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Towards a Phenomenology of Novelty: Perceiving and Engaging with Virtual Reality

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Abstract

In 4E cognition, – which holds that the mind is embodied, embedded, enacted and extended – the role of contexts is highly relevant, as an agent is understood as a system reciprocally connected and dependent on its environment. A way to evaluate contexts is to look at the familiarity or novelty of phenomena and relationships within that system. However, these observations are challenging because they aim at the subjective perspective within an experience.

In this thesis, I explore the notions of unfamiliarity and novelty through a phenomenological lens while mapping the structure of subjective capabilities and relationships in a specific version of unfamiliarity. I present an iterative experiment where participants face the unfamiliar and experience the process whereby what is novel becomes, to a degree, familiar and meaningful to them.

Hence, the participants experience a virtual reality artwork characterised by its abstract presentation and a difficult-to-recognise context.

Afterwards, they participate in extensive phenomenological interviews to produce qualitative descriptions of their perceptions, intentions, affect, and reflections.

I hermeneutically evaluate and phenomenologically treat these descriptions. Across participants, clusters of descriptions form intersubjectively relevant consensus categories used for structural analysis of the experience.

I describe an observed 'self'-enabling drive to act, characterised by the participants' focus on their potential actions. They anticipate, actuate, and realise their relevance within the new environment.

I also observe what I call 'mediating action potentials' that differ from classical habituated actions in the specificity of involved expectations and intersubjective openness. These observations fit the assumptions that action perception strives for optimisation with the help of experiential 'types' and supports the notion of a minimal self sedimenting in and through a lived body.

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1. Introduction: (Un)familiarity and the Role of Contexts as a Research Topic

Imagine the unimaginable: encountering something truly new. Sound easy? After all, we continuously encounter new things in our lives. However, almost everything shiny and mysterious also carries aspects of familiarity. For instance, consider a new phone app or the experience of a foreign culture. In both cases, we know how to approach them broadly: we can tap and swipe, symbols are often interactive, and a menu with options is hidden behind three bars. While visiting another country, we crudely know pop references from all over the world, or we can guess the function of places and buildings from the implicit derivation of practical design decisions. However, when obvious orientation supports are missing, what happens?

We can attempt to imagine such situations: an extraterrestrial artwork of unknown origin and intent, a yet undiscovered landscape with flora and fauna produced by vastly different laws of nature, or a playground with structures and toys for another species. Nevertheless, we must admit that we cannot imagine the

objects themselves – they are, by definition, unimaginable. Thus, if they become tangible, they do so by us recognising our relationship with their circumstances and possibilities. They may still appear strange, but they are now familiar to a degree.

Indeed, this thought experiment highlights relevant questions: Can we even make sense of what is in front of us? How so? What skills and coping strategies are necessary? What does it all feel like?

These questions motivate this thesis, while in a general sense, they may inform our general understanding of everyday perception. How are our cognitive and bodily capacities prepared to integrate the unfamiliar? What does it mean to find meaning where none is apparent?

A Phenomenology of Novelty and Emerging Meaning

Questions like these are tools in the philosophy of mind. They are used to consider our perceptual capabilities and the nature of consciousness. This thesis seeks to add to the understanding of these capabilities by focusing on a specific version of unfamiliarity. It will present an experiment where the participants face the unfamiliar while utilising a methodology that uncovers the phenomenological structure of their experiences. The thesis then presents observations of the lived process whereby what is novel becomes familiar and meaningful.

Phenomenology is about understanding human experiences and

intersubjective structures of consciousness as approached from a subjective point of view. The experience of unfamiliarity and emergent meaning in a phenomenology of novelty illuminates what happens to a subject coping with such phenomena. Nevertheless, the work is about the structures and processes of meaning-making we all undergo and share.

Observing experiential structures is a different task than, for example, thinking about whether pure unfamiliar situations can even exist or how relevant unfamiliarity is for our cognition. For this observation, I must judge a situation characterised and shaped by unfamiliarity from an external standpoint and then somehow determine how the participants actually experience it. The experimental study of this thesis utilises a highly abstract virtual reality (VR) artwork for this purpose. The idea behind using such material is that the presented context is hidden beneath representational layers so that it appears almost without context. How does one cope? What does one feel and think in the face of a lack of context?

Here is where this thesis offers a detailed account of the complex interplay of affect, intentions, and actions by applying a phenomenological method to the background of 4E cognition while calling upon the provided agency within a multimodal, complex virtual environment. It collects descriptions of subjective phenomena via phenomenologically trained interpretation and scientific validation. The guiding research question is

How do we *cope in the face of novel or unfamiliar contexts* of an environment?

In response, I map the experiential structure of a specific version of this experience by focusing on the interplay of intentions, affect, habitual performances, and the perceived self. How are the participants historically situated? How do they recognise and enact themselves? How are they perceptually equipped to realise initially unknown meanings and relationships?

The Structure of this Thesis

This thesis is a philosophical project at heart that conducts an exploratory experiment. Therefore, its structure reflects both aspects. Thus, I attend to the theoretical background, the methodology and the experiment before the actual observations and their analysis, similar to how many empirical experiments are documented. However, the respective chapters are considerably more extensive since they must fulfil additional requirements regarding the use of concepts and the introduction of methods for different readerships.

Chapter 2 introduces the theoretical background of my study. I explain the interdisciplinary field of 4E cognition and how it has answered long-standing questions about meaning-making. I situate this thesis within contemporary phenomenology and enactivism. Starting with the notions of 'sense' and Maurice Merleau-Ponty's

embodied perception, I explore contexts of perception through the duality of affect and actions and the role of habits and affordances while subsequently arriving at intentionality and the self. This introduction to a wide set of research avenues can help readers who are not well versed in experimental phenomenology to clarify the concepts I later use in the interpretative analysis. This chapter closes with relevant proposals to grasp 'unfamiliarity' and its phenomenological consequences, which I also take up in the analysis.

Chapter 3 explains the methodology I use in my study. Since it is still somewhat unusual for phenomenologists to design and conduct an experimental study, I explain why I do so and introduce leading scholars who have shown the relevance of applying phenomenology in the modern cognitive sciences. I then make the case for the advantages of 'real' experiences as factual variations in the face of Edmund Husserl's eidetic variations. As I use VR artwork for my factual variations, I also highlight specific modalities of aesthetic experiences and the technical and mediated aspects of a digital environment.

This methodology chapter concludes with the collection, validation and analysis of my data: the participants' interview statements. These statements form consensual categories that validate prominent aspects between participants and highlight structural similarities of the experience. Hence, I set up my data collection by addressing the exploratory and approximating nature of a phenomenological inquiry and the problem of definition bias with

experiential phenomena. Herein is where I also establish the starting definition of the experience and explain why it changes throughout the iterations of the experiment.

Chapter 4 then outlines the experiment. It starts with the search and vetting of potential artworks, which includes a close reading of the final artwork: *Mutator VR: Vortex*, by William Latham, Stephen Todd, Lance Putnam, and Peter Todd. The initial interview guide is then explained. Following, I recapitulate how each of the three iterations of interviews unfold and their subsequent changes to the virtual environment, the interview guide, and the experimental procedure. A preliminary thematic clustering of the participants' statements is part of this process.

Chapter 5 presents the found consensus categories of experiential descriptions, including the participants' judgements, intentions and motivations, along with their emotions and perceived affordances. I analyse how they are structurally connected and whether they form coherent stances or modes of engagement, which includes interaction dynamics, habitual particularities, and the participants' perceived role – the experienced self. I then present an observed 'self'-enabling drive to act. This affective drive is fuelled by distinct 'mediating' action potentials that operate with much more open expectations than action potentials habituated through familiarity with concrete categories of objects and situations.

In Chapter 6, the final chapter, I reflect on the theoretical implications and broader significance of the study's findings. The

chapter examines how the proto-gestures and mediating actions identified in the analysis represent a transitional ground between the minimal and narrative aspects of selfhood while addressing the methodological innovations of using immersive technologies as tools for factual phenomenological variations. These reflections merge the thesis' contribution to understanding perception as active sense-making while opening avenues for future research at the intersection of phenomenology, cognitive science, and aesthetic experience.

My analysis indeed works with relevant concepts and current discussions. However, the experimental study and the treatment of the collected interview data were separated from such assumptions to conduct phenomenological work on experiential descriptions only since the consensus categories needed to be as isolated as possible from philosophical theories. As the author and interpreter of these findings, I was never unburdened from the surrounding discourses, as discussed in Chapter 3. However, first, allow me to introduce the literature and concepts in which this thesis is situated.

2. Theory and Literature: The Story of ‘Sense-Making’, Action Perception, and the Self

Even though they comprise the core of my research question, ‘novelty’, ‘familiarity’, and ‘context’ in perception are such intricate concepts that they demand a proper introduction. This need is even more true since this thesis is aimed at a diverse readership – with the author approaching the topic through lenses as diverse as the phenomenology of the 20th century, European media studies, and aesthetical theories.

This chapter introduces the theoretical foundation necessary for understanding my approach to perception in unfamiliar contexts through five interconnected sections. It begins with sense-making (Section 2.1) by examining how meaning emerges through the dynamic relationship between subjects and their environments. Moving beyond traditional representational approaches, I adopt the perspective that sense-making involves an ongoing, imperfect

tuning to the world – a process that asks how things matter to an embodied agent. Section 2.2 explores enactive perception and cognition within the broader 4E framework by focusing on perceptually guided action, where cognitive structures emerge from recurrent sensorimotor patterns. I examine different strands of enactivism (i.e. autopoietic, sensorimotor, and radical) to highlight the centrality of activity in perception.

Section 2.3 investigates actions in aesthetics by examining how actions contribute to sense-making and the affective dimensions of engagement with unfamiliar environments. This analysis advances our understanding of how actions serve as the first context in novel encounters, preceding representational meaning. In Section 2.4, I turn to the self as the temporal continuity that underlies value-action relations to explore how embodied intentionality enables subjects to perceive and actuate what matters to them. Drawing on Merleau-Ponty's notion of motor intentionality and its critiques, I develop an account of the diachronic nature of intentionality as it plays out in unfamiliar contexts. Finally, Section 2.5 examines what matters to the self by focusing on how affective valuation shapes action potentials and creates the conditions for meaningful engagement with the world.

Together, these theoretical explorations establish the framework I later use to examine how the subjects in my study confront, navigate, and make sense of novel environments through embodied affective action. The conceptual groundwork for my experimental method, which is conceived to maintain a critical and

methodological distance from all these concepts, is detailed in the following section.

2.1 Sense-making

This thesis assumes a productive experimental situation, namely that experiencing the 'thin contexts' of an unfamiliar environment can help illuminate subjective processes of finding meaning in the world. Therefore, the thesis first examines complex terms within and around 'meaning'. What do these scientific concepts entail for a project like this one, and what kind of academic projects are already involved? This entire chapter is a literature review that explores neuroscience, aesthetics, and even game studies while finding its core arguments within the modern phenomenology of perception and enactivism. Nevertheless, a few thoughts about the term 'meaning' and its more productive sibling 'sense' are first necessary.

The Meanings of 'Meaning'

'Meaning' has been the subject of prominent investigation in linguistics, semiotics, and information theory because of its numerous connotations. Its boundaries and substance are at the core of many philosophical fields, the ontologies of everything, and the philosophy of language. It even permeates every aspect of

theology and metaphysics.

Perhaps something more primal lies at the heart of all these roles 'meaning' can take – part of everyday life – which this thesis helps to navigate. It explores how personal human experience invokes, manifests, and plays out meaning. Looking at the personal domain (i.e. the subjective) requires taking an inward stance to look at factual behaviour as crucial while including what a situation *feels like*. This process starts with acts of perceiving the world and perceptual phenomena, continues with emotions, reactions, and bodily sensations, and finally includes reflective thought, mental reason, and imagination.

Here, the term 'meaning' may, in fact, be problematic. Even though the project of experiential meaning is sometimes called 'meaning-making', the term mixes discourses that try to unpack the contents of experience, media, and culture on their own rather than the constitution and structures of experience itself, which is a different object of research. In the philosophies of language, the differentiation between 'meaning' and 'sense' categorises the relationships of a word or a sign.

Consider Frege's famous example. The meanings of the words 'morning star' and 'evening star' point to the same celestial object, Venus, based on the relationship between certain signs and signified objects or concepts. However, the sense of 'you are my morning star' accounts for the relationship between a sign and

concrete actors that use this sign in a concrete situation.[1]

Moreover, take the case of an aesthetic object that is much closer to this thesis. The 'experienceable' meaning of a painting on a museum wall differs from the meaning of the concrete situation 'to attend to and engage with a particular image at a certain point in my life'. The entanglement of the painting's *culturally inscribed meaning* with what it *subjectively means* makes this issue of meaning so muddy. Imagine that the painting shows the symbolic religious voyage of a ship in a stormy sea with a harbour in sight. What this depiction may 'mean' for me is to engage, realise, and confront my personal notions and concrete experiences of a voyage.

'Sense'

Ergo, this thesis differentiates between 'meaning' as the contextual, latent space of an artefact and 'sense' as the concrete relationship to a specific subject at a specific time. Thus, 'meaning-making' is the dynamics of relating phenomena to create a contextual possibility space of a material artefact, while 'sense-making' is the process of acting as oneself within this space of meanings.[2] Crucially, the first

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[1] See e.g.: Peleš, "Literary Semantics and the Concepts of Meaning and Sense."

[2] This thesis uses this terminology for clarity. However, there are other, often overlapping uses of the terms, e.g. in the literature around John Dewey's concept of the self. Mark Johnson explains how with Dewey 'meaning' is an aspect of the enacted self, which is relational and, in time, affords experiences. In this thesis, this aspect is encapsuled in the term 'sense' instead, as this section explains.
See: Johnson "Identity, Bodily Meaning, and Art," 210.

may be part of the latter.

For instance, the painting is conceived as a collection of visual entities tied to contexts: the ship, the raging sea and storm, and the harbour in the distance, but also the undecipherable blob in the corner that may be someone fallen overboard or a mere piece of driftwood. While these elements are valued differently, they are navigated through observable behaviour. I can spend more time taking in the raging sea than – in my opinion – the generic-looking sailing ship. Indeed, all senses are navigated through activity. I can daydream about the atmosphere from the painting's scenery, or I can walk between paintings to compare my feelings and then actively ponder whether I subscribe to the idea that voyages in life actually set out for a safe harbour.

This discussion exemplifies the differentiation between 'meaning' attached to an artefact and 'sense' attached to a dynamic agent and its inner world. The discussion shifts from factual statements about the objective world and behaviour to *signification* – 'how something matters' for an individual.[3] It also adds subjective memory,

[3] 'Signification' is a phenomenological term with historically different connotations. The core idea is the relation of a subject to a phenomenon as a constituting part of that phenomenon. For instance, signification is part of Husserl's 'noema' as "that through which consciousness relates itself to its intended object".
See: Drummond, "Intentionality," 127.

In contrast to Husserl, Maurice Merleau-Ponty does not separate the content of experience ('noema') from the acts of an experiencer ('noesis'). As Donald Landes explained, signification is the "content of experience [… as] the intuitive coherence things have for us when we find them and cope with them in our practical circumstances".

intentions, and values to the structures of perception. Therefore, we must discuss the 'contexts' in which perception happens.

Nonetheless, perception, if only understood as the 'input' and 'processing' of sensory data, is just one-half of the story. Phenomenology – the study of the structures and dynamics of subjective experience – has a long history of discussing the role of subjective behaviour as the *expression* and simultaneous *realisation* of 'sense'. Indeed, Maurice Merleau-Ponty contemplated the idea of the body and its dual role as the tool and the place of perception while carving out analytical concepts like 'gestures' and 'habits' as early as the 1950s.[4]

In a current understanding of the term 'sense' (in which this thesis is interested), the subject and its body are not understood as "a functional system defined in terms of inputs and outputs – as it is for functionalist cognitive science". Instead, perception and cognition are 'sense-making' with an emphasis on their regulative and interactional dimensions. The subject feels and endures existential consequences of their mental and bodily activity, which results in "adaptive self-regulation".

Such an understanding of cognition and perception differs from a

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See Landes' foreword to: Merleau-Ponty, Phenomenology of Perception, X.

[4] Landes explained how for Merleau-Ponty 'embodied expression itself offered a fundamental account of all of human experience. As [Merleau-Ponty] wrote, "All perception, all action which presupposes it, and in short every human use of the body is already primordial expression".
See: Landes, The Merleau-Ponty Dictionary, 74.

straightforward input-output model. It puts 'meaning' in the relationship "between body and cognition [which] is accordingly constitutive and not merely causal". These words are from Ezequiel Di Paolo and Evan Thompson,[5] a cognitive researcher and a philosopher of the mind, respectively, who significantly informed the discussion about what 'sense' can be for an organism whose actions and mental processes are bound to its particular body.[6]

'Sense-making' is the idea that such organisms are continuously involved in a kind of negotiation about what they want, need, and demand. It is also the proposed capacity of an autonomous agent (or system) to conduct such negotiations while adapting and regulating according to its environment. Thus, "being a sense-maker implies an ongoing (often imperfect and variable) tuning to the world and a readiness for action".[7]

Di Paolo and Thompson heavily emphasised the teleology and autopoiesis of sense-making by postulating that at the core of cognition lies a "concernful self-affirmation" that "an entity for whom its own continuation is an issue would immediately project [...] onto its surroundings".[8] However, regardless of whether one subscribes to this notion, the quest for sense-making starts with the question of 'How does it matter?' to an individual being, which requires accounting for all the contexts that specific systems and

[5] See: Di Paolo and Thompson, "The Enactive Approach".

[6] More about enactivism in the next section.

[7] Di Paolo, Cuffari, and De Jaegher, Linguistic Bodies, 33.

[8] Di Paolo, "Autopoiesis, Adaptivity, Teleology, Agency."

processes of cognition, perception, and action must work within.

2.2 Enactive Perception and Cognition

Approaching perception and consciousness while considering their contexts falls under a scientific umbrella term: 4E cognition. Coined by Shaun Gallagher and others,[9] this acronym stands for embodied, embedded, enacted, and extended cognition. While 4E does not form a unified theory, it is widely accepted as a promising conceptual avenue for understanding cognition.[10] What unites the 4Es is the idea that such frameworks must depart from purely internal models of how the mind works.[11]

In the 1990s, several projects introduced the core ideas that would form the 4E's under the assumption that cognition is qualitatively

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[9] Gallagher stated, "I accept only partial credit (or blame). In 2007 I organized a conference on 4E cognition at the University of Central Florida and used that term. But the label itself emerged from a workshop on the Embodied Mind at Cardiff University, in July 2006, which included the following participants: myself, Richard Gray, Kathleen Lennon, Richard Menary, Søren Overgaard, Matthew Ratcliffe, Mark Rowlands, and Alessandra Tanesini".
See: Gallagher, Enactivist Interventions, 2017, 28.

[10] Andy Clark called it a "loosely-knit field".
See: Clark, Supersizing the Mind.

[11] Richard Menary said in his introduction to a 4E edition of Phenomenology and the Cognitive Sciences that 4E is supposed to overcome cognitivism as in "cognition as the manipulation of representations". However, as Menary emphasised, it does not make these approaches internally compatible by default.
See: Menary, "Introduction to the Special Issue on 4E Cognition."

different from the information input/output models of representational computation (RCC).[12] In general, the cognitivist view sees the mind as the sole result of the brain and nervous system's activity. In contrast, the 4E mind is understood as fundamentally connected to and brought forth by a world that includes the body in which it is situated, the objects and environment around it, and continuously unfolding extra-brain dynamics, including physiological, emotional, social, and contextual processes.

With the body at the centre of this understanding, the embodiment of the mind raises the question of what a mind is operating with and what its substances are. RCC and cognitivism's answer to this question used to be inner states and 'concepts' like symbols, representations, and inferences (formed from sensory input). Nonetheless, these must be replaced, at least to a degree, if cognition is seriously considered a product of more than just a

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[12] The recent push for embodied and 4E cognition started in 1991 with The Embodied Mind by Varela, Thompson, et al. and the proposal for 'distributed cognition' by Hutchins.
See: Varela et al., The Embodied Mind.
& Hutchins, "The Social Organization of Distributed Cognition."
& Hutchins, Cognition in the Wild.
Another fundamental text is: Clark and Chalmers, "The Extended Mind."

The integration of these ideas into cognitive science was later also labelled a 'pragmatic turn'.
See: Menary, "Pragmatism and the Pragmatic Turn in Cognitive Science."

nervous system.[13] [14] Since 4E cognition can be understood as an overarching project, different disciplines are occupied with it while debating within and with each other about specifics. As *The Oxford Handbook of 4E Cognition* states, at the centre of the discussion are "the very nature of embodiment, the precise way that brain, body, and environment are coupled or integrated in cognition, and how much we can generalize from the observation of embodiment in one type of cognitive performance to others"[15] Therefore, 4E cognition is an umbrella term, as 'embodied', 'embedded', 'enacted', and 'extended' emphasise different aspects and implications of the mind, inseparable from its world.

The most relevant E in this thesis is 'enacted' or enactivism. As a consensus definition, enactivism is the idea of cognition being brought forth by sensorimotor activity.[16] A robust and yet comprehensive definition of enactivism – which introduces the central role of perception and action also found in this thesis – was provided by Shaun Gallagher and Vara Sánchez:

> "[...] an explanatory framework of cognition articulated around two main tenets: (1) perception consists in

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[13] For an introduction of this discussion, see:
Shapiro and Spaulding, "Embodied Cognition."

[14] For a great overview from computational cognitivism to the enactivist approach and the historical background of Varela's and Thompson's famous The Embodied Mind,
see: Ward, Silverman, and Villalobos, "Introduction."

[15] Newen, Bruin, and Gallagher, The Oxford Handbook of 4E Cognition, 4.

[16] See: Shapiro and Spaulding, "Embodied Cognition."

> perceptually guided action, and (2) cognitive structures emerge from the recurrent sensorimotor patterns that allow action to be perceptually guided."[17]

Enactivism also encapsulates the other three Es while emphasising their flexibility. The embodied mind, its embedding contexts, and extended ways are not static properties of a system. This mind is not like an amodal computer running decision tree algorithms equipped with sensors and actuators while using the world as an extension of its hard drive. Instead, these dimensions need to be 'enacted'.[18] Therefore, *how* these actions play out becomes interesting and can transform the system itself.

While in principle always relevant, the dimensions of embodiment, embedding, and extension can be directly addressed, emphasised, or neglected by the acting system: the agent. In the example of looking at the painting, an agent can take a step back to focus on the sudden uneasy feeling in their stomach (i.e. embodied) and use that feeling to stop for a moment with closed eyes and recognise their intellectual and emotional conflict with simplified religious messages (i.e. embedded). They then immediately can scribble down recent memories of religious tropes to check their occurrence in the agent's modern lifestyle (i.e. extended).

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[17] Gallagher and Vara Sánchez, Performance/Art, 2021, 12.

[18] Enactivism is about "the enactment of a world and a mind". The 4Es are descriptive focal points of the unfolding relationship between the two: "the basis of a history of the variety of actions that a being in the world performs".
See: Varela et al., The Embodied Mind, 77.

All three Es are complex sets of impactful sensorimotor actions. However, exactly to what degree they shape cognition and perception – and vice versa – is what enactivism explores. The central notion is always that "perception is *for action*", as Shaun Gallagher explained in *Enactivist Interventions*.[19]

Different strands exist within enactivism. Ward, Silverman, and Villalobos identified the most common viewpoints as autopoietic, sensorimotor, and radical enactivism.[20] "Autopoiesis" refers to the autonomy of biodynamic systems, which models minds as "enriched versions of the structures and principles grounding life itself". In practice, autopoiesis refers to the consequences of an entity interacting with an environment – like 'nurturing' or 'inhibiting' effects. If a system can treat such outcomes as values, they comprise the beginning of cognition.[21] This form of sense-making revolves around physiological consequences while only implicating a phenomenal experience.

In contrast, "sensorimotor" enactivism starts with the apparent fact that phenomenal experience exists, an inner perspective, which is explained by taking "perception as an active exploration of the environment rather than the construction of an inner model that

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[19] Gallagher, Enactivist Interventions, 2017, 5.

[20] Ward, Silverman, and Villalobos, "Introduction."

[21] E.g. Di Paolo treats cognition as "a relational phenomenon" and stated that a system not only has to be able to recognise value but also 'adapt' and 'regulate' itself accordingly.
See: Di Paolo, "Extended Life."
& Di Paolo, "Autopoiesis, Adaptivity, Teleology, Agency."

recovers information lost in sensory transduction". While this approach ties self-experience and world experience to sensorimotor contingencies, how we explore and move,[22] it does not consider other aspects of consciousness. Finally, the radical strain of enactivism, a set of strong enactivist views, rejects the need for representational cognition altogether. Nevertheless, representations' must be addressed in more detail.

There is More to 'Context' than 'Representations'

The most consequential aspect of a strong enactivist perspective is that it rejects consciousness as something working with representational models. The question then becomes what representation is, why it speaks to the role of context in perception, and how enactivism proposes alternatives to it.

Discourses considering 'meaning' often take up the idea of representational operators for conscious processes. These elements

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[22] As an example, for Alva Noë perception is a "thoughtful activity […] determined by what we are ready to do". Our bodily competence in movement and sensory exploration not only adjusts but also informs and so fundamentally shapes sensory input. This explains perceptual presence, why the world appears to an I as integrated objects – even though on a modal level our perception is highly selective, prone to error and limited in perspective.
See: Noë, Action in Perception.
& Noë, Varieties of Presence.
According to Joel Krueger, this "involves an implicit understanding we have as subjects of what our bodies can do […] and how these bodily doings alter our perceptual access to the world".
See: Krueger, "Enacting Musical Experience," 101.

are easy to recognise and communicate, but they stand in for aspects of the world that are far larger, layered, incomplete, blurred, and multifaceted. For example, an object points to a story behind it, a symbol to a whole belief system, and a word to a complex conversation that previously occurred.

Take our painting with the signifier as particles of paint on a canvas, arranged in somewhat coherent shapes to form the image of a ship, complete with flattering sails and blurred by the powerful waves washing over it. These forms signify an imagined ship, which is more than what is depicted. This represented ship is physical and three-dimensional, filled with frightened people hidden inside its belly while moving through a sea that expands beyond the canvas and through time itself. It may even fall apart under the force of the storm.

On the one hand, this ship is theoretical since all possible ships may be seen in the picture, which is the realm of dialectic representation that is subject to cultural, media and art studies and not of interest in this thesis. On the other hand, it is a concrete ship for the person experiencing the painting, depending on their expectations of 'what' a sailing ship is and how it behaves. These expectations include cultural aspects since the viewer may have internalised the trope of the 'voyage' and the 'safe harbour' – or regularly read romantic pirate novels.

Notably, these expectations, associations, and emotions can even be remarkably different for the same person at different times. For

instance, the first time I walk past the painting, I may briefly associate it with the last blockbuster game I played on my video game console. However, 30 minutes later, I may remember something my art teacher taught me years ago about a similar painting.

The role of representations in a concrete and personal encounter is what consciousness studies are usually interested in. For example, representational models are used to describe a consciousness' way of relating to the world. The perceived world is a fluid set of concepts and predictions a mind has for the world.[23] An embodied version of these representations is 'modal', as defined by Lawrence Barsalou et al.[24] Besides internetwork connections, these modal representations possess connections between the information or

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[23] Bayesian models are common and assume that cognitive categories are formed from probabilistic stimuli-clusters (or features) of what they represent.
See e.g.: Anderson, "The Adaptive Nature of Human Categorization."
& Sanborn, Griffiths, and Navarro, "A More Rational Model of Categorization."
& Shafto et al., "A Probabilistic Model of Cross-Categorization."

These Bayesian models usually assume a two-fold categorisation following an input-output structure. First, the input, the stimulus, is categorised. Then, an output is formed from the input, the (cognitive) behaviour of the categoriser.
See: Kruschke, "Bayesian Approaches to Associative Learning."

[24] See: Barsalou et al., "Grounding Conceptual Knowledge in Modality-Specific Systems."
& Barsalou, "Perceptual Symbol Systems."

Later, these proposals found supporting evidence in the 'dependent spatial compatibility effect' and the 'action-sentence compatibility effect'.
See: Symes, Ellis, and Tucker, "Visual Object Affordances."
& Glenberg and Kaschak, "Grounding Language in Action."

semiotic level and the nervous system's sensorimotor structures, which learn and retain contextual sensory inputs and motor instructions.

Nevertheless, both amodal and modal representations are invoked through pre-conscious sensory signals. Moreover, as mental concepts, they are informed and mended by such signals. However, minds as consciousness machines do not operate with sensory data and instead only handle representations. Other concepts within the representational network of the subconscious point to modal and amodal representations. In modal representations, the concepts point to additional instructions and collected information that is too detailed and complex for the conscious mind to handle.

Representational models as stand-alone explanations of cognition are problematic from the perspective of embedded, extended, and embodied minds because the 'context' of the mind's operations is no longer merely internal, which is one understanding of 'unreflective' or non-conceptual thinking. Consider the debated but prominent models for two qualitatively different types of mental processes involved with decisions and problem solving: 'dual process' theories.[25] In short, they identify 'intuitive' (type 1) and 'reflective' (type 2) processes.

This classification sounds somewhat like the classical distinction between emotion and reason. However, as Evans and Stanovich noted, 'intuitive' here is an affective dimension of processes

[25] Popularised by: Kahnemann, Thinking Fast & Slow.

interacting with higher-order reflective processes. While type 1 processes are fast and do not involve working memory (i.e. they do not require an agent to mentally represent something), they rely on affective markers already possessed or otherwise accessible in contextual layers.[26] The four different E's capture and describe these contextual layers – these bodily, material, and social components rooted in fluid, temporal environments. They are external to the brain, which is typically 'the place' of a representation network. They also clearly appear in conscious experiences – at least, they become accessible via retroactive self-reflection.

