Professional Artists in Australia." *Australia Council for the Arts*, November 12, 2017. http://www.australiacouncil.gov.au/research/making-art-work/.

Woolf, Virginia. *A Room of One's Own*. London: Penguin Books, 2004.

The Many Facets of Creative

Maya M. Shmailov

Identity would seem to be the garment with which one covers the nakedness of the self, in which case, it is best that the garment be loose, a little like the robes of the desert, through which one's nakedness can always be felt, and, sometimes, discerned. This trust in one's nakedness is all that gives one the power to change one's robes.
—James A. Baldwin

Take a Moment

Breathe in.
Breathe out.
REPEAT.

Autumn. Japan. Naoshima Island. Chichu Art Museum. I approach a hall, hidden behind a cold cement wall. Before arriving at the entrance, I am greeted by a young lady, who is so gentle she is almost transparent, dressed in gray, against a colds cement background. She hands me a leaflet with written instructions and explains the process to follow: go in, keep quiet and follow instructions.

My mind tries to calculate what to expect.
My body starts feeling the cold temperature of the room.
She asks me to remove my shoes.
I follow.
She instructs me to go into the adjacent room and receive further instructions.
I make five steps inside.

The temperature is even lower now, the room is filled with ambient light and all I see is another instructor, a podium with seven black stairs connected to a white wall, and a blue square on a wall extending above the stairs. The instructor signals to me that I should approach her. Reluctantly and with little understanding of what all the fuss is about, I approach her. She asks if I have read the instructions that I must listen carefully to her instructions. I nod.

"Please go up," she says. I place my foot on a step and try to understand why I need to approach a wall via stairs when I can see it perfectly well from where I am—it must be a perspective thing—I try to rationalize.

"Please continue," she repeats.
I go two steps further.
I still see the same wall.
"Please continue," she urges me now in an assertive tone.
Puzzled, I look back at her.

There was no place for discussion. I surrender. I ascend the next steps and see the white wall with the blue square close up. “Go in,” she says. “Go in where? It’s a wall,” I say, disregarding the instructions to be quiet. “Please proceed!” she urges me, with a sense of agitation in her tone. Curious, scared, heart rushing, muscles stoned, I decide to risk it and trust her.

I feel cold air on my face.
I put my foot forward and realize there is no wall.
My heart almost stops.
I curiously enter a space, no sign of boundaries, no sign of walls, and very cautiously I walk in, my body is covered in goose bumps. I hear her voice.

“Continue.”
I am torn between my curiosity, my rational, my emotions.
I continue into the space.

Silence. Tears start flowing, heating the cold white floor. I have no control over my emotions or my body. I stand in the space sobbing. Looking back, I do not see an exit. I get lightheaded and dizzy. All I see is an orange square at the space where I positioned the entrance. Overtaken by my emotions, I want to run out scared by this magic and at the same time stay there forever to explore the physics of the creation. For few seconds, I am lost.

I am so h a p p y.

This sensory experience, the breaking of a script, and the raising of the stakes for me as a participant of the creation is what made this moment so powerful.[1] I was experiencing the magnificent “Open Field” of James Turrell, as I was becoming part of the creation.[2]

Creation is a process and a product.[3] For me, the truly creative outcome is one that allows you to experience the process of creation as well as the product. You may hate it or love it, but you feel it. The process takes you in and embeds you in to the creation, even if for a split second. You experience a facet of the creators self-experience. You become one. In turn, as a creator, one is always influenced by experiences she has, it inevitably affects what she does, how she thinks and her creative process. The great creation, one that resonates with your body and mind, breaks a boundary between you and the creator and allows you to explore yourself through her process and benefit from her experience.

It is inevitable that when you try to create within a certain existing domain that you will find yourself recreating a feeling that accompanies the creations in that field. What is being discussed in the following is a different type of creation,

an almost limitless creation of new possibilities, of erasing boundaries and erecting new ones.

Create. Dream.

To truly create is to dream.[4] To dream of the unknown, unexplored, to challenge oneself and challenge those that govern the known. Those that dream, those that dare to act on their dreams are those that create new ways of looking at things, and new ways of exploring emotions and of being.

It is often said that creative ideas comprise three components: they should represent something different or new; are of high quality; and be relevant to the domain of practice.[5]

This is a rather formal and cold definition. Creation is filled with emotions. A creation has a message. Like an oracle, giving an answer to the question buried deep inside you that was not even posed. The motivation behind the creation, behind the dream, is a motivation to change something in reality for self or the other, be it for one person, for a community, or for the whole world.

Creation is often described by creators as “a meditative state” with moments that overtake the mind and the body and allow a spirit to play out the dream. If you speak to a creator, any creator, about the moment she came up with an idea, she will always say that there is this “disconnection with the reality,” the body or mind of the self are no longer in the driver’s seat, “a spirit takes over,” music is played in the mind, new colors are seen, new smells are discovered, numbers and words just come out dancing, and the creation is finally laid down

1 See Chip Heath and Dan Heath, *The Power of Moments: Why Certain Experiences Have Extraordinary Impact* (New York: Simon and Schuster, 2017).
2 James Turrell, “Open Field,” Chichu Art Museum, 2000.
3 See Robert J. Sternberg, James C. Kaufman, and Jean E. Pretz, “The Creativity Conundrum.” (2002); Mihaly Csikszentmihalyi, “The Creative Personality,” *Psychology Today* 29, no. 4 (1996): 36–40; and James C. Kaufman and Robert J. Sternberg, eds., *The Cambridge Handbook of Creativity* (Cambridge: Cambridge University Press, 2010), 217.
4 This work is partially based on a research into the lives of outsider scientists published in Maya Shmailov, “Nicolas Rashevsky’s Pencil and Paper Biology,” in *Outsider Scientists: Routes to Innovation in Biology*, ed. Oren Harman and Michael R. Dietrich (Chicago: University of Chicago Press, 2013), 161–80; Maya Shmailov, *Intellectual Pursuits of Nicolas Rashevsky: The Queer Duck of Biology* (Basel: Birkhäuser, 2016); Maya Shmailov, “My Love Affair with an Outsider (lecture, TEDx, 2013), https://youtube/vcH_d-9GI-E; Maya Shmailov, “Personality of Boundary Crossers” (lecture, Center for Contemporary Art, Tel Aviv, March 23, 2016), http://on-dizziness.com/boundary_crossers/; and further research based on interviews with inventors, artists, designers, and entrepreneurs.
5 James C. Kaufman and Robert J. Sternberg, “Resource Review: Creativity,” *Change* 39, no. 4 (2007): 55–58.

with little understanding how it came to be. This is not surprising as recent research shows that creative people have a condition called synesthesia, which leads to crossing of sensory functions, resulting in seeing colors when reading, seeing smells or tasting colors.[6]

Attempts to capture the process of creativity, to define it, to analyze it, are abundant.[7] Contrary to common belief, it is in fact of no difference if we observe the world of science or the world of humanities. After all, as entomologist Edward O. Wilson writes, "Science and the humanities share the same origin and brain processes of creativity."[8] In past years, with the attention on unveiling the secret of innovation and the advantages of breaking the conventional set of rules, the body of knowledge we have on creativity is exponentially growing. But still, there is no winning formula that will assure creativity.

It has been long held that creativity often comes to be when established boundaries, norms, and expectations are crossed, erased, and reconstructed anew. It is thus not surprising to read behavior scientist Donald Norman and others writing that a creative project should be constraint free and boundaryless.[9] To add to this, consider Professor Andrew Jarosz of Mississippi State University mixing cosmopolitan cocktails to remove inhibition in his study subjects and to prove that drunk people are better at creative problem solving.[10] Creation is hindered when filters are added. And yet, creating or breaking a boundary is never as simple as taking a drink.

Who Are You?

In *Tom Sawyer Abroad* (1894), Mark Twain narrates a beautiful conversation that takes place between Tom and Huck while they are traveling in a fantastical hot-air balloon. During their trip, Huck decides that their geography professor is a liar. The reason the professor is perceived as such is because Huck deduced that according to how fast and in what direction they were floating, they should have passed Illinois and arrived at Indiana. When Tom confronts him on this point, Huck explains that the professor's map showed that Illinois is green and Indiana is pink, therefore they are still in Illinois as the scenery is completely green with no pink in sight.

I find this story intriguing because most people are realists like Huck, and learn about gender, science, culture, religion, and art from pre-charted maps. For Huck, maps teach you facts, they teach you the extent of a boundary. Reality should be in line with this, because facts do not tell lies. For Tom, this was not the case. He understood that the map is a tool and not a mirror of reality.

In the world of science, for example, the interpretations that surround scientists and science with special believability often become cartographic. Science, and in fact each of its distinct branches, becomes a space on maps of culture, separated from other territories, labeled with landmarks that show the traveler how and why it is different from other regions. But these maps are episodic rather than transcendent or timeless, and every so often a branch of science is expanded, forming new branches as boundaries are redefined and extended.

It is not a trivial matter, especially in science. Edward O. Wilson, a biologist, asserts that the acid test for a scientist is "I discovered …"—a discovery that must be a certifiable scientific discovery. It needs to be judged and certified by peers who abide by the same rules in the same and nearby "silos." "Real scientists seek above all the acceptances and esteem of their peers," putting public acceptance for example as secondary.[11] Thus, to break a norm, to bring something new to the domain of knowledge, inevitably results in taking a risk.

Typically, characterization of the scientist—a creator—almost always emphasizes the objectivity of the work and describes the scientist's cold, detached observation without any emotional feeling, without discussing his or her process of discovery. The scientist is typically portrayed as recognizing a problem and searching for its solution. But there is more to it. Because all great movements are ultimately human-powered, to understand one's creation is to explore and understand one's personality and motivation, which are closely tied together. A short visit to the nonfiction books section will prove a rising interest in the human side of scientists, artists, and creators in general. This is all with the goal of telling a story to gain understanding of the incredible process of discovery and creation.

But what characterizes these people who defy established norms, who disregard conventional boundaries, institutionalized rules, and accepted reward and evaluation systems—people who, in fact, not only view conventional boundaries as ridiculous, but do not see boundaries to start with?

The personality of the "creative" in this work is that of a boundary crosser, often an outsider who establishes a new train of thought. Such a personality inevitably has many faces. When discussing with behavioral psychologist professor

6 V. S. Ramachandran, and E. M. Hubbard, "Hearing Colors, Tasting Shapes," *Scientific American*, May 2003, 52–59.
7 See, for example, the body of works in Kaufman and Sternberg, eds., *Cambridge Handbook of Creativity*.
8 Edward O. Wilson, *The Origins of Creativity* (New York: Liveright, 2018), 81.
9 Donald A. Norman, *Emotional Design: Why We Love (or Hate) Everyday Things* (New York: Basic Books, 2004).
10 See Alison Beard, "Drunk People Are Better at Creative Problem Solving," *Harvard Business Review*, May–June 2018, 32.
11 Wilson, *Origins of Creativity*, 191–92.

B. J. Fogg the motivations of boundary crossers, he concluded that their personality is probably a combination of nature and nurture although I was hoping for a different result.[12] An attempt to single out and unlock the secret to creativity, to find that one personality trait that gives rise to creativity will inevitably lead to failure.[13] However, observing creative personalities and closely examining the motivation underlying their actions shed light not only on their achievements but also on the process of creativity.

But what is personality? How do we define that? For psychologists and behavior scientists the term "personality" refers to a unique and constant set of behaviors, feelings, thoughts, and motives that build the profile of that person.[14] It is what distinguishes us from one another, what makes us unique and contrary to what you might believe it is very difficult to break from your profile or change your personality.

Creativity is assumed to be unique and defining trait of our species with its ultimate goal, self-understanding.[15] Personality, as a predictor of creative achievement, trumps intelligence as a predictor of lifetime creative achievement.[16]

The following list of traits are common to boundary crossers and creatives: norm-doubting and nonconformity, independence and desire for autonomy, a particular balance of extraversion-introversion, aloofness, social hostility and coldness, dominance with a taste of self-confidence, and arrogance.[17] Some will note that extraversion or sociability and outgoingness are rarely a trait to define a creator. Extraversion, however, is a combination of assertiveness and sociability, and viewed as such the association is more natural as boundary crossers are typically highly confident, assertive, and autonomous.[18] In turn, this self-confidence and assertiveness leads to a belief that one is capable of doing something or carrying out some source of action, also defined as a trait of self-efficacy.[19]

Their motivation is often described as related to the following terms: persistent, driven, ambitious, focused, and impulsive.

How Does It All Play Out in Reality?

> They actively seek experience and action. Being independent and not subject to group standards and control, they are more observant than others and are highly autonomous. As they are egocentric, this makes accumulation of experience possible, allowing them to center on what is really important to them.

> They also like resolvable disorder. Having a high tolerance for ambiguity, they can carry through the search period, or "stay in the cloud" during the process of discovery without rushing toward a solution or finding the way from A to B.[20]
>
> With strong egos, which allow them to regress to preconscious states with the certainty they will return, they are without fear of failure. They take high risks without worrying about failure because they have no doubt that they are still on the right path.
>
> Interpersonal relations are of low intensity in their life and they are often perceived as asocial. They marginalize themselves into states of isolation and in a sense are opportunistic, with little loyalty to others. "I need it I take it" is the adage. One the other hand, they build a support network of very few people, and nurture these connections.
>
> They are preoccupied with things and ideas more than with people. They like to take risks and rarely depend on luck.

In my research, I also found that while boundary crossers have what could be considered as positive traits like self-confidence, alertness, unconventional thinking, and behavior, and perhaps add obsessive commitment to their work; these personality types also may have negative trait: self-confidence merges with narcissistic behavior, egotism, and self-absorption fueled by arrogance. They also can be master manipulators, maneuvering between self-deprecation and self-admiration, marketing their brands to a number of audiences.[21] Their persona is like a faceted diamond. Their strength is in allowing the diamond to constantly rotate to expose one facet, showing one aspect of their personality, to achieve the goal at sight. Each facet is carefully chosen when presented to those on the outside, and often adapted to the viewers' expectations, while

12 B. J. Fogg, interview by the author, January 29, 2018.
13 Mihaly Csikszentmihalyi, *Creativity: Flow and the Psychology of Discovery and Invention* (New York: Harper Perennial, 1997).
14 See J. Feist and G. J. Feist, *Theories of Personality* (New York: McGraw-Hill, 2009).
15 See Wilson, *Origins of Creativity*.
16 G. J. Feist and F. X. Barron, "Predicting Creativity from Early to Late Adulthood: Intellect, Potential, and Personality," *Journal of Research in Personality*, no. 37 (2003): 62–88.
17 Kaufman and Sternberg, eds. *Cambridge Handbook of Creativity*, 121.
18 Chávez-Eakle et al., "Personality: A Possible Bridge between Creativity and Psychopathology?," *Creativity Research Journal* 18, no. 1 (2006): 27–38.
19 As proposed, for example, by Albert Bandura, "The Explanatory and Predictive Scope of Self-Efficacy Theory," *Journal of Social and Clinical Psychology* 4, no. 3 (1986): 359–73.
20 See "Uri Alon: Why Truly Innovative Science Demands a Lap into the Unknown," YouTube video, 15:51, posted by "Ted Talk," June 12, 2014, https://youtube/F1U26PLiXjM.
21 See Shmailov, *Intellectual Pursuits of Nicolas Rashevsky*.

the true intention, the inner complexity, remains incomprehensible to those on the outside. By being master manipulators, an identity is created to suit the purpose and to gain acceptance of the new idea or creation, a marketing strategy is put in place. But the inner drive stays constant.

Why Do You Do What You Do?

But what kinds of things motivate the boundary crossers? What exactly drives them? Is it the need to know? Is it recognition or acceptance? Self-expression? Money? Pleasure or excitement during the process? Edward O. Wilson asserts in his research on the origin of creativity that the driving force is humanity's love of novelty. It's an instinct for the discovery of something new, the solving of old challenges, "the aesthetic surprise of unanticipated facts and theories, the pleasure of new faces, the thrill of new worlds." Creativity is and should be judged by the magnitude of the emotional response it evokes.

I often ask research subjects "Why do you do what you do?" The answer is never simple and often perplexing. Common features are, for example, inner drive, hunger to prove something that others claimed as impossible, expressing connections they see that others overlook or deem as irrelevant. This is known as "intrinsic motivation," and a large body of research supports this idea. "Extrinsic motivation," such as financial rewards, recognition, or peer acceptance, has been shown to actually have a detrimental effect on creativity. They deter from the process, they conform the creator to accepted norms, which in turn prevents the process of breaking the status quo and crossing a boundary.

The fact of the matter is, and as many studies show, creative people, people who redefine the world we live in, no matter which field, are very deeply and emotionally involved in their work, and in fact are themselves an essential tool in the process of creation and discovery. When exploring reality-changing creations, be it in the art world, science, technology, society, politics, food, or any other field, to truly create, means that the creation is not pointing at you, as the creator; rather, it points to something larger, with a bigger purpose, and it's about something that goes beyond the creator. The creation has a message. The motivation behind the creation, behind the dream, is a motivation to change something in the reality, for the self or the other, be it for one person, for a community or for the whole world. While for most, change signals loss, for boundary crossers, change signals excitement. Fear is an emotion that is embraced in a calculated manner and taking a risk is sine qua non for these creators.

Margaret Mark and Carol Pearson have developed a system that integrates motivational and archetypal theory to explain how great brands become extraordinary.[22] They build on Abraham Maslow's 1954 seminal work on motivation and personality and combine it with Carl Jung's theory of "archetypes" to show how they can be employed to bring meaning and profit to a brand. A deeper look into Mark and Carol Pearson's work on brands and marketing, in combination with the fact that creators and boundary crossers, who need to attract audience to their creations, build an identity they market—makes their combination theory a suitable ground to understanding the motivation of our boundary crossers.

In brief, this motivational theory centers on four major human urges positioned along two axes: belonging versus independence, and stability versus mastery (that includes risk-taking). These categories of motivation link most closely with the stages defined by Maslow.

Basically this means that most of us want very much to be liked and to belong to a group. At the same time, we also want to be individuals and go our own way. Both of these desires are deep and profound human urges, yet they pull us in opposite directions. The desire to belong makes us want to please others and conform, at least to some degree. The desire to individuate causes us to spend time alone and make decisions or act in ways that those close to us may not understand.

Similarly, most people have a deep need for security and stability. Such desires are fulfilled by routine, comfort, and staying with the tried and true. We see these when we buy insurance, when we religiously exercise or stay in a job for the pension plan. Yet, however much people want safety, there is also the ambition and the desire to exert mastery and to feel the exhilaration of accomplishment, by taking risks.

While we all negotiate along these poles on a daily basis, these urges are in a struggle when in the state of crisis or in transition period in our life. This struggle between the poles is something most of us have experienced at least once at a time when we tried to find out who we are. Take the transition of your teenage years. When we are no longer kids, we are released, at least theoretically, from under control of our caregiver, we are under the illusion that we can be who we want to be and yet we are still tied to the definitions and boundaries that have been laid out to define us. We feel like the world we knew, which protected us, is falling apart or we take it apart, we rebel, struggling to find balance, and some part of us that we are yet to recognize seeks expression. We wobble, like Vanka Stanka (a roly-poly doll), between the need to belong and the need for independence and self-expression, between the need for stability and taking risks. If we are lucky, and we have the support we

22 Margaret Mark and Carol Pearson, *The Hero and the Outlaw: Building Extraordinary Brands through the Power of Archetypes* (New York: McGraw-Hill, 2001).

need, we find a balance and allow our inner core to come out and the wobbling diminishes (but never really ends).