Imagine, again, our painting. Using a 4E perspective, it is transformed from a set of signifiers to a situation of temporal, emotional, and bodily magnitude. In this view, the mind of a recipient comes into existence by bodily walking into the museum with baggage and intentions while deciding what to do there. Perhaps the recipient will find the raw beauty of nature immortalised in art, but then mere depictions of the sea make the visitor feel ill in the stomach. Maybe the recipient will use this environment to escape from the troubles of their working lives, which is all they can think about at the moment. Furthermore, maybe they will come with a friend with whom they already have agreed on how shallow art used to be. All this informs how they enact their encounter with the painting, which concretely influences their perception of it.

[26] See: Evans and Stanovich, "Dual-Process Theories of Higher Cognition."

Such an embodied account of the experience renders the idea of an internal information-relation network of representations as merely a part of different possibilities for meaningfully perceiving the painting. It also opens the door for the abovementioned 'radical' enactivism – hence, the debate of whether cognition can work without representations at all. Proponents like Daniel Hutto and Erik Myin built upon the ideas of AI researcher Rodney Brooks[27] to argue for the possibility of 'basic minds' that operate as embodied, intentional and extensive agents without ever handling content. These minds do not "'retrieve' informational content from the world – content that is then processed and manipulated – in order to attribute properties to the world" but only act upon it.[28]

While this thesis does not directly contribute to the fundamental role of representations, it relies heavily on the idea of non-representational cognition – minds that work and are shaped by the experiencers body (i.e. physical and spatial relations), feelings and proprioception, social interactions, and even technological tools. All these relations have a deeply profound impact on what the world 'means' to the experiencer in their live: what sense they make at a particular moment.

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[27] Brooks, "Intelligence without Representation."

[28] Crucially, they build upon a theory of 'extensive' instead of merely 'extended' minds. While the "Extended Mind Hypothesis (EMH) doesn't rule out the assumption that biologically basic cognition is, by default, brain-bound", their 'Radical Extensive Cognition' (REC) assumes that minds can be "constitutively already world-involving" and thus does not need mediating representations. See: Hutto and Myin, Radicalizing Enactivism.

Action and Affect: The Two Sides of the 'Enacted' Coin

As explained above, 'enacted', the fourth E, stresses the entanglement and flexibility of these new layers by proposing an idea of how the mind operates within them. In all its different permutations, enactivism boils down to the central role of 'activity' in perception and cognition. Actions bind all elements together and let the mind as an interconnected system come to life. Exactly how this happens is the subject of ongoing debate, even among enactivists.

Nevertheless, while actions describe how one connects oneself with the world from an inside-out perspective, the same story can be told from an outside-in perspective. Affect is often used as the term for the emotional component of an experience. While capital-E emotions like hate or envy are concepts of mid- to long-term experiences, how they are perceived in a concrete situation does not necessarily fit a birds-eye perspective on reality these concepts often take.

'Anger' for example, can be described as a category of a subject's relationships with targets, justifications, actual reasons, dynamic developments, and potential resolutions. However, as Michelle Maiese reflected, "I am not attending to my anger as such and will not necessarily categorize it, describe it, or identify it as similar to something I encountered in the past".[29] Here is where "affect" steps in. This thesis follows Maiese's understanding to great lengths. In

[29] Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 518–19.

Maiese's work on emotions belonging to the cognitive and bodily realms, she describes the experience of emotions as "affectively framed things or events" in combination with "unreflective bodily knowledge and habits that help us to keep track of the meaning and significance of things as we actively explore and interact with our environment".

Thus, the function of affective framing is the mediation of values. As subjects, our bodies and internalised behaviours keep us on track with what is valuable and relevant, while for emotions, "cognition and bodily feeling are mutually constituting", so the intentional significance of an environment in a given moment is "central to emotional experience".[30] Situational intentions and values rise from the broader goals and needs that a subject has. Thus, affective framing is the bodily awareness of a sense-making process – the sensitivity of what matters to us. How does this sensitivity play out in a concrete experience?

Maiese identified its dual mechanisms of 'attraction' and 'repulsion' as fundamental for the subject-in-the-world, in agreement with Varela and Depraz.[31] These "feelings of caring" are diffuse and holistic feelings of the body. Through them, every situation discloses itself to us, shaped by how we pay attention to it and how

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[30] Maiese labels these significations as 'desires'.
See: Maiese, 523.

[31] E.g.: "the primordial constitution of self-affection as a dynamic polarity, as manifesting itself in the form of a tension that takes several forms: like-dislike, attraction-rejection, pleasure-displeasure".
See: Varela and Depraz, "At the Source of Time."

we think about and associate with it. We make sense of the world and navigate it through our "affectively aroused body".[32] Affectivity, then, is the process of disclosure of the world – done by the subject but dependent on the reality of objects, materials, and signals in the environment.

> "Affective framing is a spontaneous, non-inferential, and pre-reflective way of discriminating, filtering, and selecting information that allows us to reduce the overwhelming clutter of information."[33]

Building on the work of Bernhard Waldenfels[34] and Jan Slaby[35], Maiese described the body as a node between self and action. Affect is intertwined with action. The first often motivates the latter, but it

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[32] At its "most basic level", there can be more reflecting ways to do this (e.g. judgement, association, and imagination). However, reflective cognition is preceded and informed by this sensitivity, as "caring is both bodily and evaluative".
See: Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 527.

[33] Maiese, 524.

[34] Waldenfels did not examine affect but 'pathos' in contrast to the idealising aspect of the mind, 'logos'. Pathos nature is of the body, and being "exposed to what is alien to myself (Ichfremdes) depends neither on our knowing nor on our willing, i.e., on our consciousness; it is related to our body". The affectionate, movable body may 'belong' to me, but that "does not […] mean being at my disposal". As such, it is the place of intertwinement of the 'own' and the 'other', capable of realising "situations which offer something which attracts or repulses us, which looks frightening or tempting". Crucially, this capability precedes concepts born out of perception.
See: Waldenfels, "Bodily Experience between Selfhood and Otherness."

[35] Slaby differentiates between the 'felt' body (e.g. the pain from a needle in your fingertip) and the 'feeling' body, in which the body is not an object but a vehicle of intentional expression. These are "impulses or urges towards specific or unspecific movements". As such, "affective states are intrinsically motivational".
See: Slaby, "Affective Intentionality and the Feeling Body."

is also realised through actions in a reactive body that feels itself.[36] Affective urges – "an organism's forward trajectory [...] fueled by desire and need" – are the motivation to act in a self-sustainable manner, "to supply [one]self with what [one] lacks to keep going". Thus, affective needs are the "interactive, sensorimotor process" of an active agent to express value to oneself, to "interpret environmental stimuli in terms of their vital significance".[37] Hence, affect is a constituting part of action because it is another aspect of the same body-environment interaction. Therefore, what affect can 'be like' depends directly on the activity and how it resonates with the environment.

Reconsider the example of the painting on the wall. A visitor's repulsion or attraction to the work does not happen while they are without activity and merely internally contemplating. Even the act of sitting down on a bench and focusing on a specific object in the room is already a highly specific activity. Long before, affective framing happens when the visitor enters the room – how they turn away and distance themselves or enthusiastically embrace an object by turning towards it and increasing their step to reach it. Nevertheless, the activity of focused sitting, already infused with

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[36] "Dynamic bodily engagement is a necessary condition of emotional consciousness". Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 527.

[37] The "development of more sophisticated modes of movement and bodily sensitivity corresponds to the development of more sophisticated modes of sense-making and emotional feeling. At every moment, the balance between living animal and environment is constantly interfered with, and then constantly restored by way of its own movements and adjustments".
Maiese, 528.

tacit knowledge of 'how' to look at a painting and what to seek, will likely result in a more complex emotional relationship with the painting than a casual, fleetingly interested observer slowly walking by.

Moreover, affect is not only part of the action within embodiment (i.e. being felt) and embedding (e.g. in motor activity and social actions) but also extended. Explored intensively by Andy Clarke, affect is the idea of cognitive work being done 'outside' the nervous system by tools like writing systems, symbolic representation, communication, and illustration. In turn, the extended mind also introduces the possibility of the mind being significantly shaped by the environment it can make use of.[38]

Furthermore, Kim Sterelny proposed that extension is indeed not a general ability to utilise the world, something we share indiscriminately. Instead, it is sets of concrete, unequal actions that depend highly on a subject's capacities to utilise their particular surrounding. As a result, the individual "niche" is constructed and fitted to one's needs and circumstances.[39]

Giovanna Colombetti and Joel Krueger built on this idea to include affective states. When we can support our cognition by utilising the environment, then the construction of such niches surely also includes emotions. Coined as 'scaffolding', we use tools, aesthetic experiences, personal references, and everyday occurrences (i.e.

[38] See e.g.: Clark, Supersizing the Mind.

[39] Sterelny, "Minds."

material and social) to induce, support, or inhibit emotional states.[40] The examples range from getting into the mood with a romantic song to covering all mirrors in our flat at a time of grief (and thus inhibiting potential moments of being stopped and reminded of ourselves).

The painting on the wall can also be such a material extension. Armed with an individual knowledge of religious tropes and already connected experiences, the willing art historian can use the painting (and, in fact, the whole battery of paintings hanging in this particular room) to evoke particular emotional sentiments about themselves and the world just by engaging with it. However, this act is not a function of expertise since everybody can do it. Of course, everybody's particular way of constructing the niche may differ significantly (e.g. concrete behaviour and conjured memories and experiences). Therefore, the next person's use of the painting may not be as comprehensible for us as the cliche of the expert who enthusiastically and empathically seeks a particular painting when they want to feel a particular way.

Michelle Maiese again took up the idea of affective scaffolding and highlighted that it is important to understand how this niche construction plays out. She used the terms "habits of mind"[41] and "framing" of a subject's environment. Hence, we can internalise specific interactions (e.g. socially or materially) to evoke particular emotional states. We can then influence or make use of our

[40] Colombetti and Krueger, "Scaffoldings of the Affective Mind."

[41] 'Habits' are also a central term discussed in the next section.

environment to achieve these states. Crucially, to create such habits and frame our environment, "environmental resources must be trusted, to a significant extent, to have a particular impact on one's affective state, and also be integrated, to a substantial degree, into one's bodily activities and daily routine".[42]

Therefore, understanding perception as 'enactive' means looking at it as a 'sense'-making process of continuous reciprocal interaction that has an affect–action motor at its core and is contextually embedded in the broader needs and circumstances of a subject. Ergo, this thesis raises questions and provides observations about actions and affect as the 'sense'-making dynamics working their way through different layers of contexts. By stripping away the dimension of representational relations, can we create a situation for research purposes in which the 'enacted' aspects become more obvious, where actions and affect emerge from their opaque entanglement and stand out even?

2.3 Actions in Aesthetics

Of course, only emphasising action and affect as central concepts for modelling dynamic sense-making is not enough. What exactly are their contributions, and how do they play out? This part of the discourse is the main contribution of this thesis. It adds to a rich discussion since 'action' as a term and a phenomenon previously

[42] Maiese, "Affective Scaffolds, Expressive Arts, and Cognition."

underwent scrutiny in the literature.

Phenomenology teaches us to discern the description of actions as observable occurrences from stepping into actions in the first person. Suddenly, it becomes important how an activity is perceived as one's own. Consider an exemplary viewer of the painting who may feel the 'want' to appreciate the work and experience every detail. However, they perform a whole array of actions without even noticing it – taking several steps towards the painting, almost touching it with their nose. They spend much time literally looking at the structures of the ship and the blurred lines comprising the sea with a focused gaze. They slightly bob their head from side to side to see how the light bounces off the oily paint and then take a step back again to grasp the whole canvas immediately. Most people probably do not actively 'decide' such actions, yet in hindsight, they would not hesitate to describe this close encounter as wilful. However, they may own these actions as wanting to look at the painting. What is a good way to describe this internal relationship to one's activities?

Recent phenomenology differentiates between a 'sense of ownership' and a 'sense of agency'. While the former occurs "regardless of whether the [action] is voluntary or involuntary", it still holds "the sense that I am the one who is undergoing an experience". In contrast, the latter is the feeling that "I am the one who is causing or generating an action [… or] a certain thought in

my stream of consciousness".[43]

Thus, the concept we derive from this experience is 'agency', which we can see employed by Gibson as a tool to describe why a perceptual stimulus is not a distinct occurrence from the responding behaviour of an organism. Being an agent means having influence over what to perceive and how to perceive it through actions and behaviour. This duality is 'embodied agency' because perceptive systems only function as they are in an energetic interaction (i.e. motion) with the world. However, this interaction can have different forces altogether with different impacts, so agency is the (felt) relation of an organism's active part in the interaction.[44]

Shaun Gallagher proposed agency as one of four pillars complementing the 4E framework, which is included in the 4A's of "affect", "agency", "affordance", and "autonomy".[45] Affect was introduced above as a part of the enactive perspective, while affordance follows shortly. Through Di Paolo's lens of an autopoietic organism, autonomy is the place of agency with a "self-constructed unity [...] actively regulating its exchanges with [the world] for adaptive purposes that are meant to serve its continued

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[43] Gallagher, "Philosophical Conceptions of the Self."

[44] We are "experiencing the world in relation to ourselves, including our bodily capacities". This 'ecology of agency', which includes information and affordances, is a product of the 'late' Gibson's work, while the 'early' Gibson tried to overhaul the classical stimulus–response theory.
See: Costall, "Bringing the Body Back to Life."

[45] Gallagher, "The 4Es and the 4As (Affect, Agency, Affordance, Autonomy) in the

viability".[46]

This viewpoint is similar to how Gallagher employed agency as a dynamic of mid- and long-term goals and not as 'control' over every minuscule aspect of one's actions. For him, "the relevant interactions to consider are in the dynamic couplings between a situated mind–body system and its physical–social environment".[47] Such an account of agency considers an agent embedded in a personal history and social contexts; it does so in mid- to long-term timescales. Agency is not reducible to elementary neuronal

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Meshed Architecture of Social Cognition", 2021.

[46] "The unity is self-distinguishing because it is constructed and sustained by its own activity in spite of the equalizing physical tendencies".
Di Paolo, "Autopoiesis, Adaptivity, Teleology, Agency."

[47] This is Gallaghers reaction to the neuroscientific debate around motor-control, where neuroscientists consider interactions with one's own body. They specifically look at concrete and cued movements of a body part in a very short timeframe. To have agency (or 'free will') over those is famously debated since empirical work in the mid 80s by Libet implied deterministic subconscious structures of neural activation which precede/predict the felt decision to act.
Gallagher mainly criticised this account of agency tied to the so-called 'readiness potential' for its narrow timeframe and the isolation of the actions in focus. He expected unconscious feedback loops in motor activity because of the flexibility and adaption to concrete circumstances of our actions, which require a quick and smooth integration of direct sensory data that is only possible on a pre-reflective, unconscious level.
See: Gallagher, Enactivist Interventions, 2017.

Notably, Libet's experiments had a window of 150 milliseconds between the conscious awareness of the urge to move and the actual movement. Thus, there still is agency. However, in his account, it was the negative capability to veto unconscious neural processes.
See: Libet, "Unconscious Cerebral Initiative and the Role of Conscious Will in Voluntary Action."

processes, nor is it reducible to a mental act. It involves a structure of complex relationships of contexts in timescales that allow for their integration, like the formation of intentions and the entanglement of strings of actions, the recognition of information that they produce and the reorientations they enable. Agency is ultimately tied to a subject's history, life experiences, and overarching needs and wants.

Dependence on contextual goals has also been well researched in a field that is much concerned with agency: game studies. These perspectives are especially relevant since this thesis works with a VR environment employing the same conditions for interaction as a computer game.[48] In *Games: Agency as Art*, C. Thi Nguyen proposed that humans "have a significant capacity for agential fluidity", so "we can deploy temporary agencies and agential modes without losing ourselves to them".[49] He referred to games as experiences involving a "construction of a temporary agency layered within our overall agency", whereby the "ends of the overall agency continue to function to regulate our choices and to maintain temporary agencies, and can intercede". In experiential terms, these temporary agencies are "compartmentalized and clear experiences of value".[50]

In other words, games set up rules and an environment for those

[48] This includes the virtual reality hardware and software implementations for graphics and interfaces, along with certain expectations of users because of their associations with how games make use of these tools. More is explained in Chapters 3 (i.e. methodology) and 5 (i.e. the analysis of participants' statements).

[49] Nguyen, Games, 5 & 217.

[50] Nguyen, 47 & 217.

rules to play out. They confront their players with (a) the choices to accept this magic circle of actions and 'submerge' their agency in the games contexts and then (b) the choices within the rules of the games, whereby a new agency emerges that points to the relationship between the subject and the game environment. While the explicit goal of games is to evoke situated and defined agency, they can only make use of it if the layering of agency exists as a general capability of humans. Thus, the games are an isolated example of how agency depends on (and is almost determined by) the environment. Nevertheless, it is also still entangled in the agents' historical, social, and physical makeup, which enables taking and continuously modulating *a perspective* on that environment.

Indeed, taking a perspective raises the question of how to recognise something. How are potential actions even available for an agent? This idea is unpacked next.

Attention, Engagement, and Awareness

We sometimes foresee actions and expect them, internalise them, and recognise their potential for application. However, actions can also happen to a subject, which we recognise after the fact. All variations of actions are an "enactment of a world and a mind" as long as we can say that they are based "on [...] a history of the

variety of actions that a being in the world performs".[51] Several concepts help to describe actions (and affect) as historical contextual dynamics of behaviour and perception. Two of the most relevant for this thesis are 'attention' and 'engagement' because they highlight that an interaction *can* differ in specific situations.

As an overarching dynamic, the capability to be attentive makes a system do something instead of doing anything else.[52] Thus, engagement here is the act of attending – be it conscious or unconscious – with the caveat that it includes behaviour that belongs to and distinctly shapes the experience of *being aware* of something. Together, these terms may seem elusive and circular, so we must unpack them further.

The terms 'attention' and its phenomenal brother 'awareness' have a strange dual function. For Depraz, they were "an experience and a method [to observe experience] at the same time".[53] She noted that as concepts, they are not merely descriptive but also constitutive of the phenomena of *perceiving* and *acting*. Thus, perception and

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[51] Varela et al., The Embodied Mind, 9.

[52] This is not the only way to approach 'attention'. In neuroscience, attention is often assumed to be a specific functional or neural system. Hommel et al. noted that because of this assumption, the term has been used for a variety of selection processes of different systems. However, attention, as an overarching capacity to be selective, is a byproduct of these processes, not necessarily their essence.
See: Hommel et al., "No One Knows What Attention Is."

[53] "Attention is a crucial phenomenon for an experiential phenomenology because it is two in one: an experience and a method at the same time […] not a separate tool, but the very tissue of such an experience".
See: Depraz, "An Experiential Phenomenology of Novelty: The Dynamic Antinomy of Attention and Surprise."

action can break down into causal, inanimate events without attention. Moreover, both only exist – or make sense – to an observer who is capable of utilising their own attention.

This ontological blurriness is not new. In the 1950s, Alfred Schütz described attention as an "alertness and sharpness of perception [as in 'sensory systems']". However, crucially, it also involves a form of intentionality and embodied action. According to Schütz, attention also needs the temporal situatedness of the attended object, with connections to past experiences and anticipations of the future, so 'attending' systems must incorporate these aspects.[54]

Later, Merleau-Ponty famously postulated that "our perception ends in objects, and the object, once constituted, appears as the reason for all the experiences".[55] For him, the object of attention preceded perception only from a retrospective on a certain moment in time, in a separate act of recollection of an experience. Attention itself is "the institution of a new dimension of experience, and the deployment of an a priori" – the origin of orientations – that, in turn, are interdependent with objects.[56]

Merleau-Ponty further described the object's preceding indeterminacy as an "interlocking of experiences in which one of them is perpetually given as an object". Thus, 'things' are merely part of a spatial (and temporal) system and appear as objects

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[54] See: Schütz, "Making Music Together."

[55] Merleau-Ponty, Phenomenology of Perception, 69.

[56] That is because they are a relational action through the self-object of the body onto the world. See: Merleau-Ponty, 32.

because – like all other spaces – they stand out against the background of the spatial body.[57] Attention, then, is not a mental capacity superimposed onto the body[58] but the body in time and space rooting itself.

Hence, without the intentional and bodily activity of orientations, there is no phenomenon of to attend. Shaun Gallagher built on this framing to couple agency and behaviour in mid- to long-term timescales and to 'free' a subjects will from neurological determinism. He argued that "behaviour motivates [...] an awareness of what is happening". This dynamic of 'motivated' attention renders agency as a structural feature of the interplay of behavioural, awareness, and higher-order conscious systems – even if attention on the micro-level looks uncontrollable or even physiologically determined.[59]

Therefore, the painting in the gallery is seen in all its detail because one engages in the activity of standing or sitting right in front of it and 'letting' one's gaze float freely over it (while not leaving the frame). Hence, while the gaze can only focus on something for a

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[57] Merleau-Ponty, 104.

[58] This is a view in the cognitive sciences and philosophy of mind that has much support and connotations. Therein, attention is understood "as anything from a capacity limitation, to a quantity-like resource, a specific neuronal or cognitive process, and a manner in which other neuronal and cognitive processes are going on". In more recent discussions, attention is understood as an activity but crucially still a mental one. For example, Sebastian Watzl proposed attention as "the activity of regulating priority structures", where current information is organised to make it more useful for the organism.
See: Watzl, Structuring Mind.

[59] See: Gallagher, "Action and the Problem of Free Will."

limited time (and the spontaneous and subconscious decision to do so is challenging to account for through 'agency'), the general stance of being aware of the paintings features and its possible relationships with oneself is informed and initiated by overarching, continuous activity. This example captures the motivation of attention, of being aware through sensorimotor engagement.

The embodied understanding of attention has gained support in some empirical work in neuroscience. For example, neuropsychologist Bruno Laeng demonstrated that the working memory of an image comprises a visual representation and a connected oculomotor pattern. Therefore, the path of the gaze controlled through the eyeball's rotation is part of the memory that is revoked through the imagery of the picture.[60]

Laeng later stressed that this outcome is not just a byproduct of the image-storing process. His findings pointed to the role of the body as the place, means, and manifestation of attention. The bodily movement of the gaze seems to encode the information concerning where the salient features of an object are likely to be found and, thus, where attention should be directed to find, identify, and explore an object.[61]

Similarly, Bompas and O'Regan explored how the eye's imperfect distribution of colour-perceiving cones and irregular resolution still

[60] Laeng and Teodorescu, "Eye Scanpaths during Visual Imagery Reenact Those of Perception of the Same Visual Scene."

[61] See: Laeng et al., "Scrutinizing Visual Images."

result in the colour vision we experience. They proposed a process of sensorimotor adaptation as the solution: the body's disposition as an acting, moving entity makes our vision possible, not vice versa.[62] These studies suggest that *attending to* is embodied from the start, while attention can be framed as the continuous interplay of the motivated body and its responding environment.[63]

Shaun Gallagher also proposed integrating cognitive abilities and motor functions because adaptive performance seemingly requires judgement and reflection, even in quick, small, and reflexive actions. As soon as context is needed to optimise an action, this "context-sensitivity requires some forms of mindedness".[64] Referring to Christensen et al.'s "meshed control in skill actions",[65] Gallagher adapted context-sensitivity as a flexibility in the relationship between knowledge and action. This dynamic elevates a performance from automatic to innovative. Context-sensitivity here denotes a straightforward form of cognition, one that "is not at

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[62] Bompas and O'Regan, "Evidence for a Role of Action in Colour Perception."
& Bompas and O'Regan, "More Evidence for Sensorimotor Adaptation in Color Perception."

[63] These and similar empirical findings can still be disputed as supporting attention as merely a sensory function. For instance, Sebastian Watzl et al. proposed attention as a cause of psychological or neural modulation, while Wayne Wu countered that attention is "what guides an agent's response in action". In both arguments, the response that is embodied, while attention remains a dynamic of the inputs before any response and its neural states.
See: Wu, Movements of the Mind.
& Watzl, Structuring Mind.

[64] Gallagher, "The 4Es and the 4As (Affect, Agency, Affordance, Autonomy) in the Meshed Architecture of Social Cognition," 2021.

[65] Christensen, Sutton, and McIlwain, "Cognition in Skilled Action."

the high level of prior intention, but closer to an intention-in-action that specifies an action in context, directly shaping the action". This distinction comes from skilled kinaesthetic performances like sports and dance. Nevertheless, these examples highlight the adaptive nature of specific actions, in contrast to automatic repetitions or fight-or-flight reflexes.

Gallagher specified that in other cases, context-sensitivity (i.e. situational awareness) can "rang[e] from thoughtful, reflective consciousness, to a thin performative pre-reflective awareness, with different gradations in between". Thus, a performative awareness of actions and context is relevant for this study to "provide a sense that one is moving or doing something, not in terms that are explicitly about body parts, but in terms closer to the goal of the action".[66] This engagement is characterised by awareness and the optimisation of performance towards contexts chosen deliberately or subconsciously in anticipation of an artwork and modulated during the encounter with it.

Action Potentials, Affordances, and Habits

Now that agency and attention have been conceptually embedded in aesthetic perception, their concrete relationships need more terminology. Since this relationship is enacted through sensorimotor activity, it makes sense to unpack the actions.

[66] Gallagher, How the Body Shapes the Mind, 73.

> "What counts for the orientation of the spectacle is not my body, such as it in fact exists, as a thing in objective space, but rather my body as a system of possible actions, a virtual body whose phenomenal 'place' is defined by its task and by its situation. My body is wherever it has something to do."[67]

This thesis later refers to 'action potentials', a term used herein that incorporates the concepts of affordance and habit where it is not possible or unnecessary to differentiate the two, with the distinct property of them being accessible.[68] The term is inspired by Merleau-Ponty's phrase of the 'system of possible actions'.

What are action potentials? Picture the artworks in a gallery. Upon entering the exhibiting room, a visitor may immediately perceive this space as filled with potential locations to 'look at'. Its entrances, exits, and the floor between its benches are recognised as ways 'to navigate' it. Moreover, fellow visitors are understood as potentials to 'do not disturb' or to 'share a thought', depending on the visitors' sense of mischief and social boundaries.

This recognition of the world as potential places and times for actions is often called 'affordances'. Thus, the painting 'affords' stopping one's movement to explore, approximate, and decipher its encoded storytelling while opening up emotionally for its atmosphere. Affordances, together with information, are classical

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[67] Merleau-Ponty, Phenomenology of Perception, 260.

[68] This differs from certain interpretations of Gibson's 'affordances', where the potential for action is observable for an observer in agent-object relations but not necessarily recognised by the agent.

Gibsonian "resources", relational aspects of objects but only "for [and dependent on] an embodied and active subject".[69] As such, affordances are an "invitation to act", which "is jointly determined by the properties of the environment and the capacities of the agent within that environment".[70] This 'invitation' is an idea that needs an intentional subject (i.e. agency), or it would be an incomplete account of these joint properties.

This concept has even been argued in neuropsychology. Take, for example, Miguel Segundo-Ortin:

"For affordances to invite, we need an organism that is already capable of exploring its environment, actively focusing its attention on some informational patterns instead of others. That is, for affordances to invite, we already need an agent."[71]

Affordances are usually understood as immediate action possibilities of concrete objects. However, projects like the *Skilled Intentionality Framework* have explored affordances as deeper and possibly less-immediate relationships.[72] What is somewhat

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[69] Costall, "Bringing the Body Back to Life."

[70] As Wittingslow explained in his take on the affordances of artworks:
Wittingslow, What Art Does.

[71] In fact, Segundo-Ortin argued that "invitations to act [affordances] are not causes of behavior" and that they "presuppose […] agency instead of explaining it".
See: Segundo-Ortin, "Agency From a Radical Embodied Standpoint."

[72] This "include[s] possibilities for long-term planning, possibilities for reflection, possibilities for creative imagination, possibilities for social interaction, and possibilities for language use".
See: Rietveld, Denys, and van Westen, "Ecological-Enactive Cognition as Engaging with a Field of Relevant Affordances: The Skilled Intentionality Framework (SIF)."

undisputed, from an analytical and phenomenological standpoint, is that affordances are "a stable but non-binding possibility for action", so in an aesthetic sense, one must "be open to the possibility that [and artwork] has something to say but [one] also need[s] to be prepared to listen".[73]

Also relevant to this thesis is the connection between affordances, affect, and agency, which follows Shaun Gallagher's ecological line of thinking that "affective changes can modulate both my agency and my field of affordances". Therefore, they "may co-vary: e.g., more affordances often mean more possible actions". Hence, while affect is an internal and normative mechanism, agency is the self-conscious experience of the relationship between one's top-bottom cognition, automatic body schematic processes, and environmental, social, cultural, and normative forces of a performance.[74] This description contrasts with the analytical cognitive sciences that often treat 'affordances' as concepts merely for integrating bodily interactions in mental models.[75]

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[73] Wittingslow, What Art Does, 91.

[74] "As one engages in a particular performance, one's agency (or sense of agency) may be modulated by affective experience but also by the quality and quantity of affordances available". – This is Gallagher relying heavily on Simon Høffding's analysis of expert performance in the Danish String Quartet. In the resulting model, affect and agency sit at the intersection of a meshed architecture of vertical bottom-up and horizontal 4E integration
See: Gallagher, "The 4Es and the 4As (Affect, Agency, Affordance, Autonomy) in the Meshed Architecture of Social Cognition," 2021.
& Høffding, A Phenomenology of Musical Absorption.

[75] For example: McClelland, "The Mental Affordance Hypothesis."
& Bruineberg and van den Herik, "Embodying Mental Affordances."

The use of affordances ecologically, dependent on needs and the history of a subject, is also supported by aesthetics and music theory. Notably, Eric Clarke described the relationship between affordances and an 'ecology of perception' with the help of the concept of specification. An affordance exists phenomenally only through a specific attunement to what itself is "specified by stimulus structure". This relationship means two things. First, any array of stimuli will have "invariant [...] properties, in a specific pattern of relationships".[76] The concrete features of stimuli are not important; it is the internal structure of how features relate to one another that is specific and recognised in a phenomenal affordance.[77]

However, this pattern must be recognisable through a subject's experience, intentions, and capabilities in the first place,[78] which was critiqued as too focused on the stimulus by the musicologist Mariusz Kozak. He argued that Clarks view on affordances is too metaphorical and that specification probably happens as a dynamical system in which "actions and [sensory event] unfold in tandem, each one responding to the other, together creating significance". While Kozak agreed with Clarke (and Gibson) that the

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[76] Clarke, Ways of Listening, 32 - 34.

[77] Perhaps with Clarke, the feature specifics of a stimulus are objectifying observations after the fact about perception while never truly perceived in the moment, where only the relation-specifics matter.

[78] Clarke called these patterns 'invariants', but they are only invariant in the sense that they must be stable and consistent throughout a specific time of perception for a subject in their specific ecologically embedded perspective.
See: Clarke, 34.

overarching signification through perception is the exploration of an environment, an agent does "not only draw out this information but can also project onto [a sensory phenomenon] previously learned [actions] related to [its] production".[79] Thus, what Clarke called invariants of a stimulus prevails. However, for Kozak, we still can abstract different affordances from these available[80] structures, which is why one can perceive something differently immediately after experiencing it the first time.

Both Clarke and Kozak made their points because they wanted to account for music as an aesthetic phenomenon with specific aesthetic affordances. Kozak spoke of the 'culturally competent listener', which I suggest can be expanded to the 'contextually competent perceiver' because he described a framing process called 'situation semantics' that allows a perceiver to *actuate* different contexts on invariant structures.[81] If we understand the agent as always motivated, then their situation semantics can be treated as the complementary outcome of Maiese's previously introduced 'affective framing'. The sensitivity to what matters primes the body to perform a particular situational semantic. In Merleau-Pontian terms, it is known as the 'urgency' of an affordance's "solicitation".

As Komarine Romdenh-Romluc explained, solicitation is the 'pull' of certain affordances depending "on what might roughly be called

[79] Kozak, Enacting Musical Time, 49 & 59.

[80] Not only available, but potentially inexhaustible – given how complex stimuli like sounds and light are on a physical level.

[81] Kozak, Enacting Musical Time, 88.

[their] salience" for the subject.[82] Afforded actions and framing affect reveal themselves again as two sides of the same coin — the manifestation of a motivated and enacted relationship with the world. Moreover, while affordances have also been accounted for differently over time in the literature, Patrick Valiquet highlighted that originally, "Gibson insisted on a holistic, relational account of perception, in which motivations and intentions emerge from the dynamic flux of situated activity".[83]

This discussion brings us to 'habits' and the need to account for the process of framing. What does 'framing' actually mean, and how does it work in everyday life? One can understand framing as the process of active problem solving. However, as the analysis in Chapter 5 shows, the framing relevant to this thesis is relatively passive and does not include highly reflective or detached stances towards an environment.

Nevertheless, a form of unreflective framing of affordances has been much discussed in the literature as 'habits'. As Froese and Ramírez-Vizcaya explained in a comprehensive overview of the term, "Enactivism understands habits as operationally closed, precarious, self-sustaining, and adaptive networks of neural, bodily, and interactive processes that generate dynamical patterns of behaviour and constitute a central source of normativity for the

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[82] For Merleau-Ponty, the solicitation of an act also depends on the previously acquired motor skills for it, which belong to the realm of 'habits'. They become more salient the more familiar and at hand they are.
See: Romdenh-Romluc, "Thought in Action", 199 - 201.

[83] Valiquet, "Affordance Theory."

agent".[84] The first emphasis here lies on 'patterns of behaviour', with a close second on 'adaptive'.

Speaking from a phenomenological perspective, habits are tried-and-true ways of *doing* and *being with* something, which is relevant for an agent while not dogmatic. In fact, habits explicitly help us in situations with unforeseen aspects since they are not merely behaviour but continuous learning-by-doing. Shaun Gallagher saw them as "open and adaptive way[s] in which the body learns to cope with familiar or unfamiliar situations".[85]

Upon entering a room in the museum with a completely unknown set of paintings, patterns of concrete actions are still employed while approaching them. As habits touch upon all dimensions of affordances, they can be meaningful patterns of locomotion, interception, and material or social interaction. For example, one may enter the room automatically with cautious steps to slowly take in first impressions or not to seem pretentious. In contrast, one may confidently march towards the most prominent painting and centre oneself directly in front of it.

While these unreflective actions may be afforded by the environment, they are not entirely automatic. Following Dewey and Merleau-Ponty, Gallagher et al. proposed that habits should be best understood as 'heedful performance'. While "habitual actions are

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[84] They review 'habit' as a term in neuropsychology and compare how enactivism employs it: Ramírez-Vizcaya and Froese, "The Enactive Approach to Habits."

[85] Gallagher, "The 4Es and the 4As (Affect, Agency, Affordance, Autonomy) in the Meshed Architecture of Social Cognition," 2021.

elusive because they mostly take place spontaneously in the background without rising to the level of thematic consciousness", they still differ from the fully automatic behaviour a worker displays on an assembly line. In contrast to a 'flow' experience with a completely internalised and at-hand set of affordances,[86] habits require heedfulness: an attentive openness towards the environment and its demands.[87] Within the museum room, one must pay attention to what is specifically encountered and check what affordances are actually present.

As normative patterns, habits are approaches to a situation fuelled by former experiences. Kozak called them "forms of memory" of a "habitually rearranged and renewed body whose movements are a deployment of previously enacted meanings". However, the momentum of the habitual body is also what enables it to perform "non-habitual movements that actively make sense of the world, movements that generate new meanings in the course of their unfolding". The habitual and non-habitual thus play out almost always in constant dialogue—tension, even".[88]

Some phenomenologists use the terms 'scripted' and 'unscripted'

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[86] Coined by psychologist Mihaly Csikszentmihalyi: Csikszentmihalyi, Flow.

[87] The point here is not the complete separation of habits from automatic behaviour. As Miyahara, Ransom, and Gallagher put it, "Heedfulness comes in degrees". Rather, they emphasised the general capability of habits to be meaningful for an agent in situations that require adaptation, which, in fact, are most everyday situations and even skilful performances. This outcome makes habits so relevant. See: Miyahara, Ransom, and Gallagher, "What the Situation Affords."

[88] Kozak, Enacting Musical Time, 138.

concerning actions for the same dynamic.[89] While scripted actions are typically part of habits, they allow us to look at the world through the lens of the unfolding action. Of course, interruptions also occur because the world does not necessarily follow our habitual scripts. We then react with unscripted actions, which form their own intentions as we look at the world to determine its relational structure concerning us.

In terms of perception, this description explains why habits are so elusive. They are the incorporation of meaningful self-world relations. Therefore, they precisely trivialise those meanings in a conscious experience – in the face of all meaning that still needs to be established and requires attention.

When approaching the unknown gallery painting, one may not perceive the dimensions of the room, the other visitors, the frame of the painting that restricts one's gaze, and the social conventions automatically adhered to. However, all these enable the experience of perceiving *something*, in this case, aspects of the painting that stand out against the backdrop of a habitualised situation in an art institution. In other words, this backdrop concretely frames the affordances that are present throughout the painting.

To bring Kozak into a visual medium, the museum room and the paintings context fade into the background so that the attention can

[89] A great example is Donn Welton, whom I discuss in the next section on intentionality: Welton, "Bodily Intentionality, Affectivity, and Basic Affects."

be directed but relatively undisturbed due to its features.[90] Maybe at first, the stormy waves with their bright whitecaps 'take' one's attention. Thus, they make one aware of the use of contrasting colour pigments that make the painting seem so vivid and dynamic. An interest fuels this attention through habitualised patterns of movements to examine such features in a hung-up two-dimensional illustration. Nevertheless, this vivid colourisation is then incorporated in the gaze and its attentive motions, so suddenly, one perceives that this style highlights only certain parts of the painting and not others. Such framing is continuous and affective since each freshly experienced meaning can become habitualised if it matters within a situation.

As we account for the action potentials and their role in sense-making, their appearance as actively explored affordances or as gradually integrated habits, another question arises: who experiences them? So far, we have discussed agency and agents, but the former is used as a relational attribute, while the latter is a crude and objectifying term for a black box that acts. What makes the inner workings black, and how does the box experience itself? From a phenomenological standpoint, we cannot account for the subconscious dynamics and processes of the mind. However, we can speak about its experience by attempting to account for the agent's 'self'.

[90] These features are phenomenal, not material.

2.4 What Matters is the Self

In the previous sections, a perceiving and acting agent was called motivated and intentional. The question of exactly how (or what) is motivated and intended here concerns much of the literature. 'Intentionality' as a concept has been highly scrutinised. It has also emerged as a driving force for enactive perception and sense-making. In concert with the term 'selfhood', intentionality is supposed to account for what binds values and goals in a system to actions and phenomenal or physical states.

To be clear, the 'self' can be much more. It is a concept in the research of physiological brain processes and pathologies, as a social and cultural phenomenon, and as a psychological continuum.[91] Of course, self-consciousness also exists.[92] However, for this project, the 'self' in question is the temporal continuity, the structure, and the morphing of an agent's value-action relationships. It follows the view that values in action enable a subject to perceive and simultaneously actuate *what matters*. Thus, a starting point for accounting for these relationships may be to look at what 'to intend' and 'intentionality' mean in the literature.

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[91] For a great overview, see: Gallagher, The Oxford Handbook of the Self.

[92] Dorothée Legrand offered a compelling take on how self-consciousness takes different forms and is connected to intentional actions:
Legrand, "Self-Consciousness and World-Consciousness."

Intentionality

The term 'intentionality' played a significant role in the early days of modern psychology and phenomenology. Franz Brentano's 'intentionality' is the mind directed towards something:

"Every mental phenomena includes something as an object within itself, although they do not all do so in the same way. In presentation something is presented, in judgment something is affirmed or denied, in love loved, in hate hated, in desire desired, and so on".[93]

Brentano's student, Edmund Husserl, also saw consciousness as a 'consciousness of what'– a *being directed* that is the essential structure making up consciousness. This tradition shaped the modern use of the term for consciousness, which has a directed perspective on the world of objects and what they mean to consciousness. As a leading voice in phenomenology and a Husserl scholar, Dan Zahavi noted, "Consciousness is not concerned or preoccupied with itself, but is, rather, by nature self-transcending".[94] The self is a sub-concept of consciousness, an entity that is not (yet) found materially but experiences, judges, and imagines. In doing so, consciousness is expressed in *how* it does all these things. The relevance of this 'how' points back to *being*

[93] Brentano, Psychology from An Empirical Standpoint, 68.
[94] Zahavi, Phenomenology, 16.

conscious. Therefore, intending is the practice of engaging in something that one is conscious of.[95]

The previous sections on enactive perception, affect, and actions have already suggested that intentionality has been increasingly understood as embodied. With Merleau-Ponty's 'motor intentionality', intentionality has become thinkable as non-representational, non-conceptual, and practical at work through the body-in-action.[96] Merleau-Ponty's account was subsequently criticised for the pathological case it was built on and its methodological ambiguities. Nonetheless, it still stands as a major framework for non-representational and pre-reflective forms of intentionality that direct actions without reflective control and awareness of these actions.[97]

Recall the example used in the previous subchapter again. A visitor in the museum goes through several actions to perceive the details of a painting, be they minuscule or rather extensive. The 'goal' of these actions may not be present for this visitor. They may explore the painting, traces of the technique used to create it, or how it differs from a postcard in grandma's kitchen – but it is absolutely possible they are unaware of these actions at that point in time. All the while, their body still performs all necessary perceptual actions skilfully and in a directed fashion. How?

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[95] Reflective or pre-reflective? This is another question.

[96] Merleau-Ponty, Phenomenology of Perception, 112.

[97] See e.g.: Jensen, "Motor Intentionality and the Case of Schneider." Or: Pacherie, "Motor Intentionality."

An ongoing discussion in the literature concerns intentionality building and unfolding pre-reflectively across time rather than being confined to discrete, synchronic moments of awareness: diachronic versus simultaneous intentionality.[98] Hence, a need exists to build better accounts for how mid- and long-term values inform our reflective and pre-reflective perception and use of action potentials. This issue is discussed in the analysis chapter.

Another issue with intentionality is that it may describe a dynamic set of properties of actions and internal states, but the functional path it takes is difficult to access. As phenomenologist Donn Welton stated, engagement is "resistant to a direct reflective account and can be approached only by moving through the surface structure of intentionality to the deep structure making it possible"[99] Welton also saw 'affectivity' at the centre of this functional structure and stressed how it differed from singular 'affects'. Similarly to Maiese, Welton identified the *basic affects* of needs, wants, and desires as conditions for intentional acts, as controllers and motivators for 'intentions-in-actions'.

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[98] For instance, Line Ryberg Ingerslev looked at how habits function diachronically: their self-understanding comes after the action rather than accompanying it simultaneously. See: Ingerslev, "On the Role of Habit for Self-Understanding."

Moreover, Catriona Mackenzie summarised recent studies on diachronic agency and arguing for her understanding of embodied selfhood in philosophical psychology.
See: Mackenzie, "Embodied Agents, Narrative Selves."
in response to: Meyers, "Corporeal Selfhood, Self-Interpretation, and Narrative Selfhood."

[99] See: Welton, "Bodily Intentionality, Affectivity, and Basic Affects."

Initially, needs arise from the disturbance of "the homeostasis of various bodily systems". Hunger, sleep, freedom of movement, and pain/warmth are not emotions, but "they can quickly link up with emotions". As an agential system acquires experience and skills, "satisfaction becomes gratification and gratification leads to habits, needs become wants".[100] In other words, habits have a primordial role of connecting bodily imbalances with established (bodily) strategies for coping with them.[101] As a result, the world phenomenally presents itself as affective and "'felt' values are as much a part of objects as is their utility" Affectivity includes the internal regulation of this relational structure because 'enjoyment' and 'dread' modulate the needs and wants and bring forth the mid- and long-term perspective of oneself in the world.

In the example, I enjoy looking at a painting in a gallery because I non-reflectively anticipate the gratification of many needs and wants from my social upbringing, my cultural rooting, and my communicative skills in this act, even if this particular painting at this place, setting, and time turns out to be unsatisfactory. Affectivity as a framework integrates historical experience in every concrete action because its underlying valuations are modulated, compressed, and distorted every time it becomes relevant. An action-centred self emerges that realises and directs itself towards what matters to it.

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[100] Welton, 185.

[101] To connect those terms as well: gratification leads to attraction – or lacking gratification and disturbance leads to repulsion.

The Content of Perception and Presence

If consciousness from a phenomenological perspective is always intentional, it is to be conscious *of* something, so it equals directed and engaged perception. Thus, this chapter must return to the content of perception for a moment. We have seen that the object of intention and the factual object are two different things: the former with a phenomenal character (i.e. the specific features experienced) and how it appears to us (i.e. the affordance relations we have with it) and the latter with a physical character (i.e. the theoretical complete sum of all features it possesses) and all the ways it interacts factually with us (e.g. its reflected light and our optic nervous system; its mass, shape and momentum; and our grabbing hands).

Much can be said about the first kind, which is often done so with the term 'content' of perception. As David Woodruff Smith summarised, perceptual content can be differentiated as comprising "appearances" or qualia (e.g. shapes, colours, and sounds) and their "mode-of-presentation" related to intentionality. This differentiation is because what is perceived is dependent on a causal physical relationship (e.g. the sense organs and optical perspectives) and an intentional relation.[102]

While the appearance of something is changing all the time,[103] it is

[102] Smith, "Perception, Context, and Direct Realism."

[103] Smith and others have illustrated the fluidity of qualia with an example from the art world: Claude Monet's different paintings of the same factual object, like a

often not the focus of our perceptual activity. Instead, we *perceive* (e.g. see, smell, and touch) a complete object. We see the painting on the wall. We may even see the weary ship and its final storm. At the very least, we see a depiction of a ship. These are not appearances, but holistic *things* given to the perceiver that have a way or 'mode' of how they are given to us.

Smith tied this mode of appearance to the indexical character of perception, where a certain collection of appearances comprises 'this' in perception, which points to (and is through enaction given from) different directions. Herein lies the pointer to the factual object that I assume is *in my presence*. However, intentional aspects also exist, like I expect to be there (or am surprised by it) and the interests, emotions, and state of mind I engage it with.[104]

Art often complicates this indexical character. Lambert Wiesing, who combined phenomenology and image theory, coined the terms 'artificial presence' and 'exhibiting images' (*aufweisende Bilder*) to highlight that the *presence* that I share with a depiction differs in

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cathedral or a Japanese bridge, from the same perspective, but in different lighting and ambient conditions. Monet captures this aspect of our perception by making the objects 'appearance' change completely – not only its colours and shading but how it blends and bleeds into other objects and background while morphing the details it consists of. Famously, in some paintings, the central object is barely recognisable anymore.
See: Smith, 142.

[104] Smith categorises these aspects as 'intentional relation' and the 'intentional character'. For this study, the underlying indexical function of perceptual content itself is more important.

quality from the one I share with its material canvas.[105] While I am engaging with the painting in the room, which will have consequences for me, the depicted ship does not similarly suffer the consequences of my being there.

Wiesing argued that we have a relationship with the depiction. However, it is decoupled from the reality of *being with* something, which makes for a distinct set of possibilities and consequences. Importantly, this study circumnavigates this issue by using a technological medium that does everything possible to hide the 'real' presence of the world and have the 'aesthetic' material appear all-encompassing with consequences for its subjects. This idea is further explained in the third chapter about methodologies.

For now, it is important to note that 'presence' and the indexical character of perceptual content depend on each other. Within the subjective experience, the content of perception relates and postulates that 'this' content is present with oneself. In turn, the 'self' is present with the content. However, what is postulated here is only a referral that informs about the relationship between the two. It does not hold information about any substantial nature of this self.

The term 'presence' here expands our perceptual context. It encapsulates a spatiotemporal condition for the content of

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[105] Wiesing put it so poetically: "Someone who is submerged in an image does not emerge within it".
See: Wiesing, "Pause of Participation. On the Function of Artificial Presence," 252.

perception, one that is present by being addressed in the situatedness of experience.[106] As Dorothée Legrand noted, this function relies on being at work, on the ongoing act of moving perception: "Experiencing presence does not merely depend on appearances but is rather a function of the interaction between the subject and the environment".[107]

Thus, by moving closer to the ship in the painting and focusing on the details of its painted exterior, a perceiver may 'realise' that the ship is (or is not) what they 'knew' to be before. They can only do so because their perceptual content (i.e. the now more detailed ship) points towards its own existence, appearances, and implications a few moments ago., as well as to the perceivers self as the place and means that remembers, expects, and (potentially) unifies these experiences.

The Embodied and Sedimented Self

This section started by saying the 'self' of interest here is the temporal structure of an agent's value-action relations. Of course, it is more complicated. The spatiotemporal context of perceptual content identified a self-referential awareness of the agent within that content. Their values cannot persist nor be actuated without this self-referentiality because they always implicate an

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[106] Smith calls this 'indexical awareness'.
See: Smith, "Perception, Context, and Direct Realism," 146.

[107] Legrand, "Pre-Reflective Self-Consciousness: On Being Bodily in the World," 503.

understanding of one's actions as one's *own* actions compared to what is happening in the sphere of *the other*.

This argument has been put forth most persistently and continuously differentiated by Dan Zahavi's exploration of the experiential self[108] – a 'minimal' conception of the self. It stands in contrast to a conceptually loaded and 'narrative' image of oneself, "that is constituted with a past and a future in the various stories that we and others tell about ourselves".[109] The work that the term minimal self does is to allow us to talk about experiences that are immediate and involve nothing more than the subject engaging with the environment with no reflexive acts.

What comprises this minimal self? Indeed, subconscious brain processes may exist that phenomenology and this study cannot address. However, there is also the continuity of the ecologically embedded body that is experienced and familiar to an agent most of the time when we speak about human experiences.

Merleau-Ponty discussed this "other knowledge that we have of [our body] because it is always with us and because we are bodies". In his "point-of-view" (PoV) argument, he famously emphasised the role of the body for a body-subject: "If one perceives with his body,

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[108] "[A] theory of consciousness that wishes to take the subjective dimension of our experiential life seriously also needs to operate with a (minimal) notion of self". Zahavi, "Consciousness, Self-Consciousness, Selfhood", 703.

See also: Zahavi, Self and Other.
& Zahavi, Subjectivity and Selfhood.

[109] From the glossary of: Gallagher, "Philosophical Conceptions of the Self."

then the body is a natural myself and, as it were, the body is the subject of perception".[110]

In 1988, Ulric Neisser proposed in *Philosophical Psychology* the five 'selves', with the first 'ecological' self being a body subject that one is directly and pre-reflectively aware of as part of the physical environment.[111] More recently, Shaun Gallagher's distinction of 'body image' from 'body schema' conceptually separated the body-as-an-object. One can intentionally perceive and address one's body image, but the body schema is the pre-reflective, proprioceptive, and kinaesthetic body subject that exists as primordial relations of oneself to the environment.[112]

On the experiential or minimal level, the body schema is (for a physiologically regular) subject always in action. However, it is also in constant dialogue with the body image and is reconstituted through experiencing consequential interactions with the environment. The exact relationship between the pre-reflective layer and the narrative layer of experience is debated. Both the internal dialogue between the body schema and the entanglement of the minimal and narrative self are problems in current research.

For example, Richard Menary – who also conceptualised the

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[110] Merleau-Ponty, Phenomenology of Perception, 213.

[111] His 'interpersonal self' ("established by species-specific signals of emotional rapport and communication") and 'extended self' ("based on memory and anticipation") also resonate with 4E cognition.
See: Neisser, "Five Kinds of Self-knowledge."

[112] Gallagher, How the Body Shapes the Mind.

experiential self – proposed that pre-reflectively 'owned' experience is the source material for the narrative self.[113] In contrast, Catriona Mackenzie built on Dan Zahavi's work to propose that the distinction between experiential and narrative self is an observational abstraction, while the body-subject is instead integrated into the "temporally extended, concretely individuated narrative agent".[114] This doctoral study cannot speak to the notion of a narrative (or temporally extended) self. However, work on the concepts of the experiential self and the body schema is of interest to my participants' experiential reports.

This study provides a granular account of bodily experiences and the participants' understanding of themselves, their felt bodies, and their perceived action potentials developing within a span of just a few minutes. Thus, while the narrative self is not in the scope of this project, there is still the temporality of an embodied self at play that needs conceptual tools to account for it.

Phenomenologist Allan Køster proposed Merleau-Ponty's term of 'sedimentation' to outline how the experiential self builds and, crucially, changes over time. For Merleau-Ponty, every "sensation is a reconstitution, it presupposes in me the sedimentations of a previous constitution".[115] Just like dust, soil, and traces of life that repetitively 'happen' to come to rest and form a landscape of new geological layers, the self forms attitudes towards specific contexts

[113] See: Menary, "Embodied Narratives."
[114] Mackenzie, "Embodied Agents, Narrative Selves", 161.
[115] Merleau-Ponty, Phenomenology of Perception, 222.

through habitualised virtual actions as experienced in the past.

As we have seen, what a subject internalises is what *mattered to it* before.[116] However, this focus does not mean that sedimentations are restricted to hermetically subjective values derived only from individual needs. Because perception is rooted in the world, "generality and probability are not fictions, they are phenomena". Hence, they are also part of the "atmosphere of my presence" and part of our sediments.[117]

More importantly, Køster noted that the sedimentation metaphor is not adept at highlighting that experiential layers constantly shift and rearrange. While they "provide us with a way of envisioning how stable structures can emerge from a fundamentally contingent, temporal and historical process", with consistent sedimentations forming 'deeper' or more stable structures, all layers of the resulting structure are subject to constant change under the force of new experiences, even including sudden shifts.[118]

Sedimentations, therefore, help us describe attitudes towards contexts since attitudes emerge from the interplay of action potentials and past experiences. They also provide metaphors for how an unfolding experience affects sedimentations. They may

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[116] Køster spoke about 'gravitas': Sediments result from the external pressure the environment puts on experiences, whereby pressure is here 'a spectrum from repetitive through significant impact' for our lives.
See: Køster, "Personal History, Beyond Narrative", 176

[117] Merleau-Ponty, Phenomenology of Perception, 467.

[118] Køster, "Personal History, Beyond Narrative", 176.

simply add new and unstable sediments 'on top', or they may gradually erode or change more fresh and unstable trajectories or even violently shake up stable 'deep' sediments. They may also – as may be the case for the participants in this study – blast away layers that prove insufficiently grounding in the current context and expose only those layers that form a secure base of modes of engagement and attitudes.

Sedimentations also emphasise a core mechanism of evaluation of actions and stimuli, which is not an evaluation that *assigns* value through representation, so it is not (necessarily) reflection. It is evaluation through the successful or unsuccessful integration into one's habitus and predictions through consequences for one's affects. The (minimal) self is shaped by what *matters* to it.

Køster said that while this metaphor gives a vocabulary to speak about interaction modalities over time and their internal structures, it is not exhaustive as a model for all aspects of the experiential self.[119] Therefore, this thesis cannot rely on sedimentation as a fully-fledged model. However, it is useful in describing structural changes to the experiential self in the course of an action. Let us return to the gallery example for one last time.

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[119] He proposed 'embodied existentials' as analytical tools to further illustrate the makeup of sediments, specifically an 'individual's relation to the material world, to others, to culture, to meaning and to oneself'. These include 'habituation', 'intercorporeity', 'incorporation', the 'existential-Hermeneutic repertoire', and the 'affective register'.
See: Køster, 178.

2.5 Ruptures of Sense and Normative Optimisation

As first-time visitors to the gallery, our subjects enter a particular room with a specific painting of a ship on the wall. They do not know the painting, the room, or the educational concept that the gallerys curators had in mind when they created the installation. They do not even know the artist. Nevertheless, they know about themselves.

They may know how much they enjoyed painting watercolours with their grandparents as a kid or how much fun it was to play the game where you see a small part of a picture and try to guess what it is while slowly zooming out to its full glory. They may know about an emotionally stressful school trip to a park, where they found refuge at a marble statue in a remote corner and how this artwork helped them to think about something far away. Of course, knowing these things does not necessarily mean that they reflect on them or that they otherwise conceptually represent them in thought. However, these visitors' lives are inscribed in their habits and sedimented through their impact. Therefore, they know, with their bodies, what they can do with this space. Hence, upon entering – without hesitation – they act.

However, what if what they specifically encounter now is unfamiliar to them: the painting, its context within the discourse, and the practices of the art world? Maybe they have never seen specific objects and symbols in the depiction, like parts of the ship's construction, the flags it flies, and the distinct-looking tower in the distant harbour. Assume they have never seen or heard about the general composition of such a painting (e.g., a ship in a storm and a distant harbour). Even more radical, imagine that this is the first time they stand in front of a real painting. What happens now?

This thesis refers to this situation as 'context-thin', which is characterised by aspects that are mostly unfamiliar to a subject and provide less context than the experiencer feels is needed to approach the environment without great effort. While an experiential situation is never entirely *without* context, some experiences feel like there must be more context. Context-thin experiences occur when one is engaged with something which is partially known but at the same time unfamiliar. For the sake of the argument presented here, context-thin experiences are significantly shaped as follows:

a) a distinct object or environment that one engages with through perceptual acts;

b) some awareness of potential but not yet established relationships with this object or environment;

c) an affection for either this awareness or the object/environment

(i.e. the motivation to engage).

All these aspects need further scrutiny and exploration in this study since the dimension of actions is not yet defined. How does one act in the face of a thin context? This thesis offers a detailed account to illuminate the complex interplay between affect, actions, and the experiential self. Furthermore, I present observations about how one is historically situated and behaviourally equipped to *become aware* of a potential for relationships which are not yet realised.

Husserlian Types

In phenomenology, objects are often understood as 'particulars' of a subjective 'type'. Edmund Husserl originally asserted this notion to be a precognition for objects: in their unfolding perception, types are evoked and subsequently further shaped by ongoing interactions.[120] While perceptual acts can either continue to revolve around this type ('What strange kind of ship is this?') or concern a particular ('What is this thing at the bow of this strange ship?'), a type is always part of the perception.

It helps to understand that a 'type' is not an association, which is a subsequent cognitive action. Instead, types are the inherent understanding of perceived features that comprise their *being perceived*. A subject sees a 'ripe apple' because they operate with the type 'apple', just like they see its colour 'red' because they operate

[120] Husserl, Experience and Judgment, 321.

with the type 'red things'. A type essentially exists as an understood relation of previously experienced attributes, and as such, it also sets an "open horizon of anticipation of further such attributes".[121]

Nevertheless, Husserl's types and the intentionality of perception can also be read as normative: perception has conditions to be met. As Maxime Doyon explained, "[E]very perceiving act triggers a series of motivated expectations, which may or may not be fulfilled by the further course of experience". This description is similar to how Merleau-Ponty described body schematic habits allowing "perception to be goal- or norm-sensitive and, if needed, to initiate a process of optimization or self-correction, depending on whether the experience progresses in accordance with her intentional goal or not".[122] Doyon stressed that this normativity is not a binary judgement about good or bad perception but an ongoing striving for ideal access to what is perceived, which is known as 'perceptual optimality'.[123]

The painted ship is perceived as a ship. Nonetheless, does it have all the features expected of a ship? The subjects position themselves to perceive it better while testing different angles and distances. They may squint or stare. Will these actions reveal more features of the object's types or add to them?

Perceptual acts are often about reaching perceptual optimality.

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[121] Husserl, 332.

[122] Doyon, "On the Phenomenology and Normativity of Multisensory Perception", 120.

[123] See also: Doyon, "Husserl on Perceptual Optimality."

Ergo, they rely on – and address – perceptual types. They may seek more expected features of the type or address those that are unexpected. However, crucially, such actions are habitualised, pre-reflexive, and rely on our body schema.