Any exploration of the self is of course a constant process of negotiation along these poles. However, when we try to bury who we really are or try to adapt to the world despite our urges, we struggle. Then comes a life crisis or a "midlife crisis," when we feel again that the reality as we know it changes, and we are under the illusion that "time is running out" and we have this urge to find out or to define who we should be—we get out of balance, some buy a sports car, some take apart their life, wobbling from pole to pole because there is a part that has been suppressed for a long time and now seeks expression.

This process of self-discovery at times of transition leads to rigorously jumping along these poles in a state of dizziness, beyond the normal. As with a roly-poly doll, shifting from one side to the other, constantly seeking to reach its balance but often getting lost, sacrificing one end of one of these to continue to the other end. Most people seek balance, as the lack thereof leads to a state of crisis and loss of control, whereas for explorers, like boundary crossers, this unbalance is in fact what drives their works. They master this staggering movement, and learn to make the best of a situation.

We often see the creators deliberately living in this negotiation until they reach a state of balance, through accomplishments, recognition, and a gradual realization of their dreams. The state of balance in turn signals stagnation, lack of novelty. This then leads to another go at the process through self-marginalizing, breaking down another boundary, and fearlessly running into another endeavor. Through the research of personalities and motivations of such creators, it becomes reasonable to assume they are what psychologists classify as a type T personality, as first proposed by Frank Farley.[23] This type T personality is often described as a personality dimension referring to individual differences in stimulation-seeking, excitement-seeking, thrill-seeking, arousal-seeking, and especially risk-taking.

It seems that in the creative process, if you're not risking failure, you're not risking enough. Research on risk-taking and success shows that 30 percent of what leads to success is this ability to take risk and the rest is training (40 percent) and skill (30 percent).[24]

For most who tend to seek balance, the lack of it leads to a state of crisis and loss of control; for explorers, boundary crossers, and creative personalities, this is in fact what drives their works. They become "master roly-polys," embracing the dizzying movement between the four basic human urges: belonging, independence, stability, and risk-taking. Negotiation between these urges on

certain levels and seeking balance is common to most of us. For the boundary crossers, placing themselves often in these states of imbalance, drives their creative process. They are thus actively seeking new experiences, self-discovery, and enhancement to the creative voice. Each such state of imbalance, despite the cost in human terms, strengthens their understanding of the self, their core identity, which in turn leads to clarity of what the next step should be to realize their dream. Thus, the boundary crossers are certain that the navigation in the unknown, despite the miserable failures, is a process that leads to discovery and new creations. Being master roly-polys, they are learning to make the best of situations to achieve the most they can.

What is interesting to observe is that at the axis point between stability and risk, between the urge to belong and the urge for independence, there lies a core. This core, this inner voice, defines who we are, our true identity, features of which we might have lost and buried, allows us to seek belonging or independence, to seek stability or taking risks. And like the roly-poly doll out of equilibrium, moving from one end to the other in the state of dizziness, we are as well until we reach the state of balance, the crossing point, a certain clarity of who we are. But this state of balance is not something we are born with or can train ourselves to achieve. It's a process. It is a magnificent and exquisite process of navigation through the unknown, an experience of miserable failures, of discovery, and a way to build a new world.

A hurricane swept over last night,
And brought nothing but a sudden plight.
Oaks stood rigid and lost in the fight.
Bamboos swayed but now they stand upright.[25]

Following the bamboo metaphor so abundant in Zen Buddhism, one needs to receive enough nurture, watering, and patience of many years for the shoot to spring and for the bamboo to start growing meteorically. Only due to this patience, a root system develops, allowing the bamboo to withstand the harshest winds, the burning sun, or the monsoons. The flexibility, the fearlessness, at times conformity and flowing with the blowing winds is possible when the true identity, the core and the root system, is developed and clearly followed by the creator, even at times when sacrifice is needed to attain to the grander dream.

23 Frank Farley, "The Big T in Personality," *Psychology Today*, May 1996, 44–52.
24 Michael Schwalbe, "The 40-30-30 Rule: Why Risk Is Worth It," *99U*, November 16, 2013, https://99u.adobe.com/articles/6103/the-40-30-30-rule-why-risk-is-worth-it.
25 Fortune, no. 30, Zen Buddhism proverb, received at Mahayana Temple, New York, 2018.

Literature

Baldwin, James. *The Price of the Ticket: Collected Nonfiction, 1948–1985*. New York: Macmillan, 1985.

Beard, Alison. "Drunk People Are Better at Creative Problem Solving." *Harvard Business Review*, May–June 2018.

Csikszentmihalyi, Mihaly. "The Creative Personality." *Psychology Today*, May 1996, 36–40.

Csikszentmihalyi, Mihaly. *Creativity: Flow and the Psychology of Discovery and* Invention. New York: Harper Perennial, 1997.

Farley, Frank. "The Big T in Personality." *Psychology Today*, 1986, 44–52.

Feist, J., and G. J. Feist. *Theories of Personality*. New York: McGraw-Hill, 2009.

Harman, Oren, and Michael R. Dietrich, eds. *Outsider Scientists: Routes to Innovation in Biology.* Chicago: University of Chicago Press, 2013.

Heath, Chip, and Dan Heath. *The Power of Moments: Why Certain Experiences Have Extraordinary Impact*. New York: Simon & Schuster, 2017.

Kaufman, James C., and Robert J. Sternberg, eds. *The Cambridge Handbook of Creativity*. Cambridge: Cambridge University Press, 2010.

Maslow, Abraham. *Motivation and Personality.* New York: Harper and Brothers, 1954.

Mark, Margaret, and Carol Pearson. *The Hero and the Outlaw: Building Extraordinary Brands through the Power of Archetypes*. New York: McGraw-Hill, 2001.

Norman, Donald A. *Emotional Design: Why We Love (or Hate) Everyday Things*. New York: Basic Books, 2004.

Ramachandran, V. S., and E. M. Hubbard. "Hearing Colors, Tasting Shapes." *Scientific American* 288, May 2003, 52–59.

Schwalbe, Michael. "The 40-30-30 Rule: Why Risk Is Worth It." *99U*, November 16, 2013. https://99u.adobe.com/articles/6103/the-40-30-30-rule-why-risk-is-worth-it.

Shmailov, Maya M. *Intellectual Pursuits of Nicolas Rashevsky*. Switzerland: Springer International Publishing, 2016.

Sternberg, Robert J., James C. Kaufman, and Jean E. Pretz. *The Creativity Conundrum*. New York: Psychology Press, 2002.

Wilson, Edward O. *The Origins of Creativity*. New York: Liveright, 2018.

Growing Transformation and Cocreation Capacities

Two Case Studies in Business Consulting

Maria Spindler

There are essential conditions for growth from the viewpoint of consulting and counseling. For instance, anarchy and dizziness can enable personal co-evolution in connection with others and within the wider context of organizational systems. Both are essential conditions for deep transformation.[1] On the one hand, power relations are conditions that either delimit or open up development. On the other hand, we can become aware of these conditions and transform them actively through self-empowerment and cocreation.

In this paper, knowledge development is treated from a phenomenological perspective. Theory and practice (qualitative empirical data) inform each other. The cases described derive from my work as a consultant and coach. I differentiate and connect three levels of awareness:[2] individual, self "I" awareness; collaborative, interpersonal "we" awareness; and organizational, systemic "us" awareness. My desire is to create a complex approach to meet complex challenges by telling the human story about becoming aware of potentials. That requires the renewal of power patterns through anarchy and dizziness.

Conditions for Growing Transformation and Cocreation Capacities

How Anarchy Gives Space for Dizziness

Anarchy is a daring call to give away the power we are used to,[3] to turn loose given and old patterns and make space inside our minds and our systems for something new. It is key to gaining ownership and becoming active instead of following. Providing space for anarchy means setting the stage, preparing conditions for something new to take place, and for future forms to emerge.[4]

Experiencing anarchy comes with the lack of known power patterns, well-known leadership cultures, structural clarity, and designed processes. In this void, the moment before dizziness kicks in, anarchy holds the nothingness

1 In philosophy, we call this "conditions of the possibilities of knowledge," originally formulated by Immanuel Kant in *The Critique of Pure Reason* (1781). His book deals with conditions that must be fulfilled in order for a thing to be known by reason. Kant argued that only on this basis of rational understanding can deep transformation of human moral agency become possible.

2 Maria Spindler, "How Do You Embrace the Big Picture? The Development of Awareness as a Potential of Collective Growth through Senior Management," February 2016, https://www.maria-spindler.at/how-do-you-embrace-the-big-picture/.

3 Cf. Maria Spindler and Chris Stary, "SoS: Anarchy: Active Inner Spacing for Co-creating Future Outer Space," *Challenging Organisations and Society: Reflective Hybrids* 6, no. 1 (2017): 1014–64.

4 See Otto Scharmer, *Theory U: Leading from the Future as It Emerges* (San Francisco: Berret-Koehler, 2009).

that contains everything, all potential. Simultaneously, nobody knows what this potential of everything could be. As a consultant, I have experienced this moment as crucial, and sometimes cruel. For a moment, it takes one's breath away, like diving into a new atmosphere, like changing worlds. Sometimes people say it out loud: "aha" or "ooh" or "wow" or "I didn't expect this" or "It's simple, but …"

In order to be able to leave well-known, deeply imprinted patterns behind, a first, inner seed is needed that dares to be different and nonconforming compared to the well known. If this inner seed can be anchored, new space will be captured with which the individual inner space can be newly connected. We transform in quality when we move from non-thought (routines and conformity) to our own active seeding. Anarchy is the condition for space liberation and self-engagement.[5]

Routine – Pattern = Anarchy

How Dizziness Feeds Transformation

Anarchy is a condition for dizziness. When dizziness kicks in, confusion, overreaction, too much of everything and nothing come to the surface. Not knowing what is right or wrong to say or do, not knowing how to fill the void, not knowing how big the risk is, not knowing what is behind this dizzy, foggy, misty, noisy nothingness. Dizziness is essential for transformation; it is needed for the process of destruction of old patterns. Ruth Anderwald, Karoline Feyertag and Leonhard Grond see dizziness as a resource for creativity. They describe "a conception of dizziness as movement through spatial, emotional and social surroundings movements," and thus "gain new perspectives on the affects and effects of thought […] thinking-in-motion holds the potential to overcome the traditional opposites of motion and standstill, certainty and uncertainty, knowing and not-knowing, because there is space and movement 'in between' professed opposites, which can become productive in moving towards new knowledge and meaning."[6] Movement acknowledges the gray, undefined, unknown zone required for creativity and innovative potential.

Dizziness leads us beyond two-dimensional, linear, logical, cognitive thinking as it embraces all potentials and more, without judgment, without preference. It is a multidimensional approach, urging body recognition, body movement, and embodiment as processes of freeing, showing, and materializing the potential. Body awareness provides the next level of complexity and thus the next level of dealing with uncertainty. Connecting our body-mind system relations anew allows us to experience more complexity and thus more connections within us and outside of us.

We must have the grit to destroy old patterns so that dizziness can unfold its potential,[7] reinventing us as humans, cocreating our shared future collectively. Daring to experience dizziness, looking into our own unknown, into the core of our vulnerability lets us emerge more complex, multidimensional, and more integrated at the same time.[8] Stepping into dizziness is risky for leaders and organizations, simultaneously not knowing and hoping that it could be the basis for new qualitative growing.

Routine – pattern = anarchy & dizziness × body awareness
= multidimensional awareness of potentials

Two Case Studies: How to Transform and Empower Ourselves

Case 1: Self-Empowering from Within

This case illustrates the process of finding and conquering one's own inner anarchy and finding one's inner beauty. Edmund,[9] a CEO, was fired from his position; he was wounded, suffered, and did not understand how this could have happened. He was shaken and sought professional coaching. After several sessions searching for explanations and looking inward, following up on the discomfort of his body, his stomach aches, back pains, headaches, and tensions, an inner image became obvious: there was a wheel spinning in his head, a rat race, and he did not know how to stop it. The process was not always painless for him. On the one hand, this wheel was the source of constant production of great ideas about himself, but, on the other hand, it led to negative images about his behavior and negative projections about his coworkers, bosses, employees, and environment. This caused stress, increased pressure, micromanagement, and narcissistic behavior that, in the long run, his business and private surroundings did not appreciate.

5 "Anarchism […] stands for the liberation of the human mind from the dominion of religion; the liberation of the human body from the dominion of property; liberation from the shackles and restraint of government. Anarchism stands for a social order based on the free grouping of individuals for the purpose of producing real social wealth; an order that will guarantee to every human being free access to the earth and full enjoyment of the necessities of life, according to individual desires, tastes, and inclinations." Emma Goldman, *Anarchism and Other Essays* (New York: Dover Publications, 1969), 83.

6 Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, "Dizziness—A Resource: Dizziness and the Compossible Space in Research-Creation," *Emotion, Space and Society* 28 (2018): 129.

7 See Angela Duckworth, *GRIT: Why Passion and Resilience Are the Secrets to Success* (New York: Scribner, 2016).

8 See Brené Brown, *Daring Greatly: How the Courage to Be Vulnerable Transforms the Way We Live, Love, Parent and Lead* (New York: Gotham Books, 2012)

9 All names in this article have been changed.

At this point, I asked his permission to take a deeper step, following the deeper flow of his inner nature. He agreed to go into more unknown territory. The process started with breathing consciously, relaxing, looking inward, connecting to his body. The wheel's spinning decreased slowly, and it felt to him as if the wheel was melting down his neck, back, and chest. This process took approximately fifteen minutes; his conscious mind shifted into the background and his attention opened up an inner place. I asked him to let his good future arise from the inside. He poured out the words: "My positive way of life." Now something new emerged: a green meadow with fragrant flowers became clearer and bigger and outgrew his skin. He was lying in the meadow, at the same time overgrown by it, looking into the sky. A new positive inner space was born.

I witnessed his face and body relaxing, changing, and the smiling mask dropped into a serious, soft expression. He talked slowly, was able to relax, lying there in the grass among the flowers and smelling them intensely, feeling the soft warm wind on his skin, looking into blue eternity. It was an experience he had never had in his life before, becoming aware of his senses and body in a soft and self-loving way. Several times during this process he felt a loss of control. He wanted to fade out, had to overcome some inner obstacles, as there was something happening that was not steered by his cognition. The final image was a green meadow with a white fence that was at his disposal as a gift from himself.

He left my office very happy, dancing into his life. The next day he called, slightly shaken, talking about his uncertainties, asking if he was still a normal human being and man. He said that he had looked at old pictures from his childhood and that he had tears in his eyes looking at himself and seeing and feeling this tiny vulnerable boy. He recognized a shift that felt painful but simultaneously was a relief. The first inner seed was sown, and it grew a meadow and thus changed his rat race to a life-affirming pace.

Edmund had experienced in the outer world a massive breakdown of his routines, his well-known patterns. Anarchy grew step by step. First, he lost his job, without seeing this coming or knowing why. He was so shaken up that he sought the help of a coach, focusing on himself as the cause. Secondly, the more consequential and deeper transformed the unconscious rat-race thinking routine and opened up a new space, a complex world as conscious body-awareness.

Dizziness had taken over as the rat race started slowing down, melting, and moving into the background. This process of decomposition has its inner narrative, which one cannot speed up. One loses one's sense of time; the mask one wears for the outer world disappears,[10] and the inner face surfaces. When everything decomposes, the inner, multidimensional world can slowly expand

and something new can emerge; the positive intention appears as an image, in this case a meadow with its smells and positive feelings. This inner journey was not superimposed by two-dimensional, fast-paced, centralizing mind control (the rat race). The multidimensional awareness is the process of freeing his deeper, more complex narrative.

For the process, it was important that as his coach I kept the inner space open for the narrative to perform its necessary ritual. I opened the session with breathing, relaxing, and connecting exercises. I kept it open the entire seventy minutes by accompanying him through the process, slowing him down when he became tense, following his bodily awareness, telling him he was doing fine and that everything was welcome, that this was his own process, and he had all the time needed. It is important that a coach does not judge and trusts the client's narrative: the rat race, the melting down, the growing—even higher grass and fragrant flowers. Edmund's growing into this new, colorful inner space simultaneously increased uncertainty and hope. Looking at his family pictures the next day showed that he was open to wider and deeper integrated multidimensional awareness making its way into his daily life. Edmund's case shows there is a decision for each of us to make when it comes to power: Do I want to follow patterns through unquestioned acceptance, or do I want to step up, question patterns, and act in self-awareness?

Routine – pattern = anarchy and dizziness × Body awareness
= multidimensional awareness of potentials
& intention & overcoming obstacles
& opening unknown potentials × integration
= self-empowerment (individual transformation capability)

Interpretation and Consequences of Case 1

Power over relations alter their "objects,"[11] be they individuals, groups, organizations, or nations. Dominance and coercion are used. Power over relations focus on polarity, opposite views, and differences in power that attract each other from a position of distrust. One side vies for power over the other; this can be influencing the other to concede its position but also using brute force to get its way. Max Weber defines power as the probability that one actor in the social relationship is positioned to carry out his will despite

10 In *The Transparency Society* (Stanford: Stanford University Press, 2015), Byung-Chul Han analyzes loss of inner life, inner connection, and trust for others that result from the focus on being transparent and recognized in a certain way by the outer world. Edmund's mask and rat race were the perfect solution for this transparency society. With the mask and rat race, Edmund blocked his inner beauty.

11 Mary Parker Follett, *Prophet of Management: A Celebration of Writings from the 1920s*, ed. by Pauline Graham (Washington, DC: Beard Books, 2013).

resistance, regardless of the basis on which this probability rests.[12] Power over works with fear: fear that one will be worse off than one already is, will be punished, will lose status, one's job, or one's good and comfortable life, or will experience even more conflicts. Unquestioned dominance-organized relation patterns disintegrate. *Power under* occurs when we give up our own power. When complex interconnections and the need for equal cooperation and a person's own dignity come into play, an active move and responsibility shift of everyone is required.

Power with requires from everyone a "stepping up," taking responsibility, and not following blindly, shutting down, or stepping back. It is self-empowerment from within. Power with is a form of collaboration and participation that we today call stakeholder engagement, multi-sector approaches, and cocreation.[13] Mary Parker Follett argues in her "power with" concept that reciprocal influence could lead to creative synthesis. This includes concepts like:

> Collaboration on an equal level as system with all differences (diversity, inclusion, etc.), negotiation, dialogue, and shared decision-making.
>
> Self-empowerment of individuals, active participation, motivation, and responsibility for self-learning as a condition for stepping up and being able to collaborate on an equal level.

These *cocreative* processes bring groups of people together for closer and better equal relations. This can happen in a government, an enterprise, or an NGO. It also means constant integration and differentiation, overcoming and involving what seems strange or frightens.

Arendt defined practical wisdom as a certain orientation and perspective in connection with the world.[14] The highest and most important relation is an active life that embraces the potential of human freedom. Each mutual action finds its meaning in recognizing the action as part of a larger movement. In Arendt's concept, power can be realized when we actively cocreate our reality. This approach defines power as a shared interest and intention for a potential that can emerge among us. An active social life (practical wisdom) is a condition of power and vice versa. Through acting together, we gain power potential, which corresponds to the condition of plurality in relating to each other. For the same reason, power can be divided without decreasing it. And living this cocreation is a condition for and result of individual freedom and dignity within organizations and thus in society. Arendt argued that freedom does not preexist in the organized community but is constructed there, as seen in the common space in which people bring their own uniqueness and create something of lasting value, such as an organization or a state.

In fact, Arendt sees this power as the element that gives us a reason to cocreate our future.[15] It is the reason we build organizations. Whenever I experience "power for," I feel the potential it carries within itself. I interpret Arendt's definition as connecting us anew with our human dignity, our individuality, and responsibility for our collectives beyond repeating old, shared power patterns.[16] The term "power for our shared future" is here understood to mean creating new realities, as a lively nexus between the world and energy for life creation. This gives leadership systems and organizations a different sense in our complex society. The possibility for "power for" must be given and taken and if necessary defended; the space for it must be guaranteed and fostered.