Furthermore, as previously mentioned, this process is part of a feedback loop. Actions matter because they either optimise the perception or they do not, as they continuously inform a "renewal of the body schema".[124] Here, we see habits being self-correcting and adaptive to optimise the experiential fluidity or maximise the coherence of the experience. Thus, their signification happens in both directions. On the one hand, noetic typification is ongoing and adaptive,[125] while on the other hand, the body schema is enacted and adaptive through the optimisation of perceptual acts. Maxime Doyon aptly argued for the interplay of noetic and bodily plasticity in Husserl and Merleau-Ponty. For him, it comprised the fundamental capacity for perceptual learning that is also sedimented in the long term.[126]

Nonetheless, what happens if there are just strange forms, washed colours, and unrecognisable lines on the canvas? What if there is something truly undeterminable, truly novel? For Husserl, there is still a contextual horizon, specifically an "empty horizon of familiar unfamiliarity", which belongs to the archetype called the 'object in

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[124] Merleau-Ponty, Phenomenology of Perception, 143.

[125] Notably, typification also happens through cognitive or reflective acts, not only through perceptual ones.

[126] Presented by Doyon as 'Perceptual Plasticity and Normativity' at the 13th Annual Copenhagen Summer School in Phenomenology and Philosophy of Mind, 2023.

general'.[127]

Again, this notion is similar to Merleau-Ponty's particularisation of general perception where a "milieu of generality" exists that results "from a *sensitivity* that preceded [conscious perception] and that will survive it". Merleau-Ponty recognised that this sensitivity is an a priori of perception that distinguishes a perceptual self-experience from a conscious one: "I would have to say that one perceives in me, and not that I perceive".[128] Nevertheless, it also means that even when something is completely novel, there is still normativity and a striving for optimality. Therefore, the experience in question is the transition from a general 'unfamiliarity' to a particular world of things that matter – that have a sense.

In the domain of unfamiliarity, one operates with general types and is possibly only motivated by a sensitivity that precedes conscious processes. Before offering further analysis of some of these in the analysis chapter, we turn to other recent endeavours addressing the hard-to-grasp experience of thin context through different concepts. Especially interesting are the concepts of 'curiosity', the 'alien', and '(dis)orientation'.

Curiosity and the Primary Drive of Affection

In Merleau-Ponty's *Phenomenology of Perception*, the term 'curiosity'

[127] Husserl, Experience and Judgment, 38.

[128] Merleau-Ponty, Phenomenology of Perception, 223.

rarely appears and is used for an attitude that is necessary for the sensible act 'to focus' on something. It is a "second-order or critical act of [a single sense] that attempts to know itself in its particularity".[129] However, in his recent thesis, Hermanni Yli-Tepsa argued that curiosity can also apply to Merleau-Ponty as a concept – and in a more concrete role in Merleau-Ponty's account of the process of particularisation.

Yli-Tepsa built on Matt Bowers' examination of Husserl's 'instincts', a term for different, affective drives of engagement.[130] Yli-Tepsa argued that Merleau-Ponty followed this Husserlian idea. Nevertheless, if there are concrete affective drives, there also "must be a passively experienced affective relation to the fields of experience, [in general …] an experience of an atmosphere".[131] This concept is then curiosity, a basic and instinctive drive for *being affected* in general. It is also a primary condition for all other affective drives because "every other particular drive is dependent on an interest of becoming particularized and determined, they are conditioned by curiosity".[132] Thus, curiosity includes the drive of optimality of perception because even a simple optimisation (e.g. repeated perception) is a form of attention to unifying the object-like appearance of something. It relies on another motivating drive to 'simply experience' something.

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[129] Merleau-Ponty, 235.

[130] See: Bower, "Husserl's Theory of Instincts as a Theory of Affection."

[131] Yli-Tepsa, "The Question of Biological Existence in Merleau-Ponty's Phenomenology of Perception," 232.

[132] Yli-Tepsa, 226.

Hence, curiosity strives "towards prominence, a tendency that is satisfied when we attain more unity of something".[133] This idea describes the affection of curiosity: 'what it is like' to experience something,[134] where *to experience* is conceded as enjoyable and desirable. In addition, Yli-Tepsa offered an evolutionary interpretation of why it would be the case even for negative (e.g. painful) experiences. Curiosity "allows us to notice the [negative] and to localize it",[135] a necessary capability for addressing and avoiding undesirable experiences.

Notably, this understanding differs from how we use the term 'curiosity' in everyday language. Usually, we are curious about the preconceived interests and concrete possibilities that cater to our affect. However, here, 'curiosity' is a condition for affectivity towards anything. Since it is not directed, this primary curiosity is 'atmospheric' in its permeating generality, so particularisation actually satisfies it.

As Yli-Tepsa explained, "the development of [a concrete] drive is the event in which the atmospheric desire becomes an actual affection". He also claimed that experience feels like "an indeterminate striving"; the realisation can "be described as 'this is what I was searching for'".[136] Beyond this claim, this model of curiosity sharpens Merleau-Ponty's account of a general sensitivity,

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[133] Yli-Tepsa, 235.

[134] In reference to Husserl's 'hyletic what'.

[135] Yli-Tepsa, 229.

[136] Yli-Tepsa, 231–35.

as it further details its developmental relation to affectivity. Curiosity is the *a priori* drive of affective particularisation. As a primary drive, it also provides a conditional motivation for Husserl's optimisation of perception. I use this concept in the interpretation of my findings.

If there is a 'curiosity' drive to act, unify, and optimise perceptions, how does one actually do this? Thus far, we have only mentioned examples of actions described from an objective perspective (e.g. 'getting closer' and 'changing perspectives'). Such actions can be listed but not exhaustively since every situation, every object of interest, and every individual certainly demands highlighting other specific actions. A phenomenological account needs to look for structural similarities beyond the specifics. What are the characteristics of typification in the face of a 'familiar horizon of unfamiliarity'?

One approach in the literature is found in the work of the phenomenologist Bernhard Waldenfels, who examined the conceptual term of the 'alien'. For Waldenfels, the alien "interrupts the familiar formations of sense and rule, thus provoking the creation of new ones".[137] Next to this 'interruption', he also highlighted the temporal structure of the alien: what challenges us has a 'previousness' to which we have a different relationship than to its 'posterior', which is the reaction of *wanting to know* it. Thus, we have a dual structure – an anterior perception of an interruption

[137] Waldenfels, Phenomenology of the Alien.

because of actions put in motion further before and a posterior unfolding of the alien. Notably, what happens after the interruption changes the phenomenal character of the cause of the interruption. To explain the motivation for addressing the interruption in the first place, we already have curiosity at hand – the primal drive of affective particularisation.

Antony Fredriksson took Waldenfels' alien experiences and examined their relationship to habits. First, he noted that the alien "is never completely foreign to us". Nonetheless, we understand it differently than the non-alien or familiar world. The difference can be called a perceptual *stance,* in which "we are attuned to the present historical world to our perception – rather than to our preconceptions".[138]

Taking this stance can already be a perceptual action because it may involve subconscious changes in sensorimotor faculties to actually focus on *what is there* and not simply repeat habitual ways of perceiving. In this sense, the habits interrupted are not only fulfilments of wants but also perceptual habits. Fredriksson called it a "disturbance of the habitual" and argued that, as such, the alien is an essential part of the habitual. He also connected this idea with the concept of *to attend*: "a particular form of perceptual action that signifies exactly a refraining from domestication". Therefore, it includes an acknowledgement of the novelty at play through "refraining from projecting one's own habitual points of

[138] Fredriksson, "The Alien World, Attention and the Habitual."

reference".[139]

Fredriksson rightly highlighted the 'intentional arc', Merleau-Ponty's concept for the indeterminate nature of the world before it is *at hand.*[140] The intentional arc expresses the necessity and the purpose of perception to compile the unfamiliar and produce what "presupposed, certainly no longer as the cause of our perceptions, but rather as their immanent end".[141] Thus, while the act *to refrain* from the habitual is key for Fredriksson, it does not clarify how else to act. He provided a few observations, though, to offer an avenue of exploration.

For example, the refrain of 'projecting points of reference' opens the question, 'Is there a version of the (non-)habitual that works without points of reference, or at least without a certain form of references?' Fredriksson also noted the 'attunement to the present historical world'. Finally, he proposed "a return to a beginner's perspective" as a stance or experiential state that phenomenologically differs from a habitually flowing experience.[142] The 'beginner's perspective' is characterised by an intentionality that is "more open-ended". It aims to understand "my position in relation to other positions" and, crucially, normative "parameters

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[139] Fredriksson, 127.

[140] Merleau-Ponty, Phenomenology of Perception, 137.

[141] Merleau-Ponty, 33.

[142] Fredriksson called the opposite a 'rational observer's perspective', which may need further clarification while raising the question of whether there are gradients between the two.

[which] are yet to be established".[143]

Notably, the beginner's perspective is not clueless. While understanding is involved, it concerns the necessity of taking the stance and, implicitly, how to do so. This concept, of course, is a throwback to the reciprocal interconnections of corporeal beings. Points of reference exist, as does a form of the habitual. However, both are much more about basic corporeal existence.

Fredriksson interpreted this idea as an "intentionality [which] has not yet gained a proper foothold", so the stance "works as a counterpoint in relation to intention".[144] While this thesis deems it productive to explore the beginner's stance as one where "the environment [...] is perceived as beyond ones clearly defined intentions, desires, and habits", it does not follow the claim that intentionality itself is absent in such experiences. Furthermore, adding to an account of the dynamics of a beginner's intentionality is precisely one of the novel aims of this thesis, which is presented in the analysis.

Bernhard Waldenfels only recently mentioned a series of examples for the temporal-spatial orientation of the body: "The place I find myself to incarnate forms the null point at which the here and now spring up and from which 'near' and 'far' spread out."[145] Waldenfels

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[143] Fredriksson, "The Alien World, Attention and the Habitual", 131.

[144] Fredriksson, 133.

[145] Translated by the author – In the original: "Der Ort, an dem ich mich leibhaftig befinde, bildet einen Nullpunkt, an dem das Hier und Jetzt entspringt und von dem aus sich Nähe und Ferne ausbreite". Part of Waldenfels' argument for the

understood the 'alien' as the unfamiliar in the world that extends to the *alienation of the body-subject* ("*Fremdwerden des eigenen Leibes*") since it can be found in deficiencies of referential habits for the body like tiredness, dreams, illnesses and pathologies, and drug-induced experiences. Waldenfels' point was that the body is never self-evidently a coherent body-subject; it exists as 'more' or 'less'.[146] Thus, the precise moment of the body schema – the substance of habituality – seems to be less rooted and more fluid in the face of the alien.

Importantly, the body schema becomes more palpable in the experience – maybe because it is actively negotiated from the beginner's perspective. The body schema's referencing is so primal that some of its aspects are best found in child development and infancy research. Phillipe Rochat summarised what is currently assumed as the lifeworld of a newborn and toddlers for the phenomenological community:

(a) the general capability of affectivity and sensibility to be attracted and repelled by stimulation;

(b) an underlying "awareness of [one's own] body as unified and organized";

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connection between technology and the body.
See: Waldenfels, "Der Leib als Urmedium und der Körper als Vehikel der Technik", 208.

[146] "Der eigene Leib aufgrund seiner wechselnden Nähe und Ferne zu mir selbst niemals schlechterdings mein Leib ist, sondern immer nur mehr oder weniger".
See: Waldenfels, 201.

(c) the ability to "detect sameness", as in "what remains the same in the midst of many changes". This ability includes an outward stance (towards the environment) and an inward stance (towards states and urges).[147]

Disorientation

Given the views presented above, we may assume that there is a version of the human self, unfamiliar with the world and its body as a toddler, that relies entirely on such a beginner's perspective driven by curiosity. From the perspective of this study, the question now is whether these structures are still at play in consciousness with a lifelong history of habituation and sedimentation, one that is skilful and communicative in such a way that it can express what it experiences. We now turn to the concept of 'disorientation' to explore this notion.

In her influential book *Queer Phenomenology,* Sara Ahmed built on Merleau-Ponty, Husserl, and Heidegger to employ the experience of 'disorientation' as a tool for carving out what 'queerness' is and how it can inform phenomenological projects. Even though the concept of 'queer' experiences covers theoretical and historical ground that reaches beyond the concepts of the 'alien' and 'unfamiliar', Ahmed offered incisive considerations and implications of 'being oriented' and 'being disoriented' that matter for the experience of a lack of contexts and this thesis in particular.

[147] See: Rochat, "What Is It Like to Be a Newborn?".

Ahmed described disorientation and *being lost* as a distinct habitualised action. To be lost is (contrary to conventional understanding) still a way of "inhabiting a space", so it can "become a familiar feeling" (i.e. a habitualised stance) despite its unfamiliar contents[148] because only by registering what is there – and thus a change of perceptual stance towards the environment – does the experience of disorientation play out. The familiar, then, is the form of inhabiting a space where the actions of inhabiting are not forms of registering but of 'reaching out'. Only what is already registered and, therefore, 'within reach' is familiar.

Circling back to Husserl's types, we can say that being disorientated is a stance that addresses the types themselves. In contrast, being orientated addresses particulars that only emerge because the expectations and habits of a type produce them. Ahmed offered an account of the process to-orientate-oneself quite similar to the beginner's perspective:

"Orientations are about how we begin; how we proceed from 'here', which affects how what is 'there' appears, how it presents itself. […] Bodies may become orientated in this responsiveness to the world around them, given this capacity to be affected".

She also tied this idea back to the body schema: "If orientation is about making the strange familiar through the extension of bodies into space, then disorientation occurs when that extension fails".[149]

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[148] Ahmed, Queer Phenomenology: Orientations, Objects, Others, 7.

[149] Ahmed, 8 – 9.

As an example, consider again gallery visitors standing in front of a huge, framed canvas with a strange substance. For a moment, they cannot grasp what they are looking at; it is a feeling of not being rooted and an uncertainty about what to do next. They lift their hand, unsure about touching the painting. However, their eyes do not know what to fixate on, a momentary insufficiency of the extended body schema. The gaze and the grasp have no particulars to work with.

Nevertheless, the eyes scan what appears in front of them as the body moves back and forth, a primal probing of perspectives that addresses not *what* is perceived but *how* to perceive itself. Through these perspective shifts, the canvas suddenly reveals itself as no canvas at all. Our example is an illusion produced by a framed, distorting mirror. Not only is there suddenly a type (i.e. 'a mirror' or 'a reflection'), but it is also a space. The mirror is of a particular distance from oneself, and the shapes in it are of a particular depth. 'Near' and 'far', as in Waldenfels example above, come forth as a direct result of the beginner's actions. As Ahmed described, "The nearness of such objects is a sign of an orientation I have already taken".[150]

This speculative, abstract illustration is supported and expanded by the concrete example in this thesis' experiment. Its data showcase the emergence of a world of particular types. Therefore, it is interesting to look out for Husserl's 'familiar horizon of the

[150] Ahmed, 58.

unfamiliar' within Ahmed's framework, which reminds us that a horizon itself is invisible: it marks that which "gives objects their contours, and it even allows such objects to be reached".[151] The world emerges only as types of objects that my horizon allows.

However, is the disorienting mirror-as-a-canvas before it is unveiling even an object in Husserl's terms? Yes. It is, at the least, a more general type framed by the often-subliminal context of preceding perceptual interactions similar to its placement through gaze and movement next to more recognisable types: the frame, the wall, and the space of the gallery room. Nevertheless, the general object is an incompleteness of perceptual interaction, a "moment of failure, [where] such objects 'point' somewhere else or they make what is 'here' become strange".[152]

For Ahmed, it was important that this "strangeness [...] seems to reside somewhere between the body and its objects", which marks a primary drive to address the object itself. The perceptual incompleteness "brings these objects to life and makes them dance".[153] She did not call this dynamic 'curiosity', yet it clearly resembles Yli-Tepsa's subsumption. The horizon of the unfamiliar is the disorientation of general affectivity; the objects are not within reach for a particular drive, but they are within reach as general objects framed as the strange. The result is a curious draw of this emerging world to be perceptually optimised and affectionally

[151] Ahmed, 55.
[152] Ahmed, 160.
[153] Ahmed, 163.

particularised.

The Self-as-a-process of What Matters

Confronted with an artwork that seems to lack context and is initially ambiguous in what it depicts and even how it is composed, the visitors do not turn away. They act out of curiosity while driven to bring forth the thing itself – not for the sake of the thing but for the sake of their experience – its affects. This particular moment is important for a phenomenology of perception because it exemplifies an interruption of habitual action and a shaping of attention. How does a beginner's stance actually play out? Can we observe moments of primal sensibility, of attraction and repulsion? Can we recognise a self-awareness of the subjects organising body? Can the subject recognise their focus on 'sameness' within 'the midst of changes', like we suspect it happens in a newborn's yet unfamiliar world? Moreover, what are the consequences for the self as the sum of in-momentum intentions and sedimented habits?

A few unifying phenomenological models exist for the self in these progressing situations – or the *self-as-a-process*. This notion is especially true for the consideration of all its dimensions of stimulation, affect, habitus, intentions, and interactions. Husserl and Merleau-Ponty, together with the literature summarised here so far, have provided a framework for grasping participant reports from the experiment presented in this thesis. However, this framework is a patchwork. Since unifying models are often effective

comparators against the outcomes of experimental studies like this thesis, I also ask whether there are more comprehensive models for comparative analysis.

The one model I found suitable for a comparison with my data is quite recent and is rooted in phenomenology and sociology: Erika Summers-Effler's multiprocessing theory of 'selfing'. Her theory aims to integrate phenomenological accounts with the pragmatism of George Herbert Mead, William James, and John Dewey.[154] As a model, 'selfing' is not solely about the minimal, perceptual self, so it considers representations alongside what Summers-Effler called "somatic" and "emotional" content. What we have seen herein as the sedimentation of habitus and value structures is what she called "selfing".[155]

Summers-Effler also accentuated the role of the resulting anticipation of the environment as 'contextualising' perception, which results in a heightened sensitivity towards essential features and processes internalised from former encounters. This outcome results in a forward momentum that, in its continuity, predates and shapes the "sensation, perception, and experience" of the moment. However, most importantly, Summers-Effler employed the concept of "emminding" to describe how "conscious meaning [emerges] by

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[154] Summers-Effler, "Selfing."

[155] See: "[…] organizing, anticipating, accumulating, and reconciling emotional, temporal, somatic, and cognitive information. These processes operate in order to make sense of past experience so as to anticipate and negotiate unfolding futures". Summers-Effler, 93.

marking unanticipated scenarios with strong emotion".[156]

The unanticipated here differs from Ahmed's 'disorienting': no complete horizon defined by unfamiliarity makes the objects dance or the self reorientate; it is a rupture of a familiar horizon by disruptive phenomena that the self navigates. In other words, the model does not look at different modes of perception but at a perceptual flow that adapts.

The strength of Summers-Effler's model is that it considers our modern understanding of short-term and long-term memory. Hence, it is also an information-focused model, which makes it more applicable to observed data. It considers the axiom that perception tries to process information most effectively by operating with it as patterns of anticipation. Usually, processing informational patterns creates a "flow of absorbed engaged action as well as mindless action and mental chatter".[157] However, this flow can be disturbed by large enough sets of unanticipated information. When this happens, the affected information is made explicit through affect and short-term memory, which can also later sediment into long-term memory.

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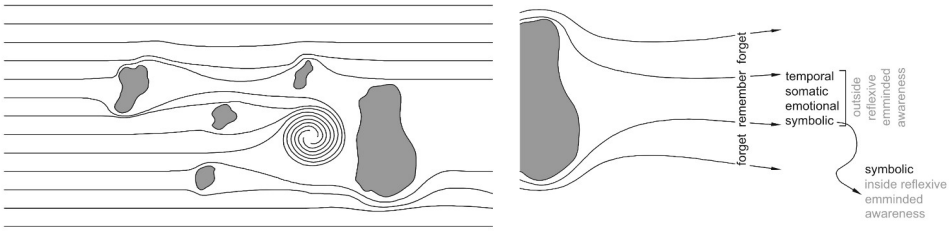
[156] See: "Emminding: the process of pointed conscious reflexive awareness that follows situations precipitating out of the absorbing flow of action. […] Heightened reflexivity and awareness during these moments render associated experiences more likely to be represented discursively and thus more likely available for verbal communication and conscious memory retrieval".
Summers-Effler, 93.

[157] Summers-Effler, 110.



Figures 2.1 & 2.2: The flow of information through 'patterned' perception is no longer effective when facing large, unanticipated obstacles. Their information is emotionally marked and narrowed into attention. Taken from Summers-Effler, "Selfing", 111 & 116.

Affect and short-term memory translate into a strong emotional mark. For Summers-Effler, this marking is one's own 'emminding awareness', a "situatedness within the mind, just as *embodied* refers to a situatedness within one's body". The awareness is self-referential since it affects the experience of the self. More specifically, there is a negative mark in the self-experience as *being bound* to new demands from ruptures of the expected, which is coupled with the heightened awareness of oneself in such a relationship. Thence, the self shows up more in the uncommon rupture than in the common flow, so "we primarily experience ourselves as bounded, even though we spend far less time bounded than integrated" in our environment.

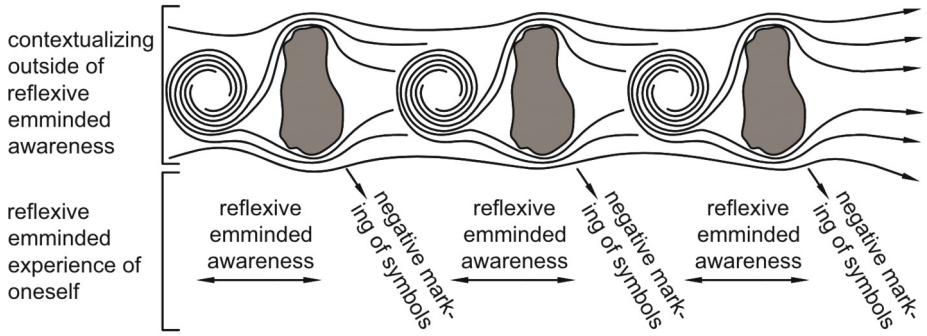


Figure 2.3.: The self is experienced through emminded awareness and thus emerges as the result of the processing of obstacles in a patterned information flow. Taken from: Summers-Effler, "Selfing", 117.

As a model, Summers-Effler 'selfing' unifies self-experience with a specific form of affect and memory and information flow theory. However, it does not speak to other aspects of the self. When she said, "Our impression of ourselves is [...] based on remembering past moments of punctuated emminding awareness",[158] it was only a statement about a memory process. However, this statement was accompanied by a comprehensive model that considers the historical sedimentation of the self as a phenomenal perception facing unfamiliarity, expectations, and embodiment. As such, it can be tested against the self-reports of participants in a situation that highlights such ruptures.

The notion of the self-as-process also works when considering the habitual as an elementary place for an individual *being with* and

[158] Summers-Effler, 116.

even *valuing through action*. The preceding section introduced Køster's take on the sedimentation of habits as a flexible process that can undergo fundamental shifts and gradual nudges. Moreover, Di Paolo (with whom this dive into embodied sense-making began) repeatedly stressed the contextual adaptivity of the habitual through the idea of 'regional identities'.[159] Depending on the situations an agent experiences, the forming habits can imprint vastly different values and strategies into a system. In his words, Di Paolo would expect "the inherent regulative tendencies of sophisticated processes of identity generation [...] to sometimes enter into conflict even with basic metabolic values".[160]

Therefore, contextual framing is a process that touches on enacted values and produces different iterations of a self within a system-environment relation. For Di Paolo, identity is tied to what a particular situation as a whole allows to be actualised. The possibility space of selves is thereby determined by the habitualised capacities and realised needs of the agential system, along with the demands and perceivable affordances of the environment[161] – until the sphere of social interaction enters the picture and establishes

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[159] See e.g.: Di Paolo, "Extended Life."

[160] Di Paolo, 18.

[161] "Agents do not hold monolithic identities that remain constant independently of the activities they perform. On the other hand, this notion does not imply a complete fragmentation of the self, either: it is not that a completely different person will emerge from each interaction, but that particular sets of habits will be regularly displayed by an agent depending on his current activities and context performance".
Ramírez-Vizcaya and Froese, "The Enactive Approach to Habits."

the need and more possibilities for narrated identities. However, seeing as social interaction is a dimension of the self outside of the scope of this thesis.

The perspectives presented here offer a core system that brings this chapter back to the initial question of what the process of sense-making is: several processes working together as one enacts embodied desires and needs in the situatedness of the moment. At the same time, while carving into the body, these actions create a history of habitus and anticipation. Reaction and interaction perceptually shape one's world as much as the environment affords connections to one's past. Agential identity emerges from these interactions as an awareness of one's capabilities and those consequences that *matter*. The enacted self is insofar affected and shaped by what matters *to* it, as it is only aware of its history that applies to or collides with a situation.

The world has sense or no sense as it does *for* the agent. If an ongoing realisation of sense is disturbed, then the phenomena become *strange* or *alien*. They point outside of what already belongs to the self. *Being with* fundamentally changes its phenomenal character and becomes *being in front of*, which takes effort to engage in typification and optimisation, particularise the alien, and reorientate oneself.

Extending this conceptual framework to bear on real-life phenomena, the next chapter explores how to observe these processes. It looks at the theoretical implications of experience as a

research object, phenomenological ‘data’, and the use of media and VR to gather them.

3. Methodology: Phenomenological Data from Factual Variations in a Virtual Reality

3.1 Experience and Experimental Phenomenology

Before the experimental study of this thesis was conducted, it lay at the crossroads known to philosophy for a long time: experience and consciousness (seemingly) belong to rationalistic access to the world, which is only approachable by critical thinking, introspective insight, and methodical scrutiny in combining the two. However, conducting experiments and collecting data about the happenings of the world pertains to the realm of empiricism, seamless

observations, and documentation of observable behaviour in the world. The two approaches entail a different quality of statements that they produce about the world – what something *is* like with a unique authority for a specific individual versus what something *presents* itself to be like from an outside perspective, endowed with the authority of repeated and intersubjective observation. This ontological differentiation must be taken seriously. However, as this thesis method chapter outlines, the tension can be put to use productively and scientifically.

This chapter explores the phenomenological method and its recent adaptations, the arguments and limitations of recent projects that have integrated verbal statements into phenomenological analysis, safeguards in experimental design that take the ontological nature of such statements seriously, and, finally, the use of aesthetic media and VR to create experiential conditions for experiments. Each section concludes with a concrete research statement or experimental strategy for this thesis.

Experience is not a research object in the classical sense; it revolves around a hard problem: How are biological systems which perform cognition, attention (and so on) actually capable of an inner world of qualia? Even leaving this problem aside, experience as a research subject is not an artefact or a process that can be observed directly or indirectly with technical tools. Memory, judgement, interpretation, and expressive capabilities of human subjects and researchers are much more prevalent in the production of

statements about experience than they are with the material subjects of the natural sciences – even though they also play significant roles there. Therefore, experience can be viewed as a delicate research object that is challenging to fit into scientific notions of consistency and proof. In addition, the previous chapter showed how experience is directly tied to concepts like 'consciousness', 'the self', and 'agency', which come with their own sets of explanatory problems since the research of experience often focuses on *what experience is*.

Experience is an undeniable part of the world, yet for the phenomenologist, experience is what shapes the world's fundamental appearance and relevance. Some have suggested that much recent work in cognitive neuroscience has already "introduc[ed] phenomenological themes into the scientific debate".[162]

Gallagher and Zahavi explained that this view began permeating psychology and philosophy from the late 1980s onwards, "when methodological questions arose about how to study the experiential dimension scientifically [...] without resorting to old-style introspectionism". They argued that, beyond the emergence of enactivist theory, the development of modern brain imaging technologies pushed the individual's experience back into focus. Images of neural processing "depend on reports about the experience of the experimental subjects".[163]

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[162] E.g.: Albertazzi, "Experimental Phenomenology."

[163] See: Gallagher and Zahavi, The Phenomenological Mind.

Nonetheless, experience may be challenging to investigate through experiments, yet experiments in cognitive science need descriptions of conscious experience for good design paradigms and interpreting their results. In fact, subjective judgements from participants have been a common sight in neuroscience and experimental psychology for a long time, "expressed as 'comparison' between or evaluation of stimuli. However, this expression is a source of terminological and theoretical confusion", explained Liliana Albertazzi.

"The answer given by the subject is given in terms of what he/she perceives. It is the experimental theoretician who knows the stimuli and sets the subject's answers in relation to those stimuli, whose role is only that of having triggered the perception effectively evaluated."[164]

This reality leaves a blind spot concerning how a researcher performs this interpretation. What knowledge about the subjective experience do they apply, and what of those are assumptions or personal truths?

A Tool for Context in Cognition and Perception

Experience is hard, so good descriptions of experiences are necessary. Hence, the methodological pillar of this study is phenomenology. Phenomenology is not a model, a developing theory, or even a field defined by a research object. Instead, it is an

[164] Albertazzi, "Experimental Phenomenology", 196.

evolving toolset with a long history and a method for approaching the experiential dimensions of a research subject. As such, it is used in different parts of the humanities, for example, in literature studies,[165] media studies,[166] and feminist and queer studies,[167] besides the obvious philosophy of mind.

Phenomenology's structural differentiation of contexts makes it a good investigative tool for many fields. Phenomenology can help identify and sharpen research questions. For instance, it has been used to "generate productive hypotheses about the neurobiological basis of psychiatric diseases"[168] and provide templates in the search for congruent information structures in neurological hierarchies and networks[169]. Furthermore, in the psychological investigation of 'learning', it has been used to grasp the learner's "engagement with the world and her intention to make sense of its structures".[170]

Taking the contexts of experience seriously is the aspect of phenomenology that makes it quite suitable for the current study. Phenomenology aims to capture phenomena as they present themselves in an individual's experience, including all their contextual relations – at first. Subsequently, these details are treated with a sharp distinction between contexts that are situated

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[165] See: Ruthrof, "Phenomenology."

[166] See: Majkut, "Media."

[167] See e.g.: Fielding, "Feminism."
& Ahmed, Queer Phenomenology: Orientations, Objects, Others.

[168] Kyzar and Denfield, "Taking Subjectivity Seriously."

[169] E.g. proposed by: Maier and Tsuchiya, "Growing Evidence for Separate Neural Mechanisms for Attention and Consciousness," 35.

[170] See: He and Jespersen, "Habitual Learning as Being-in-The-World."

or lived and those which are conceptual or retrospective.

In a separate step, phenomenology captures the 'invariant structures' of the experience, which means explicitly separating contextual necessities (i.e. the conditions for the experience to be 'the' experience) from contextual additions and contingencies. In the words of Sebastian Luft and Søren Overgaard, "[Phenomenology] must faithfully record the appearance of a phenomenon, including everything that belongs to it, but without adding anything that is not there".[171]

Nonetheless, even as a method, phenomenology is not just one thing but a historical movement with different ideas about how and where to apply it. This thesis subscribes to Natalie Depraz's remark that phenomenology should know its own performative situation. It can be theoretical, "hermeneutical [... and] its object primarily textual", or it can take "a specific lived situation as its singular (each time different) object, and its method of accounting for it is of a descriptive kind". For Depraz, the latter should "undertake a comparative work between both conceptual and experiential levels, the aim of such a comparison being to bring about new, more complex and more embodied categories". This comparison revolves around concepts, which should be "logically coherent" yet "call for a specific experience". If they sit in this sweet spot, the philosopher can determine "how [the concepts] are able to resonate with a

[171] See the introduction to: Luft and Overgaard, The Routledge Companion to Phenomenology, 10.

personal experience".[172]

Experiments and Phenomenology

Subscribing to the search for 'resonances'[173] between concepts and experiences, it makes sense to ask whether practitioners of phenomenology should broaden their research activities and bring their analytic expertise into the field. This idea has been championed by voices like Shaun Gallagher et al., who proposed not to take the role of an "armchair philosopher seeking to offer definitive answers to long-standing questions, but [that of a] curious explorer"[174] because contact with real experiences demands exploration, not validation. Indeed, every experience is different, so only by taking these differences seriously can a researcher recognise structural (and conceptual) similarities. In the last 30 years, several approaches for integrating phenomenological perspective into experimental research have been undertaken. For example, Gallagher, Petitmengin, and several others have developed

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[172] See: Depraz, "An Experiential Phenomenology of Novelty: The Dynamic Antinomy of Attention and Surprise", 283.

[173] Note that I mean resonances between experiences in question and the experiences of intellectual thought, the researcher's 'thinking about concepts'. They are not resonances of experiences with an environment, which may be related to the previously mentioned 'affective framing'. For an example of the latter, "further contact with the environment", Nanette Nielsen and Remy Martin provided the interesting case of embodied live music:
See: Martin and Nielsen, "Enacting Musical Aesthetics."

[174] Gallagher and Vara Sánchez, Performance/Art, 2021, 10.

experimental phenomenological methods for cognitive science.[175] [176] [177] [178]

As one of experimental phenomenology's most prolific figures, who focused strongly on further developing its methods, Shaun Gallagher clarified that "we should not expect [...] neurophenomenology to provide all the answers or even complete answers to specific questions". He emphasised that neurophenomenology works in concert with "other methods and approaches – lesion studies, pathological studies, behavioural experiments, philosophical analysis, studies of language and narrative, and so on".[179] Other methods often need a specific model, or at least a specific research question, deeply rooted in a theoretical foundation to provide assumptions charged with the informing life-world of the researcher.

Experimental phenomenology is different in this regard. It most notably aims to set aside theories and assumptions about what is observed and analysed. As phenomenological work happens with this robust focus on *what is there* in an experience, it also means excluding scientific discourse from the work – up to a certain point.

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[175] Sometimes also coined 'neurophenomenology'.
See: Gallagher, "Phenomenology and Experimental Design. Toward a Phenomenologically Enlightened Experimental Science."

[176] Or: Petitmengin, Baulac, and Navarro, "Seizure Anticipation."

[177] Or: Bitbol and Petitmengin, "Neurophenomenology and the Micro-Phenomenological Interview."

[178] Or: Pokropski, Mechanisms and Consciousness.

[179] Nowakowski et al., "Interview with Shaun Gallagher - Part I. From Varela to a Different Phenomenology."

"[Phenomenological work] relies on an iterative process of reducing common beliefs and scientific knowledge about the external world and the mind, describing the subjective experience of various objects and analyzing it in order to identify its invariant structures and regularities."[180]

Experimental phenomenology only connects to theory and models during carefully designed stages.

For example, the connection can happen before data collection and inform assumptions and the experimental design (i.e. 'front-loaded'), or it can be part of the experimental work but connect to models after specific steps of reporting and reflection that need to happen in relative isolation.[181] How this connection works is continuously addressed in this chapter. First, however, another way of framing experimental phenomenology exists where phenomenology works with the data from structured observations and experiments.

Phenomenological Data and Generating *Explanandum*

Rarely have projects been attributed to this kind of experimental phenomenology in the last 20 years. Such projects have addressed

[180] Pokropski, Mechanisms and Consciousness, 15.

[181] See: Gallagher, "Phenomenology and Experimental Design. Toward a Phenomenologically Enlightened Experimental Science."
& Gallagher and Brøsted Sørensen, "Experimenting with Phenomenology."

various experiential aspects, from the body schema[182] to seizures,[183] empathy,[184] musical 'absorption',[185] and 'amnesia'.[186]

This thesis aligns with projects that have incorporated existing experiential data or generated data for phenomenological analysis. Experiential 'data' is perhaps an unusual term. In this thesis, data are primarily verbal statements about experiences. However, they can also include other referential symbols generated to document an experience from a subject's PoV (e.g. drawings and sketches or self-assessments with the help of scales or codes). What these have in common is that they are (at least partially) generated by the experiencing subject to communicate what an experience *was like* for them. They are restricted through the medium used (e.g. natural language, 2D visuals, and 1D numerical scales) and other specific conditions (e.g. communication with researchers and the allotted time to generate them). In this regard, they are 'data points' similar to technical observations from other sciences. They point towards what happened for this individual to form a coherent representation of more complex dynamics if treated with enough scrutiny. However, while empirical measurements are attributed to a third-person observer's perspective, experiential data cannot easily claim the same for themselves. The topic of phenomenological interviews is addressed in the last section of this

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[182] Gallagher, "Dynamic Models of Body Schematic Processes."
[183] Petitmengin, Baulac, and Navarro, "Seizure Anticipation."
[184] Gallagher and Gallagher, "Acting Oneself as Another."
[185] Høffding, A Phenomenology of Musical Absorption.
[186] Høffding and Montero, "Not Being There."

chapter.

Noting the nature of specific phenomenological projects is crucial since they cannot try to generate 'general' data about broad concepts like 'attention', 'touch' or 'imagination'. Instead, they need to concentrate on specific scenarios, sometimes defined by mental states, while other times defined by external, physiological, or pathological circumstances because, at their core, lies an explorative question of *how* an experience unfolds. As such, they work inductively and abductively by relying on concrete observation and focusing on specific aspects of the experience. This approach is not the same as asking *why* an experience is structured in a certain way (a question suited for an empirical approach),[187] which ultimately relies on already having reliable answers to the *how* question. "Instead of trying to answer why there is some qualitative feel accompanying our experiences, [phenomenology] delivers a nontrivial concept of consciousness and methods for describing and analyzing the structure of first-person experience".[188]

To understand structures of experience — something we cannot see or measure — we need a comprehensive (but not necessarily

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[187] Phenomenological projects sometimes also concern themselves with the 'why', including explanations. However, these explanations are ontologically limited if they do not connect with other scientific methods. Examples of the discussion around this: Casper and Haueis, "Stuck in between. Phenomenology's Explanatory Dilemma and Its Role in Experimental Practice."
& Gallagher, "Taking Stock of Phenomenology Futures."
& Emiliussen et al., "We Are All in It!"

[188] Pokropski, Mechanisms and Consciousness, 32.

exhaustive) set of descriptions. There are two perspectives these descriptions can take. For instance, Gallagher differentiates between the 'explanans' – the sub-personal findings of looking at bodies and behaviour through a physiological measurement – and the 'explanandum' –an as-accurate-as-possible description of the personal, lived experience of *being in/through* a certain phenomenon.[189]

The aim of collecting the 'explanandum' of an experience is to generate a framework to grasp *that which needs to be explained*. However, the explanandum requires specific methods which aim directly at producing a nontrivial picture. Like any other scientific description, it cannot rely on assumptions, individual introspection, or common sense. Otherwise, it will be plagued by errors like incorrect categorisations, underspecifications and misidentifications.[190] Hence, generating and refining the explanandum methodically is the foremost task of experimental phenomenology, which happens based on experiential data.

This Thesis: Explanandum through Data Collection

Each section in this method chapter ends with a dedicated part about how this thesis positions itself within the discussed matter, the strategies adopted, and the specific aims. This section has so far

[189] Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 9.

[190] See e.g.: Pokropski, Mechanisms and Consciousness, 32–33.

been about the general ontological perspective that a project working with experimental phenomenology can take.

This thesis subscribed to the methodical generation of a specific explanandum for experience, facilitated through experimental work that collects 'data' and processes using a phenomenological method. It did not take a solely hermeneutical approach, even though treating statements as texts and their internal coherence played a role. Its object of inquiry was a specific and lived situation that presented itself through individual differences. After the treatment of the collected data, I performed a comparative interrogation of the experiential and the conceptual levels: What categories could be found within, and how did they fit with established phenomenological categories?

These questions were at the heart of this explorative endeavour. No hypothesis existed that the data were to confirm or refute. Moreover, no model or scientific concept was tested that served as a blueprint for designing the experiments. The goal was to observe simply *what was there* in a specific situation and then – afterwards – set about what scientific theories could ask of it. From the outset, this thesis had to be completely open about how the situation in question was to be experienced by the participants.

Nevertheless, assumptions preceding this project had to be actively set aside (i.e. 'bracketed'). Furthermore, the experiments arguably revolved around a particular concept. But this was an experiential, not a scientific concept – the idea that a situation is experienced in

a certain way. In this thesis, this experience is the mentioned 'lack of contexts or relations', which was important to achieve, as discussed in the next section.

This project also presents specifically designed experiments that were specified, searched for, and refined in a controlled situation for the participants to be observed, as outlined in Chapter 4, which documents the experiment. The thesis also designed a workflow to extract data through interviews. These data were treated, grouped, and interpreted. This final step comprises the fifth chapter of this thesis: the analysis.

3.2 From Eidetic to Factual Variations

Because phenomenology has a rich philosophical tradition, its usage for work outside of disciplinary constraints has been critically discussed in the literature. This section addresses the extent to which the epoché and the principle of eidetic variations apply to experimental work and statements about experiences.

Determining the ontological problem of what kind of knowledge is accessible for phenomenological analysis – and under which circumstances – is crucial since it determines the scope that such a study can take. As this is an extensive and ongoing discussion, this study cannot contribute ontological answers. However, it positioned itself as a productive example of a position in favour of experiential

data. As inspiration, I drew on Maurice Merleau-Ponty's use of pathologies[191] as 'factual' variations. However, first things first: what is the epoché, what are eidetic variations, what are some of their significant use cases historically, and why do they matter here?

Eidos, the Epoché, Reductions, and Eidetic Variations

When Edmund Husserl developed his phenomenological programme, he aimed for it to produce (or approximate) what he called *eidos* – the essence of a phenomenon, the kernel that makes it 'this' phenomenon and not any other. For example, what comprises the phenomena experienced by 'looking at an abstract painting of a green square' at their core? Is it the perception of coloured surfaces, their framing, the expectancy of intent because it is art, the recognition of an aesthetical code, or the social setting of its appearance? In response, Husserl deemed it necessary to conduct a rigorous treatment of one's reflective access to the phenomena. He chose *epoché* as the term for this process, which has a long

[191] The term 'pathologies' was not well defined or discussed by Merleau-Ponty, especially related to the distinction between abled and disabled bodies. It is a historical necessity to refer to the cases examined by Merleau-Ponty as 'pathologies' because it was the dominant term used by him at the time. Pathology here refers to physical injuries resulting in seemingly less-functional behaviours and bodily skills in the injured. Nevertheless, 'functionality' is not a measurement in which Merleau-Ponty was strongly interested, so he did not define it. However, he recognised pathologies as individual circumstances, not a divisive category: "There is no strictly elective disorder. […] Each disturbance is nuanced according to the region of behavior that it principally attacks". See: Merleau-Ponty, Phenomenology of Perception, 127.

philosophical history as the stoic term for the abstention of judgements about something. Similarly, Husserl's epoché involves disregarding previous judgements about the phenomenon.

Nevertheless, this detail has far-reaching implications. It means to exclude concrete judgements (e.g. 'Paintings of squares are usually concerned with abstract issues and not concrete depictions') while pertaining to scientific knowledge (e.g. 'Green can be composed of blue and yellow particles' and 'Materiality and emotions are themes of modern abstract art') and the personal historical dimension (e.g. 'I like the colour green because it reminds me of the forests of my youth'). It even includes judgements about the existential nature of the object in question (e.g. 'There actually is a canvas on a wall with colourful particles that form a square').

These aspects do not belong to the realm of essences because they are circumstantial and 'particular' in their nature. Therefore, they are only valid and significant in certain instances throughout different experiences and times. Essences are what must remain to recognise the phenomenon for all possible experiential versions that still include 'this exact painting with a green square'.[192]

This exclusion within the epoché is now often simply understood as a 'bracketing of particulars'. In the terminology of Husserlian thinking (and its critique), it is called a 'reduction' – specifically an 'eidetic' reduction – a more comprehensive "shifting focus from the

[192] For a detailed interpretation of Husserl's essence, eidos and 'pure' essence – and that 'essence' is about a concrete object: De Santis, "Essence and Eidos."

facticity of experience to the essential or necessary structures of that experience".[193] For Husserl, eidetic reduction was the necessary first step in any phenomenological reflection. Without it, the philosopher would maintain a natural and naïve attitude towards the world – of which they could only assume it 'is there', while they should approach any phenomenon as something that only 'appears' to consciousness.[194]

Nevertheless, ignoring the general claim of the existence of objects does not mean that Husserl negated the factual world. Instead, it had to be set aside to facilitate an examination of how consciousness produces an experience of it. Neither denying other sciences nor questioning the general faculties of our senses is the aim of the reduction, but "the object [...] considered as perceived, [...] in specific modalities (vision, smell), and, more important, how it is perceptually apprehended: through successive adumbrations, from a certain point of view relative to the subject's body and so on".[195]

How this examination is accomplished regarding a concrete single experience was somewhat elusive in Husserl's writing, so it became a point of discussion in Husserlian tradition. Natalie Depraz, as a renowned Husserl specialist, said that Husserl

"[...] very rarely gives indications about how to concretely come back to such an experiential individualized level of reality: how to

[193] Landes, The Merleau-Ponty Dictionary, 68.

[194] See e.g.: Husserl, General Introduction to a Pure Phenomenology, 57–62.

[195] Pokropski, Mechanisms and Consciousness, 15–16.

explore one's own experience, how to cultivate such an intimate presence to myself, what inner gestures and practical tools are to be put to work."

Hence, she and Varela and Vermersch proposed such 'inner gestures' more recently: the principles of "suspension, conversion as re-direction [and] letting-go as welcoming".[196] As principles, they should guide one's epoché to reach an awareness of the structures of one's subjective experiences.

The Specificity of Eidetic Reduction Versus the Reduction of the Natural Attitude

Many productive reinterpretations of the Husserlian reduction have been offered. For example, Dan Zahavi, a figurehead of experimental phenomenology, proposed "ignor[ing] the epoché".[197] This comment highlighted the complicated task of the epoché by specifically clarifying what the reduction entailed and translated into actual scientific work.

Zahavi examined Husserl's complex relationship with the concrete practice of psychological-phenomenological reduction. He pointed to how Husserl saw the psychologist as someone who explored an experience with a "systematic focus on [...] the purely psychic

[196] Depraz, "An Experiential Phenomenology of Novelty: The Dynamic Antinomy of Attention and Surprise", 280.

[197] Zahavi, "Applied Phenomenology: Why it is Safe to Ignore the Epoché."

aspect". This psychological phenomenology performs a reduction, but the 'psychic' is the aspect it *cannot* bracket out.

Comparatively, "the physicists must effectuate a universal epoché in order to study the corporeal in abstraction from everything else". In effect, "every science needs to bracket extraneous themes if it is to focus on its own distinct topic". Of course, a difference exists. For Husserl, the psychological reduction is – phenomenologically speaking – still "inauthentic and non-genuine" because the psychologist is not taking the most radical attitude that abstains from their field's preexisting and scientifically loaded world. They are not performing the fundamental work of the consciousness philosopher, even though they look at matters of the mind.

Thus, the epoché needed here (which Zahavi argued can be ignored) is a "transcendental reduction[,] a second purifying step". The difference is that the psychological bracketing of the psyche is still rooted in positivistic science with a natural attitude. A transcendental reduction does not accept positivist truths, only an awareness of presentations of truth: the "apodictic knowledge that [knowledge] can never be apodictic".[198]

What is gained by taking this stance? It precisely carves out the structures we previously encountered with Husserlian terms, such as the 'horizon' of experience, the aspects of 'noema', and the archetype of the 'object in general'. This kind of reduction 'transcends' the causal relationship of the subject with the world –

[198] Cairns and Embree, "The Transcendental Phenomenological Reduction."

"a position to discover the intrinsic intentionality of the mental act, an intentionality that is precisely preserved even if the object doesn't exist".[199] It first understands experience as a vessel, and its form shapes its content. Only by looking at this form can we revert back to its contents and their relationship with the world.

Nevertheless, in returning to the question of necessity, while the transcendental reduction may be absolutely productive and required for certain philosophical questions, does it mean every interest in the explanandum of experiences needs to "reach the hyperreflective transcendental attitude" and "learn to suspend the general thesis and various deep-seated metaphysical assumptions about the mind-independent status of the world"? Zahavi said, 'No': a psychological reduction can be valid without the transcendental reduction. Thus, to demand it may even distract "qualitative researchers [to] engage with the phenomena themselves".

However, bracketing out the 'natural attitude' is not the same thing. This process does not go as far as the transcendental reduction, so it is worthwhile for experimental phenomenology. Like Petitmengin, Zahavi argued,

"When living in the natural attitude, we are inevitably absorbed by and preoccupied with worldly objects and events, with the *what* of

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[199] Zahavi showed Husserl's opinion that, after "having first established a firm transcendental foundation, [the phenomenologist] can shift back into the natural attitude and then reinterpret everything that has been transcendentally established as psychological structures".
See: Zahavi, "Applied Phenomenology: Why it is Safe to Ignore the Epoché."

experience. By [...] bracketing our implicit belief in the existence of a mind-independent world, we can finally reorient our attention, [...] revealing aspects and dimensions of our subjective lives that we normally overlook and ignore".[200]

While Husserlian eidetic reduction needs to find pure essences to speak of a priori aspects of experience, the exploration of concrete experiences that consciousness processes may not.

Concrete explorations of how something appears in subjective awareness benefit enough from the reduction of the natural attitude so that they can take stock of experience without external templates. To be clear, the 'natural (or naïve) attitude' includes everything one takes for granted. It works with established categories and assumptions, yet it is also trivial and self-evidently true. Indeed, defining the realm of common sense is challenging because the "obviousness of commonsensical experiencing [means] that we understand it without it having to be defined".[201] To bracket it is to make oneself aware of what may seem 'obvious' and not worth discussing, to start with exactly these aspects. Only by performing the reduction do we become aware of what it entails.

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[200] Zahavi, 260.
See also Zahavi's examination of the 'natural', the 'naturalistic', the 'personal' and the 'personalistic' attitude: Zahavi, 267.

[201] de Warren, "Husserl, Common Sense, and the Natural Attitude."

The Completeness of the Reduction and the Benefit of Intersubjectivity

Husserl's eidetic reduction was based on imaginative mental operations: eidetic 'variations'. The phenomenon in question as a mental object was to be probed by theoretically changing its distinct elements and properties. Would it change to some other object or remain what it is supposed to be? However, statements about the phenomenon's horizon are not to be treated as discoverable, definitive variables but as claims similar to a hypothesis. What a phenomenologist identifies as eidetic essences at one point can still turn out to be a variable aspect in a subsequent study.

Such is the nature of phenomenology, which only ever further approximates its objects of inquiry. In addition, the extent to which experience is culturally conditioned is a pitfall that includes the phenomenological researcher, sometimes without them being aware of it.[202] This pitfall is the root of another objection to Husserl's reduction. Its application – especially the extent to which a phenomenologist can approximate their target phenomenon by modifying it in their imagination – is impossible for most individuals to realise with the rigour, integrity, and self-reflection necessary. Even then, imagination can overshoot. Again, Dan

[202] Or as Gallagher put it, "The transcendental project will still have to defend itself from charges that the whole project is one that is culturally situated. Is there such a thing as consciousness in general? Or is it rather that since every conscious individual is situated in the world, every conscious experience will be different in some way?"
See: Gallagher, "Taking Stock of Phenomenology Futures."

Zahavi identified that without intimate familiarity, we can "imagin[e] something that superficially resembles [the phenomenon]" but does not pertain to the experience at all.[203]

In a more general sense, Maurice Merleau-Ponty noted, "The most important lesson of the reduction is the impossibility of a complete reduction".[204] Nevertheless, in a concrete, practical sense, it may not render reduction and variation useless.

In his guide to integrating phenomenology into cognitive science, Marek Pokropski explained that while we "cannot simply set aside our knowledge and our deeply rooted cognitive attitudes", the reduction "should be understood as a normative and methodological rule – an ideal toward which we aim and which tells us how phenomenological analysis should proceed". Giving this notion a productive momentum, he then proposed that "the procedure needs to be repeated every time" while recognised as non-definitive. Pokropski also highlighted that the reductions' goal is to "obtain a field of phenomena that can be analysed for correlations and invariant structures", not to produce statements and concepts.[205]

Moreover, Zahavi, also a prominent representative of the use of pathologies in phenomenological psychology, added,

"Since so many details must be attended to if a thought experiment

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[203] See: Zahavi, Subjectivity and Selfhood, 140 – 142.

[204] Merleau-Ponty, Phenomenology of Perception, xxvii.

[205] Pokropski, Mechanisms and Consciousness, 15–16.

is to be truly conclusive, it might, occasionally, be better to abandon fiction altogether and instead pay more attention to the startling facts found in the actual world."[206]

This notion is long standing. As Donald Landes explained, Merleau-Ponty "generally [left] aside Husserl's technical language (e.g., noesis/noema)" and took the reduction as "a general term for any rupture in the closely woven fabric of familiarity, any moment that leads us to stand in 'wonder' before the world". Landes agreed with Merleau-Ponty that a complete reduction is impossible. However, tackling the natural attitude reveals "unfamiliarity [...] against a background of familiarity that [Merleau-Ponty] names the pre-predicative unity of the perceived world".[207]

If phenomenological reduction is never complete and imaginative variations suffer the phenomenologists' blind spots about themselves, is it still a workable and productive scientific practice? Merleau-Ponty certainly thought so. He was one of the first to emancipate the reduction from eidetic variations as a pure introspective technique by looking for variations of an experience in himself and the world.

Specifically, Merleau-Ponty used statements from – and about – patients with neurological pathologies. These cases were where patients experienced situations differently from an abled person because of injuries and illnesses that affected their neural and

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[206] Zahavi, Subjectivity and Selfhood, 142.

[207] Landes, "Merleau-Ponty from 1945 to 1952."

sensory systems. Merleau-Ponty used statements about these patients' experiences as factual variations: people *did* experience these variations; they were not just theoretical.[208] In addition, these were intersubjective variations, so they came from individuals other than the phenomenologist. Thus, such statements exist and can be recognised even despite any of the researchers' introspective blind spots.

Merleau-Ponty's move to consider these reports is relevant to this thesis; the next section clarifies how by inspecting their ontological constellation. I look at pathologies within his *Phenomenology of Perception* and specifically the epistemological roots of his famous discussion of a neurologically injured patient known as the Schneider case.[209] It exemplifies how pathologies prove to be a fruitful show-and-tell for applying the phenomenological method and provide the opportunity to bracket the presuppositions of our perceptions. This brief excursion leads to Komarine Romdenh-Romluc's argument that Merleau-Ponty did not utilise the physiological specifics of Schneider's pathology to make his points.[210] Instead, he used a specific understanding of phenomenological variations to identify unifying or shared relationships in the experiential content of the patient Schneider and an uninjured person.

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[208] Whether their statements suffice to describe an experience is the subject of a later section in this chapter.

[209] Goldstein and Gelb, "Psychologische Analysen hirnpathologischer Fälle auf Grund von Untersuchungen Hirnverletzter."

[210] Romdenh-Romluc, "Science in Merleau-Ponty's Phenomenology."

> "Concrete movement is thus centripetal, whereas abstract movement is centrifugal; the first takes place within being or within the actual; the second takes place within the possible or within non-being; the first adheres to a given background; the second itself sets up its own background."[211]

The Schneider case[212] is one of several pathological reports about injured patients to which Merleau-Ponty referred in his work. It is certainly one of the most central in his *Phenomenology of Perception*. In this now-famous case, a patient suffered wounds from shrapnel (a common injury for a veteran of World War I that produced many peculiar pathologies[213]), which left him with problems performing certain motor tasks (e.g. locating tactile stimuli on his body and telling what position a specific body part was in). These shortcomings in his proprioception mainly appeared when Schneider was asked to actively focus on them.

For example, Schneider could not say where he was touched on his body in a deliberate test. However, he could do so when touched

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[211] Merleau-Ponty on the capabilities of the patient Schneider.
Merleau-Ponty, Phenomenology of Perception, 106.

[212] Goldstein and Gelb, "Psychologische Analysen hirnpathologischer Fälle auf Grund von Untersuchungen Hirnverletzter."

[213] Leonard Mlodinow painted a lively picture of how trench warfare and the weapons of the Great War produced many violently penetrated brains and historically helped neuroscience as a field with a sudden influx of unfortunates to study.
See: Mlodinow, Subliminal, 48.

unexpectedly. He could also perform everyday manual tasks and labour, though not via a set of concrete, verbal instructions concerning the movement of his limbs and hands. Furthermore, under no circumstances was Schneider able to ostentatiously point at something, yet his ability to reach out and grip something seemed to mostly work.

Goldstein and Gelb were the two psychologists who wrote up the report and the descriptions that Schneider gave. Merleau-Ponty never actually talked to Schneider. The two original authors also categorised the actions Schneider performed as 'concrete' and the ones he struggled with as 'abstract'. This distinction interested Merleau-Ponty. Hence, while discussing "the reason behind the privilege"[214] given to Schneider for concrete movements over abstract ones, Merleau-Ponty made his case for bodily consciousness.

Merleau-Ponty began this argument by tracing Schneider's experiences backwards towards a reason or purpose for his actions to understand their logic. Moreover, he looked for the dependencies that one category of actions had while another did not by asking, "How are we to make sense of this series of facts, and how should the function that exists for the normal person, but that is missing for the patient, be understood through them?".[215] Komarine Romdenh-Romluc noted that these dependencies had to be intrinsic, not just rooted in arbitrary markers (e.g. the fact that

[214] Merleau-Ponty, Phenomenology of Perception, 106.

[215] Merleau-Ponty, 110.

Schneider could do one thing but not another).[216] Schneider's experience was not to be used to point at the consciousness or physiology behind it. Instead, whether Schneider could or could not use his body highlighted consciousness as a relationship concerning the body and manifested through it.

Merleau-Ponty found that actions seemed to presuppose some kind of 'knowledge' about the body in space and in relation to itself. For Schneider, some of this knowledge did not seem apparent. With this interpretation, Merleau-Ponty explained why Schneider needed to perform certain preparatory movements and investigations on his body before he finally circumvented his struggles with 'abstract' tasks. Through these preceding movements, Schneider actively gained the missing knowledge about his posture and – in turn – more access to his body and its relationship to objects in the world:

"Clearly, the patient's body is only available to him as an amorphous mass in which only real movements introduce divisions and articulations. [...] The patient does not seek and does not find the movement himself; rather, he agitates his body until the movement appears."[217]

Thus, 'concrete' tasks seemed to either not be needed or already contained a kind of knowledge that was lacking in the abstract tasks. Therefore, the dependency towards which Schneider's

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[216] See: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 64.

[217] Merleau-Ponty, Phenomenology of Perception, 112.

pathology pointed was one of proprioceptive access or presence of the body, which rendered Schneider "conscious of bodily space as the envelope of his habitual action but not as objective milieu"[218].

At this point, Merleau-Ponty explicitly distinguished his analysis from earlier approaches to cases such as Schneider's: empiricism (i.e. measuring and finding causalities of information) and intellectualism (i.e. the reflective signification of sensations). As Merleau-Ponty stated in his introduction, this differentiation was because his phenomenological method started before science could focus on any singled-out aspects of something:

> "The entire universe of science is constructed upon the lived world, and if we wish to think science rigorously, to appreciate precisely its sense and its scope, we must first awaken that experience of the world of which science is the second-order expression. Science neither has nor ever will have the same ontological sense as the perceived world for the simple reason that science is a determination or an explanation of that world."[219]

For example, empiricists, including the psychologists Goldstein and Gelb, asked which 'sense' to provide Schneider with objective insights as the impaired one. If he seemed to miss the crucial information for one kind of task but not for the other, it was a matter of finding the malfunctioning sense involved in the affected

[218] Merleau-Ponty, 106.

[219] Preface of: Merleau-Ponty, lxxi.

tasks, was it not? Not necessarily, Merleau-Ponty argued, because such an information flow of the five senses is not how experience works. Experience is not an array of single properties from several isolated modalities present in the mind. Instead, it usually comprises holistic phenomena, wherein all single properties of the perceived object, structure, or process integrate into one impression. For any analysis of an experience, it means

> "[Schneider's perceptive] operation takes place wholly within the order of the phenomenal[. It] does not pass through the objective world. Only the spectator, who lends to the subject of movements his own objective representation of the living body, can believe that the bite is perceived, that the hand moves itself in objective space and, consequently, is surprised that the very same subject fails in the designation experiments."[220]

Romdenh-Romluc recapitulated Merleau-Ponty's stance on proprioception in particular by highlighting that all the senses play together in an integrated way with internal sensations like hunger, fatigue, and body orientation to create proprioception.[221] We do not

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[220] Preface of: Merleau-Ponty, lxxi.

[221] See: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 68.