Case 2: Cocreating from the Inside Out and the Outside In

This case shows how complexity awareness for cocreation and systems grows through anarchy, dizziness and transformation.[17] The case follows the growth from unawareness to two-dimensional system logic to multidimensional, integrative awareness. It addresses the transformation of the top leader, the management system, the development team, and the whole system, this means of all members, functions, and connections of the entire organization. It is "a turnaround organization," the entire process took eight years and is still ongoing. It also shows the conditions needed for deep transformation in order to experience power as future potential, rather than a threat.

Everything that constitutes and builds top management can become a capacity. Rita has a desire for development. She is intelligent, warm-hearted, witty, generous, challenging, and knows that her responsibilities are "leadership, organization, and future."

Phase 1: Top Management as Complexity Opener

Rita started taking coaching sessions on her own in order to get an idea what her best leadership function could be in this system, and how she could help herself, the management system, and the organization grow. Her intention was to develop the entire organization from unawareness to shared development where coworking and developing the entire system into future strategy

12 Max Weber, *Society and Economy: An Outline of Interpretative Sociology*, ed. Guenther Roth and Claus Wittich (Berkeley: University of California Press, 1978),
13 Follett, *Prophet of Management*.
14 See Hannah Arendt, *The Human Condition* (Chicago & London: University of Chicago Press, 1958).
15 Arendt.
16 Arendt.
17 Starting with approximately 250 employees and headquarters in Vienna, the size of the organization and the number of staff members and clients grew 7 percent in these eight years. Due to client-consultant privilege, I am not permitted to give more information about the nature of the business.

would show through daily practice. She decided for a long-term process so that no one would have to be fired, and that each person's dignity and motivation would grow.

Phase 2: From Mechanical Leadership to a Logical Leadership System

We decided to take small steps, installing teams along the hierarchical structure. The first two-day workshop was to set up the leadership team around the director. The following workshops, with top and middle management, stabilized line-oriented organization: moving from an unconscious mechanic power relation to clearly defined responsibilities for tasks and systems, logical processes. The management team gained enough overview to provide orientation for their middle-management teams to do their jobs without fear of making mistakes.

The director developed and showed multiple power awareness and actions:

> Power with: when to share power and invite ideas, initiatives, cocreation.
>
> Power for shared future: inviting the leadership system to grow, pull strings of developments together, and focus.
>
> Power over and power against when needed to protect developments and topics against negativity and a culture of blaming.

Individual fear and negative, destructive loops (e.g., downgrading or hindering other people and projects) slowly lost their magic, and it was possible to take on more complex responsibilities and collaborations within the leadership system. This second phase created a foundation on which the multidimensional complexity could be built.

Phase 3: From Two- to Multidimensional Awareness as Whole System

The organizational narrative, the deep flow of the system and its individuals connected so that shared future could arrive through the power of self-organization and collaboration. It started with the director's quest for the company to become a more innovative, future-oriented organization. She called the initiative "Our Future 2025." She introduced a new vessel: "the development team" and handpicked fourteen people: they were good networkers, highly respected experts, or lower managers, and cared about the organization. I focus here on the most crucial moments of four events that show the process of increasing transformational capabilities. The director, the management team, and I prepared the three-day workshop set up to institutionalize this development team.

Development Team Workshop 1

Participants of the workshop were the handpicked fourteen plus Rita, with the management team and the middle management, making twenty-six people altogether. The first day was for orientation (individual, team, whole system) and to discuss the following questions: What is the idea for this team? Who is here? Why and in what capacity? What are the individual intentions for the future of the entire organization? What could be the shared intention, and how is it connected to the rest of the people of the organization? On the second day, I introduced a tailor-made method for self-organization in the style of open space,[18] which creates anarchy by expanding space and time. One cannot predict specific outcomes: only the framework "Our Future 2025" was set in this case.

I introduced the method and invited the participants to introduce topics they would like to work on. They took responsibility for naming the issue and posting it on a pin board, which simultaneously served as the space in which to meet. The hosts introduced the topics and kicked off the conversation, taking notes, which were placed on the pin board, and presenting the topic to the plenary.

And off we went. For a moment they were stunned: three hours of self-organization; everyone was supposed to follow her or his energy and interest; if someone had no interest/energy, he or she could take a break, chat with others, or develop new topics. And after this moment and energy outburst came an explosion. I had the impression that the walls of our seminar room were bending outward. The room was filled with words, movements, laughter, material collecting, chatting, plotting. It was a wild, slow-motion dance, secret romantic talks, child's play, serious talk, and more.

After three hours, eleven topics had emerged and some of the participants had already started working on initiatives: strategy development, leadership concept, architecture, social environment concept, core competences, handbook for trainees, culture from negative loop to positive loop, landscape gardening for the courtyard. Some of the topics were already merged during this process. People were stunned by their own outcomes. The management was more than satisfied seeing the commitment. A multidimensional flow had opened, and we had to bring it into different streams in order to build bridges into the next steps of development for the entire system.

18 Harrison Owen, originator of the term and the approach open-space technology in 1984, says open-space works because it harnesses and acknowledges the power of self-organization, which he suggests is substantially aligned with the deepest process of life itself, as described by leading-edge complexity science as well as ancient spiritual teachings. See Harrison Owen, *Open Space Technology: A User's Guide* (San Francisco: Barrett-Koehler, 2008).

The Whole System Event 1 (one day, four months later) was the most important vessel that brought those initiatives into an even more complex environment. The team and management were doubtful that the open space could also work with 250 people, that they would follow their passion and contribute in whatever way they felt was right. This large-scale event required a lot of preparation, such as which auditorium to use, how to arrange the room, how to proceed step-by-step, how to secure results, and how to engage the people. It was a mix of excitement and fear; tension was high.

The members of the development group presented their topics at the whole system event with the entire crew of 250. We replicated the core part of the tailor-made development-team workshop. Some people were lost; the other two facilitators and I accompanied them from time to time so they would not become lost in their own fear. It was a huge success for the system and the people: anarchy and dizziness opened further, and the whole system development became more complex and deeply rooted.

To connect those two events so closely meant having to build bridges between the members of the development team, the management, and the entire system, the motto "Future 2025," the topics, and the actors. After three hours in the "open space," one could feel that the dizziness and fear were slowly being replaced by a growing awareness and acceptance of the task's complexity. More positive collaboration and laughter arose, and new opportunities surfaced. Fewer people were lost in space. They dared to say what was important to them. As fear was replaced by joy in collaboration, the power over/under was overwritten by the power for shared future.

The final presentation of fourteen initiatives made the people proud; they clapped, whistled, and sang songs, surprised by the range of topics and connections among them across the entire organization. The loop was positive; even unpleasant issues could be addressed without being judgmental. The flow into the future became deeper and wider and opportunities materialized: each topic had one or two responsible people from the development team. They had been working in self-organized project groups with members throughout the entire organization over the entire year.

Development Team Workshop 2 (2 Days): One Year Later

All team members maintained their commitment over the year. The projects performed more strongly than expected. Some projects for the entire organization had already successfully ended. The members of the development group had taken on responsibilities throughout the year and had been supported by Rita and the management team. The presentations at the beginning of the workshop were already an emotional highlight; one member hung a

huge banner over each project pin board with comments like "successfully ended" or "work in progress" or "already implemented."

I suggested going one layer deeper and asked them to build three groups that would plan a ritual for overcoming obstacles to reach "Our Future 2025." They had enough space and time until the next morning to prepare the rituals to allow for dizziness to happen. The three rituals followed a narrative of a three-part ceremony: from past to present to future. They were performed in following order:

> Ritual 1: Transforming old habits into growing new plants out of the ashes and earth.
>
> Ritual 2: Three arrangements building sculptures based on the three letters in the organization's acronym.
>
> Ritual 3: Connecting the words (represented by people) of the strategy for "Our Future 2025," and connecting the institution with society and the intention. It was a ritual process of developing the strategy one step further.

Rituals mark transitions for people and systems. They interweave individuals with the system in its depths. Through rituals, individual meanings and a shared collective sense are connected. Barriers and obstacles become zones of death, of transformation, of hope for something new. Rituals are narrative processes; they develop their own rhythms and drumbeats. The transitions in this case were:

> Letting go of old patterns, freeing ourselves from past restrictions to let new life grow.
>
> From standing alone to standing together in the sculpture of the whole system of the letters and the future value sentence.
>
> Cocreating and embodying the future together and bringing it into the here and now among ourselves. Shared intentions are the internal compass of a system.

The people were changed, simultaneously connected to each other and able to stand alone. Their togetherness had a new quality of trust. They decided to facilitate the next large system event themselves. I was hired to prepare the event with them and wished them well. The event took place in February 2018, and according to Rita it was a huge success. This eight-year process shows how important passion and perseverance are, especially from top management,

to increase joy, to give purpose, and to have success together throughout the entire system.

Routine – pattern = anarchy & dizziness × body awareness
= multidimensional awareness × Intention & overcoming obstacles & opening unknown potentials × integration
= self-empowerment × whole system × shared intention & cocreation × resilience/endurance/perseverance
= new power for a shared sustainable future
(collective transformation capabilities)

Conclusion

Power and its patterns are not inherited or given by a higher being but are a choice. We put ourselves into a position where we can gain a perspective on power by coming together as individuals and through organizations with action, reflection, and decision-making. We generate establishments in the here and now for shared future opportunities. The two cases showed different movements, emerging from unconscious habits, growing into two-dimensional logical awareness, decomposing again, and growing into multidimensional, integrative awareness.

For the individual, it requires decentralization from centralized mind control; multidimensional body awareness allows for individual "I" awareness.

For the collaboration, it requires a cocreation of the future in order to experience trust and the deep connectedness of "we" awareness.

For the system, it requires embracing the whole and daring to lose ourselves in it, which allows us to grow individually through and with it: I am part of it, and I can cocreate it.

Anarchy and dizziness are two sides of the same coin: an inner state of humans and social systems, a capability and a resource that transform from reaction to action, from a mechanical knowing (the rat race pursuit) to not-knowing to growing life awareness. Thus, anarchy and dizziness invite us from the inside to transform the awareness of power relations in order to create more anarchy and dizziness and thus more growing. Awareness of one's own inner place is essential for growing one's own anarchy and dizziness. And it is the place from which we create and bring the foundations for future leadership possibilities into reality. The development of awareness requires conscious perception of one's own thinking, feeling, and acting in relation to oneself, other human beings, and the world. Allowing oneself to be touched by inner anarchy and

dizziness is in accordance with one's awareness of patterns, such as conventions, rules, structures, processes, principles, cultures, values, and norms, and of individuals and social systems (teams, organizations, and society). To increase transformational capabilities and to support other people and systems growing these capabilities, I suggest to:

Be deviant and let go of well-known patterns, even if others cannot understand your approach and interventions.

Walk into the unknown. Be a role model and show how to deal with insecurity and failure. In this way, the two-dimensional approach can be overcome.

Give away rigid, expected power. This is a situation in which the narrative process and dynamics can organize themselves. It is an invitation to you and others to expand their capabilities, moving between individual intention and system intention as well as between stability and flow.

Disappoint expectations, to be rejected with your inner and outer space. When you as leader, coach, or consultant can be comfortable with being different, there is more space for dizziness, discomfort, the unknown, and bewilderment.

Believe in the whole and its future potentials, provide and hold the space, even when there is the uncomfortable feeling of nothing, of emptiness.

Put a lot of work into providing and holding anarchy and hold it open so dizziness can pave the way for decomposition.

Slow down, let go of time and grasp anarchy and dizziness in order to succeed and be sustainable in the long run.

The way we lead and organize ourselves is what our organizations have become in relation to us as individuals in relation to our society. "Power for" focuses on awareness in cooperation, responsibility, and emancipation, mutual actions that expand the freedom and activity of others in any form of collective social construction, in teams, departments, corporations, networks, states, and society. Everybody can grow transformational capacities. There are two interwoven paths: from the inside out and from the outside in. Empower yourself, dare to decompose and grow new clarity through transformation and cocreation in a way that roots in and embraces power with multi-perspective awareness for a shared human future.

Literature

Anderwald, Ruth, Karoline Feyertag, and Leonhard Grond. "Dizziness—A Resource: Dizziness and the Compossible Space in Research-Creation." *Emotion, Space and Society* 28 (2017): 122–30, http://dx.doi.org/10.1016/j.emospa.2017.07.001.

Arendt, Hannah. *The Human Condition*. Chicago: University of Chicago Press, 1958.

Brown, Brené, *Daring Greatly: How the Courage to Be Vulnerable Transforms the Way We Live, Love, Parent and Lead*. New York: Gotham Books. 2012

Byung-Chul, Han, *The Transparency Society*. Berlin: Verlag Matthes & Seitz, 2012.

Duckworth, Angela. *GRIT: Why Passion and Resilience Are the Secrets to Success*. London: Vermilion, 2016.

Follett, Mary Parker. *Prophet of Management: A Celebration of Writings from the 1920s*. Edited by Pauline Graham. Washington, DC: Beard Books, 2013.

Goldman, Emma. *Anarchism and Other Essays*. New York: Dover Publications, 1969.

Heintel, Peter, and Maria Spindler. "Organised Power Relations and Their Potential." *Challenging Organisations and Society: Reflective Hybrids* 3, no. 2 (2014): 600–19.

Kahneman, Daniel. *Thinking, Fast and Slow*. New York: Farrar, Straus & Giroux, 2011.

Kant, Immanuel. *Critik der reinen Vernunft* (1781), In Deutsches Textarchiv, http://www.deutschestextarchiv.de/book/view/kant_rvernunft_1781?p=47.

Owen, Harrison. (2008) *Open Space Technology: A User's Guide*. San Francisco: Barrett-Koehler, 2008.

Raggio, A. *WAS HEISST BEDINGUNGEN DER MÖGLICHKEIT?* (2009). *Kant-Studien* 60, no. 2 (2009): 153–65. doi:10.1515/kant.1969.60.2.153.

Scharmer, Otto. *Theory U: Leading from the Future as It Emerges*. San Francisco: Berret-Koehler, 2009.

Spindler, Maria, and Christian Stary. "SoS: Anarchy: Active Inner Spacing for Co-creating Future Outer Space." *Challenging Organisations and Society: Reflective Hybrids* 6, no. 1 (2017): 1014–64.

Spindler, Maria. "How Do You Embrace the Big Picture? The Development of Awareness as a Potential of Collective Growth through Senior Management." 2016. https://www.maria-spindler.at/how-do-you-embrace-the-big-picture/.

Strange, Susan. *The Retreat of the State: The Diffusion of Power in the World Economy*. Cambridge: Cambridge University Press, 1996.

Weber, Max. *Society and Economy. An Outline of Interpretative Sociology*. Edited by Guenther Roth and Claus Wittich. Berkeley: University of California Press, 1978.

Navigating Dizziness

Navigating in the Unknown

Karoline Feyertag and Alice Pechriggl

Alice Pechriggl is Professor of Philosophy at the Alpe-Adria-Universität in Klagenfurt. In cooperation with Ruth Anderwald, Karoline Feyertag, and Leonhard Grond, the Academy of Fine Arts Vienna, and Nora Leitgeb from the Kunstraum Lakeside, she organized the workshop "Navigating in the Unknown" at the Department of Philosophy in Klagenfurt in May 2015. On the first of the two-day workshop, a HASENHERZ with the film *Failed States* (2008) by American filmmaker Henry Hills took place in the Kunstraum Lakeside.[1] A music performance by the Swiss artist Charlotte Hug concluded the first day. On the second day, the workshop was moved into the university, where a number of lectures and podium discussions delved deeper into the topic of navigating in the unknown.

Karoline Feyertag (KF): I would like to combine two topics in our conversation: on the one hand, the topic of dizziness and vertigo, of losing one's sense of orientation and balance, and, on the other, your project concerning the development of a theory of action, especially with regard to withstanding dizziness. Considering that uncertainty is one of the most important aspects of dizziness, I suggest that action is the other major issue. In the conception of the exhibition "Dizziness. Navigating the Unknown" at the Kunsthaus Graz, the idea of falling into dizziness, going through it, but also coming out of it, was very important. The chief curator, Katrin Bucher Trantow, realized that the visitors also had to be accompanied out of the exhibition, so they were not left alone, lost in dizziness. For our research project we use the Keat's term "negative capability," which is similar to the term "containment," coined by the psychoanalyst Wilfred Bion.

Alice Pechriggl (AP): Maybe this would be a good point for me to cut in, or otherwise this discussion might be too long.

KF: Yes, I was thinking we would start the conversation with the individual, because this was also the starting point of our research project. During the project, we came to realize that the individual itself is not enough but that he or she can be understood as a starting point for the experience of dizziness. With regard to the term "experience," I would like to quote your announcement text for the workshop "Navigating the Unknown" that we held together in Klagenfurt in 2015: "What are we doing when we try to rethink the concept of action including *unconscious action*? That is the initial question that needs to be answered not

1 HASENHERZ is the screening and discussion format developed by Anderwald and Grond, which appropriates ideas of Arnold Schönberg's Society for Private Musical Performances for film and video works. HASENHERZ shows a film and discusses it with the artist and public, then screens the work a second time, after the conversation.

only in a theoretical manner, but also through an empirical approach. We intend to shed light upon the term 'empirical,' and to realize it in a philosophical manner based on the term *empeiria*, experience [...]; in the framework of an artistic analysis of the world, that is by means of improvised as well as planned action, and attentive, as well as thoughtful follow ups concerning lived experiences."[2]

Your approach of artistically analyzing the world is comparable to that of Ruth Anderwald and Leonhard Grond, regarding their approach toward dizziness, inasmuch they combine experience with reflection. It seems that both approaches use as their starting point the term empeiria, or bodily experience. How much self-observation and also self-forgetfulness can be found in your philosophical-empirical approach? Where do you see moments of dizziness in your work process?

AP: This question really moved me—right away I had to think of the four phases of execution that I developed within my emergence ontology, as I wanted to distance myself from the Aristotelian teleology that is found within any theory of action. To this day, the philosophical-teleological model of dynamis (possibility), energeia (potentiality and actuality), eidos (cause of form), telos (cause of purpose), and entelechia (completion or goal-orientated realization) stands in the foreground in all sciences that deal with the concept of action. Therefore, I developed a four-phase model comprised of mise-en-scène (creativity *in actu*), mise en sens (*logos* and deliberate action),[3] mise en acte (potential and its actualization), and mise en abîme (chaos as negativity, the potential of collapse). However, the order in which these four phases occur is irrelevant. What is important is how the single phases are combined. These combinations do not intend to replace Aristotle, but rather expand on his theory.

The mise en sens accounts for the action, the act of giving meaning, the thought devoted to what we do, the reflective moment within deliberation or *boulêsis*[4]—while the mise en acte is always at work. The latter corresponds to energeia according to Aristotle. It means that you are always doing something, either alone or with others, when thinking, speaking, but also physically—you are always active, even when sleeping. The mise en acte is actually the most natural; the mise en sens is what we finally produce when we think about what we have done. It is our mental and dianoetic contributions that have the power to transform our acting out into deliberate action. However, it is important I mention that also within acting out in the psychoanalytical sense of the term that there is a thought process present: it is subliminal, thus unconscious. Resembling latent thought within dreams, thought is at work within the unconscious, yet in a very different manner.

It was also of great interest to me to take a close look at the mise-en-scène: I therefore began with three phases of execution and worked with it for two years. The mise-en-scène accounts for the imaginary, thus the imaginary institution of our society, and I have dealt with the social imaginary according to Cornelius Castoriadis for a long time. If you were to ask me about experience, empeiria, I would say that I went to Paris to *experience* the imaginary with Castoriadis;[5] and later I turned toward dealing with questions concerning the body. You then wrote your dissertation, which I had the honor of supervizing; I also found the experience of working together to be wonderful, and am happy that we *think of* each other again, years later. This matrix of people that we enjoy working with is very important to me, to my individuality—it is something I consider to be very real, because I was recently very sick, and I became highly aware of my own mortality.

Coming back to the three phases of execution, at that point they seemed complete to me. But then I had a major skiing accident, in which I fell so badly that I got a slight tear in my aorta. I could not remember anything—I had retrograde amnesia, forgot everything, and said the same thing again and again every few minutes, which everyone found rather disturbing. After eight hours, these symptoms disappeared and even my concussion was not that bad. Afterward, I had to take things very slowly, and was on sick leave for three weeks, yet I constantly thought about my book *Agieren und Handeln* and about the three-phase model. I thought to myself that something was missing. Well, and then I realized that the fall was missing: How to come out of the act of falling? Why do you fall so far that you almost die? These questions became so important to me that I added mise en abîme as the fourth phase of execution.

That is how I came even closer to your research project on dizziness than I had already with the concepts of action, the unconscious, the chaotic within action, the uncontrollable, and the undefinable that evades the control mechanisms of the conscious and of deliberation. By introducing the mise en abîme,

2 Alice Pechriggl, quoted in *Taumel*, no. 2 (2015), http://on-dizziness.com/booklet-2/. Unless otherwise noted, all translations by Christopher Hütmannsberger.

3 This refers to action that relies on *deliberation*, that is, on discussion by a group and on reason-guided reflection.

4 "*Boulêsis* is not only *deliberatio* and deliberate will, but also establishes a positive freedom as something with which people decide upon their world; in the history of institutions it established a democratic government (*boulê*) as a collective act of giving the matter thought, thus the self-governing polis." Alice Pechriggl, *Agieren und Handeln: Studien zu einer philosophisch-psychoanalytischen Handlungstheorie* (Bielefeld: transcript, 2018), 25.

5 The concept of the social-historical imaginary was established by Cornelius Castoriadis in his seminal book *The Imaginary Institution of Society* (Cambridge, MA: MIT Press, 1998). Alice Pechriggl earned her habilitation degree with a thesis on Castoriadis's philosophy. It was published in French under the title *Corps transfigurés: Stratifications de l'imaginaire des sexes/genres* (Paris: Harmattan, 2001).

I was also able to establish a connection between the chaos that emerges from excessive control and the ordering mechanisms that emerge through unconscious, planned action. This kind of connection represents a Chiasma.[6] As the mise en abîme—entirely in line with Hegelian dialectics—offers both the possibility of a new start, as well as the possibility of utter destruction, of death, of the end of form, of a figure—whether this is good or bad, pleasant or unpleasant does not matter in this case. In that respect, it is a central phase, and I was surprised that I had not thought about it before; however, had it not been for that accident, I would not have come to the realization. My book would have been missing an important part, and maybe I would not have even finished writing it. These "life events" have given me a lot of strength, with regard to the book, but also to my life in general; also my sickness—that I do not want to describe here—became an important phase of my life because it affected the joy of life with my friends, my work, and philosophizing together.

KF: Could you please expand on the terms "emergence" and "emergence ontology"? Is emergent to be understood as something connected to acting out and as something that simply comes to the surface of consciousness? Is the term "emergence" to be set in contrast to "teleology" and does emergence then mean an (unforeseen) event? What arises through emergence? Or is it a term that points to experience as empeiria?

AP: Anything can arise. Something that emerges, that arises, can come up in all walks of life—in experiences, in interpersonal action, no matter if this is in reference to a form of thinking, of imagining, of symbols, ways of acting, or of things that we come up with. What interests me is giving space to the developments of the term, and not always knowing and controlling what should come out at the end: this forceful "I know what I want, and that is what is going to happen, and you all have to adhere to me." I have worked with various committees at the university and have always suffered from the teleological-techno-bureaucratic train of thought and how rigidly it defines all forms of action. At that point, deliberate action ceases to be action and becomes mere functioning: people must function in the way that the new planned economy demands, and their creativity is supposed to be part of that. Those are absolutely absurd thoughts, and even I could not say for certain that they exist as conscious thoughts. Managers have their programs and the auditors check—and it is those checks that are becoming increasingly scary for the top floors at university. It is a regime of fear and terror, but the people do not see it as such.

However, there are those, especially within the arts and humanities, who severely suffer under such a regime—and from the dumbing-down process that comes with it. That is what made me sick, but that is also what made me so productive,

since I was interested in how to account for the new forms we are constantly creating; not only in a positive sense, we all also come up with monstrosities—that is also emergence. And emergence emphasizes the spontaneous character of what arises, rather than the teleologically planned form. The latter is important to me as well, because we have to be able to imagine what we are doing when we do it. But that is not everything. And coming from my experience with group psychoanalysis, I wanted to get to the bottom of this: how it is connected, how one can transport the other, and how shedding light on this connection can also help us in our action. I see a certain improvisation in acting out—and that is where art, and the collaboration with artists helps me a lot, as improvisation, as well as acting out, is so important to many artists—like it is for me as philosopher; I like just sitting and thinking, and waiting to see what happens in my thought resonance space,[7] in my body, in my mind, or in my psyche. Or simply: What did I dream? I am very happy about dreams, also the strange ones, which is why I love watching films, but I do not want to deal with films on a scientific level, because that could take away the experience to some extent.

KF: There are two points I would like to consider more precisely: on the one hand on improvisation, on the other on togetherness. During our workshop in 2015 in Klagenfurt, there was a musical performance by the Swiss artist Charlotte Hug in the Kunstraum Lakeside, where improvisation played a large part; furthermore, we realized throughout our research on dizziness that the individual itself cannot deal with dizziness on their own and must rely on the assistance of others, and if possible a safe and sheltering space that surrounds them, or rather in which they are included.

6 Derived from **χίασμα**, Chíasma "crossing" after the Greek letter X. See Alice Pechriggl, *Chiasmen: Antike Philosophie von Platon zu Sappho – von Sappho zu uns* (Bielefeld: transcript, 2006). Also see the last paragraph of this text.

7 "The thought resonance space is no longer solely a scheme that is created through radical imagination of images and concepts, but also a bodily and psychic medium in which passivity and activity should be considered to be entangled on a medial level; it is a nonplace over and in which the body moves imagining and thinking about itself without ever leaving it entirely, yet also acting in a disassociating and seceding manner. This thought resonance space is characterized by many voices on a linguistic level, but also as a space of the ever socialized individual; it is a space in which there are many, a group space in a figurative, but also in a literal sense in that the various carriers of the voices, and authors of the thoughts seem to be present within us." Alice Pechriggl, "Versuch einer gedanklichen Visualisierung vielstimmig sich gebärdenden Denkens," in *Korporale Performanz: Zur bedeutungsgenerierenden Dimension des Leibes*, ed. Arno Böhler, Christian Herzog, and Alice Pechriggl (Bielefeld: transcript, 2003), 178.

Regarding improvisation: Hug's performance had a strong influence on the theory workshops the next day at the university, and she also took part and spoke about improvisation and about her experiences in music, in which improvisation plays such a large part. In her talk, she addressed the problem of breaking down the habit of falling into patterns, something that was also mentioned by the artist duo Anderwald and Grond. Everyone tends to fall into patterns when improvising, and so it is important to be able to interrupt yourself, or to throw yourself off track, as these patterns tend to emerge very quickly. This is very understandable especially in music, but also in thought and action, maybe also in acting out. That would be the question to you: How do you deal with improvisation, without quickly falling into a pattern that repeats something and finally does not provide a space, which bears the possibility of something new, or a change in the status quo?

AP: "Pattern" is a good term, which I hardly use and practically never in my book. It is a very important concept in psychoanalysis. Maybe I will tell a short story from my childhood: My father was a jazz musician and he still played when I was a child. That meant that I was always surrounded by the sound of jazz. Improvisation was also always a topic. I very much appreciated Hug's performance, and her description of improvising, but also her description of the ensemble in London, with which she only improvises.[8] It is not like in classical jazz, where you have a standard that you always come back to after improvising, so that you have order again that you then deviate from—these people meet only to improvise. I liked that very much.

If we now turn to psychoanalysis—be that for an individual or a group—it is often about free association. Groups make more sense to me, especially for serious pathologies, but often people are so individualistically habituated that they refuse a group. I believe there to be many connections between improvising in art, in jazz—especially in music—but also in other fields, such as performance art and with free association in psychoanalysis. It is difficult because we are always trapped in patterns of ordered speech, and from a young age onward we are told to sit still, and to speak and write properly—of course it is important in a culture that is very much based on writing and comprehensibility. But that is something that has been set against us and is a constant battle within us. I once heard my colleague Sophie Klimis say at a lecture series in the context of our research project "Generating Bodies" that she had learned to play classical music, but then wanted to play jazz, and that that was impossible for her because she simply could not unlearn the patterns of music virtuosity that were drilled into her. It took her a very long time to loosen the hold of those patterns, which are very similar to those of the university regime. She was certain it would have been easier for her to learn free improvisation had she not had such a strict musical education. Of course it is a good thing if you know what you are doing and have attained such virtuosity.

That is what I believe to be important when it comes to creating terms. That is why I speak of emergence ontology. I liked the emergence theory by Francisco Varela, and others, that opens a window into biology and allows for spontaneous developments. That means that it is not the survival of the fittest, but maybe also, allow me to speak biblically, that the last will be the first; the smallest, the worst adapted life-forms could appear to be the fittest based on some circumstance or another, because maybe their constitution fits best after a catastrophe. If it had been up to the evolutionary plan, they might have disappeared. It is something that I also see politically: an insurgency of the weak; they gather and produce something against all expectations. That is something I very much appreciate about free association: something arises that was suppressed. That is why I love psychoanalysis, and why I find it especially wonderful to experience in a group. When something arises from within the group, everyone can enjoy it together. Or when someone frees him or herself from anxiety, it is incredibly touching. In a situation like that you experience empathy and pity at the same time, almost like in a Greek tragedy—he or she might start to cry within the group, but also frees him or herself, and the others are happy and sad at the same time. That is true compassion. That also holds true in larger groups that are often not as intimate, but in smaller groups you often hear very personal stories and through this catharsis—very much in the sense of Aristotle's *Poetics*—everyone participates in this liberation from anxiety or from the suppression of emotions that would have only represented a danger if you were to open Pandora's box by yourself. In that respect, a group does help a lot to contain, to catch, to endure. A group can have a very comforting effect, and you can see how kind people can be to each other, but of course also how mean.

KF: Yes, I was just about to ask what the other side looks like. My fear of such a group analysis is essentially the fear of the other people.

AP: Yes, but you are sheltered by the setting. That is why such a group is minimally led by a psychoanalyst.

KF: Is there a relation between dizziness and queerness from your perspective as a queer-feminist philosopher, perhaps for instance between the experiences of dizziness and coming out? In the context of the research project I have treated this question under the title "Queering Dizziness," displaying the semantic proximity of (gender) trouble and

8 This refers to the London Improvisers Orchestra: http://www.londonimprovisers orchestra.co.uk/.

dizziness, for example analyzing feelings of insecurity, which are provoked by bearded women in a heteronormative society.[9]

AP: There is a connection between queerness and dizziness for sure and I would like to answer your question this way: Nearly every society institutes two gender classes that are more or less strictly separated; not all individuals would fit smoothly within one of these classes, be it in a psychic, somatic, or psychosomatic way. In this case, we speak of intersex, transgender, or genderqueer persons. Feeling situated between the two classes, which are inseparable from the power relations they institute, is confusing. The confusion not only concerns the libidinal economy of these persons or their socially conditioned identification process but also implies dizziness as a kind of permanent questioning of something that seems natural for the majority, namely, unambiguous gender difference and exclusive heterosexual orientation derived from it, even if its taken-for-grantedness is illusory. One could say that people who are marked by this questioning have integrated dizziness more than others. They lack a certainty that others and the normative society believe they have. Yet, it seems to me that this certainty begins to crumble for the "normal people" too.

*

At this point in the conversation, the recording device broke down unexpectedly. However, I luckily made notes that allows us to gain more insight into the connection between dizziness, the abyss (abîme), deliberate action, and acting out with regard to the collective and the group.

A major advantage that group analysis has over an individual session concerns the transfer situation that Pechriggl emphasizes in the interview. In such a case, the group acts as the subject and the various projections can be split up among multiple people, and the patterns that are usually transferred onto a single person, the analyst, can be broken down in an easier manner. Pechriggl also points out that within a group, problems that are caused by a group (family, society, etc.) can be better analyzed and solved. In her experience, the personal drives, personal stories, and experiences cause afflictions, but even more so, problems are caused by social declassification and socioeconomic pressure. Another moment of dizziness within a group situation is that of silence. It becomes menacing, but at the same time it represents a place of collecting, collection, and reassurance. To endure the silence in a group can often be very difficult.

With reference to the workshop "Navigating the Unknown," Pechriggl saw the technique of navigating to be much like the principle of triangulation in sailing, in which you must have a third bearing in order to avoid "losing one's bearings." To apply this to psychoanalysis, the third bearing would be society and language, very much in the sense of Jacques Lacan's topology of the imaginary. Pechriggl reminds us of the Möbius strip that represents disorientation, the uncanny, and fear, as a geometrical shape for Lacan. On a Möbius strip, the top side is simultaneously the bottom, the right simultaneously the left. This makes it impossible to spatially orientate yourself, pulling the rug from under the feet of the Euclidean space, and we fall into dizziness. This reversal is also achieved by another figure, the Chiasma, which is shaped less by mathematics and more by linguistics and rhetoric: the key component in tropes or figures of speech is created by the Chiasma in a crossover space, which is simultaneously a thought resonance space. Through the crossover of an *X* (chi) connections are created between what previously seemed to be unconnected: applying this to Pechriggl's critical continuation of action theory in reference to emergence ontology, the figure of the Chiasma could represent a combination of freedom and acting out, as well as between deliberate action and obligation. To act freely in the sense of free association within psychoanalysis and artistic improvisation, Pechriggl talks about a potential for liberation that has the potential of noticeably tipping the scales. Instead of asking about freedom of action we must now also ask about the obligation of action, or of forced action—and now we have returned to the regime of fear and terror by the new planned economy.[10]

The end of the conversation was shaped by the question of whether or not it is possible to learn to fall, and if that would help in cases where people lose their proprioception. In those cases, Pechriggl says we can practice falling.

Translated from the German by Christopher Hütmannsberger

9 The continued thought meets the semantic relation and possibly chiasmic structure of dizziness/resource and navigating/unknown. New possible combinations of the chiasma mentioned above that disturb, or expand the usual contrasting pairs, could be: navigating in dizziness or dizzying navigation, and the unknown as a resource. What seems more familiar to us is: navigating as a resource, and dizziness as the unknown.

10 For example, American artist Zoe Leonard's photography from a series of five silver gelatin prints, "Preserved Head of a Bearded Woman," Musée Orfila, 1991 (Collection of Centre Pompidou, Paris) reflects the medical and heteronormative gaze in the anatomical museum as well as the practice of exhibiting the "abnormal" and the very fact of taking pictures. See also Karoline Feyertag's essay "Queering Dizziness," http://on-dizziness.com/queering_dizziness/.

Literature

Castoriadis, Cornelius. *The Imaginary Institution of Society*. Cambridge, MA: MIT Press, 1998.

Pechriggl, Alice. *Agieren und Handeln: Studien zu einer philosophisch-psychoanalytischen Handlungstheorie*. Bielefeld: transcript, 2018.

———. "Agieren und Handeln." *Taumel Issue # 2*, edited by Ruth Anderwald and Leonhard Grond. http://on-dizziness.com/booklet-2/.

———. *Chiasmen: Antike Philosophie von Platon zu Sappho – von Sappho zu uns*. Bielefeld: transcript, 2006.

———. "Versuch einer gedanklichen Visualisierung vielstimmig sich gebärdenden Denkens." In *Korporale Performanz: Zur bedeutungsgenerierenden Dimension des Leibes*, edited by Arno Böhler, Christian Herzog, and Alice Pechriggl, 157–80. Bielefeld: transcript, 2003.

———. *Corps transfigurés: Stratifications de l'imaginaire des sexes/genres*. Paris: Harmattan, 2001.

Balancing Togetherness
Oliver Ressler's Artistic Strategies as Models for Democratic Collaboration

Katrin Bucher Trantow and Oliver Ressler

Perhaps we can change the world without taking power. Perhaps we cannot. The starting point—for all of us, I think—is uncertainty, not knowing, a common search for a way forward. Because it becomes more and more clear that capitalism is a catastrophe for humanity. A radical change in the organisation of society, that is, revolution, is more urgent than ever.
—John Holloway

A fundamental interest in democratic coexistence and how to live together better are at the core of Oliver Ressler's work. How we identify and how we communicate with each other are questions that logically emerge from there. His artistic practice generally serves as a political statement and a call for resistance within a globally connected world. For almost twenty-five years, Ressler's work has become exemplary for pinpointing and actively forming concepts of resistance and reaction; an activism that works in the art field and beyond. Ressler finds his fields of interest and resistance all over the economically, politically, and ecologically linked world. His research analyzes economic conditions and political forms of organization, focusing primarily, for example, on forms of resistance found in the so-called anti-globalization movement or in the climate-justice movement. Characteristic of his work is the representation of alternatives to the existing, conveyed in films, photographs and installations as role models for action. He often works in collaboration with other artists, scientists and activist groups. This text is based on a public talk between the artist and the author at the U-jazdowski Castle, Warsaw, on December 2, 2017,[1] and aims at unraveling Ressler's strategies of fundamentally questioning social inequality as a threat to democracy. His work often consistently focuses on finding just solutions for an equitable community: a community beyond capitalist profit maximization, power relations, and hierarchies. His aim is to find uncommon ways out of seemingly blocked or antagonistic situations, while the power of the collective and its collective decision-making processes serve as his models for individual action. At the conference, Ressler stated that in his practice he follows interests in different models of self-organization: "I follow the questions of economy, democracy and ecology—while looking for forms of alternatives. And then I am interested in spreading the work."

Ressler was born in Austria in 1970 and lives in Vienna. Originally educated in painting, he eventually moved on to the analysis of image and text, of their interrelations and use for political, economic, and social communication and

1 The talk took place during the conference "Balancing Togetherness," which was held on December 2–3 at the Centre of Contemporary Art, U-jazdowski, during the show "Dizziness. Navigating the Unknown," curated by Ruth Anderwald, Katrin Bucher Trantow, and Leonard Grond. See "Balancing Togetherness—The Conference 02/12/2017," YouTube video, 4:34:38, posted by "Centrum Sztuki Współczesnej Zamek U-jazdowski," March 5, 2018, https://www.youtube.com/watch?v=4prduCdKiDw.

education. Since the mid-'90s, video-based installations and text and image montages became central elements of his practice. Ressler was first known shortly after his studies when his works appeared in the public space. As a reaction to the overwhelming success and the rise of the FPÖ (the so-called Freedom Party of Austria, a right-wing populist party), under the leadership of the infamous Jörg Haider, Ressler—together with Martin Krenn—started billboard projects like *Institutional Racism* (1997) that focused on detention centers for undocumented migrants as an example of state-regulated (institutional) racism. In contrast to critical NGOs and liberal media, the project did not call for a reform, for the improvement of the poor conditions in these institutions, but was fighting for an end to the existence of these facilities.