Note also that Merleau-Ponty's understanding of proprioception differed from the modern understanding of the term. It represented more than body orientation as a catch-all term for all internal sensations. In Schneider's case, however, the term mostly referred to the patient's problems with the orientation of his limbs and relations among distinct movements.

look at our hand distinct from the tactile feeling we get from it or the orientation it has in relation to the rest of our body. Instead, Merleau-Ponty argued that all these things are one experience. It then requires further effort from us to single out the actual orientation of the hand, especially in a way that we can articulate.

Along with an empiricist approach, Merleau-Ponty programmatically addressed intellectualism, as in 'the mind as conceptual representations preceding actions': to use our hands, we need to have knowledge about them – the concept of 'my hands'. Was this internal concept damaged or lacking aspects for Schneider? No. Like empiricism, intellectualism did not sufficiently explain Schneiders condition for Merleau-Ponty. In fact, he opposed their shared effort toward "taking inventory", be it "the sensible qualities that compose [Schneider's] consciousness (in empiricist language) or the material available to his knowledge (in intellectualist language)".[222] What does this statement mean?

Both empiricism and intellectualism demand that either qualities within modalities or concepts within thoughts exist before the act and are free from context. However, for Merleau-Ponty, the context cannot be ignored. The body that presents the context since the body is the capacity and place of contextual integration: "[The body] is a knot of living significations and not the law of a certain number of covariant terms"[223]; "[It] is the place or, rather, the very

[222] Merleau-Ponty, Phenomenology of Perception, 116.

[223] Merleau-Ponty, 153.

actuality of the phenomenon of expression"[224]. In short, taking the body as a starting point may offer a comprehensive framework for any subsequent explanations,[225] which requires looking at the experience in its context for the subject and as a mode of its being in the world.

Merleau-Ponty explained that being in the world manifested itself in perception by 'presenting' the subject with things already loaded with value derived from the concrete potential to interact with them. In this principle, Schneider and a normal person do not differ. One may say that for both, the world has an affective and emotive structure, which invites and repels certain behaviours.[226]

For example, think of an inviting path showing the way forward out of a dark forest. We recognise it as an opportunity to make use of it in relation to an environment instead of a gap in vertical optical lines, classifiable as trees, surrounded by a certain brightness directed inwards, as a light source that hints at an open space behind these rows of brown and green. The former is closer to actual experience and replete with Merleau-Ponty's potential for

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[224] Merleau-Ponty explicitly saw this idea as aligned with Herders 'sensorium commune'. See: Merleau-Ponty, 244.

[225] In contrast to the two other approaches, the empiricist would need to explain the different outcomes of actions dependent on objective facts given to Schneider through the same modalities, e.g.: Merleau-Ponty, 106.

The intellectualist would struggle with the failure in rational thought, which would occur for Schneider in one kind of task only.
Cf.: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 71–73.

[226] See: Romdenh-Romluc, 74.

actions, while the latter is a conceptual treatment after perceiving the phenomena. However, does Schneider's injury give insight into this kind of relation to the world? Merleau-Ponty said, 'Yes:

> "After all, Schneider's disorder is not initially metaphysical, for it was a piece of shrapnel that injured him in his occipital region. His visual deficiencies are extensive, but as we have said, it would be absurd to explain all others through them as if through their cause, and it is no less absurd to think that the shrapnel collided with symbolic consciousness. Rather, his spirit is affected through vision."[227]

Merleau-Ponty claimed insight into how Schneider (and a 'normal' person) experienced work. While he acknowledged he could not access the specific 'feeling-how-it-is' for Schneider, he insisted that the underlying structures of both experiences were still comprehensible. Therefore, we could ask how Schneider's world might differ in body consciousness from that of a normal person:

"We observe that the patient [does X. …]. Nothing could be more mistaken than to assume that the same operations are at work for the normal person and merely abridged by habit. The patient only seeks these explicit perceptions in order to supply himself with a particular presence of the body and the object that is given for the normal person and that remains for us to reconstitute."[228]

Thus, Merleau-Ponty's analysis did not deduce the pathologic from

[227] Merleau-Ponty, Phenomenology of Perception, 127.

[228] Merleau-Ponty, 110.

the normal experience but treated both as variations of a not-yet-visible structure that unified them. He had to 'reconstitute' what we share with Schneider, which was invisible to us through its 'givenness' and only became visible thanks to Schneider's disposition. Thus, through the difference between the experiences, a structural core — resembling an 'essence' in Husserlian terms — can be increasingly discerned via a variation of capabilities that we have experienced in other contexts but never in Schneiders constraints.

Equipped with this method, Merleau-Ponty then explained Schneider's problem. If Schneider could still perform in a concrete context (e.g. 'at work'), then the contextual action potentials invoked through the perception of his environment would still be intact. It is only when we realise this similarity that we see what was different for Schneider: he failed in his tasks when his behaviour needed to be conceptually enriched by something other than the environment. Hence, Schneider's proprioception within an environmental system worked and interacted with what he perceived. However, it did not function when Schneider had to actualise what to do – when his actions required being added *to* the environment.

Nonetheless, how are 'actions' present in an environment in the first place, even if only as potentials? To answer this, Merleau-Ponty introduced his central term, 'habits, as presented in Chapter 2 of this thesis. His habits also referred to previously gained knowledge about behaviour through doing: the practice of being in

an environment. However, as Romdenh-Romluc explained in detail, Merleau-Ponty's habits are not to be confused with motor reflexes or similar automated processes.[229] They represent actual knowledge about environments and knowledge about oneself. As such, habits enable one to identify environments, adapt to situations, and perform variations upon actions for the behaviours involved.

Through habits, Schneider could do his work even if the circumstances and specifics changed slightly from day to day. Lacking any corresponding habits, however, he could not perform abstract tasks such as following verbal instructions because habits and immediate sensations were the only motor potentials to which he had access:

"The distinction between abstract movement and concrete movement is thereby clarified: the background of concrete movement is the given world; the background of abstract movement is, on the contrary, constructed."[230]

Merleau-Ponty concluded that Schneider could only perceive and act upon that which was directly presented by his ongoing task within an environment. Moreover, Schneider could not discern

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[229] This would also render Merleau-Ponty's conceptual framework similar to the intellectualist one, whereby the problem is one of connecting thought as the invoking power to motor skills. However, habits are a kind of thought – they are knowledge in action, the body as a conscious entity.
See: Romdenh-Romluc, 79–89.

[230] Merleau-Ponty, Phenomenology of Perception, 113.

what was potentially available as actions outside of the most direct environmental stimulation and accompanying urgency.[231] Hence, Schneider's problem was impaired access to the *virtual potentials* of his motor skills, not the more general problem of the senses being separated from some form of consciousness or some kind of preceding thought separated from the body.

Merleau-Ponty found that the mind, body, and world form a relationship. They are not respective poles or separate entities that need to be connected by something. Experientially, they are impossible to pull apart. For Merleau-Ponty, the body manifests and navigates habits as active potentials for actions in an environment, so the body is a consciousness structure. Furthermore, through experience, the environment does not exist without the body as the place of perception and skill.

Looking at this relationship from the other side, the body is not imaginable without an environment towards which it can position itself. Each is part of the other. Schneider's consciousness emerged as a range of capacities within this relation.

Pathologies as Factual Variations

The point of the previous section was to show how Merleau-Ponty utilised Schneider's experiences in his discussion of body consciousness and habits. Referencing both empiricist and

[231] See also: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 95.

intellectualist ideas, his analysis exemplified three key points:

1) Merleau-Ponty did not see virtue in practising phenomenology as a form of philology. Commentaries on predecessors like Husserl and Heidegger

> "[…] would offer nothing, for we only find in texts what we have put into them, and if ever a history has called for our interpretation, it is surely the history of philosophy. We will find the unity of phenomenology and its true sense […] in ourselves."[232]

2) Science and phenomenology work on the same project. As Romdenh-Romluc described in the *Oxford Handbook of the History of Phenomenology,* this duality is apparent in Merleau-Ponty's choice of the object of inquiry:

> "Phenomenology, as he conceives it, is an investigation that proceeds from observed data, i.e., experience, which requires an accurate description of what is observed. The same holds for science."[233]

This approach to phenomenology is not Husserlian introspection, isolated from the object world. It starts with concrete moments of contact with the object world to arrive at the contents of experience as concrete scientific objects. The necessity of taking seriously the contents of experience leads to a search for revealing variations

[232] Preface of: Merleau-Ponty, Phenomenology of Perception, lxxii.

[233] Romdenh-Romluc, "Science in Merleau-Ponty's Phenomenology."

upon these contents. From these variations, one can theorise about structures of perception and behaviours.

3) Therefore, Merleau-Ponty's approach is a way of science which uses factual variations to reveal the unifying structures of experiences (maybe even essences). One should use the 'real' experiences of others in order to collect significantly different variations and seek their structural similarities:

> "The phenomenologist should start with essentially the same sort of data as the scientist: observations of the world and accounts from others of their experiences, including those who perceive the world in extraordinary ways due to illness, injury, the influence of drugs, and so on."[234]

Nevertheless, even though these are shared structures underlying the data, they are not objective facts – not 'mechanisms' or a sum of 'features' or 'properties' to be revealed. Like essences, they serve ontologically as conditions of possibility – for experiences to exist as such and for the interpersonal recognition of experiences:

> "Perception of the world 'by Pierre' is not Pierre's doing, nor is the perception 'by Paul' Paul's doing; rather, in both cases, it is the doing or the work of pre-personal consciousnesses whose communication raises no problems since this very communication is in fact required by the definition of

[234] Romdenh-Romluc.

consciousness, sense, and truth."[235]

Phenomenological structures (and ultimately essences) are ideal relations relevant to analysis and thinking. They are not objects but means to approximate existence because "our existence is too tightly caught in the to know itself as such at the moment when it is thrown into the world, and [...] our existence needs the field of ideality in order to know and to conquer its facticity"[236] To 'think about descriptions' means reflecting on them, so introspection remains a major part of the process – after the collection and treatment of real experiences – because phenomenological thinking always involves and relates to the self of the investigator, no matter where the description originally came from.[237]

The consequent benefit of using pathologies to think about perception or the mind is not that their dysfunctions reveal something. Instead, the pathological experience shows *how* to be in the world: a relationship between consciousness and the world that serves as a variation of the equivalent 'normal' structures of the self, for which the investigators self stands in. By themselves, the normal

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[235] Preface of: Merleau-Ponty, Phenomenology of Perception, lxxv.

[236] Preface of: Merleau-Ponty, lxxviii.

[237] Ontologically, the other and the resulting dialectic between it and the self "are only possible if the Ego and the Alter Ego are defined by their situation and are not set free from all inherence; that is, only if philosophy is not completed with the return to myself, and only if, through reflection, I do not discover merely my presence to myself, but also the possibility of an 'outside spectator'. […] The Cogito must find me in a situation, and it is on this condition alone that transcendental subjectivity will, as Husserl says, be an intersubjectivity".
Preface of: Merleau-Ponty, lxxvi.

and the pathological experience are “through and through related to the world”. However, by reflectively stepping back from (or between) the two experiences, “transcendences spring forth and [the new perspective] loosens the intentional threads that connect us to the world in order to make them appear; [reflection] alone is conscious of the world because it reveals the world as strange and paradoxical”.[238]

The Role of Similarities in Factual Variations

With factual variations, Merleau-Ponty effectively laid the groundwork for what we earlier called the ‘reduction of the natural attitude’. His movement of thought revealed the connections to the world precisely because they were “taken for granted” if looked at only in a single description: “We must abstain from them for a moment in order to awaken them and to make them appear”[239]. Hence, the differences in experiential content, the particulars of a situation, were not at the core of Merleau-Ponty’s analysis. Merely deducting one experience from another one by subtraction to acquire underlying structures is categorically impossible because

A) These specifics are not sufficiently available to anyone but the subject (i.e. the patient);

B) There is not something missing in the other (i.e. pathological) experience – it is always whole for the experiencer. If there are

[238] Preface of: Merleau-Ponty, lxxvii.
[239] Preface of: Merleau-Ponty, lxxvii.

substituting functions in the pathological mind, they are part of the pathology and not present in the normal mind, so they cannot be found through subtraction.[240]

Pathologies are not merely interesting because a bodily injury produces a particular variation. They are interesting because they expose different means or modes of access to the world. They all carry some shared experiential structures of how we relate to the world in the first place: "To seek the essence of perception is not to declare that perception is presumed to be true, but rather that perception is defined as our access to the truth".[241] [242] Why this access is different in 'particular' terms is not that important, except to the extent that it creates a connection to reality that is not a given with imaginary variations of pure introspection. This concept keeps Merleau-Ponty's phenomenology connected to the *Weltlichkeit* (worldliness) of existence and experience.[243]

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[240] What makes Merleau-Ponty's approach still somewhat transcendent is that it emphasises the inexhaustibility of explanation for the sensible realm. I add that this emphasis has also stood the test of time as an enactivist view of the agency of bodies and the inseparability of thought and flesh.

[241] Preface of: Merleau-Ponty, lxxx.

[242] Merleau-Ponty also touched on the role of truth in his thoughts about illusions. Illusions, after all, are also variations upon experience – but ones where we have already stepped back, so they became apparent to us as illusions. This is what Merleau-Ponty investigated: the structures of how we relate to or how something is true to us.

This "is because we have previously recognized illusions, and we could only do so in the name of some perception that, at that very moment, vouched for itself as true, such that doubt, or the fear of being mistaken, simultaneously affirms our power of unmasking error and could thus not uproot us from the truth".

See: Merleau-Ponty, lxxx.

[243] "The eidetic method is that of a phenomenological positivism grounding the

What is interesting is how certain 'functions' of consciousness are similar and recognisable despite the differences. Only with these templates are 'differences' also discernible. In Schneider's case, the difference was *how* the two classes of abstract and concrete situations *meant* something to him. These descriptions were (from Merleau-Ponty's standpoint as the investigator) either transcribed second-person accounts or the original authors' third-person accounts and measurements of Schneider's behaviour in fixed contexts. Since the authoring psychologists outlined these experiments or circumstances of Schneiders life, Merleau-Ponty knew them and used them as environmental backdrops to examine Schneider's relation with them.[244] Schneider seemed to suffer from a shift or disruption of access to the world. However, Merleau-Ponty used it as a blueprint of what was still there and recognisable – previously established habits and a former bodily experience 'imbuing' the environment with motor significance.

Schneider could not perform actions that he needed to add to an environment if they were not previously established as habits before his injury. This abstract mode of being was different for Schneider: he could not 'imbue' or connect motor significance to an environment that did not present that significance to him yet.[245]

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possible upon the real". Merleau-Ponty, lxxxi.

[244] "It follows that one perceives one's surroundings primarily as a setting or backdrop for a particular sort of behaviour – activity that relates to one's current task".
See: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 96.

[245] "Since Schneider lacks this power, he is unable to imbue the psychologist's

Merleau-Ponty saw the familiarities between Schneider and a 'normal' variation of the experience. Thus, he could then pinpoint 'the difference' from this standpoint. He continued to interpret the difference as a hint at an existential structure: the virtuality of the environmental background for an action. This virtual background precedes the perceiving act and is "immanent in the movement, inspiring and sustaining it at every moment".[246]

The Ecological Validity of Factual Variations

Merleau-Ponty's argument about environmental backgrounds also shows that he could only describe Schneider's disposition by looking at him in a nearly ecological setting: not as the subject of an experiment but as a person who underwent different situations and had to adapt to the environments that came with them. Merleau-Ponty understood Schneider as an agent capable of giving himself tasks, so he did not dissect the patient into functional parts, like some sort of experience machine undergoing isolated trials.[247]

The experiential categories of the 'abstract' and the 'concrete' served Merleau-Ponty as a good starting point from which to speak

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order with motor significance and experience the demand to raise his arm. He understands the order conceptually, but he has no practical understanding of it. His lack of motor understanding affects his grasp of how his body is orientated". Romdenh-Romluc, 100.

[246] Merleau-Ponty, Phenomenology of Perception, 113.

[247] See also: "The bodily exercise of motor skills cannot be analysed causally. These actions are not mere causal responses to brute physical stimuli. Instead, one's bodily self copes with one's environment in ways that are appropriate to one's current task". Romdenh-Romluc, 102.

about how our minds operate with highly ambivalent materials. It is only our daily occupation with the outcomes that makes us overlook the fact that much of what we perceive and act out is not *in* the material world. However, as he showed, perception is also not a mere product of abstract thought and signification. A special relationship exists between the world and us as consciousness systems.

Via Schneider's pathology, Merleau-Ponty observed a mind operating in a distinct reality, so to speak – one where this relationship was challenged and manifested differently from many people in most everyday situations. Merleau-Ponty then asked what would need to happen to him so that this kind of structural change in behaviour would be necessary. This self-relating analysis was aimed at existential and internal structures. Hence, he treated the underlying world–body relation in a naturalistic way to discover that its categories, the pushing and pulling forces, and especially its blind spots are all observable and replicable.[248]

Phenomenology can learn from experiences that seem to differ from an everyday perspective – experiences that produce irritations to be overcome. They offer opportunities to reflect on the categories and structures of our world–consciousness–body relationship. However, following Merleau-Ponty, we also need to look at the entire consciousness-at-work – in the body and everywhere. Moreover, we need to find subjects who are free to operate as

[248] This is also a reason the Phenomenology of Perception later addressed illusions as another variant experience of ambivalence.

agents while giving themselves tasks and living out intentions.

Fittingly for this thesis, Merleau-Ponty also showed that we need to ask about the *meaning* of an act or perception *of its subject*. As can be seen, this project is an open, exploratory inquiry that does not presuppose outcomes. In the end, Merleau-Ponty's method did not find definite answers empirically. Nevertheless, it was not supposed to. It only provided one of the infinite approximations of consciousness structures.[249]

This Thesis: Factual Variations of 'Realising Context'

What does this thesis take away from this chapter's look at the epoché and Merleau-Ponty's evolution of the eidetic into the factual variation? For one, it follows Depraz et al.'s principles of "suspension, conversion as re-direction [and] letting-go as welcoming" to find a version of the epoché that applies to its collected experiential statements.

Next, it seems necessary to set the scope of what the generated explanandum of this project entails and what its epoché attempts to achieve. The primary subject of inquiry here is a concrete perception in action, not a transcendental axiom of consciousness.

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[249] In Merleau-Ponty's words, "[As] an infinite dialogue or meditation, […] it will never know just where it is going. The unfinished nature of phenomenology and the inchoate style in which it proceeds are not the sign of failure; they were inevitable because phenomenology's task was to reveal the mystery of the world and the mystery of reason'.
Merleau-Ponty, Phenomenology of Perception, lxxxv.

It can, therefore, free itself from Husserl's aspirations for an eidetic reduction to focus on perception and the phenomenal field: the structure of the perceived present or oneself in an environment – a *situated* being *somewhere*.[250] What this thesis looks at are specific circumstances of being situated, not memories, imagining situations, abstract thought, or reasoning.

Being situated is unthinkable without the body as the place or structure of the encounter between a mind system and the world. However, as Taylor Carman wrote in his foreword to the *Phenomenology of Perception*: "The phenomenal field is neither caused nor defined but constituted by the sensorimotor structures and capacities of the body. The structure of perception just *is* the structure of the body".[251] The body itself is a consciousness structure. As seen with Merleau-Ponty, observing the processes of a (disabled) body does not indirectly relate to information about its resulting states of mind — it means directly observing the bodily consciousness-at-work.[252] This thesis applied this observation of the consciousness-at-work, inspired by the capabilities of bodies in pathologies and other bodily and sensory 'variations'.

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[250] Merleau-Ponty, lxxxv.

[251] Carman, "Foreword," xv.

[252] Komarine Romdenh-Romluc explained that "bodily consciousness underpins those states and activities that we tend to think of as mental, for example beliefs, desires, thinking. [It] is manifest in perceiving and acting, and it is through his analyses of perception and action that Merleau-Ponty develops his notion of bodily subjectivity". See: Romdenh-Romluc, Routledge Philosophy GuideBook to Merleau-Ponty and Phenomenology of Perception, 62

Utilising this connection meant looking at 'factual' variations of experiences while not being confined to introspective 'eidetic' variations. Therefore, this thesis followed the understanding of phenomenology as not being introspectionist so that the epoché could be applied outside of thought experiments.[253] Applying a reduction of the natural attitude to factual variations meant considering these experiences as devoid of presuppositions, except for the presumption "of simpler phenomena" involved in the phenomenon, which the researcher and the subjects of the experience could access.[254]

The principles of 'suspension', 'redirection' and 'letting go' for a reduction call for the researcher to suspend beliefs and prejudices about the state of the world from the experience (i.e. herein from interview statements). The redirection is, then, about the attention that must shift from external objects to the interior dynamics and modalities of the experience. Furthermore, to sustain and be receptive towards the achieved attitude, the practitioner of the epoché must let go by not trying to control the experience and instead expecting it to produce something unexpected and new. Therefore, this thesis was not concerned prematurely with concepts like 'habits', 'novelty', and 'curiosity', only to rediscover them by how they made themselves apparent in the factual experiences.[255]

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[253] See: Pokropski, Mechanisms and Consciousness, 24–25.

[254] Emiliussen et al., "We Are All in It!"

[255] Eloquently put in this conference paper, "How does one achieve discontinuing judgment? One encloses the things to be judged […] in parentheses and leaves them alone".
Wang, Chen, and Li, "Information Phenomenology."

Treating an experience as unexpected and without presuppositions makes it difficult to maintain a stable definition for it during a significant period of the experimental phase. Indeed, one cannot define something without presupposing the axioms of what comprises up. The experimental setting needs to be fluid and co-created by what it produces. The result is a certain loss of control: the environment has a *higher probability* of invoking the experience than its reliable source by producing factual variations in its conference with the individual experiencers.

Gallagher and Zahavi stressed the necessity of accounting for the uncertainty that comes with such a vague environment and the fact that the researcher can be infallible in the interpretation. They proposed using another tool: 'intersubjective corroboration' or verification.[256] This tool usually produces descriptions while being concerned with the replication of these results to reflect on the degree to which they are universal or shareable. This thesis accomplished this goal through intersubjective congruence within consensus categories and recursive experiment design, which are topics unpacked in Sections 3.4 and 3.5.

However, there needs to be some initial definition and some understanding of an experience that sets the explorative process in motion. What is the phenomenon that this thesis subjects to an epoché and will produce factual variations of?

The concepts of 'novelty', 'context', and 'meaning' cannot be

[256] Gallagher and Zahavi, The Phenomenological Mind, 29–31.

supposed to *be present* in the experience and are unfit to serve as a blueprint for the investigation since they can only be called upon *after* the epoché for operations with its outcome. Furthermore, 'meaning' is the overarching research matter that this thesis wants to add to, so it cannot presuppose what it wants to help define. However, there are 'simple' phenomena and their descriptions that we have legitimate access to (see Section 3.4). The experience in question is still labelled from a conceptual standpoint since this thesis is interested in an experience dominated by a clear lack of recognisable meaning and its overcoming:

> The experience of **thinness of meaning as a lack of contexts within an environment**, possibly as a result of its novelty.

This preliminary label was the target of the direction of the research question. As mentioned, I could not presume that the actual experiences produced would relate to its concepts. To find actual experiences, this thesis needed other operational terms and additional labels that referred to the experience in less conceptual, more descriptive terms. Notably, the connection between the concepts and the descriptive terms was assumed as a hypothesis that contained some truth. At this juncture, the hypothesis was as follows:

The experience of novelty/unfamiliarity and subsequent thinness of sense and context contains

- [...] experiences of a **lack of orientation and information** about an environment
- [...] and/or **realisation of relationships** within and to the environment to acquire a perceived understanding or grasp of it.

While this definition could be more descriptive and better recognisable from within an experience for different experiencers, it is likely part of a myriad of everyday situations. Factual variations that truly illuminate their specific unfolding must be *primarily experienced* as such, not as something else (e.g. a social situation, emotion, or task/problem resolution that precedes, overlaps, or frames the situation). They are, therefore, a set of phenomena and dynamics that are highly isolated from the everyday world. This environment must be complex to make it as ecologically valid as possible.[257]

Since we cannot presume what dynamics are most prevalent in such an encounter, the variations require access to environmental possibilities for freely deploying bodily and emotional capacities.

[257] This definition of unfamiliarity was mirrored in the artistic intentions behind the final selected artwork for the experiment. As discussed in more detail in Section 4.1.5, the artists explicitly considered how to position their artwork between the realms of the 'real' and 'unreal'. Their self-assessment showed a deliberate balance between familiar elements (e.g. organic forms and physics-based movement) and unfamiliar ones (e.g. the impossible geometries and non-Euclidean spatial relationships). The artists' intentional creation of a liminal space between familiarity and unfamiliarity provided an ideal context for examining how the participants navigate and make sense of novel aesthetic experiences.

The experiencers should be able to act out intentions that are unforeseeable to the researcher. Hence, the environment must be self-contained and present, so it should not immediately refer to contexts other than those it provides through internal relations. An environment rich with such semantics or sensations implicitly refers to previous experiences, which makes reducing previously formed memories, theories, and beliefs more challenging.

What situation can provide these circumstances? It is painfully obvious that a meticulous search is necessary. The next section explores arguments for where to start: aesthetic and virtual environments.

3.3 The Material: Aesthetic and Virtual Experiences as Factual Variations

With factual variations of an experience as a proposed tool for experimental phenomenology, the question arose of the *materials* I possessed to invoke suitable experiences. This section describes the arguments and thoughts that consider *aesthetic experiences* and *the technical medium of Virtual Reality* as suitable moments for experimental phenomenological work. This thesis used their potential to dive into experiences of thin contexts and unfamiliarity.

Enactivism has a history of considering aesthetic experience as more than concepts and reflections. Gallese and Freedberg argued that before cultural and social contexts become relevant in an aesthetic encounter, universal mechanics of embodied simulations "of actions, emotions and corporeal sensation" had to be considered.[258] Gallagher took up this notion of embodied empathy towards the environment and critically expanded it by pointing to empirical evidence of how aesthetic experiences differed from everyday encounters with physical objects and people. His main point focused on aesthetic experiences "disrupting ordinary engagements and creating possibilities that are not realizable in

[258] Freedberg and Gallese, "Motion, Emotion and Empathy in Esthetic Experience."

current or established frameworks".[259]

According to Gallagher, the depictions and representations of an aesthetic artefact become experiences potentials for actions that are not part of the depiction. These potentials inform how we actively perceive the artefact through motor actions, our gaze path, and our attention. Importantly, the agent's "narrative" of the work ties directly to these potentials. Hence, we do not merely empathically *simulate* what is happening to the depicted others and environments. Instead, as agents, we actively *engage* the work with a subjective agent that, in turn, shapes our perception of it.

At least, this notion is what some of the evidence suggests. Does the specific way contextualisation plays a role in aesthetic experiences make it a potential candidate for a phenomenological study of contexts? To consider a range of experiences for their theoretical potentials, to find suitable materials that can evoke them and, finally, what the participants of an experiment actually experience with these materials are three different situations. Hence, I only looked at theoretical implications. The notion of the aesthetic experience played a lesser role in this thesis' experiment and data analysis because this project did not have the resources to circle back and address aesthetic experience from the limited data collected.

This section expands the argument for the different enactive potentials of an aesthetic encounter. I specifically refer to Alva

[259] Gallagher, "Aesthetics and Kinaesthetics."

Noë's analytical concept of 'experiential art'.[260] The last part discusses how VR artworks and environmental media installations can also enable this category of experiences. However, first, another definition is needed for this thesis: what exactly is an 'aesthetic' experience?

Aesthetic Experiences: Sense Outside of Everyday Contexts

From a phenomenological perspective, it is important to distinguish between the environmental world of objects and dynamics and the subjective experience of that world. For instance, an antique and priceless masterwork of a statue may be used – and solely perceived – as a coat hanger. Furthermore, a mundane and natural occurrence like a falling leaf in the wind can be experienced as an aesthetic revelation. John Dewey, in his 1930s work *Art as Experience*, proposed that aesthetic experiences are not confined to categorically distinct objects or even form a binary classification of experiences.[261] They are a subgroup of perceptual experiences.

Nonetheless, I followed Maria Brincker's conclusion that they are distinguishable by specific forms of "perceptual engagement" that can be involved to different degrees. Brincker spoke of aesthetic affordances, specifically the affordance of "disengagement of goal-

[260] Introduced in: Noë, "Experience and Experiment in Art."
Expanded within the concept of art as a 'strange tool': Noë, Strange Tools.
[261] Dewey, Art as Experience.

directed action", which "typically bring[s] us to an 'edge of action', an affordance of perceptual engagement but yet non-action, which opens up possibilities for using our minds – and brains – in ways we do not in our regular practically engaged modes of perception".[262]

Brincker also introduced the framework of the 'aesthetic stance' to classify the experience, which includes openness in the face of a lack of goals, taste as a gatekeeper to manage the openness, and a recognition of 'the other' in and the social entanglement of the situation. While I was sympathetic to this framework, it was important to note where 'the aesthetic' occurs here: it revolves around the *disruption* of the perceptual stream and an experienced *need to act* in the face of that disruption. How this action unfolds can be quite different since aesthetic experiences can be weak or strong, active or more passive, isolated or integrated. This variability provides an interesting base condition to watch for, even though it probably will not suffice for a definition of aesthetic experiences.[263]

Other observations had to be considered. For instance, Merleau-Ponty described a similar structure in his explanation of the *Communication of the Senses*. The sensual self-observation and the

[262] Brincker, "The Aesthetic Stance – On the Conditions and Consequences of Becoming a Beholder."