In *Gelernte Heimat* (Learned homeland, 1996), one of their first poster projects, Ressler and Krenn tackle the issue of hidden political interests and political residue in Austrian educational textbooks. They used the books customarily employed at state schools for their research, extracting images and quotes. Transferred onto two massive poster collages, they chose images and texts dealing with the concept of homeland, nation, and belonging. Installing the posters in the main square in the city of Graz as well as at the Neue Galerie where they were shown together with interviews from the public square, they consciously used the "art institutions to explore a content more deeply [...] and use the field of art in order to go beyond the field of art."[2] Krenn and Ressler contextualized the material and exposed it as highly contaminated by political right-wing vocabulary and imagery. The conception of homeland itself became evident as a construction and a concept of the Austrian nationalist state in search of segregation, rather than identification.

Tools of Criticality and Self-Empowerment

In the case of *Gelernte Heimat*, the discussions provoked immediate results: after a report on national radio FM4 by Susanna Niedermayr, the radio station started a campaign where pupils were asked to collect racist texts from their school books and many schools took part.[3]

Producing artworks that serve as a starting point and as a instrument for public discussions remains one of the main aims of Ressler's practice up until today. Another core concern lies in a critical attitude toward the institutional, which also includes the art institution itself. Ressler has learned to use the institutional setting of the art gallery as a tool for his profound analysis of democratic systems and their approaches to communication: he makes use of the art institutions set up supporting scientific research and aesthetic analysis. Economically the art field has offered Ressler possibilities to network between different scientific fields and to create criticality, even if under precarious

conditions. Production budgets for exhibitions, festivals, and catalogues help to reach out for grants in visual arts and film, while the institution regularly represents a safe space—in the sense of Foucault—from where the deconstructed message can spread from within to without.

For the exhibition "Dizziness. Navigating the Unknown," we chose, together with our cocurators Ruth Anderwald and Leonard Grond, Ressler's three-channel video installation *Occupy, Resist, Produce* (2014/15–ongoing) to tackle the concept of finding creative solutions. The ongoing film project documents

Figs. 55–56
Martin Krenn and Oliver Ressler,
Gelernte Heimat (Learned homeland),1996

different cases of worker's self-organization, and is done in collaboration with the political scientist, sociologist, and documentary filmmaker Dario Azzellini. Ressler has worked with Azzellini previously, for example, during the Bolivarian Process when they documented worker-controlled factories, which served as a model and a basis for the filmmakers' interest in workers self-empowerment. They also documented the takeovers in Venezuela in 2005 during the legally benevolent situation of the stately approved process under the presidency of Hugo Chavez.[4]

2 See https://www.youtube.com/watch?v=4prduCdKiDw.
3 Markus Wailand, "Willkommen Österreich," *Falter* 42, no. 97, http://www.ressler.at/institutional_racism/falter.html.
4 "With the Bolivarian government seeking to develop '21st century socialism,' it offered financial support to workers willing to organize into cooperatives. Recognizing that restarting idle factories could generate new jobs and add to national output, in July 2005, Hugo Chávez announced in his weekly television program, Aló Presidente, that 136 closed factories were to be evaluated for possible expropriation." Sharat G. Lin, "Can the Bolivarian Process Achieve Socialism? 5 Worker-Controlled Factories in Venezuela," *Venezuela Analysis*, September 5, 2006, http://www.venezualanalysis.com.

The multilayered construction of *Occupy, Resist, Produce* comes together in an exemplary way to articulate a strong plea for resistance and self-organization. The work deals with a dark side of speculations in a globalized and impersonal free-market economy, when after the global economic crises of 2007/8 workers suddenly became unemployed; where functioning factories were abruptly left and their financial assets were often taken along by their legal representatives and owners.

> It's important to state that in the occupations of factories [in Occupy, Resist, Produce] in Milan, Rome and Thessaloniki [RiMAflow, Officine Zero and Vio.Me] emerged out of fraudulent situations where in all cases the workers have been defrauded by the legal owners of the factories. In all cases the workers struggle radicalized once they realized that they wouldn't get the wages that were owed to them. [...] After months of struggling these workers collectively decided that the only possibility to continue working in the factory would be to take over all the responsibilities in the factory and produce and manage without their legal bosses. [...] Usually the group of workers not only had to establish a new form of collaboration, but also to develop a new form of production. For different reasons: In one example [RiMAflow] the workers occupied a more or less empty factory where the machinery had been sold by the legal owner. [...] In the Vio.Me factory in Thessaloniki the machinery park was very old [and needed restoration]. But there is no way to get a loan for an occupied factory from the bank of course, as its no legal entity entitled to receive a loan. [...] In this case the workers decided to start an organic soap production and raised the necessary small investment through private loans from people who fought in solidarity with them.[5]

Ressler and Azzellini's concentration on situations of self-organization and solidarity with others ties in with social movements and critical thinking today as described in John Holloway's publication *Change the World without Taking Power: The Meaning of Revolution Today* (2002) that searches alternatives to the politics of a central power as in capitalism.[6] Holloway suggests to form councils as teams, to build "cracks" in the existing neoliberal system. His idea is that collective movements can form a logic differently from that of profit: the logic of cracking capitalism. That is, to create, within the very society that is being rejected, spaces, moments, or areas of activity in which a different world is imagined and—just as in Ressler and Azzellini's work—revolutionary alternatives are prefigured.

Marco Scotini calls Ressler's films "manuals of dissenting techniques" and refers to Jean-Luc Godard's plea in 1970 that there "are two kind of militant films, those we call blackboard film and those known as international films. The latter are the equivalent of chanting L'Internationale during a demonstration, while

the others prove certain theories that allow one to apply to reality what we have seen on screen."[7]

I believe that is the case in many levels: curatorially, the work of Ressler consequently served as an instrument to give an image to the idea of finding a way to move on. Starting with the claim that the experience of dizziness often accompanies creative processes that are defined by the three stages of moving in, through, and out, the exhibition was shaped accordingly in three overlapping zones. These three conditions connected to the three states of falling, colliding, and swerving, which are found in Lucretius's first-century BC didactic poem "De rerum natura" and describe three kinds of movement toward the emergence of the new or extraordinary. As curators we used this structure to recreate the process of creative thinking through the experience and analysis of artistic works in the space and in creating the meandering path through the works in the exhibition space. Motion turned out to be highly important as a solution to physically step forward and empirically point out possible ways to go out of the show, to leave dizziness and find stability by moving on. In the context of the exhibition, the three-channel video installation thus allowed us to understand the implications and workings of dissent as much as a feeling of dizziness productively. The work actively demonstrated a way out of a crisis. On the one hand, through its physical presence as an actively engaging installation inviting the public to sit down on a set of bleachers reminiscent of wide stairs in a public square while also hinting at the function of pedestals honoring a partaking public. On the other hand, by means of the successful combination of art and activism, demonstrated in film through several existing examples seen in parallel; all of them displaying democratic decision-making growing into common action. The installation as a whole served thereby to finalize a processual experience throughout the exhibition reaching from powerless and dizzying dependency toward self-empowerment: Azzellini and Ressler's work showed a way to leave dizziness through the experience of collectivity and solidarity.

On another practical level, Azzellini and Ressler used the film as an instrument to research the process of collaboration and the process of common decisions concretely: "There are several decision-making bodies that we analysed. [In all three factories alike]. [We recorded] two different meetings. For the one, it is

5 Oliver Ressler, (lecture, Centre of Contemporary Art, U-jazdowski, December 2, 2017); see https://www.youtube.com/watch?v=4prduCdKiDw.

6 John Halloway, *Change the World without Taking Power: The Meaning of Revolution Today* (London: Pluto Press, 2002); https://libcom.org/files/John Holloway-Change the world without taking power.pdf.

7 Jean-Luc Godard, quoted in Marco Scotini and Oliver Ressler, '"Blackboard" Cinema and the Capitalistic Regime of Enunciation," in Oliver Ressler, *Cartographies of Protest*, trans. Otmar Binder (Nuremberg: Verlag für Moderne Kunst, 2014). 19.

the existing workers assembly, so their most important decision-making body. We created a second situation, in each case a gathering of about six people. [...] We asked the workers to engage in a discussion with each other how they read the past struggle, how they saw their factory's development up the present and how they were seeing and imagining the factory's future, and future productions."[8]

Fig. 57
Occupy, Resist, Produce, installation view at U-jazdowskie Castle, 2017

Since the year 2000, his videos have aimed at a public not only inside, but also outside the immediate field of art. Moving between art and political activism, these works pick up themes and practices of resistance from a non-institutionalized left. "These films document a certain aspect of reality—but

they also create a certain reality—they are tools to be used in different contexts."[9] As was the case in the exhibition "Dizziness" the work is presented in museums. However, it can appear also in film festivals, etc., and can be seen and understood by a differently interested public. Furthermore, users of the films can be political organizations, the portrayed workers themselves or other workers in similar situations also struggling with existence and production. Workers can use the films as way to understand better these processes and to make the struggle understood by a public, or by political decision makers. Thes film as such grow into being a far-reaching testimonial and representation to put up resistance.

"Alternatives Need to Be Expressed through Language"[10]

Occupy, Resist, Produce works as the descriptive title of a three-channel video installation, but it is also a manifesto and could just as well be the refrain of a protest song. It is also a slogan used in different languages coming from the struggles for workers control. Language in Ressler's case is a critical tool for a new form of speculative imagination of alternatives. He uses language in his works in different ways: in his installations and films we find text lines or slogans as songs, chants but also as visual citations like demonstration banners or posters. Text also appears as an ongoing line of subtitles for a precise understanding of what people say. As in the early poster projects, language can also appear in form of text-image-montages. When Ressler states that realities first have to be imagined and tested in language, he points out to the fact that language together with the image is the medium to reflect on and deconstruct prefabricated beliefs. Ressler's work therefore is showing us how to demonstrate in multiple ways.

When in his non-documentary work *Emergency Turned Upside-Down* (2016) Ressler comments on the so-called summer of migration in 2015, he confronts the cynical and inhuman discourse about the flight of refugees. This repeatedly called refugees' presence in Europe an "emergency" when that word should be applied to the war, terror, and economic strangulation that forced people to leave their home. Other than in most of his works, Ressler underlies the film consisting of drawn animations in black and white with a narrator's voice. Overlapping lines form an abstract pattern that together with the dropping words evoke borderlines, migration routes, and outlines of states, lifelines, and human heart rates. The film—atypical in a way—is a consistent and even bitter comment

8 Oliver Ressler during the talk held on December 2 at the Centre of Contemporary Art, U-jazdowski, see: https://www.youtube.com/watch?v=4prduCdKiDw.

9 Ressler.

10 Ressler.

on the misuse of language and images of personal fates for systematization, categorization, and evaluation. Consequently, the film elaborates on words like "border" and "migration" as inventions and possibilities for division and "zoning"—for marking out of different types of people—regardless of international human and civil rights.

Figs. 58–59
Dario Azzellini and Oliver Ressler, *Occupy, Resist, Produce*, 2014–15

With a view to the speakers of documentary works, Ressler on the other hand wants his work "be given back to the people [...]. Referring to "Everything's coming together while everything's falling apart: The ZAD (Zone a Défendre)" from 2017, Ressler says: "Those people have so much knowledge which generally is hardly heard. I tend to bring people together in front of the camera in small groups. I hardly film any single people as its mainly collective discussions that I want to present in my films." Consequently, the work, which again is part of a continuous film project documenting an ongoing resistance process, focuses on a collective struggle against global warming. Three key moments of civil disobedience link situations and contexts of the people's struggle against a capitalist system and its dependence on fossil fuels. Starting with mass protests of activists and a massive presence of police forces during the UN Climate Change Conference in Paris in 2015, it continues with the episode *Ende Gelände* (End of the road) from 2016 documenting the massive civil disobedience action

at the Lusatia lignite coal fields (near Berlin). Last year Ressler finished the film on the ZAD, an impressive struggle against the building of an unwanted airport on farmland and woods near Nantes. Here the resistance of 2012 is documented by the camera apparently grows viral and brings together all different sorts of people fighting against state decisions and real estate speculation. Forty thousand people were involved in a five-week-long struggle, in which treetop protests took place and temporary constructions were built to resist the attempted evictions. Finally, the state gave up, as opposition grew too strong. The film brings forward the actual voices of "disobedient" activists and shows them as practically and theoretically skilled persons fighting for a collective existence. We hear dialogues, no voice from the offset, no explanations of the context besides what the activists tell us or what can be read on the protest slogans or a few text inserts in "Everything's coming together while everything's falling apart: The ZAD." The voices, like the languages are multiple. Through clever cuts, close-ups on seemingly incidental happenings cinematically used aesthetic functions in different settings and works toward a maximum of identification. In the art context, the tractors digging blindly through the grounds of the woods might remind us of Robert Smithson's famous comparison between the unthinking building machines and the prehistoric animal world, whereas most football fans, demonstrators, or sociologists might see the chanting as a necessary act of identification. The protesters themselves are

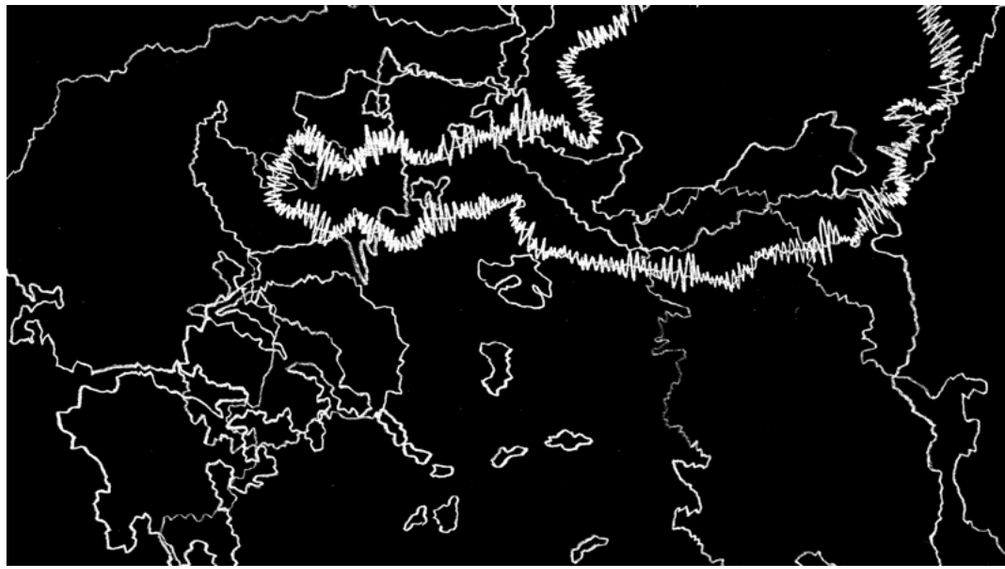


Fig. 60
Oliver Ressler, *Emergency Turned Upside-Down*, 2016

clever to use popular iconography and phrases like "Resistance in the land of Asterix" that refers to the fact that the police dared to label their police operation "Operation César" in the land of Asterix. No wonder then that while watching the films the slogans catch us and infect us and before we know it, we might become infected with the virus of wanting to become part of it. Ressler uses humor as much as other cinematic instruments for identification when he, for instance, shows the beauty of resistance in the thoughtful face of the true protester who invests her time and energy for a shared cause. He skillfully reintroduces an experience of collective euphoria, fear and power of the mass that inevitably reminds us of the euphoria experienced in the early days of the internet or at music festivals. When asked if he consciously chooses positive or happy endings for his films, he said, "I am not sure if 'happy ending' is the right term. I travel around and focus primarily on these rare examples of positive aspects of organizing, which are important to highlight to strengthen the movement. The only way to seriously fight global warming is to engage in civil resistance. We cannot believe that those people, who claim to be our representatives in the parliament, will do the job for us. For twenty-three years nations have been negotiating a reduction of carbon emissions [under the framework of the United Nations] and they do not succeed at all: it requires that we get involved."[11]

Fig. 61
Oliver Ressler, *Everything's coming together while everything's falling apart: The ZAD*, 2017

Toward the end of our talk at the U-jazdowski in December 2017, Ressler refers to Rebecca Solnit's *A Paradise Built in Hell* (2009) and summarizes that collaboration evokes empathy, a side of human nature easily forgotten. Solnit "shows that in the very beginning of catastrophes such as the Hurricane Katrina for example, people help and support each other. In all the cases that Solnit describes, it is after a certain time the state and the police forces intervene and make the direct and personal support of people impossible. The state will rather support already privileged people and forget the others. [...] However, it shows that we are able to collaborate. For decades, the state has been trying to prove that the logic of the [capitalist] system lies in the fact that we cannot do things on our own. That we need owners to lead factories to generate profit. We should try to forget all of this and—cooperate!"[12]

11 Ressler.
12 Ressler.

Literature

Holloway, John. *Change the World without Taking Power*. London: Pluto Press, 2002.

Lin, Sharat G. "Can the Bolivarian Process Achieve Socialism? 5 Worker-Controlled Factories in Venezuela." *Venezuela Analysis*, September 5, 2006. http://www.ressler.at/can-the-bolivarian-process-achieve-socialism/.

Scottini, Marco, and Oliver Ressler. '"Blackboard' Cinema and the Capitalistic Regime of Enunciation." In *Cartographies of Protest*, edited by Juan Antonio Álvarez Reyes, Marius Babias, Emanuele Guidi, Stella Rollig, 15–24. Vienna: Verlag für moderne Kunst, 2014, 19.

Solnit, Rebecca. *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster*. New York: Penguin Books, 2010.

Dizziness
From Aporia to Method?

Karoline Feyertag

Fig. 62
Zoe Leonard,
Niagara Falls No. 4,
1986/1991

By the gods, Socrates, I am lost in wonder (*thaumazo*) when I think of all these things. It sometimes makes me quite dizzy.
—Theaetetus to Socrates

Any reflection on dizziness is very much induced by personal experiences of feeling dizzy, lost, disorientated, overwhelmed, trapped, depressed, paralyzed, or fearful. Alternatively, moments of getting lost might also be a free and inspiring experience, in which dizziness is a means to take some time off from our daily routines and work, or as a resource for reorientation.[1] In the following, I will try to give an account of what Janus-faced dizziness means in a philosophical and political setting, specifically addressing the question: Can dizziness be transformed into a method, and if so, to what extent and for what or whose purpose?[2]

This question alludes to the paradox that underlies any reflection on dizziness. On the one hand, dizziness is aporetic. This means dizziness is a very bodily experience from which there is no escape through rational reflection. It rather hinders any kind of rational thinking or even epoché.[3] On the other hand, dizziness might also become this means or resource by which to escape such an aporetic situation because dizziness, causing disequilibrium, sets our organism into motion.

I will begin with three moments that circumscribe different experiences of dizziness. Many scholars, also in this volume, begin with a very personal experience as a starting point to reflect on dizziness. These following moments refer to this necessity to confront dizziness also personally on an affective level that is mediated through language(s) and images.

Art

Henry Hills's experimental film *Failed States* (2008) testifies to the basic assumption of "Dizziness—A Resource," namely, that dizziness might be transformed into a resource under certain conditions. By editing spinning motions, filmed either with a moving camera or from a still point of view, Hills trans-

1 See Rebecca Solnit, *A Field Guide to Getting Lost* (New York: Viking Books, 2005).
2 Preliminary work on dizziness as a method has been written by Karoline Feyertag. See her essay "Le vertige comme méthode," *artpress* 2, no. 46 (August–September 2017): 58–62.
3 Epoché refers here to the phenomenological method established by Edmund Husserl, which is also called "phenomenological reduction" through the "bracketing" of conscious knowledge (ideas) about the external world. This method aims at the temporal suspension of rational judgement, following the ancient Greek skeptical tradition and focusing exclusively on the analysis of experience. But if this experience is so dazzling that it paralyses the subject totally, then the suspension of judgement becomes lasting and dangerous.

lates the dizziness he experienced in the aporetic situation of a creative cul-de-sac into moving images. Dragging us into the movement of his filmic images, Hills also pulls us into our own experience of the unknown by confronting us with our own dizziness. As Anderwald and Grond have already stated: "Hills literally used dizziness as his resource. [...] Not only had the vertiginous perception of the world matched his uncertainties about his work, but his becoming dizzy also stimulated new sensations and brought back a childhood memory—spinning and falling into the grass while watching the world turning around him."[4] Hills's reenactment of spinning like a child helped the filmmaker to overcome his severe crisis and to realize new ideas.

Throughout the artistic research project "Dizziness—A Resource," we've discussed the notion of "resource," especially with French philosopher François Jullien. In my interview with Jullien, he referred to an initial "common ground or source" out of which the understanding of our common world originates and unfolds.[5] Jullien generally speaks of *le fonds*/*fond*, *la source*, and *la souche*, meaning foundation, fount, source, and soil all together.[6] This notion of source or ground that Jullien adopts is not essentialist but refers in a wider sense to the perplexity Aristotle mentions in relation to aporia. "Aporia," writes Aristotle, "is an equality between contrary reasonings [that] would seem to be a cause of perplexity; for it is when we reflect on both sides of a question and find everything alike to be in keeping with either course that we are perplexed which of the two we are to do."[7]

When we feel trapped in between two equally true propositions or possibilities, it becomes very hard to decide which side to choose, which direction to follow, which path to take. As individuals, we have a range of parameters helping us with that decision, keeping us from falling into aporia. But this range of parameters, determining what to do, what to think, is always threatened to become deranged, confused. Out of fear of chaos, we cling to these parameters as if they were cast in stone. Yet, it is only a specific society's apparatus (Michel Foucault's *dispositif*), the sociohistorical imaginary (Cornelius Castoriadis) instituting those parameters that ought to help us with undecidable questions.

As Jullien states: "Your theme of dizziness—and that's what I find interesting—is that dizziness makes one flourish again, pulling us back to this non-differentiated ground of confusion [...]. Maybe the interest of the kind of vertigo, of dizziness as you use it, is to bring us back to this ground of seeming confusions, but which is actually a ground of ambiguity, non-separation and communication of opposites among each other."[8] Dizziness is understood as a "re-source" in a literal way. The term "resource" comes from the Latin *resurgere*, meaning to rise up again. Dizziness as resource reopens a way toward chaos and lets us draw upon this disorder, our existential source, once again. Dizziness clears the way to the "foundation-fount" of humankind in Jullien's sense, establishes a poros to basic philosophical *ambiguity* and to the ancient Greek *chaos*. It affects us as human beings on an individual *and* a collective level.

Vertiginous Heights

Furthermore, an aporetic situation might affect everybody, the individual as well as the collective, because it is a bodily experience and not only a theoretical concept: "Aporia is an *experience* that affects us on many levels at once: we feel discomfort, we doubt ourselves. We may ask, 'What do I do?' 'What do I say?' 'What's wrong with me?' An aporia is a crisis of choice, of action and identity, and not only of belief. When I have too many choices, or no choices, I don't have a choice; I'm stuck. I don't know how to go on."[9] Transformation through dizziness is linked to chaos, which stands for the beginning of all existence. Afterward, once the transformation has come to an end, the problem is solved, the crisis overcome, and the threshold trespassed, the individual has become someone different, and the whole world looks changed, debunked. Out of chaos emerged order (*cosmos*)—in contrast to chaos, which is the unordered and limitless (*apeiron*). To navigate this unknown space, these unfamiliar or even uncanny experiences, the significance of the limit and the threshold needs to be considered.

Both notions, limit and threshold, seem crucial when thinking of the catalysts for dizziness and for defining the parameters, which transform dizziness either into motion or standstill. Reaching one's own limit makes one dizzy. Crossing a threshold, which is understood as a symbol for ending something and beginning something new, could start within dizziness but also could end in lucidity. Madeleine Schechter defines the limit as follows:

> In Western tradition, *limit* appears very early on in Greek philosophy, where *peras* is connected to the problem of the *continuum*, with the general sense that limit marks the end of a region in space, also indicating the suppression of all separations. Thus, in the literal sense, as mentioned above, limit has a purely physical connotation, being the place

4 Ruth Anderwald, Karoline Feyertag, and Leonhard Grond "*Dizziness—A Resource*: Dizziness and the Compossible Space in Research-Creation," *Emotion, Space and Society* 28 (August 2017), http://dx.doi.org/10.1016/j.emospa.2017.07.001.

5 See the conversation with Jullien in this volume, 54–64.

6 See Jane Marie Todd, "Translator's note," In Jullien 2009, xii.

7 Aristotle, "Topics," in *Complete Works*, vol. I, ed. Jonathan Barnes (Princeton, NJ: Princeton University Press, 1984): 245 (Book 8, 145b).

8 François Jullien, in conversation with the author, May 2015.

9 Nicholas C. Burbules, "Aporias, Webs, and Passages: Doubt as an Opportunity to Learn," *Curriculum Inquiry* 30, no. 2 (2000): 173, https://doi.org/10.1111/0362-6784.00161.

Fig. 63
Ruth Anderwald + Leonhard Grond,
Human Flight Experiments Nr. 34, 2003

> where a certain reality, i.e. thing or territory, ends. However, the term has also had from the beginning a complex meaning, since limit can exist only in connection with a 'before' and a 'beyond.' As such, interest in the limits of the categories and consequently in their transition or transgression is the hallmark of a certain epistemological shift, whose focus is not on limit as border, but on limit as threshold (which both connects and separates), creating a 'third space' (in Homi Bhabha's formulation), and as such can be described as in-betweenness (in Victor Turner's terms).[10]

The limit as threshold opens up a specific space-time and can be compared to Deleuze and Guattari's "zone of indiscernibility," to Bhabha's "third space," and to Foucault's "heterotopia," as well as to Jullien's use of the term "compossibility," which Ruth Anderwald, Leonhard Grond, and I have developed further to the notion of the "compossible space."[11] The apeiron literally means "without limit" and designates the proper "space" dizziness creates when there is no way out and no end in sight—when orientation is completely lost because of no *peras* (limit or landmark). When we enter the state of dizziness, we not only enter unknown territory but also often fall into aporia.

At the edge of an abyss, be it real or virtual, natural or urban, we might reach such a limit, and looking down, we might become dizzy.[12] Architectural historian Davide Deriu speaks about the urban phenomenon of the "vertical city." He suggests there is a political and economic purpose behind this sort of Babylonian architecture, constructing ever-higher buildings and skyscrapers, for example, in a downtown area. "In recent years, the growth of vertical cities around the world has been increasingly associated with the pursuit of dizzying experiences that reflect, and respond to, different states of suspension. Examples abound in contemporary high-rise architecture: the observation

10 Madeleine Schechter, "Liminal and Hybrid Aspects of Intersemiotics," *Internet-Zeitschrift für Kulturwissenschaften* 16 (August 2006), http://www.inst.at/trans/16Nr/01_2/schechter16.htm.

11 See Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: Athlone, 1988); Homi K. Bhabha, *The Location of Culture* (London: Routledge, 1994); Michel Foucault, *Le corps utopique, les heterotopies* (1966; repr. Paris: Nouvelles Éditions Lignes, 2009); and Anderwald, Feyertag, and Grond, "Dizziness and the Compossible Space in Research-Creation."

12 See Davide Deriu, "'Don't Look Down!' A Short History of Rooftopping Photography," *Journal of Architecture* 21, no. 7 (2016): 1033–61.

decks of American skyscrapers such as Chicago's Hancock Centre and the Willis (Sears) Tower, for example, have been retrofitted with overhanging ledges that invite an immersive experience of the urban abyss."[13] This architecture as well as the practices of its human appropriation, for example, through illicit rooftopping, skywalking, and funambulism,[14] and their visual modes of (self-)representation via social media end up making people used to vertiginous heights. Deriu tentatively suggests that political and economic purposes underlie this "high-rise architecture," deliberately inducing dizziness in order to accustom citizens not only to vertiginous sensations, but also to dizzying ups and downs of the financial speculation or precarious working conditions.[15] It is such purposes that transform dizziness into a method, making people insensitive to the abysmal, to general disorientation, growing social inequalities, and the shared condition of an exaggerated imperative to optimize the individual human being according to the demands of the market in our accelerated societies.[16] However, we only seem able to critically reflect on dizziness as a phenomenon on the basis of personal experiences.

Literally, Dizziness

Yet, another example for vertiginous heights and the existential, but ambiguous implications of dizziness and falling into aporia is found in Jorge Luis Borges's short story "The Library of Babel" (1941). Borges uses the library and its specific Babylonian architecture, hexagonal galleries that are superposed endlessly, as a dizzying metaphor for the universe. To share this literary experience, I quote the entire paragraph:

> The universe (which others call the Library) is composed of an indefinite, perhaps infinite number of hexagonal galleries. In the center of each gallery is a ventilation shaft, bounded by a low railing. From any hexagon one can see the floors above and below—one after another, endlessly. The arrangement of the galleries is always the same: Twenty bookshelves, five to each side, line four of the hexagon's six sides; the height of the bookshelves, floor to ceiling, is hardly greater than the height of a normal librarian. One of the hexagon's free sides opens onto a narrow sort of vestibule, which in turn opens onto another gallery, identical to the first—identical in fact to all. To the left and right of the vestibule are two tiny compartments. One is for sleeping, upright; the other, for satisfying one's physical necessities. Through this space, too, there passes a spiral staircase, which winds upward and downward into the remotest distance. [...] Like all the men of the Library, in my younger days I travelled; I have journeyed in quest of a book, perhaps the catalog of catalogs. Now that my eyes can hardly make out what I myself have written, I am preparing to die, a few leagues from the hexagon where I was born. When I am dead, compassionate hands will throw me over the railing; my tomb will be the unfathomable air, my body will sink for ages, and will decay and dissolve in the wind engendered by my fall, which shall be infinite.[17]

But not only would this unimaginable infinite space of the library—its vertiginous architecture—make us feel dizzy, the story's end touches on an existential kind of dizziness: when there is no longer any hold, falling becomes the human condition par excellence and not only our sense of balance, but the sense of human life itself collapses:

> Methodical composition distracts me from the present condition of humanity. The certainty that everything has already been written annuls us, or renders us phantasmal. [...] I am perhaps misled by old age and fear, but I suspect that the human species—the *only* species—teeters at the verge of extinction, yet that the Library—enlightened, solitary, infinite,

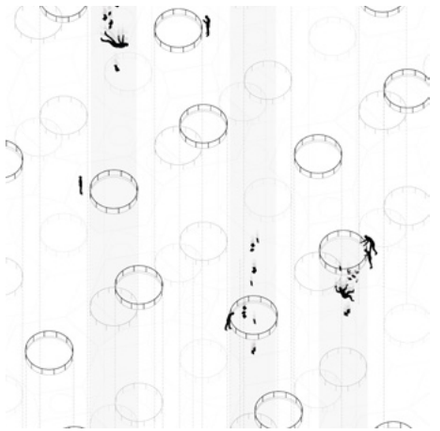


Fig. 64
Rice+Lipka Architects, *The Vindications*, 2013

13 Davide Deriu, "Architecture and Vertigo: States of Suspension in the Vertical City," in *Vertigo in the City* (London: University of Westminster, 2015), 10.
14 See Deriu's discussion of Philippe Petit's high-wire walking between New York City's Twin Towers in 1974 in this volume, 118–36.
15 Davide Deriu: "Vertigo in the City" (paper presented at the symposium "Agents of Confusion!," Kunsthaus Graz, February 10, 2017).
16 See the research project "Aporias of Perfection" (https://www.ipu-berlin.de/en/university/research/project/aporias-of-perfection-in-accelerated-societies.html); Isabell Lorey, State of Insecurity (London: Verso Books, 2015); Judith Butler, Zeynep Gambetti, and Leticia Sabsay, eds., *Vulnerability in Resistance* (Durham, NC: Duke University Press, 2016); and Hito Steyerl, "In Free Fall: A Thought Experiment on Vertical Perspective," *e-flux*, no. 24, April 2011, https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/.

> perfectly unmoving, armed with precious volumes, pointless, incorruptible, and secret—will endure. [...] If an eternal traveller should journey in any direction, he would find after untold centuries that the same volumes are repeated in the same disorder—which, repeated, becomes order: the Order. My solitude is cheered by that elegant hope.[18]

It was in 1941 that Jorge Luis Borges wrote this tale in Buenos Aires. A lot has been written about it since then, especially with today's focus on digitization, data storage, and artificial intelligence. How can we imagine this space, chaotic and ordered at the same time? It is hard to visualize such a complex and infinite system of architecture suspended in the void. As readers we lose orientation. A space filled with all books that could ever be written, all possible and even the impossible books; the immoveable Library, which will endure and survive humankind. As already mentioned, the specific liminal space-time of aporia can be compared with the compossible space. Borges's Library is a metaphor for such a space. Yet, it is not utopian but heterotopian in Michel Foucault's sense. It is a completely different, yet perfectly real space; an-other space compared to our common and shared social spaces. A heterotopia is the "contestation of all other spaces," a "counter-site."[19] Besides the colonies of the seventeenth century in the Americas, the fairgrounds, vacation villages, prisons, and asylum houses, museums and libraries form part of yet another type of heterotopia: not only are the latter two spaces outside our common spaces of daily business, but they are also "heterochronies" of a special kind, "indefinitely accumulating time," like cemeteries. Will this "idea of accumulating everything, of establishing a sort of general archive,"[20] make humankind redundant in the long run and contribute to the loss of the human sense of balance and orientation?

Besides the dizzying or vertiginous heights of architectural and literary construction and against this backdrop of heterotopian compossible spaces, I want to take a closer look on the existential moment of dizziness to which the last paragraph of the Borges tale refers: the human species teetering on the verge of extinction. This moment of dizziness is a proper *aporia*, leading to chaos and disorder. The fear of extinction and death is what makes looking down the abyss so dreadful. Before this fear of death comes the fear of falling. But what if we even don't realize that we are falling because there is no ground?[21]

Existential Dizziness

One could claim that Greek philosophy as such arose out of aporia. For instance, the Platonic dialogue uses aporia as rhetorical device to point out the questions humankind is unable to resolve.[22] Instead of closing a dialogue that revolves

around such questions and concluding the discussion with an unambiguous truth, Plato often releases his interlocutors with yet another aporia—as if we as humans were to stumble from one impasse to another time and again.

There are many philosophical texts, such as René Descartes's *Meditations on First Philosophy* (1641), where feeling dizzy, doubtful, troubled, and uncertain is closely linked to the act of philosophizing in the sense of resolving an aporia. The original Greek word aporia means the negation of *poros* and can be separated into its two morphemes: a- and poros ("without passage"). For understanding dizziness in a philosophical and political setting, it is indispensable to understand both notions, aporia and poros. To be sure, poros has a wide range of meanings, including passageway, resourcefulness, and expediency. Poros designates potentiality because it is inventiveness. The situation or better, the space, in which poros becomes necessary, is the typical space-time of aporia, the moment when we reach a limit or an impasse and when this liminal experience propels us into limitless chaos and dizzying perplexity. Though poros cannot offer the same security as *hodos*, which is essential to any scientific method.[23] French philosopher Sarah Kofman gives a multifaceted account of aporia in her book *Comment s'en sortir?* (1983), where she links philosophical deconstruction of Greek texts to the autobiographical nightmare of a Jewish child being persecuted by the Nazis during World War II.

> *Poros* is not to be confused with *odos*, a general term designating a path or a road of any kind. *Poros* refers only to a sea-route or a route down a

17 Borges, "Library of Babel," 112.
18 Borges, 118.
19 Michel Foucault, *Le corps utopique, les hétérotopies* (1966; repr. Paris: Nouvelles Éditions Lignes, 2009), 34 and 24. Unless otherwise noted, all translations are my own.
20 Foucault, 30.
21 Steyerl, "In Free Fall," 2011.
22 Aporia as rhetorical device is understood here in the sense of "deliberating with oneself as though in doubt over some matter; asking oneself (or rhetorically asking one's hearers) what is the best or appropriate way to approach something" (see "aporia," http://rhetoric.byu.edu/). But aporia can also be understood in the way Sarah Kofman metaphorically describes it as an escapeless situation where we lose the ground beneath our feet and start falling: "Like the sophists, Socrates draws his interlocutors into a situation from which there is no escape, makes them *fall* into a directionless space where they become disoriented and dizzy. The aporetic state always arises as one moves from a familiar environment or space to a space to which one is unaccustomed, during a *transition* from below to above or from above to below, from darkness to light or from light to darkness. In both cases, falling into an aporia is like falling into a well of perplexity and becoming a laughing stock for bystanders." Sarah Kofman, "Beyond Aporia?," trans. David Macey, in *Post-Structuralist Classics*, ed. Andrew Benjamin (New York: Routledge, 1988), 19–20 (emphasis in original). The English translation is only an incomplete translation of Kofman's book *Comment s'en sortir?* (Paris: Galilee, 1983).
23 From Greek *methodos* "scientific inquiry, method of inquiry, investigation," originally "pursuit, a following after," from *meta* "in pursuit or quest of," and *hodos* "a method, system; a way or manner" (of doing, saying, etc.), also "a traveling, journey," literally "a path, track, road" (https://www.etymonline.com/word/method).

> river, to a passage opened up across a chaotic expanse which it transforms into an ordered, qualified space by introducing differentiated routes, making visible the various directions of space, by giving direction to an expanse which was initially devoid of all contours, of all landmarks. To say that a *poros* is a way to be found across an expanse of liquid is to stress that a *poros* is never traced in advance, that it can always be obliterated, that it must always be traced anew, in unprecedented fashion. [...] The watery depths [*l'abîme marin* in the original version], the *pontos*, is the ultimate *apeiron* [*c'est l'aporie même*], *aporon* because *apeiron*: the sea is the endless realm of pure movement, the most mobile, changeable and polymorphous of all spaces [...]; it is analogous with Hesiod's Tartarus, with the image of chaos itself; Tartarus is a realm of wild swirling squalls where there are no directions, no left and no right, no up and no down, where there are no fixed directions, where one can find no landmarks, no bearings to travel by.[24]

In Kofman's sense, poros is characterized by the impossibility to reiterate a route on water, which does not leave any traces to follow and cannot be shared. Nevertheless, poros has the potential of "giving direction, contour, and landmarks" within the "most mobile, changeable and polymorphous of all spaces." It is this potential that dizziness shares with poros: the ability to set into motion and reorientate a lost movement in the limbo of space and time. Yet, dizziness cannot become a *method* in the traditional sense—a *meta-hodos*—because a method always implies a grounded way, going straight forward; it implies a hodos that can be repeated or followed endlessly. Hodos is the basis of modern experimental science. But what happens when scientific laws are challenged, for instance, the laws of gravitation formulated by Isaac Newton and called into question by Albert Einstein's theory of relativity? If scientific evolution appears to have dizzying effects on its own scientific methodology, poros in the end seems more appropriate than hodos to reveal new and creative approaches to the unknown.

Groundlessness, disorder, movement, or chaos seems to be the basis of the universe and human existence or—in Borges's language—of the library. We cannot know whether we fall downward or upward because we don't know if there is an end or a "ground" to the universe. All this contributes to our confusion, our feeling of being lost and disorientated. "Chaos" is the ancient Greek word for disorder, and in Hesiod's cosmogony it signals the beginning of our world or the cosmos, that is, of order. Dizziness understood as *resource*, which is another translation of poros, leads us back into this initial chaos.