[263] This thesis did not work on sufficient conditions of aesthetic experiences. For an interesting overview of what the 'aesthetic' can comprise from a 4E perspective, see: Burnett and Gallagher, "4E Cognition and the Spectrum of Aesthetic Experience."

experience of the situational object "stand out against the background of a common world [...] united in the very moment they come into conflict" because the perceptual focus of something sensual progressively excludes awareness of aspects of the self: "The moment I wanted to give myself over to vision entirely, the sky ceases to be a 'visual perception' in order to become my current world". Nevertheless, when we are invited into sensory distortion, we leave the natural perception "accomplished with our entire body all at once" and enter "an abnormal attitude".[264]

Building on Brincker, Carlos Vara Sánchez explained that the consequential base affordance of the aesthetic stance is not an invitation "to a sensorimotor engagement in order to get something specific, but to experience this engagement in its uniqueness".[265] Separately, Mark Johnson also concluded that the pre-reflective dimension of an aesthetic experience makes one "aware of the meaning of [one's] experience" – not by providing a clear perspective on "who you are" but by affording a possible "encounter with ways of being in the world". He also identified possible means of the 'disruption', non-conceptual, felt contours of a phenomenon, like "tension-release, rhythms, speed (changes), intensity (changes)" as well as harmony and scope that differ from everyday

[264] Merleau-Ponty, Phenomenology of Perception, 234.

[265] Sánchez was specifically interested in the entrainment processes "between faster sensorimotor and affective dynamics taking place at the brain region scale and slower attentional and narrative processes at the brain network scale" at the pre-reflective level.
See: Vara Sánchez, "Enacting the Aesthetic."

phenomena.[266]

Therefore, art as a material could produce factual variations of our experience of contexts by disrupting the stream of action perception and evoking an openness towards how we perceive ourselves as *being with* the phenomena. In *What Art Does,* Ryan Mitchell Wittingslow summarised that while "it is extremely difficult to develop a rule or principle by which to differentiate artworks from non-artworks", there usually is a functionalist or an institutionalist definition at play. The former looks at whether art objects "have the function of possessing aesthetic properties (such as beauty, sublimity, elegance, or whatever) [and] are, in fact, in possession of those". In contrast, the latter asks for a "relationship between an artist's intention to produce an object of a particular class, the object itself, and an artworld public's willingness to accept said object as belonging to that class".[267]

Wittingslow turned away from these definitions as either-or scenarios. Artworks as affordances surface when all these factors are in place – the properties of the object, the art world, and a subject aware of the art world and in possession of relevant concepts, capacities, and attitudes to make use of the potential affordances.[268]

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[266] He dedicated a chapter in his book The Aesthethics of Meaning and Thought to this idea: Johnson, "Identity, Bodily Meaning, and Art," 203–23.

[267] See: Wittingslow, What Art Does, 59 & 61.

[268] He stated that "members of the artworld public p are invited to pay attention to and think about the artwork and its circumstances in an orderly way: to consider the artwork as an object underwritten by certain intentions, having certain formal

However, a difference exists between 'experiencing art' and 'having an aesthetic experience', whereby the aesthetic should have a lower threshold. The aesthetic experience, for one, is not tied to the social context of the art world public. Nonetheless, common factors exist, as Wittingslow also attributed disruption and openness to artworks. They "constitute a kind of "structured attention" that invites us to bear our attention upon, try to make sense of, and perhaps learn from the artwork". For Wittingslow, structuring a perceiver's attention towards an artist's intentions, relations, or concepts is the core task of an artwork and the fundamental condition of scrutinising it. Nevertheless, there also is a dependence on the subjective act because the work's significance is determined in part by "what we do with an artwork: how we make use of the various affordances [...] that might otherwise not have been possible".[269]

This notion identifies artworks as a publicly vetted category of objects that, to a high degree, belong to the definition of aesthetic experience sought in this thesis. They offer possibilities to disrupt experiential streams by introducing properties and dynamics unfamiliar to everyday experiences. The structuring of attention ties to a subject's reaction to the disruption and – provided this is the intention imbued in the work – can invite an exploration of oneself faced with unfamiliar contexts.

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features, meaning certain things by convention, making certain references, expressing a certain point of view, existing within a certain state of affairs". Wittingslow, 92.

[269] Wittingslow, 93.

Experiential Art

Every cultural artefact has a specific genesis and an underlying history of codifications and contexts. If its potential to structure attention can identify an artwork, then it is possible to categorise it by aspects of this structuring (e.g., inscribed codes, material methods, and their effects and contextual prerequisites). The philosopher Alva Noë referred to works aimed at directing an experiencer's attention towards their own skilful, bodily coping as 'experiential art'. These artworks invite reflections on the experience. They probe the dimensions and boundaries of perceptual access, often using our perceptual capabilities in certain ways while referencing, inhibiting, or distorting them.

Therefore, Noë proposed using experiential art as a phenomenological tool to "investigate the temporally extended pattern of exploratory activity in which [perception] consists".[270] He took the perspective of the first-person phenomenological investigator reporting about their experiences with artworks that "draw our attention to what we do when we experience it and to how things are with us perceptually".[271] The output of such work can generate a phenomenological scale of the general potential for 'experientiality'. It is a general property in the sense that all expressive cultural works point towards executed and assumed processes of perception – *being perceived* is always part of the

[270] Noë, "Experience and Experiment in Art," 128.

[271] Noë, 134.

process of their design, so a perceiver can always reflect on how they were supposed to perceive them.

Indeed, experiential art is pregnant with this potential by inviting reflection and offering distortions that make the perceiver acutely aware *of how* they are engaged with the work. This art "transform[s] a location and so produce[s] a new environment".[272] Thus, the more it interferes with an environment, the more the artwork becomes a necessity to orientate within, not to 'read' it through familiar symbolism but to accept it as an environment that calls for bodily and mental actions. In other words, it does not pose the problem of 'What is represented here?' but 'How am I perceiving this?'[273] Thus, what this thesis adopted from Noë and the term 'experiential art' was the idea of an observable potential for *self-experience* in aesthetic encounters.

For example, allow me to transition from the painting of a ship to an object (or set of objects) much more situated in time and space: a music concert. Let us also place these objects in a context that

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[272] Noë called this feature "intrinsically site-specific". For the VR artwork in the experimental study of this thesis, this idea went so far that the work created its own specific site (i.e. a virtual environment).
See: Noë, 131.

[273] This phrasing differed from Noë since I followed the critique that he overemphasises the property of inscribed intentions in art. Burnett and Gallagher summarised, "Rather than making the purpose of art the central question, the question, we suggest, should be about the possibilities that are afforded to a beholder by a work of art".
See: Burnett and Gallagher, "4E Cognition and the Spectrum of Aesthetic Experience," 161–65.

develops from an everyday activity: being at work. You can hang the painting in an office hallway without altering the hallway's main purpose, which is to provide a practical route for us to reach the toilet. However, a music concert at the workplace affects its character much more (and that of every space it occupies). The painting may distort a habitual way of looking at things and may invite openness to what can be perceived and imaginatively done with its contents. However, we must actively stop and engage with it. An audience-packed and loud concert in the lobby is much more difficult to ignore with spatial, temporal, modal, and social scales to the distortion that an aesthetic object presents – or better yet, that any aesthetic environment can project.

Nevertheless, a high potential for disruption is not yet a sign of experiential art; it is just a potent form of a base condition for aesthetic experiences and their disengagement from everyday actions and habits. Now, imagine that the artist of the concert is an experimental chamber orchestra performing abstract *Neue Musik* with a mixture of electronic synthesisers and classical instruments. It is a demanding experience, with wildly varying rhythms and melodies, ending abruptly or being played in parallel. They seem inconsistent and often close to noise – a plucked violin mixes with electronic beeps and bops that are mixed with spoken word and everyday field sounds.

To the highly accustomed ear and in theory, these rhythms and tones have formal, narrative, and historical relationships. However, imagine that you do not have such a competence. As a result, most

perceivers simply struggle to recognise these contexts due to problems with habitual orientation (e.g. knowing what to recognise as melodic or rhythmic markers, how to move your hips or nod your head, or even where to look since the rest of the audience is equally confused while the stage mostly features minimally moving figures hunkered over their instruments). The concept of experiential art assumes that such phenomena and their setup provoke the audience to notice their actions and perceptions – in this case, through struggles with sense-making.

Nonetheless, there may be moments of clarity where a narrative emerges, a clear melody surfaces, a danceable beat appears, or a single sound dominates with its texture. Now that the audience has become aware of their inability to relate, they experience otherwise familiar moments of sense-making, and their abilities at play have become even stronger. Here, 'relief' and other rewarding emotions[274] represent such affective moments of 'experientiality'. A more experiential concert is also more site-specific since other people in the room, the context of the room, and the point in space and time in the perceiver's life influence what the specific environment affords them.[275]

Shaun Gallagher also observed the potential for self-experience as an aspect of the revelation of 'the strange'. When "motoric and affective affordances are cut short, blocked or re-routed, [... we]

[274] A personal observation is that humour plays a great role in such situations.
[275] Note that this does not mean that 'less experiential' art cannot be very site-specific for other reasons.

experience the work of art in the mode of an anticipatory kinaesthetics that [we] can never fulfill".[276] Furthermore, for Gallagher, this distortion affects motoric habits as well as habits of thought. It "reveals something different, as 'strange,' in a way that shakes and challenges our everyday attitudes".[277] While many aesthetic situations present enactive possibilities (e.g. acting emphatically towards a depicted person's sadness), they require additional effort to become 'actual' affordances. Gallagher observed that because these affordances are only possibilities, they can have the effect of "short circuit[ing]". These short-circuiting affordances "can come back to me and make me aware of my possibilities [...] in a way that disrupts my ordinary engagements".[278] While he did not detail the conditions for affordances to short-circuit, his account of the 'strange' also evoked self-experience, like the one encapsulated in the scale of experiential art.[279]

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[276] Gallagher and Vara Sánchez, Performance/Art, 130–31.

[277] Gallagher and Vara Sánchez, 131–32.

[278] Gallagher and Vara Sánchez, 133.

[279] Gallagher accentuated that this does not categorically differentiate art from everyday experiences: "A familiar lullaby, despite its functional role as an organizational activity [of everyday life], can draw our attention to the harmony it provides us and the emotional memories it encourages us to remember, and at the same time motivate thoughts about the practices and the world that make this lullaby possible. There is no strict division between these two aspects of experience".
Burnett and Gallagher, "4E Cognition and the Spectrum of Aesthetic Experience," 169.

Virtual Reality as a Mediator for Factual Variations

If an aesthetic experience can become disruptive as it can with experiential art, what role does the medium of the work in question play? This thesis utilised the technology of VR, with special circumstances to consider. In phenomenology, an increasing amount of work has examined how VR feels, unfolds, and is interacted with.[280] What makes VR interesting is that, from a signal perspective, it covers the eyes with its headset and the ears with headphones while inhabiting both hands with controllers while translating physical locomotion from the feet into the virtual environment – a radical, direct interference in the body–world relationship of the perceiver. While still different from the sensations of the 'real' world,[281] the interference is so extensive that it delivers a whole sensory environment that can represent a serious counterforce to the 'usual' contextual mesh a subject usually carries over to an experience. To grasp the extent of this force, consider the following modalities over which a full VR setup exerts sensory pressure.

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[280] Recent works have focused on the technical medium, like:
Kljajevic, Consensual Illusion.
& O'Shiel, The Phenomenology of Virtual Technology.
Hermeneutical phenomenology related to literature and art studies is also interested. E.g.: Bender and Broderick, "Phenomenology and the Virtual Reality Researcher-Critic."

[281] "VR will only ever cease to be VR if every single facet of our perceptual experiences is covered to the level of indistinguishability, including an erasure of the 'stepping in' moment to the technology, as well as, quite obviously, no leaving". O'Shiel, The Phenomenology of Virtual Technology, 183.

Exclusion/Isolation: Many VR headsets fully cover the user's field of view (FoV). Optical lenses and a screen, placed close to the eyes, cover a 90°–110° segment of the human eye's horizontal field of view, which spans 210°–220°. The goggles' casing blacks out the remaining view space so that almost no light from the outside environment enters the inside.[282] Nonetheless, a small light ray may exist around the nose, visible when the user gazes downwards. In addition, the headsets block out and superimpose sound from the environment through headphones (either mounted or integrated third devices). Setups that include controllers also occupy a user's hands and sometimes even shield them from direct contact with the environment since they feature a protective ring that encompasses the hand. The physical space of a VR setup is usually reduced to abstract and minimal contours of walls and furniture, which only become visible when a user is moments before touching or moving into them. If the user is far enough from physical barriers, which is the desired state for a VR session, then the space is not displayed at all.

Multimodal stimulation: The most significant effort of a VR design concerns the visual representation. Visuals are stereoscopic and usually render the correct sizes and distances of objects in 360° environments,[283] so they extend in every direction a user faces

[282] Some goggles have alternate reality capabilities so that cameras can capture the outside environment and display it together with digital content. However, this feature relies on the headset's capability to exclude light from outside the casing so that the display can properly display what the camera captures.

[283] This is up to the discretion of the designer of the environment. 3D engines render physically normal objects and light, but a designer or artist can choose to

through head movement or body orientation. There is a small caveat that gazes through eye movement alone are limited per the limited field of vision (FoV). (If one looks to a corner of the field of view without turning their head, they will only see black.) Spatial audio complements the free visual perspective.

These systems can accurately represent the simulated spatial origin of a sound. Sounds come from the right direction, depending on the head's orientation to the source, and with the correct loudness, depending on the distance between the head and the source. Modern VR engines even simulate the Doppler effect or introduce environmental filters (e.g. variations of echoes or deflecting and dampening) because of physical objects or properties of the air. These engines also simulate haptics to a small degree: the controllers vibrate as users touch simulated objects and surfaces or when such an object exerts force onto the users' hands.

Interaction and manual manipulation: A major feature of VR setups is that they enable the user to act within the simulated environment in straightforward ways. First, they can actively work with the position of the body and the resulting orientation and gaze, including height adjustments. Hence, if a user moves on their knees, they can crawl under a simulated object and see up close what is there. They can also jump to obtain a glimpse of what is behind an object that would otherwise obscure their view. This accessibility is complemented by a VR setup's possibilities for

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alter many aspects, including physical properties, light effects, distortion, and even gravity.

movement, either through body posture or actual (i.e. bipedal or other) movement through the physical space or controller input.

Next, the system also receives data about perspective, position, and movement, which allows it to track the user's location within the environment. Thus, the environment 'perceives' the user as they perceive the environment. For instance, virtual agents can recognise that they are being looked at and even identify the direction of the gaze. Creatures can react to the proximity of the user. Events can happen only when the user reaches a certain position or when particular objects are in view. In turn, the user can 'make' the environment react to them by experimenting with its properties and dynamics.[284]

Finally, manual interaction occurs when, through the controllers, the users' hands are tracked and represented as physical forces in VR. The user can exert outward force (e.g. stroking, pushing, or shoving objects) while grabbing onto and holding objects (e.g. for inspection, placement, or throwing). Thus, the systems can simulate body-extending mechanics and tool use (e.g. using a hammer or using the controls of a vehicle). Hand gestures sometimes complement touch and manual interaction since many controllers recognise the rotation of the hand, as well as the posture of the thumb and index finger.

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[284] See also: "The user is not merely an audience member, but also a kind of performer, playing a role and making decisions about how the scenarios they view play out".
Tavinor, The Aesthetics of Virtual Reality.

Minimal interface: VR does not need the same kind of symbolic interface that a screen-based medium usually relies on. It can simply simulate and represent physical objects while the user moves their actual body in relation to them. While commercial VR applications often employ additional graphics, symbols, and text to inform about the system's capabilities and states, these are design choices and are not necessities of the medium. Representing the actual body in VR, which shows the system's capabilities, has become a new tool for VR interfaces.

Simultaneous co-presence: One underlying condition for many of the above features is the computed concurrence of the users' actions and the virtual environment. Seeing, moving, and touching – everything has immediate effects, which places the virtual objects in a simultaneous co-presence with the user. In contrast to a painting, the represented world does not exist detached from the perceiver, who can be set up as a VR co-inhabitant. To be absolutely clear, not every VR application can accomplish this outcome. Indeed, some only give the user a fixed perspective as a ghostly observer. However, usually, to *be within* the virtual environment is the core message of VR as a medium.

As a medium, VR understands its recipients as firmly integrated into what is represented. To design user agency in perspective and interaction is not only a part of a VR artist's toolset – it is the main creative medium.[285] VR makes an experiencer's perception much

[285] This notion has been meticulously discussed in the game studies. A recent and

more consequential and detached from the everyday world, which is why this thesis considered it a viable, ecological method for creating factual variations of experiences.

From a subjective perception standpoint, these features enable us to understand VR as an alternative-reality medium rather than an added-reality medium. While paintings and screens, radios and sculptures add layers of sensory stimulation and thus representations and context to an existing world, VR directly aims to temporarily replace the world of everyday experiences.[286] What makes VR different is the combination of comprehensive sensory isolation, straightforward and multimodal stimulation, and the focus on the experiencer's agency. As the medium for materials of an experimental setting, VR also has many productive implications:[287]

- **Controlled environment**: VR is a well-defined, technically recorded environment that can be directed, fine-tuned, and – most importantly – replicated.

- **Versatile deployment**: The setup of VR with commercially

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influential voice in the discussion is: Nguyen, Games.

[286] There are major caveats to this statement (e.g. cinema and theatre put in enormous material effort to achieve arguably similar goals). Then, there is the historical recontextualisation of the everyday world through nationwide radio, worldwide TV, and instant social media. Moreover, the phenomenology of literature is undeniably relevant in any discussion of experiences that 'replace' the everyday world.

[287] E.g. see: Parsons, "Virtual Reality for Enhanced Ecological Validity and Experimental Control in the Clinical, Affective and Social Neurosciences."

available headsets and sensor technology is usually workable in any kind of indoor location, sometimes even outdoors. It is movable, so for most participants, entering and exiting VR is comparable to putting on a motorcycle helmet and gloves.

- **Accessibility of the experience:** Participants are available before and after the experience (e.g. for interviews or physiological investigations). They can also access the virtual experience without significant time delays or intermediate influences while even comparing it with experiences they had before and after. From an observational perspective, a comprehensive set of stimuli and participant behaviour are easily recorded.

- **Simultaneous methodologies:** A VR setup can be suitable for the deployment of simultaneous methodologies of observation. It usually allows only one participant at a time, isolates them from non-VR input, and allows movement only to a degree and in certain body postures. Nevertheless, it still leaves room for approaches of simultaneous physiological measurements (e.g. heart rate, breathing, and electroencephalogram).[288]

[288] As demonstrated in this study about emotional arousal and VR: Hofmann et al., "Decoding Subjective Emotional Arousal from EEG during an Immersive Virtual Reality Experience."

A critical issue for this thesis is the role of embodiment and agency in VR. For Merleau-Ponty, the body is already virtual in the sense that it is a system of subjective possibilities and intentions. The body is not tied to the object of flesh but "a virtual body [*corps virtuel*] whose phenomenal 'place' is defined by its task and by its situation. My body is wherever it has something to do".[289]

It does not matter what the objective relationship is between the stimulating world and the phenomena. What matters is that they form "a pact [...] that gives me possession of space and gives to the things a direct power upon my body". The "virtual body displaces the real body, so much so that the subject no longer feels himself to be in the world he is actually in",[290] which refers to a reciprocal power of the virtual body to inflict and also suffer clearly perceivable consequences. This power is "our inherent ability to experience perceptual change, possibility and potentiality, but also our ability to learn and adapt".[291] In theory, it makes the virtual

[289] Merleau-Ponty, Phenomenology of Perception, 260.

[290] "My body is geared into the world when my perception provides me with the most varied and the most clearly articulated spectacle possible, and when my motor intentions, as they unfold, receive the responses they anticipate from the world. This maximum of clarity in perception and action specifies a perceptual ground, a background for my life, a general milieu for the coexistence of my body and the world". Merleau-Ponty, 261.

[291] Daniel O'Shiel spent time entangling Merleau-Ponty's use of the term 'virtual' and how the virtual body utilises 'imaginative abilities' while also differing from imagination and image-consciousness with technical media:
O'Shiel, The Phenomenology of Virtual Technology, 88.

body more relevant than the physical reality of it. The question thus is, what are the consequences for the virtual body in VR?

From a phenomenological standpoint, experiences of 'the virtual' can be highly consequential – full of change, possibility, and potentiality. Jean du Toit and Gregory Swer used Merleau-Ponty to argue that while VR definitely carries structural determinations, experiencing something virtually is not *just* a retrieval of what is inscribed in the material. For Du Toit and Swer, deterministic virtual realities and agency are not mutually exclusive: virtual embodiment carries the potential to "open up new horizons of experience while also concretely determining values, systems of rationality, and thought". The virtual – as a minimal requirement – needs the subject body to enact perception. Because it needs to be enacted, the virtual also "produce[s] alterations in the self-understanding and capacities of the embodied subject".[292]

Donald Landes argued that the phenomenal field is not dominated by causal materialism since "perception is an open and evolving negotiation between myself as a trajectory and the tensions that steal across the [sensual] field".[293] His term 'trajectory' takes us back to the role of intentions. They are "the lived structure of [...] taking up of a past toward an open future and an ongoing gearing

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He referred heavily to: Steeves, "Imagining Bodies."

[292] Thus, the virtual has the potential to shine a light on a subjects' general relations to the world.

See: Jean and Morgan Swer, "Virtual Limitations of the Flesh."

[293] Landes, "Habit and Creativity."

into that which transcends us".[294] Landes' negotiation between the forces of material inscription and the subject's trajectories goes well with accounts like Du Toit's and Swer's enacted virtual embodiment. While a phenomenal source like a VR definitely carries inscribed values and 'ways of perceiving' in its material, the subject is not at the materials mercy. Instead, it enters the material realm with its own intentionality, applies this intentionality by acting, and is affected in its trajectories by what it encounters.

In this sense, the analysis of embodiment and agency in a VR is not so different from the outside. Both are not independent of material determinism. In fact, this 'negotiation' between the worldly tensions and the subject that is the focus of this thesis: VR can heighten the tension.

In this study, I sought an inscribed 'way of perceiving' in the source material, specifically the mentioned thinness of contexts, contextual novelty and unpredictability. The experiment presented in this thesis focused on the subject's coping capabilities and the structural restrictions of dealing with a high-tension environment that invited more negotiations than everyday experiences. How the user's bodily representation was designed formed a part of this tension. However, I did not have prior assumptions about how the participants in my experiment would experience this technical embodiment. This aspect was part of the investigation of their

[294] For a historical classification and how Landes developed 'trajectories' as the "expressive dimensionality" of consciousness and a structural theme in Merleau-Ponty's work, see: Landes, "Merleau-Ponty from 1945 to 1952."

experiences.

To filter for experimental material, I took cues from key concepts of psychology and media studies working with virtual realities. One of the most prominent was 'presence' (discussed in Section 2.4), here as in the feeling of being there.[295] There was also a line of discussion about a term specifically created for mediated experiences: prosthetic 'telepresence'. This term applies to action perception through representing entities, with the prime example of virtual avatars (e.g. a playable video game character or a social media profile picture).

However, the term had shortcomings in terms of having one's own perspective in VR. Even though VR technically 'represents' and simulates body parts and their actions on virtual objects, these representations are non-essential additions to one entering a multimodal realm, an actual and immediate perspective on a technical digital system.

Famously, game scholar Rune Klevjer argued that "the main 'body' of the avatar, in the phenomenological sense, is not the controllable marionette itself (e.g. Mario and Lara), but the navigable virtual camera, which becomes an extension of the player's locomotive vision during play" so that playing a screen- and avatar-based game

[295] For an introduction into 'presence' in research working with VR, see: Sanchez-Vives and Slater, "From Presence to Consciousness through Virtual Reality."
& Kljajevic, Consensual Illusion, 8 – 25.

also means appropriating and 'owning' a perspective.[296] However, with a screen, the degree to which a user has to *choose* and *focus* on both camera and avatar is much higher than the inescapable immediacy of the perspectives offered in a spatial VR. Therefore, I subscribed to the observation that the

"[…] perceptual illusion of "being there" in the virtual setting [becomes] merely 'presence' or virtual, physical, spatial, mediated and subjective personal presence" for VR[297] because "any environment, virtual or real, does not provide undifferentiated information [but] different opportunities and produces presence according to its ability in supporting the [experiencing subject] and their intentions."[298]

This statement depicts an enactive understanding of presence. Studies on the role of narratives and emotional cues have provided valuable insights into the sense of presence in VR. A review of psychological studies by Diemer et al. found that presence in VR depended on immersion and emotions. The role of immersion was "strongest when no emotion is involved […, so a] greater immersion of a VR system increases presence, particularly in emotionally neutral VR scenarios, which indicates that the effect is not mediated by emotion". Moreover, cues of emotions (e.g. fear and surprise) create a strong sense of presence and will immersion. Crucially, one can differentiate here between emotional presence (and arousal)

[296] Klevjer, "Enter the Avatar."

[297] Schultze, "Embodiment and Presence in Virtual Worlds."

[298] Riva, "Is Presence a Technology Issue?"

and spatial presence in the sense of being with something.[299]

The review also found "the technological quality of the VR system" to have a much weaker impact on experienced presence, as corroborated by another wide-ranging review, which found that only "increased levels of user-tracking, the use of stereoscopic visuals, and wider fields of view of visual displays" had a medium-sized effect on spatial presence – all aspects that help directly simulating physical relations of the user with the digital environment. Nevertheless, the concrete "quality of visual and auditory content" does not have the same influence.[300] Quite in line, an earlier study by Schubert et al. suggested that feeling present in a virtual space depends on the mental image of one's body interacting with the environment, attention as in interest and engagement with the material, and the felt cohesion and plausibility of actions and interactions within the virtual world.[301] This description takes us to the previously mentioned concept of 'immersion'.

'Immersion' is a difficult term that refers to the feeling of losing track of the everyday world in the face of some kind of not-real presentation. The literature lacks a clear consensus on the

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[299] The authors suggest studies working with VR should differentiate "between cognitive presence (presence as a subjective judgment), emotional presence, and on the other hand immersion (technological features of a given VR system), arousal (as a dimension of emotion), specific emotions (along both the arousal and the valence dimensions)".
See: Diemer et al., "The Impact of Perception and Presence on Emotional Reactions."

[300] Cummings and Bailenson, "How Immersive Is Enough?"

[301] Schubert, Friedmann, and Regenbrecht, "The Experience of Presence."

definition of immersion, partly because researchers have used it across various media, modalities, and disciplines. Nevertheless, immersion is unavoidable when discussing VR.

In *Hamlet on the Holodeck,* Jane Murray set the stage for immersion and the idea of the feeling of being submerged in something, be it a book, a movie or theme park decorations. She described immersion as being affected and believing in something, even though one knows it is not (physically) real in a traditional sense. To experience this threshold is to be in a "liminal trance", which is a creative activity that comprises "not suspend[ing] disbelief so much as we actively create belief".[302] This state of horizontal awareness is marked by a choice between perceptual horizons, which is important for my following considerations.

The field probably most concerned with immersion is game studies. In 1949, Johan Huizinga postulated the 'magic circle' of play as "a stepping out of 'real' life into a temporary sphere of activity with a disposition all of its own [where every] child knows perfectly well that he is 'only pretending'".[303] In the earlier days of digital media, Espen Aarseth coined 'ergodicity' as nontrivial interactions that perceptually encapsulate an experiencer during engagement with a medium.[304] However, Murray's suspended disbelief notably highlighted the liminal nature of the effort, choices, and perceived

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[302] Murray, "Immersion."

[303] Huizinga, Homo Ludens, 8.

[304] While 'érgon' means work or effort, 'hodos' is the path or way. See: Aarseth, Cybertext.

consequences involved in play.

Ian Bogus, referring to Murray, argued that virtual "environments must be meaningfully responsive to user input" to create immersion. Immersion is not an absolute category, which is why he talks about a "vividness spectrum" in which "the relevance of the interaction in the context of the representational goals of the system is paramount."[305] To be clear, this kind of interaction is probably not a necessary condition for immersion (e.g. immersion has a long history of being discussed in film studies), but it is most definitely a substantial contributing factor, especially in digital media.

Therefore, Gordon Calleja proposed letting go of immersion "as a stand-alone experiential phenomenon" to instead categorise it as "a variety of experiential phenomena afforded by involving gameplay [i.e. involving structures in the world]".[306] Hence, immersion in ergodic media is probably not the same as immersion in non-ergodic media since it can have different subject–world dynamics that manifest as similar feelings.[307] Here, Calleja proposed a helpful distinction or subcategory of immersion called 'incorporation'.

A game-player system achieves incorporation when "1) the player

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[305] Bogost, The Expressive Power of Videogames, 42 – 46.

[306] Calleja, In-Game, 3.

[307] In game studies, there is a fundamental debate between narratology and ludology as the core structures of a game. In terms of involvement, Calleja proposed the player involvement model of kinaesthetic involvement, spatial involvement, shared (social) involvement, narrative involvement, affective involvement, and ludic involvement.
See: Calleja, 38.

incorporates (in the sense of internalizing or assimilating) the game environment into consciousness while 2) simultaneously being incorporated through the avatar into that environment".[308] For the suspension of disbelief, it means that incorporated immersion is the active and nontrivial engagement with a system – while that system also represents the actions and/or body of the experiencer while literally making room for their presence.

This thesis also followed Aaron Smuts' definition of what marks actual 'interaction' with a system. Smuts highlighted the predictability of the consequences of any action:

"If we can reliably predict the response and there are no other ways in which we can act on the thing, then [...] there is merely control or manipulation. For the thing to remain interactive for us, there must be forms of input that result in responses that we cannot accurately predict. [...] Interactivity must be a relational, not an intrinsic, property. In themselves, things are not interactive."[309]

While a certain outcome is not interaction but a *re*action, immersive interaction is the belief in (and not knowledge about) something that is to happen. This belief is not a calculated judgement but the creative pursuit of expectations. Smuts' interaction bolstered Murray's understanding of immersion by adding a powerful but liminal stance of expectations and actions. Looking at virtual material, something "is interactive if and only if it

[308] Calleja, 169.

[309] Smuts, "What Is Interactivity?", 65.

(1) is responsive, (2) does not completely control, (3) is not completely controlled, and (4) does not respond in a completely random fashion"[310] Together with Callejas incorporation, Smuts definition offers another condition to watch for in a suitable digital environment.

One can then ask, I may feel immersed and engaged in a virtual environment, but is that the same engagement as in the physical world? Are there qualitative differences so great that we cannot speak about a 'variation' of an experience but have to understand it as something completely different?