De-coincidence

Like poros, the way through heterotopia or the compossible space is not traced in advance by a method, following an hodos, which remains always the most appropriate and fittest. Jullien recently started to speak about human existence and evolution as a way of "ex-aptation," and "decoincidence." His thesis reads that human beings only come into existence by the very fact that they fall out of existence, understood as unconsciously and unreflectingly succumbing to life instincts. It is only because humans are not adequate to their environment, because they fail to become adequate or adapted to the world that they experience a gap between themselves and the world. Jullien stresses the importance of divergence, *écart*, and non-adequation and makes it the proper element of human "ex-istence." It is only humans that can exist in the sense of not coinciding with themselves and the world. Jullien parts from a theory of modern art when life of the artwork only begins once the adequation with an object or subject fails. It is only when art does not equal the object or subject, when art does not coincide with nature, that the autonomy of art equals the autonomy and freedom of humans, or as Deleuze and Guattari formulate: "The artist creates blocs of percepts and affects, but the only law of creation is that the compound must stand up on its own."[25] The human ability to deviate from the given, from the norm, and from the so-called natural, and to withstand this marginalization and ex-istence in the sense of "standing apart," makes up human freedom.[26]

Yet the human species, writes Borges in his short story, is teetering at the edge of extinction.[27] But human existence or evolution might also be conceived as always having to redefine its ground or source. Will humankind disappear by falling into the abyss or will it adapt itself to new environments, as for instance to the vertical cities Davide Deriu writes about? Will we be able to deviate from the given, from the familiar, and from the norm and might dizziness play a role for this "disadaptation"?[28] Extinction, the absolute dissolution of humankind and of "the Order," terrifies *and* inspires the readers of Borges's story. If we try to train our ability to endure dizziness and to invent *poroi*, ways out of terrifying or overwhelming experiences, maybe the human species will be able to transform itself instead of perishing. Adapting—or ex-apting—to transition processes is key when it comes to find exit strategies

24 Kofman, "Beyond Aporia?," 10, 19 (emphasis in original).
25 Gilles Deleuze and Félix Guattari, *What Is Philosophy?*, trans. Graham Burchell and Hugh Tomlinson (London: Verso, 1994), 164.
26 See François Jullien, *La dé-coincidence: D'où viennent l'art et l'existence* (Paris: Grasset, 2017).
27 Borges, "Library of Babel," 118.
28 Jullien urges a reconfiguration of the paleo-anthropological concept of "ex-aptation", which is not the adaptation of the human being, but a "disadaptation". In his sense, exaptation means leaving behind a precedent adaptation and putting to the test new potentialities. See Jullien *La dé-coincidence*.

Fig. 65
J. M. W. Turner, *The Slave Ship* (*Slavers Throwing Overboard the Dead and Dying, Typhoon Coming On*), 1840

in a dizzying world. Therefore, core questions concerning *the navigation of dizziness* remain for the future:

Is there a way out of dizziness? Is it poros or hodos?
Is there any helping or compassionate hand to be expected?
Do we need to overcome dizziness together
or is an exaptation also possible for each of us alone?
Might we share experiences of dizziness?
Might we share the resources that help navigate dizziness on unknown territory?

In her essay "In Free Fall: A Thought Experiment on Vertical Perspective" (2011), Hito Steyerl discusses the painting *The Slave Ship* (1840) by J. W. M. Turner to illustrate the shift from the linear central perspective, due to a stable horizon, to the dizzying perspective of a horizon in motion:

> The scene in the painting represents a real incident: when the captain of a slave ship discovered that his insurance only covered slaves lost at sea, and not those dying or ill on board, he ordered all dying and sick slaves to be thrown overboard. Turner's painting captures the moment where the slaves are beginning to go under. In this painting, the horizon line, if distinguishable at all, is tilted, curved, and troubled. The observer has lost his stable position. [...] At the sight of the effects of colonialism and slavery, linear perspective—the central viewpoint, the position of mastery, control, and subjecthood—is abandoned and starts tumbling and tilting, taking with it the idea of space and time as systematic constructions. The idea of a calculable and predictable future shows a murderous side through an insurance that prevents economic loss by inspiring cold-blooded murder. Space dissolves into mayhem on the unstable and treacherous surface of an unpredictable sea.[29]

"Being thrown overboard"—this formulation echoes "The Library of Babel": "When I am dead, compassionate hands will throw me over the railing; my tomb will be the unfathomable air, my body will sink for ages, and will decay and dissolve in the wind engendered by my fall, which shall be infinite."[30] With one difference: Borges's hands, which shall deliver the dead librarian, are compassionate and helping, whereas the hands that throw the slaves overboard are acting on instruction from a captain of a slave ship on the make for profit.[31] Turner paired his painting, which was exhibited for the first time in 1840 at the Royal Academy during a meeting of the Anti-slavery Society Convention in London, with his unfinished and unpublished poem "Fallacies of Hope" (1812):

> Aloft all hands, strike the top-masts and belay;
> Yon angry setting sun and fierce-edged clouds
> Declare the Typhon's coming.
> Before it sweeps your decks, throw overboard
> The dead and dying—ne'er heed their chains
> Hope, Hope, fallacious Hope!
> Where is thy market now?[32]

According to Jullien, decoinciding is understood as the only way for humans to become human and to resist dehumanization. It even might seem like a strategy to disclose paths of divergence regarding "the market": decoincidence could be read as resistance to not becoming used to or accustomed to the vertiginous heights of the vertical city or to the demands of accelerated perfectionism in our capitalist societies. One of these paths might be opened up by Austrian artist Oliver Ressler, whose documentary films portray individuals in collective settings of radical social and political change, especially with regard to today's working conditions.[33] The metaphor of falling is particularly of interest when considering how to find a (new) way, make a (new) move, create a (new) concept. This is especially true when we link the problem of falling to the physical question of gravity, the question arises: What is falling and how does gravity participate in the creation of existence?

29 Hito Steyerl, "In Free Fall: A Thought Experiment on Vertical Perspective," *e-flux journal*, no. 24 (April 2011), https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/.

30 Borges, "Library of Babel," 112.

31 On the spectrum of motives of and motivations for taking action, deliberative action, acting out, and enacting, see Alice Pechriggl, *Agieren und Handeln: Studien zu einer philosophisch-psychoanalytischen Handlungstheorie* (Bielefeld: transcript, 2018).

32 Turner, quoted in A. J. Finberg, *The Life of J. M. W. Turner* (Oxford: Oxford University Press, 1961), 474.

33 See the conversation between Oliver Ressler and Kathrin Bucher Trantow in this volume, 232–44.

Falling Together Apart

Anderwald and Grond, when initiating their artistic research project "Dizziness—A Resource," referred to Lucretius's notion of the *clinamen* to highlight the existential dimension of dizziness as motion. The Roman philosopher and poet observed that atoms, when moving straight down through the void by their own weight, "deflect a bit in space at a quite uncertain time and in uncertain places, just enough that you could say that their motion has changed. But if they were not in the habit of swerving, [...] no collision would occur [...] nature would never have produced anything."[34] This clinamen became also part of Jullien's theory of decoincidence, because the word "de-coincidence" stems from the Latin word for falling in, *incidere*. Literally, a coincidence means the falling together of the one and the other in simultaneous motion. For Jullien, life itself begins with pure coincidence, which is only made possible by a certain deviation upstream, an inclination of a straight forward movement, without which "no collision would occur." In the interview on dizziness, Jullien stresses the importance of ambiguity when we consider the meaning of dizziness. As for his own concept of decoincidence, dizziness always enables both motion and standstill, and potential for radical change and gradual exaptation to changing environments, positive and negative effects, as well as bodily experience and theoretical reflection.

Instead of choosing either the one or the other, it seems to be the combination of limit and limitlessness, of motion and standstill, which gives ground (*arche*) for something new to emerge out of chaos or the void.[35] Disorientation and dizziness go hand in hand with orientation and directed motion. At this liminal turning point of becoming, what enables transition are the *peirata*, the landmarks. Kofman also translates the Greek word peras (limit) to mean link. If there is a possibility to establish a relation, to link one move with another, something new appears. This is not always happening suddenly, but gradually. There might be some kind of before and beyond, but it will only be *après coup*, afterward, when we realize there had been a before.

Coming to an end of these reflections on dizziness and aporia, dizziness might not become a method in the traditional scientific sense but nevertheless takes part in creating *poroi*, helping us to navigate the unknown. Furthermore, dizziness as "method" of artistic research and as a means for human exaptation to existing ways of perception, experience, and reflection will have to be distinguished from kinds of dizziness that are instrumentalized for specific purposes of political, economic, egocentric, and ethnocentric profit.

34 Lucretius, "De rerum natura [II, v. 216–24]," in *The Epicurus Reader: Selected Writings and Testimonia*, trans. and ed. Brad Inwood and L. P. Gerson (Indianapolis: Hackett, 1994), 66.

35 See Alice Pechriggl's theory of the Chiasma as epistemological device for thinking the fruitful crossover of logical oppositions in Alice Pechriggl, *Chiasmen: Antike Philosophie von Platon zu Sappho—von Sappho zu uns* (Bielefeld: transcript, 2006).

Literature

Anderwald, Ruth, Karoline Feyertag, and Leonhard Grond. "*Dizziness—A Resource*: Dizziness and the Compossible Space in Research-Creation." *Emotion, Space and Society* 28 (August 2017): 122–30.

Aristotle, "Topics." In *Complete Works*, edited by Jonathan Barnes, vol. 2, 167–77. Princeton, NJ: Princeton University Press, 1984.

Bhabha, Homi K. *The Location of Culture*. London: Routledge, 1994.

Borges, Jorge Luis. "The Library of Babel," in *Collected Fictions*, 112–18. Translated by Andrew Hurley. New York: Penguin, 1998.

Burbules, Nicholas C. "Aporias, Webs, and Passages: Doubt as an Opportunity to Learn." *Curriculum Inquiry* 30, no. 2 (2000): 171–87.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. London: Athlone, 1988.

———. *What Is Philosophy?* Translated by Graham Burchell and Hugh Tomlinson. London: Verso, 1994.

Deriu, Davide. "Architecture and Vertigo: States of Suspension in the Vertical City." In *Vertigo in the City*. London: University of Westminster, 2015.

———. "'Don't Look Down!': A Short History of Rooftopping Photography." *Journal of Architecture* 21, no. 7 (2016): 1033–61.

———. "Vertigo in the City." Paper presented at the symposium "Agents of Confusion!," Kunsthaus Graz, February 10, 2017.

Feyertag, Karoline. "Le vertige comme méthode," *artpress* 2, no. 46 (August–September 2017): 58–62.

Finberg, A. J. *The Life of J. M. W. Turner*. Oxford: Oxford University Press, 1961.

Foucault, Michel. *Le corps utopique, les heterotopies*. Paris: Nouvelles Éditions Lignes, 2009 [1966].

Jullien, François. *La dé-coincidence: D'où viennent l'art et l'existence*. Paris: Grasset, 2017.

———. *The Great Image Has No Form, or On the Nonobject through Painting*. Translated by Jane Marie Todd. Chicago: Chicago University Press, 2009.

Kofman, Sarah. "Beyond Aporia?" In *Post-Structuralist Classics*, edited by Andrew Benjamin, 7–44. Translated by David Macey. New York: Routledge, 1988.

Llewelyn, John. "On the Saying That Philosophy Begins in Thaumazein." In *Post-Structuralist Classics*, edited by Andrew Benjamin, 173–91. New York: Routledge, 1988.

Lucretius, *The Nature of Things*. Translated by Alicia Stallings. New York: Penguin Books, 2007.

Pechriggl, Alice. *Chiasmen: Antike Philosophie von Platon zu Sappho—von Sappho zu uns*. Bielefeld: transcript, 2006.

———. *Agieren und Handeln: Studien zu einer philosophisch-psychoanalytischen Handlungstheorie*. Bielefeld: transcript, 2018.

Schechter, Madeleine. "Liminal and Hybrid Aspects of Intersemiotics." *Internet-Zeitschrift für Kulturwissenschaften* 16 (August 2006). http://www.inst.at/trans/16Nr/01_2/schechter16.htm.

Solnit, Rebecca. *A Field Guide to Getting Lost*. New York: Viking Books, 2005.

Steyerl, Hito. "In Free Fall: A Thought Experiment on Vertical Perspective." *e-flux journal*, no. 24 (April 2011): 01/11–11/11. https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/.

Image Credits

Dizziness–A Resource
Ruth Anderwald and Leonhard Grond
Figs. 1–6
Ruth Anderwald and Leonhard Grond, *Working on Taumel Issue #1*, 2015, photos, Istanbul. © Anderwald + Grond.
Figs. 7–8
Ruth Anderwald and Leonhard Grond, *Taumel Issue #1*, 2015, 3-D prints, Istanbul. © Anderwald + Grond.
Figs. 9–10
Ruth Anderwald and Leonhard Grond, *'Taumel' Issue #3*, 2015, booklet: 48 pages, 13 × 21 cm, color, Vienna. Photo: Christian Hoffelner. © Anderwald + Grond.
Fig. 11
Henry Hills, *Failed States*, 2008, 16 mm film transferred to video, 10 min. © Henry Hills.
Fig. 12
Ruth Anderwald and Leonhard Grond, *Anatomy of vestibular system with cochlea superimposed*, 2018, collage. © Anderwald + Grond.
Fig. 13
Joachim Koester, *Tarantism*, 2007, 16 mm film, 6 min., 30 sec. Film still: Joachim Koester. Courtesy of the artist and Galerie Nicolai Wallner.
Fig. 14
Catherine Yass, *High Wire*, 2008, 16 mm film and Min DV transferred to HD MPEG digital files. Film still: Catherine Yass. Courtesy of the artist and Alison Jacques Gallery, London.
Fig. 15
Christian Hoffelner, *Taumel Issue #4*, 2016, Flag: 300 × 200 cm, color, digital print on Multiflag® SE, glossy, 110 g/m². Photo: Anderwald + Grond. © Anderwald + Grond and Christian Hoffelner.
Fig. 16
Kunsthaus Graz, "Dizziness. Navigating the Unknown," 2017, opening of the exhibition, Graz. Photo: Universalmuseum/N. Lackner.
Fig. 17
U-jazdowski Castle Centre for Contemporary Art, "Utrata równowagi," 2017, opening of the exhibition, Warsaw. Photo: U-jazdowski Castle.
Fig. 18
Ruth Anderwald, Leonhard Grond, and Anna Kim, *The Future Is Compost*, 2014, billboard series for the public art *The Frame of the Future™*, 2013–14, Vienna. © Anderwald + Grond and Anna Kim.

Semantics of Dizziness
Jarosław Lubiak
Figs. 19–21
Ruth Anderwald and Leonhard Grond, *Dizziness Is My Name*, 2016 revised 2019, video stills. © Anderwald + Grond.
Figs. 22–23
U-jazdowsk Castle Centre for Contemporary Art, "Utrata rownowagi," 2017, exhibition views, Warsaw. Photo: Bartosz Górka.

The Pleasures of Sensory Derangement and Its Uses in the Art of the Early Twentieth-Century Avant-Garde
Oliver A. I. Botar
Fig. 24
Max Krajewsky, Elevator shaft of the Grünefeld Department Store, Berlin, 1928, from below. Architect: Otto Firle, Berlin. Source: László Moholy-Nagy, *Von Material zu Architektur*, Munich: Albert Langen, 1929, 228. Private Collection.
Fig. 25
László Moholy-Nagy, *untitled (Aeroplane Swing, Brighton)*, 1935–37, 13.2 × 18.2 cm. © Hattula Moholy-Nagy.
Fig. 26
Nighttime view of a lit merry-go-round in movement, Blackpool, England. Photo: *Berliner Illustrierte Zeitung*. Source: László Moholy-Nagy, *Von Material zu Architektur*, Munich: Albert Langen, 1929, 167. Private collection.
Fig. 27
Englisches Flugzeuggeschwader. Photo: Sportspiegel, Berlin. Source: László Moholy-Nagy, *Malerei, Photographie, Film*, Munich: Albert Langen, 1925, 48. Private collection.
Fig. 28
Fédèle Azari, *untitled (Propaganda Drop over a Boulevard)*, gelatin silver print, n.d. [ca. 1914–19], 11.5 × 16.3 cm. Photograph © The Getty Museum, 84.XA.239.59.
Fig. 29
Fédèle Azari, *untitled (Airplanes)*, gelatin silver print, n.d. [1914–1929], 17.4 × 18 cm. Photograph © The Getty Museum, 84.XA.240.87.
Fig. 30
László Moholy-Nagy and Alfréd Kemény, *Dynamisch-konstruktives Kraftsystem* (Dynamic-constructive energy system) *Der Sturm* 13, no. 12 (December 1922): 186. Courtesy of M. Szarvasy, New York.
Fig. 31
Schematic diagram for the *Simultaneous or Poly-Cinema*, in László Moholy-Nagy, *Malerei, Photographie, Film*, Munich: Albert Langen, 1925, 40–41. Private collection.

Fig. 32
Kálmán Brogyányi, *A Fény Művészete* [The art of light] (Bratislava/Pozsony, 1932) showing page 9, with László Moholy-Nagy, "Light Machine for the Production of Absolute Light Effects" [*Light Prop for an Electric Stage*]. © The Salgo Trust for Education, New York.
Fig. 33
Farkas Molnár, overhead view of design for an U-Theater (present whereabouts unknown), with translucent foldover page. Source: László Moholy-Nagy, Oskar Schlemmer, and Farkas Molnár, *Die Bühne im Bauhaus* (Munich: Albert Langen, 1925), 61. Private collection.
Fig. 34
Farkas Molnár, *The U-Theater in Action*, drawing and photocollage on paper. Source: László Moholy-Nagy, Oskar Schlemmer, and Farkas Molnár, *Die Bühne im Bauhaus* (Munich: Albert Langen, 1925), 62. Private collection.
Fig. 35
László Moholy-Nagy, with István Sebök, *Kinetisches konstruktives System: Bau mit Bewegungsbahnen für Spiel und Berförderung* [Kinetic-constructive system: Structure with movement tracks for play and conveyance], 1928. Photomontage and collage on bromure, India ink and watercolor on card, 76 × 54.5 cm. Theaterwissenschaftliches Institut der Universität Köln.
Fig. 36
Detail of *Kinetisches konstruktives System: Bau mit Bewegungsbahnen für Spiel und Beförderung* [Kinetic constructive system: Structure with movement tracks for play and conveyance]. Photo: O. Botar.
Fig. 37
Friedrich Kiesler, *Raumbühne*, Vienna, 1924, dimensions unknown. © 2019 Austrian Frederick und Lillian Kiesler Private Foundation.
Fig. 38
Andor Weininger, *Kugel-Theater* [Spherical theater], 1926, presentation drawing for an exhibition, ca. 1930, ink on cardboard, 56 × 46.3 cm. Theaterwissenschaftliches Institut der Universität Köln.
Fig. 39
Detail showing rollercoaster sequence, storyboard for *A nagyváros dinamikája* (Dynamics of the Metropolis) *MA (Today)* 9, edited by Lajos Kassák (September 15, 1924).
Fig. 40
László Moholy-Nagy, *Waterslide, Zurich*, vintage silver gelatin print, n.d., dimensions unknown. © Hungarian Museum of Photography.
Fig. 41
Eduardo Kac, *Inner Telescope*, 2017. Single-channel video, sound, 12 min. Edition of 5. Courtesy of the artist.

Taming Vertigo: Philippe Petit and the Subject of High-Wire Walking
Davide Deriu
Fig. 42
Jerome Robbins Dance Division, *Descent of Madame Saqui, surrounded by fireworks*, 1822, print. © The New York Public Library Digital Collections. Accessed February 8, 2019. http://digitalcollections.nypl.org/items/97264390-da39-0132-d425-58d385a7b928.
Fig. 43
George Barker, *Blondin's rope ascension over Niagara River.* n.d. © The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: The New York Public Library Digital Collections. Accessed February 8, 2019. http://digitalcollections.nypl.org/items/510d47e1-458d-a3d9-e040-e00a18064a99.
Fig. 44
Illustrated Sydney News, *Henri L'Estrange, tightrope walker, crossing Middle Harbour, April 1877*, 1877. © The Collections of the State Library of New South Wales. Accessed February 8, 2019. https://dictionaryofsydney.org/image/48168.
Figs. 45–47
Jean-Louis Blondeau, *Philippe Petit walks on wire across the twin towers of the WTC*, 1974, photo, New York. © Jean-Louis Blondeau/Polaris

De/centering the Subject: Jan Evangelista Purkyně's Self-Experiments on Vertigo
Rebekka Ladewig
Fig. 48
Georg Emanuel Opitz, *Swing in the Viennese Prater*, 1805, in Hans Premmer and Nini Lackner, *Der Prater: Von den Anfängen bis zur Gegenwart* (Vienna: Jugend und Volk 1974), 199.
Figs. 49–50
Ernst Horn, *Rotational Bed and Rotational Chair, in use at Charité Berlin*, in Zeitschrift für psychische Aerzte, zweites Vierteljahrsheft, Berlin, 1818.
Fig. 51
James Watt, *Movable Rotative Couch*, construction drawing, 1801 in Erasmus Darwin, *Zoonomia, or the Laws of Organic Life*, vol. I, 3rd ed. (London, 1801), 437.

Dizziness, Creativity, and the Artist at Work
Ruth Anderwald, Mathias Benedek, and Leonhard Grond
Fig. 52
Viktor Landström and Sebastian Wahlfross, *Fractal Crisis*, video, 2016. Courtesy of the artists.
Figs. 53–54
Mathias Benedek, Emanuel Jauk, and Kevin Kerschenbaumer, multilevel analysis, daily questionnaire of the survey and art competition "Living in a Dizzying World," 2016

Balancing Togetherness
Katrin Bucher Trantow and Oliver Ressler
Figs. 55–56
Martin Krenn and Oliver Ressler, *Gelernte Heimat* [*Learned Homeland*], 1996, billboard-object at the Main Square of Graz, Neue Galerie. Courtesy of the artists.
Fig. 57
Dario Azzellini and Oliver Ressler, *Occupy, Resist, Produce*, 2014–15. Three-channel video installation, installation view: "Dizziness. Navigating the Unknown," CCA "U-jazdowski Castle," Warsaw. Photo: Oliver Ressler.
Figs. 58–59
Dario Azzellini and Oliver Ressler, *Occupy, Resist, Produce*, 2014–15. Three-channel video installation. Courtesy of the artists.
Fig. 60
Oliver Ressler, *Emergency Turned Upside-Down*, 2016, film. Courtesy of the artist.
Fig. 61
Oliver Ressler, *Everything's coming together while everything's falling apart: The ZAD*, 2017, video. Courtesy of the artist.

Dizziness: From Aporia to Method?
Karoline Feyertag
Fig. 62
Zoe Leonard, *Niagara Falls No. 4*, 1986/1991, Photography: Zoe Leonard. Courtesy of the artist and Galerie Gisela Capitain, Cologne.
Fig. 63
Ruth Anderwald and Leonhard Grond, *Human Flight Experiments Nr. 34*, 2003, photo series, Paris. Courtesy of the artist.
Fig. 64
Rice+Lipka Architects, *The Vindications*, illustration, 2013. Courtesy of Rice+Lipka.
Fig. 65
J. M. W. Turner, *The Slave Ship* (*Slavers Throwing Overboard the Dead and Dying, Typhoon Coming On*), 1840. Oil on canvas, 90.8 × 122.6 cm. Photography. © Museum of Fine Arts Boston. Courtesy of Museum of Fine Arts, Boston, Henry Lillie Pierce Fund 99.22.

Biographies

Ruth Anderwald and Leonhard Grond have been working together since 1999 in the fields of visual arts and artistic research. Their work has been exhibited internationally, among others at Whitechapel Gallery, London, Centre Pompidou, Paris, mumok Vienna, Himalayas Art Museum, Shanghai, and Tate Modern, London. In 2012 they founded the discussion and screening series "HASENHERZ," which featured artists like Basim Magdy, Rosalind Nashashibi, Ed Atkins, and Rose Lowder (www.hasenherz.at). Since 2014 Anderwald and Grond lead the cross-disciplinary artistic research project "Dizziness—A Resource," which aims to elucidate on the potential of states of dizziness, uncertainty, and unbalance in view of artistic, philosophical, and cultural and natural sciences. In cooperation with Katrin Bucher Trantow, they developed the exhibition series "Dizziness. Navigating the Unknown" at Kunsthaus Graz (2017), and "Utrata równowagi" at U-jazdowski Castle, Centre for Contemporary Art, Warsaw (2017–18). A new edition "Dizziness—Navigating on Common Ground?" will be shown at the National Museum of Contemporary Art in Bucharest in 2020. www.on-dizziness.org

Mathias Benedek is Senior Scientist at the Department of Psychology, University of Graz, Austria. He investigates cognitive and brain processes underlying creative thought, as well as individual differences in creativity, intelligence, and personality. Benedek has published numerous empirical articles and book chapters in the fields of creativity research and cognitive neuroscience. He is member of the editorial boards of "Psychology of Aesthetics, Creativity and the Arts" and of "Creativity: Theory-Research-Applications." In 2015, he was awarded the Berlyne Award in recognition of outstanding research by an early career scholar from the Division 10 (Society for the Psychology of Aesthetics, Creativity, and the Arts) of the American Psychological Association.

Oliver A. I. Botar is Professor of Art History at the University of Manitoba in Canada. His PhD dissertation (University of Toronto) was entitled "Prolegomena to the Study of Biomorphic Modernism: Biocentrism, László Moholy-Nagy's 'New Vision' and Ernő Kállai's *Bioromantik*." In it, he related biocentric ideologies to central European modernism, particularly as it relates to the Bauhaus, and this set the course of much of his subsequent career. He has lectured, been published, and has curated exhibitions in Canada, the United States, Europe, and Japan. He is the author of *Technical Detours: The Early Moholy-Nagy Reconsidered* (2006, in Hungarian, 2007) and *Sensing the Future: Moholy-Nagy, Media and the Arts* (also in a German edition, *Sensing the Future: Moholy-Nagy, die Medien und die Künste*, 2014). The associated exhibitions, which he curated, were shown in New York, Rutgers, Budapest, Pécs, Winnipeg, and Berlin (Bauhaus-Archiv, Museum für Gestaltung). He is a coeditor of *Biocentrism and Modernism* (with Isabel Wünsche, 2011) and *telehor* (with Klemens Gruber, 2013). He has published numerous articles, and has lectured widely in North America, Europe, and Japan. He has also worked on Canadian art, publishing *A Bauhäusler in Canada: Andor Weininger in the '50s* (2009), *An Art at the Mercy of Light: Works by Eli Bornstein* (2013) and several articles.

Katrin Bucher Trantow, born in 1971 in St. Gallen, (CH), lives and works in Graz (AT). She studied art history and history at the University of Basel. From 2001 to 2003, she worked as assistant curator at Kunsthalle Basel. Since 2003 she has worked as curator at Kunsthaus Graz and has served as its interim director in 2016. Selection of curated exhibitions: "Katharina Grosse"; "Berlinde De Bruyckere"; "Cittadellarte. Sharing Transformation"; "Michael Kienzer"; "Measuring the World, Heterotopias and Knowledge Spaces in Art"; "Robot Dreams" (with Museum Tinguely, Basel); "Life? Biomorphic Forms in Sculpture"; "Albert Oehlen"; "China Welcomes You ..."; "M Stadt, European Cityscapes"; and "Sol LeWitt." She has made numerous contributions to catalogues and other publications, including *Camera Austria International*, *Domus*, and *Parnass*. Katrin Bucher Trantow is a founding member of Translocal, a cooperation network of European museums of art, member of CIMAM (International Committee of ICOM for Museums and Collections of Modern Art), ICOM, IKT, and served as member of the steering committee for the EU-project "Museum as Toolbox" (2015–17).

Davide Deriu is Director of Architectural Research at the University of Westminster, London. After graduating from Politecnico di Torino, he specialized in architectural history and theory at the Bartlett, UCL. He received fellowships from the Arts & Humanities Research Council in the UK, Yale University's Paul Mellon Centre, and the Canadian Centre for Architecture (CCA), where he also curated the exhibition "Modernism in Miniature" (2011). His main interests lie in the experience, perception, and representation of architecture and urban space. He has contributed to a number of books as well as journals—e.g., *Architectural Theory Review, Journal of Architecture*, and *Emotion, Space and Society*. He also coedited several publications, including *Emerging Landscapes* (2014), and was a founding editor of the open-access journal *Architectural Histories*. Recently, he was a Mellon Fellow on the CCA program "Architecture and/for Photography," and Rowe Lecturer at the RIBA (2017). Currently he leads the inter-disciplinary project "Vertigo in the City," seed-funded by a Wellcome Trust grant.

Karoline Feyertag is a philosopher, translator, and lecturer in the Department of Philosophy at the Alpen-Adria-Universität Klagenfurt. Currently she is the coordinator of the isaScience conference and of artistic research projects at the mdw – University of Music and Performing Arts Vienna. Feyertag joined the research team of "Dizziness—A Resource" as an expert in French postmodern philosophy. Her major research interests focus on contemporary French philosophy, queer-feminist theory, cultural studies as well as artistic research methodologies. She has been a fellow of the International Research Centre of Cultural Studies in Vienna and at the École Normale Supérieure in Paris. Her recent publications include *Dizziness—A Resource: Dizziness and the Compossible Space in Research-Creation* (2018), *Queering Dizziness* (2017), and *Sarah Kofman: A Biography* (2014).

François Jullien is Professor of Philosophy at the University Paris Diderot and chair-holder of the Altérité Chair at Fondation Maison des Sciences de l'Homme, Paris. He is one of the most important figures of contemporary French philosophy. Jullien's work is deployed at the crossroads of sinology and general philosophy. Based on a study of the thinking of ancient China, Neo-Confucianism and the literary and aesthetic conceptions of classical China, it questions the history and categories of European reason by establishing a confrontation between cultures. By making the detour through China, the work of Jullien has thus opened up fertile and demanding tracks to think interculturality. The current work of Jullien aims at simultaneously disorienting thought, exploring in the Far East other intelligibilities than those developed by European thought; and by returning from this gap, to go back into the embedded choices of European reason, and to reexamine it in its prejudices—in other words, in its unthought. Jullien is the author of more than twenty major works, translated in more than twenty countries (including China and Vietnam). Recent publications include *Dé-coïncidence: D'où viennent l'art et l'existence?* (Grasset, 2017), *Une seconde vie* (Grasset, 2017), and *Il n'y a pas d'identité culturelle, mais nous défendons les ressources d'une culture* (Éditions de L'Herne, 2016).

Sarah Kolb is an art theorist and university assistant at the Department of Art History and Art Theory at the University of Art and Design Linz. After studies in philosophy, history of arts, and physics she was curator at the Vienna Secession and fellow at the International Research Centre for Cultural Studies in Vienna, at the Research Centre "Media and Cultural Communication" in Cologne and at the Duchamp Research Centre in Schwerin. In 2016 she finished her PhD on Bergson and Duchamp at the Academy of Fine Arts in Vienna. Currently she is working on a research project on Roger Caillois and planning a project on topological operations in art and art theory. Her books include *Painting at the Service of Metaphysics: Marcel Duchamp and the Echo of Bergsonism* (2015) and two major edited volumes *The Logic of the Imaginary: Diagonal Science after Roger Caillois* (2018).

Rebekka Ladewig is a cultural studies scholar and art historian. After obtaining her PhD with a study on the epistemology of orientation and the experimental history

of vertigo at Humboldt University of Berlin in 2012, she joined the Cluster of Excellence "Image Knowledge Gestaltung: An Interdisciplinary Laboratory" as a post-doctoral researcher. Since 2014 she has worked at the Media Faculty of the Bauhaus-University, Weimar, where she has been filling in the professorship for the history and theory of cultural techniques since 2018. Since 2008 she has coedited the journal *ilinx: Berliner Beiträge zur Kulturwissenschaft* and the related book series *ilinx-kollaborationen*. Her fields of research focus on theories of tacit knowledge, the cultural history of space flight, the experimental history of vertigo, transformations and migrations of Gestalt psychology, and theories of milieu. Ladewig's current research project focuses on the cultural history of bow and arrow. Her monograph *Schwindel: Eine Epistemologie der Orientierung* was published with Mohr Siebeck, Tübingen, in 2016.

Jarosław Lubiak is artistic director at U-jazdowski Castle Center for Contemporary Art in Warsaw, Poland. He also teaches at Art College in Szczecin. In his work as a curator and art critic he focuses on crossings between contemporary art, philosophy and social sphere, aesthetics and politics, art institutions and political economy. He recently curated "Assaf Gruber: Rumour," U-jazdowski Castle Center for Contemporary Art, Warsaw, in 2018; "Slavs and Tatars: Mouth to Mouth," U-jazdowski Castle Center for Contemporary Art, Warsaw, in 2016–17; "The State of Life: Polish Contemporary Art within the Global Context" in National Art Museum of China, Beijing, in 2015. He was a member of a curatorial team of Europe (to the power of) (2012–13)—the project led by Goethe Institute, London and co–realized by ten partners in Europe and China and of "Scenarios about Europe" (2011–12)—at Museum of Contemporary Art in Leipzig, Germany. He also curated with Małgorzata Ludwisiak "Correspondances: Modern Art and Universalism" juxtaposing and interweaving the collections of the Muzeum Sztuki, Łódź, and of the Hermann and Margrit Rupf Foundation/Kunstmuseum, Bern, in 2012. The books he recently edited include: *The State of Life: Polish Contemporary Art within the Global Context* (Beijing: National Art Museum of China, People's Fine Art Publishing House, 2015); *Unleashed Forces: Angelika Markul and Contemporary Demonism* (Łódź: Muzeum Sztuki, 2013); *Correspondences: Modern Art and Universalism*, with Małgorzata Ludwisiak (Łódź: Muzeum Sztuki, 2012); and *The Afterimages of Life: Władysław Strzemiński and the Rights for Art* (Łódź: Muzeum Sztuki, 2012).

Alice Pechriggl is a philosopher and group analyst. She is full professor at the Department of Philosophy, Alpen-Adria-Universität Klagenfurt. In 2000 she was the cofounder of the Center for Advanced Gender Studies at the University of Vienna where she was professor from 2000 to 2003. Pechriggl is part of the international interdisciplinary research network Social Imaginary and Creation. She is also member of the Research Cluster *Visual Culture* at the University of Klagenfurt. Her last book, *Agieren und Handeln*, a philosophical-psychoanalytical theory of action, was published 2018 by Transcript.

Oliver Ressler produces installations, projects in public space, and films on issues such as economics, democracy, global warming, forms of resistance, and social alternatives. Solo exhibitions: Berkeley Art Museum, USA; Alexandria Contemporary Arts Forum, Egypt; Wyspa Institute of Art, Gdansk; Lentos Kunstmuseum, Linz; Centro Andaluz de Arte Contemporaneo – CAAC, Seville; MNAC – National Museum of Contemporary Art, Bucharest; SALT Galata, Istanbul. Ressler is the first price winner of the Prix Thun for Art and Ethics Award in 2016. www.ressler.at

Maya M. Shmailov was born in Tbilisi (GE) and currently lives and works in Tel Aviv. She is a researcher, writer, teacher, photographer, and patent attorney. She studied biology and mathematics, and graduated from the Science, Technology and Society program at Bar Ilan University. Her PhD work explored formation of a new scientific discipline through the intellectual biography of a consummate outsider in biology: mathematician Nicolas Rashevsky. Shmailov's research provides insights not only on the innovative power of outsiders and their fresh perspectives, but also on the complex, at times disturbing, personality traits of boundary-crossers. Shmailov's research has been

extensively published through lectures and in writing, including: Oren Harman and Michal Dietrich's *Outsider Scientists: Routes to Innovation in Biology* (2013), Tedx Talk "My Love Affair with an Outsider" (2014), and *Intellectual Pursuits of Nicolas Rashevsky: The Queer Duck of Biology* (2016). Shmailov's current research concerns designers as outsiders in biology with a particular interest in the designer as a cultural translator of science.

Maria Spindler is organizational consultant in economics and for NGOs. Her consulting and speaking topics are: creating a shared future; inventing tailor-made organizations, leadership systems, and structures; organized power relations and their potential; leadership culture; organizational learning; and awakening organizations to transform and create society. She has lectured at universities in Europe and the US: organization and leadership, corporate culture, strategy development and implementation, and group dynamics. Her book publications deal with organizational learning, innovation, leadership, group dynamics, consulting, and research. She has qualified to teach trainers for the ÖGGO (Austrian Association for Group Dynamics & Organization Consulting). Spindler founded the *COS-Journal* in 2011 and has been its chief editor since then, and she cofounded https://arch-way.art/.

Marcus Steinweg, born in 1971, lives and works as a philosopher in Berlin. He is Professor of Art and Theory at the Art Academy Karlsruhe. His recent books include: *Duras* (with Rosemarie Trockel, Berlin: Merve Verlag, 2008); *Politik des Subjekts* (Zurich/Berlin: diaphanes, 2009); *Aporien der Liebe* (Berlin: Merve Verlag, 2010); *Kunst und Philosophie / Art and Philosophy* (Cologne: Verlag der Buchhandlung Walther König, 2012); *Philosophie der Überstürzung* (Berlin: Merve Verlag, 2013); *Inkonsistenzen* (Berlin: Matthes & Seitz, 2015); *Evidenzterror* (Berlin: Matthes & Seitz, 2015); *Gramsci Theater* (Berlin: Merve Verlag, 2016); *Splitter* (Berlin: Matthes & Seitz, 2016); and *Subjekt und Wahrheit* (Berlin: Matthes & Seitz, 2018). Some of his books have been published by MIT Press.

]a[academy of fine arts vienna

SternbergPress

]a[academy of fine arts vienna

The feelings of dizziness and vibrations are closely related. Most people experience vibrations at one point or another, and some even frequently. The unmistakable feeling of the body vibrating can be overwhelming. More often, though, the feeling is less distinct, and the vibrations are ignored or brushed aside as being caused by something else, like a truck passing, the floor rocking, a sudden spell of wobbliness. In dance and ritual, vibrations are made visible through the shaking of the performers. This shaking, as well as the vibrations that are sensed but unseen, can be understood as the first step in a transformation: a signal from phantom bodies, lost memories, and new identities trying to wriggle their way out.
Joachim Koester (artist)

This book gets your head spinning. While being bombarded by daily reports of crises (both real and fictional), while destabilization has become normal and feelings of disorientation, fear, and dizziness have started to prevail in our everyday lives, the contributors to this book reverse this perspective by emphasizing that dizziness is a valuable resource. *Dizziness—A Resource* is the result of the cross-disciplinary research project initiated in 2014 by artistic duo Ruth Anderwald and Leonhard Grond. What can we gain when balance is lost? How can anarchy and dizziness empower us? How can a cognitive vertigo fuel our cognition? Artists, scientists, philosophers, and art critics attempt to answer these questions and to show us how to navigate a world marked by unpredictable change.
Małgorzata Ludwisiak (director, Ujazdowski Castle Centre for Contemporary Art, Warsaw)

With contributions by Ruth Anderwald, Mathias Benedek, Oliver A. I. Botar, Katrin Bucher Trantow, Davide Deriu, Karoline Feyertag, Leonhard Grond, Sarah Kolb, François Jullien, Rebekka Ladewig, Jarosław Lubiak, Alice Pechriggl, Oliver Ressler, Maya M. Shmailov, Maria Spindler, Marcus Steinweg

ISBN 978-3-956795-21-3
9 783956 795213