Mel Slater, a leading figure in VR and neuroscience, has been concerned with this question. He found that the aspect of spatial presence (i.e. 'place illusion' in his terms) and plausible interaction (i.e. 'plausibility illusion'[311]) accompany participants behaving "realistically". Realism here means that actions are plausible but not the same as in an everyday setting. Like in Murray's liminal trance, VR users behave in certain ways even though they know "for sure that they are not 'there' and that the events are not occurring".[312]

Of course, what one perceives in a VR can be completely unrealistic by design. Nevertheless, the pressure from external signals to

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[310] Smuts, 65.

[311] Though, there are possible 'plausibility illusions' with minimal action possibilities as long as they are coherent with the environment and not completely absent.

[312] E.g.: Slater, "Place Illusion and Plausibility Can Lead to Realistic Behaviour in Immersive Virtual Environments."

accept what is perceived as an immediate and bodily reality is quite high. The user can only escape it by either complete dissociation or by abruptly aborting the entire experience and taking off the headset. The liminal stance is comparably easy to take. Thus, the user 'realistically' approaches the virtual environment *as if* it were there. The "decisions you make as a performer may affect the world through the conduit of your virtual body. Having been terrified by the green slime, you might steel yourself and swing your virtual sword at the gelatinous beast".[313]

Potentials for Experiential Awareness

Previously, I used 'physical' as the opposite term for the spatial realm of a VR, which was a simplification. For further nuance, I draw on Grant Tavinor, who argued in *The Aesthetics of Virtual Reality* that while VR as a medium is a transfer between ontological realms, this is a 'remediation' not from the physical into the 'nonphysical' but "in terms of a change in material medium".[314] The difference is that a VR object is not a modal derivate of a physical parent (regardless of whether this object ever existed).

For instance, it is not a 3-dimensional representation with only a select range of simulated physical properties. Instead, a VR object is a functional isomorphism that *functionally* serves a role that would make sense to the experiencer because – as embodied participators

[313] Tavinor, The Aesthetics of Virtual Reality.

[314] Tavinor.

– they *are with* it. However, the object and its properties exist and rest on a mathematical and logical system that works under the layer of simulation and differs from our real-world physical relations. Therefore, VR objects can have aesthetical styles that are wildly different from how things look and sound in the everyday world while also having different functional styles.

By programmatically changing the logic of the underlying systems, VR designers can ignore or alter the rules of the whole environment – gravity and light, material coherence, and time progression – by challenging a wide range of fundamental dynamics of everyday human lives. There is a physical aspect to the virtual realm – the material technology it is based on and the functional conditions contained – as well as a logical–mathematical one and a stylistic aspect that primarily represents the intentional design choices of the environment's creators.

As isomorphism, a VR world is not a representational domain per se. It is a functional domain that can contain representations if designed and then approached.[315] VR's primary creation of functional dynamics confronts the user at the level of their embodiment and perspective-taking.

Indeed, as Zeynep Akbal noted in *Lived-Body Experiences in Virtual Reality*, "the flow of skillful coping [familiar from everyday actions]

[315] Notably, this excludes Bergson's interpretation of the visual domain as fundamentally representational because it always refers to memory. Representational memory is another project ripe for VR as an investigative tool. See: Bergson, Matter and Memory.

is interrupted" because our abilities and trajectories do not already integrate the functions of VR things and bodies.[316] Moreover, Akbal, similarly to this thesis, proposed understanding VRs "as mediators of subject-object relations, rather than seeing them solely as material objects, as entities in opposition to human subjects" – because in VR, the "perceivers shift toward an active awareness of their own sensory spectrum and of what surrounds the body" while taking on "an alert responsibility for self-narration".[317] As a medium, VR facilitates a potentially far-reaching sensory reconfiguration that explicitly starts with one's body. Its users cannot help but notice this reality as superimposed. This awareness makes VR fruitful for experiential art.

Firstly, for a user, a VR object is *relevant* because it is functionally of consequence, not outside of the VR, of course, but within its self-reference. This property is something that many media and art forms can achieve. However, for VR, it is a fundamental property without which perception through spatial orientation and locomotion cannot work.

Again, this is not to say that the virtual realm is 'real'. Daniel O'Shiel looked at this debate around representationalism and

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[316] See: Akbal, "Lived-Body Experiences in Virtual Reality", 60 – 62.

[317] Akbal was particularly interested in out-of-body (OOB) experiences that directly aim at the relations of one's own subject body. VR can facilitate OOB experiences in which we directly "see our own body as an external object, ready to be closely observed […] not only enabled by a long-lasting practice of interoception (alongside a continuous introspection) but also […] grasping an external and visual understanding of it, since this totality includes the material nature of the body". Akbal, 67 – 76.

actuality for VR specifically. He strongly argued that VR's virtual objects are still given "given to consciousness through the mode of the imaginary".[318]

O'Sheil also wrote about VR as a "superreality", a form of make-believe, an "act of representation [...] that uses 'props'".[319] However, if we accept the body schema or Merleau-Ponty's virtual body as an adequate account of perceptual structures, then we must say that a VR environment depends on and addresses both to a radical degree.[320] The spatial world of digital VR is neither real nor imagined but depends on the effects of embodiment that live on a 'reality-virtuality continuum' that can be shared with others.[321]

Secondly, users are aware of their active immersion in this VR, this imaginary and yet embodied mode of being. The sensory isolation makes it easy to stay in the liminal stance, yet it is still fragile. Whatever a particular VR may afford for an experiencer, this fragility also offers the possibility of noticing all super-real affordances from a second-order perspective because the experience of being immersed implicitly entails that it would not exist outside the virtual realm. This awareness makes remediation so 'strange' in Gallagher's sense. It creates a disturbance – similar to what experiential art achieves – that points towards how we

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[318] This refers to Chalmer's virtual 'real' objects.

[319] O'Shiel, The Phenomenology of Virtual Technology, 180 – 183.

[320] Du Toit actually used Merleau-Ponty to present an embodied account of virtual worlds outside a spatial VR, called the 'embodied screen'.
See: du Toit, "Living in the Age of the Embodied Screen."

[321] In Vanja Kljajevic words: Kljajevic, Consensual Illusion, 1.

realise sense in our environment.

However, does embodiment *within* a VR artwork satisfy other necessary conditions for an 'aesthetic' experience? This question has merit since embodiment is the central aspect of VR as a medium. Barbara Gail Montero addressed this question in a broader stroke by asking if proprioception can be aesthetic and if movement is actually part of an artwork. According to Montero, three arguments reject an embodied aesthetic experience.[322] First is the "practical distancing requirement" that "mandates that no practical need or compulsion is satisfied in aesthetic experience". This requirement holds in VR. Artworks can be set up in a way that the audience only needs curiosity to engage. An experiencer is aware that there is merely an opportunity to experience 'something' with no practical reward or physical necessity.

Second, an aesthetic experience should not be "in the same psychological state as one would be in if the represented act were really occurring". As discussed, this is the case since there is a fundamental understanding of the experience as 'not real'. The acts are experienced in the liminal stance in which one needs to act on that understanding of the 'not real' by actively entering and upholding the experience.

The third requirement is less straightforward. It mandates the "aesthetic experience to be about an object that is distinct from the experience of that object [... so] we must find both a subject of

[322] See: Montero, "Embodied Aesthetics."

experience and an object of experience". An aesthetic object or situation is shareable; it is referable.

When considering dance, Montero wondered about the moving body becoming this aesthetic object. She argued with Merleau-Ponty that one's body can indeed become "the locus of sensory awareness and [...] the object of such awareness" because proprioception permits the body to be a recognisable aesthetic entity. However, is this experience not a private and wholly subjective sensation? "You, it seems, can see it or touch [my private body] (or hear it or smell it) but cannot proprioceive it". The proposed solution here is what she takes up as "kin[a]esthetic sympathy", a form of extended embodiment in which an observer can retrace proprioception based on their experience and "come to appreciate various aesthetic qualities of the movements of others".[323]

The argument for aesthetic proprioception and kinaesthetic sympathy connects strongly to other discussions of body image and the body scheme. This thesis cannot speak to these because it is foremost concerned with experience, not analytical categories. However, I want to point out Dorothée Legrand's arguments for integrative mechanics of sensory-motor systems interpreting information pre-reflectively for a given experience while manifesting one's body before any self-referential consciousness.[324]

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[323] Montero, 1075.

[324] She introduced a distinction of the first-person 'opaque body', "taken as an intentional object of observational consciousness", the 'performative body', which is

Legrand also argued that the concept of 'presence', as discussed above, does not translate to an *object of* experience. Because it is so fundamental, it is not intentionally 'thematised' in the experience but rather a pre-reflective aspect of it.

Legrand also saw the potential of VR technology "to manipulate [presence] in a way that is impossible in everyday life". Consequently, she proposed "exploit[ing] the framework offered by virtual reality to further investigate what elicits the subjective experience of presence".[325] As I laid out, this proposal can make use of the experiential aspect of VR to create strange variations of experience and the strange state of being between what is *known to be* real and *another* real (i.e. the spatial-digital) realm.

"pre-reflectively experienced as a subject/agent", the 'transparent body', "pre-reflectively experienced as the bodily mode of givenness of objects in the external world", and the 'invisible body' which is wholly "absent from experience".

While Legrand built on Gallagher's body schema, she argued that the pre-reflective body can become a conscious version of the body schema. Gallagher originally defined it as a purely subconscious mechanism, while Legrand's distinction showed that the body schema may appear consciously as proprioception, even though it is pre-reflectively given.
See: Legrand, "Pre-Reflective Self-Consciousness: On Being Bodily in the World."
&: Gallagher, "Dynamic Models of Body Schematic Processes."

[325] "What counts is the dynamic of the interactions between the body and the world […] the subject is bodily present in the [VR], and more specifically, present as a bodily agent. […] 'Concernful action' in this context is defined relative to a perception/action coupling".
See: Legrand, 502 – 503.

This Thesis: Utilising an Aesthetic, Embodied VR

To summarise, the experiment of this thesis used the consequential embodiment of VR, its remediated affordances, and its capability to support experiential affordances. Hence, a complex VR environment built on these strengths, as well as an artwork aware of its functional and aesthetical style choices, was needed. Specifically, the 'way of perceiving' this particular VR needed to align with my study: the thinness of contexts through functional and representational novelty and unpredictability. It could not just recreate a screen, painting, or sculpture in 3D. It needed to be full of internally connected functions and intended to have 'world' character. The artwork needed to be interactive, not only reactive. It also needed to refrain from strong emotional cues, obvious cultural representations, and other calls for everyday habits and strategies. As a result, VR offered possibilities for exploration and structured attention.

My task was to vet any suitable artwork and – if found inappropriate – exchange it for another. It could also be fine-tuned or modified, especially if the participants pointed out missing or misleading aspects for the desired way of perceiving. In the end, the participants and phenomenological interviewer needed to discern the relevant action perceptions of coping with this unfamiliarity, which we are usually unconscious of in everyday environments where unfamiliarity appears embedded in an array of familiar phenomena and habits.

Due to this isolated and complex environment, simultaneous and multimodal in its dynamics, this approach also provided the benefit of an ecologically strong experimental setting. Knowing what capabilities were most important in this encounter, the environment offered a range of possibilities for the participants to explore and deploy their virtual bodies. I paid special attention to ensure that the participants could act out their intentions while being unpredictable to me as a single researcher.

If the environment were rich in semantics or sensations that were easily related to previous experiences, then it would be more challenging to distinguish actual contextual orientation from the use of pre-experimentally formed memories and relationships. Therefore, the environment needed to be self-contained to a high degree. The contents and their internal relations had to primarily establish the context, including interaction mechanics. I needed to pay special focus to previously habituated everyday activities and video game mechanics.

Indeed, artists and researchers can easily adopt game mechanics, which are widely known through gaming culture and often openly documented by the industry itself and by game study scholars. However, while they help users grasp a VR environment, they can also shift the attention from the sense of the experience to "challenges and rewards/penalties".[326] Such interactions, which

[326] There are empirical indicators, like this study from 2019, which looked at two versions of an artistic digital experience, "one with game elements, another without". With game elements, "subjects reported being less focused in

reference highly probable habits, are just as contradictory to a context-thin environment as semantic references.

More issues existed with the observation of the participants coping to watch for. One non-ecological disadvantage of VR is that the environment suddenly and almost violently 'switches on' when the headset is put on or the programme starts. Transitions into new environments happen rather continuously in everyday life as one is wandering from a familiar spot to somewhere else. Hence, the shock of being teleported into this new digital place was a stark reminder of contexts outside the environment.

Another factor was subversive design strategies aimed at the user's expectations. Game developers sometimes play with expectations for actions and their consequences, a situation for which Alesja Serada proposed the user-centric term 'phantom affordances'. This technique presents visual signifiers, genre tropes, or other cues for fake affordances in computer games, which turn out to have different or no outcomes.[327] Creators can build up these expectations through a series of preceding and fruitful interactions, only to subvert the environment's reactions to an unforeseeable degree at a significant moment. Breaking with firm conventions of game genres or technical platforms produces other phantom affordances.

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understanding the experience's meaning and found it less meaningful to a statistically significant degree".
See: Craveirinha and Roque, "Impact of Game Elements in Players Artistic Experience."

[327] Serada, "Phantom Affordances in Video Games."

Nevertheless, referencing genre- or technology-specific conventions is an undesirable aspect of the experimental environment. Not every unmet action expectation is a phantom affordance, of course, since entering any new environment invokes general expectations about materials and their use, which can turn out to be misleading. The difference is that phantom affordances willingly cue and amplify habits to break them for effect. In a truly unfamiliar environment, unfamiliarity sets the horizon of expectations for many unexpected consequences and dynamics.

3.4 The Data:

Interviews, Consensus Categories, and

Recursive Experiment Design

With the material at hand to provoke factual variations of a context-thin and unfamiliar environment with experiential qualities, the question remained of how to approach these real but subjective experiences of my study participants. Finding out what their experiences comprised, how they unfolded, and how affect and intentions were structured was an *explorative* research question. Consequently, the study's outcomes were not predetermined, so the definition of the research subject was unstable.

The findings of an inquiry can shape how the researcher understands the experimental materials and the concepts used to choose them. This process demands a specific research design. Thus, in this last part of the method chapter, I examine what it means to use data in a phenomenological inquiry, how to take seriously the tension between the phenomenological method and real-world encounters, and how to set up the experiments to make sure I investigate the phenomenon I am truly interested in. Finally, I address the validity of the interviews in creating statements about

experiences and the process required to distil these conversations into ‘data’.

The Problem: Defining Experiences as Research Objects and Definitional Bias

Experience as a research object brings certain challenges to the table, whether that table stands in a scientific lab or next to a philosopher’s chair. This section examines the problem of defining a ‘specific experience’ and how I addressed it in my method. In my approach, I represent an argument for the phenomenological interview that largely followed the experiences and arguments of Shaun Gallagher and Dan Zahavi, as well as Claire Petitmengin. All three shaped the field of non-reductionist approaches to cognition and perception studies.[328]

I agree with their shared observation that experience is difficult to grasp through the reduction of its essence into smaller and smaller problems. This scientific reduction occurs, for example, when experiences are approached through the measurement of a range of physiological parameters. In contrast, the phenomenological point of view, in Gallagher’s words, approaches consciousness from a

[328] See, e.g.: Petitmengin, “Describing One’s Subjective Experience in the Second Person.”
& Gallagher and Zahavi, The Phenomenological Mind.
& Zahavi, Subjectivity and Selfhood.

devotedly non-reductionist perspective.[329] This approach factors in how our organic brain and neural functions integrate within larger systems:

> "Cognition is embedded and situated in rich social and cultural environments. A non-reductionist cognitive science attempts to grasp as much of these non-neural factors as possible without ignoring the important role of brain processes."[330]

Research projects that adhere to a non-reductionist perspective are often complex in scope. They account for observable structures and processes involved in a phenomenon while invoking the epistemological question of *what* they actually examine. Therefore, the framing of the experience is as important as the 'materials'.

Consequently, phenomenologists are concerned "with attaining an *understanding* and proper *description* of the experiential structure of our mental/embodied life".[331] As noted, the description is the explanandum. Therefore, to understand it, we can perform analytical operations on its statements to carve out correlations,

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[329] To clarify, this goal is not exclusive to (neuro)phenomenology. In fact, Gallagher and Dan Zahavi stated explicitly that the scientific fields concerned with the mind do not follow the cleanly separated methodologies which historians sometimes suggest. Conversely, "there has been growing interest of both analytic philosophers of mind and phenomenologists in experimental science".
See: Gallagher and Zahavi, 2 – 6.

[330] Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 15.

[331] Gallagher and Zahavi, The Phenomenological Mind, 9.

contradictions, and dependencies between them.

However, a particular challenge precedes all the above. How does one define the experience under investigation? Whether a project investigates awe and wonder, musical absorption, or epileptic seizures,[332] how exactly does it find 'awe', what notes it as missing when one is 'absorbed', and what part of experiencing a seizure belongs to the seizure and cannot also be seen as somehow *not* belonging – as some kind of experiential clutter? These questions show how difficult it is to approach an experience when its description is partly the result of the investigation. The solution phenomenology offers is to make such questions methodically central to the research instead of defining them in advance. In taking experience seriously, we cannot stop to ask, what is its essence?

In their exemplary project about the experience of 'awe' and 'wonder', Shaun Gallagher and colleagues criticised the scientific practice of presenting study participants with an experience "predefined in general folk psychological terms (the subject is presumed to simply 'attend' to the stimulus)".[333] They referred to the fact that most scientific endeavours start with an assumed understanding of a problem expressed in language. However, language-driven conceptions "must be based on either the

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[332] Like: Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science.
& Høffding, A Phenomenology of Musical Absorption.
& Petitmengin, Baulac, and Navarro, "Seizure Anticipation."

[333] Gallagher et al., 64.

scientist's own first-person experience [...] or upon pre-established (and seemingly objective) categories [...] or from some obscure, anonymous, and non-rigorous form of phenomenology".[334]

In addition, language is operative and not necessarily descriptive. It comes from usage that is concerned with daily or particular actions. Understanding it often presupposes a general, shared understanding of a concept, ranging from quickly making your peers understand your basic intentions to the goal-oriented conversation a doctor has with a patient. This operational dimension obliges us to look closer into the role of those concepts. Do they help us *act*, or do they describe things and help us *understand* them?

Building on this critical attitude, Gallagher and colleagues proposed a method of constant reflection that starts with general questions. Are the concepts I am interested in really the result of a thorough search for descriptions of what is going on? Do they perhaps originate in a theoretical framework, so I want to apply them to what I look at? This problem is not just theoretical. By uncritically relying on assumptions and general language, the participants and the researcher can overlook or miscommunicate the experience they attempt to access.

To use experiential data (i.e. descriptions), one must first define the situation under investigation because every experiment which collects data "lacks any pertinence [...] unless it is correlated with

[334] Gallagher and Zahavi, The Phenomenological Mind, 20.

the subject's first-person experience".[335] Put differently, even the most empirical study design needs to ensure that its participants agree that their experience is the kind the researchers are looking for. Therefore, the researchers must express this first-person perspective in language.

A definition of an experience is limited to its specific use. It cannot be exhaustive or capture all the experience's aspects because experience is a categorically subjective and contextual event (or period) freighted with an inexhaustible number of variations. Thus, while a definition is effective for identifying and talking about an experience, we cannot introduce this experience *through* the definition to someone who has not lived it already.

What sort of definition, then, is sufficient for an experiment? It should be discernible and possibly even able to *invoke* the experience for those who have already experienced something like it, either before or during the experiment itself. It is important to keep in mind from the start that such experienced veterans can access an experience in a way that the definition alone cannot.

To make the definition more reliable, one can propose to base it on measurable values instead of descriptions of first-person qualia, relations, and dynamics. This approach, however, produces a circular problem since the differentiation between experiences

[335] Note that this 'first-person experience' is ontologically the fact that someone experiences something, not a communicated description of it.
See: Gallagher and Zahavi, 18.

would be achieved through separately weighted parameters (e.g. according to the occurrence of certain brainwave frequencies or hormones). Setting the stage for the experiment means choosing physiological or otherwise measurable states as 'being in' the experience. However, one can only set these weights by agreeing on what 'being in' means, so a definition based on qualia must already be in place.

Another approach is to use information about the objective context of a situation as the foundation for the definition. For example, I can try to define 'encountering someone familiar'. This encounter is specified as 'meeting up with an immediate family member at home on a regular workday morning'. While this situation surely sounds 'familiar', does it *reliably* invoke an experience which revolves around the desired first-person phenomenon?

Consider the multitude of relations and contexts. What if the primary subject dreamed about the other person the night before – or they even argued with the previous evening? What if an upcoming work presentation distracts the subject? What if the subject simply feels grumpy without being able to explain it? Thus, the experience depends on the material setup and the social situation, attention, intentions, expectations, and memories of the experiencer at that moment. Even the physical environment is only as relevant as the experiencer makes it. In short, to use the context of an experience for its definition, one needs a series of objective facts with internal first-person descriptions.

While it is challenging and often insufficient to account for the factual context when seeking to define an experience, the morning encounter with a family member at least exemplifies a high probability of invoking a feeling of 'familiarity'. Hence, I argue that it remains useful. As an initial assumption about environmental factors, it can represent a fruitful starting point for generating data about occurrences of the feeling or phenomenon. Nevertheless, we must treat it as a situation of great potential and not as a definition, so the principal need remains to validate how the lived experiences of others might unfold in that environment.

However, the struggles of constructing a definition highlight two critical issues of access when we are talking about experience:

1) If a subject lacks preceding knowledge about a particular experience, it is categorically impossible for them to identify its constituting elements.

2) It then follows that experiences are inaccessible as self-sufficient objects of inquiry. 'An experience' is not a thing but is better understood as a *mode of being* for individuals. It is only through experienced individuals that experiences become accessible.

Notably, a silver lining exists to these issues. While experiences are contextual modes of action perception, we have reasons to assume that individuals can have experiences that are similar enough to make aspects of them 'recognisable'. The most important reason is that we recognise the potential of similar contexts to invoke similar

experiences for ourselves. Not every experience feels unique, and we have no problem differentiating them. The second important reason is that we are able to communicate these similarities, and language maintains the logic of their connections since we do not seem to be categorically baffled by others describing how their experiences relate.

This thesis relied on and explored the idea that these communicable aspects often relate as much to structural features of the experience as to their contents. For example, a study can present a participant with a loved person and expect to see certain affective emotions. However, it would not make sense to expect the same emotions when another unrelated participant was presented with that person – the object of the first participant's affection or the initial 'content' of the experience.

Conversely, in experimental setups, it is challenging to control these subjective relations. In the example, finding a loved person for every participant implies identifying and controlling for the relational nature of the emotion 'love', which likely is daunting and inexhaustible.[336]

Nonetheless, I argued that a mere attempt to determine the characteristics of this (love) relation would make it more likely to identify content (i.e. loved people). It is a question of probability for an experimental setting to be relevant. Thus, I had to persist in identifying and utilising a relational context despite this effort's

[336] As the history of human literature about love would suggest.

acknowledged flaws.

The fundamental problem remained. Since I could not know directly what an experience would be like for others, I could not presume to know a situation that evoked this experience for others. Furthermore, I had to question whether I had encountered the most relevant forms of the experience. Given these complications, how should I design my research experiment? If I used a purely theoretical concept as a framework, I would ignore the circular problem of the definition while relying only on assumptions.

For example, a commonly understood emotion such as 'joy', a theoretical dynamic such as 'affect', and an external observational term such as 'prosociality' are all concepts based on definitions. As such, they confronted me with what Gallagher called the 'definitional bias'. Therefore, instead of determining how a particular experience *was structured*, I assumed the structure from a theoretical perspective and then set out to find it.[337] This approach presupposed that the definition was exhaustive enough for everyone involved to identify it correctly, even when they (i.e. the researchers or the research subjects) had no prior encounter with the experience. How could I know whether they had? Moreover, how could I ensure that the abstract concept was adaptable enough to check whether the parameters comprising it were relevant to the experiencers?[338] What if those aspects existed as only part of the

[337] Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 22.

[338] This is the blind spot I mentioned before. Sidestepping the role of individual

story? Was there a subset of experiences that might not satisfy the abstract definition but still applied to the research question?

These concerns were condensed into one central query: How could I develop an operational definition to serve as a starting point that did not exclude aspects of my desired experience without my knowledge? As stated above, Shaun Gallagher and colleagues provided me with the solution.

The Solution: A Recursive Research Design with Variations and Intersubjective Validation

Shaun Gallagher addressed the challenges of defining experience several times in his projects. He repeatedly highlighted the definitional bias and the limitations the neurosciences have in overcoming it. One of his strategies pays attention to the exegesis of experiential descriptions to practise a "more hermeneutically informed phenomenology [which] tends to point to the limitations inherent in phenomenological method", even though phenomenology "will still have to defend itself from charges that the whole project is one that is culturally situated".[339] This cultural

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circumstances means blindly assuming either the contents or an environmental 'core' of the experience is already distinguishable and invariable for the experience in question.

[339] Gallagher recognised that limitations like cultural backgrounds are a serious concern. Cultural differences call for a methodological step to differentiate and correlate the empirical findings and internal descriptions of experiences accordingly. However, while neurophenomenology always must be self-aware of its cultural situatedness, it does not result in a general unavailability of 'transcending'

situatedness is the wiggle room between how an experience may play out depending on a subject's cultural background and how the researcher interprets observations and the subject's statements through their own cultural lens.

Gallagher's projects included testing the definition of the experience within the research design. At its core, his proposal involved what I call a recursive movement of the definition. The basic idea is simple: the definition has to overcome an unavoidably flawed start, and it does so most effectively in several steps of reconsideration. It all starts with the best common definition. Then, this framework is allowed – even forced – to shift and morph through its encounters with the rich descriptions of the experiment's subjects within iterations.

How does this example work in practice? The recursive research design is clearly visible in a previously mentioned interdisciplinary project involving Gallagher, Lauren Reinerman-Jones, Bruce Janz, Patricia Bockelman, and Jörg Trempler.[340] The team of psychologists, neuroscientists, and philosophers set out to explore the experiences of 'awe' and 'wonder' by looking for a "well-documented"[341] situation wherein these emotions often appeared, at least, as the team saw it: the situation of astronauts encountering space while in orbit around the Earth. Indeed, no team members

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experiential structures through first-person descriptions
See: Gallagher, "Taking Stock of Phenomenology Futures."

[340] Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science.

[341] Gallagher et al., 4.

had ever been to space,[342] so they began with a biased sense of what to look for and where this experience might reveal its commonalities. They "self-consciously decided on some working definitions" (i.e. verbal descriptions of the two emotions) while acknowledging "the definitions as tentative, preliminary, provisional, and open to revision".[343]

Next, the team members inspected texts by real astronauts, which ranged from their journal entries to published interviews undertaken shortly after their missions.[344] They were interested in finding statements from the astronauts that resonated with their own definitions while also looking at what the astronauts mentioned around or with the parts that resonated. In other words, their analysis involved an interpretation of these source texts as *variations of* or *additions to* their initial definitions.

In addition, they analysed the texts with an 'open mind'[345] concerning what the subjects wanted to say about the experience above and beyond the team's definitions. Hence, they ferreted out

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[342] However, they received advice from actual astronauts for some unspecified amount of time during the project.

[343] Gallagher et al, 6.

[344] The differences among these formats and their contexts were also considered in yet another additional step: a syntactical analysis of the corpora.
See: Gallagher et al., 19 - 21.

[345] This open mind extends beyond the hermeneutical aspect – that is, the team started out wondering about their approach in general: "Although we had some idea of what we were looking for, it was not at all clear how we would be able to study such things".
Gallagher et al., 7.

what the subjects (i.e. source texts, in this case) associated with these emotions and/or previously established synonyms. "[The astronaut Sandra Magnus] herself says it. That is, she associates the terms 'awe inspiring' and 'overwhelming'".[346] In this case, 'overwhelming' was added to the aspect of 'awe'.

Importantly, the researchers did not consider the astronauts to be experts on the phenomena; they were merely subjects who were likely to have undergone them. Hence, a single astronaut's associations and descriptions were insufficient. Instead, it was vital to find

> "[…] intersubjective verification that the feeling of being overwhelmed is closely associated with the experience of awe, both in the reports of other astronauts who make the same associations and in the analysis of numerous interpreters who are given our working definition of awe and who pick out feelings of being overwhelmed as lived experiences".[347]

The astronauts had to support – or, at the very least, not contradict – each other in these descriptions. Moreover, several researchers had to agree on a similar reading of the astronauts' descriptions.

Herein is where two methodological recursions became apparent: while (flawed) definitions were needed during the initial phase of the research, the team handed them over to the experiment's

[346] Gallagher et al., 27.

[347] Gallagher et al., 27.

subjects to see how they treated the phenomena. This first recursive step involved intersubjectively validating the texts by checking their overall integrity, a method reminiscent of the 'hermeneutical circle', which Gallagher described as follows:

> "One part of the text throws light on another part; the whole of the text constrains the interpretation of the parts, and vice versa – the interpretation of parts constrains the interpretation of the whole. [...] Again, however, this is not a subjective process. The text itself challenges the interpreter and in this process can reveal the reader's biases."[348]

The second recursion was then to repeat this process with different interpreters so that the chance of one or a few researchers 'overpowering' the texts with their own biases was minimised. The team compared multiple interpretations "in order to have intersubjective confirmation of a consensus interpretation".[349]

This principle of recursion is threefold. First, the understanding of 'the' experience is shaped by the researchers and multiple subjects. Second, these sources come as factual variations of their different-from-everyday-life and very specific circumstances. Third, the interpretations of the sources are validated by several readers. The framing of the experience becomes part of a validation process, and the definition becomes part of the study. This process is not unfamiliar to empirical science, of course, but it usually happens

[348] Gallagher et al., 24.
[349] Gallagher et al., 25.

between projects: "That is, scientists communicate their results to other scientists to be further tested. For science, in fact, these are hermeneutical safeguards".[350] Within a single study, factual variations, the hermeneutical circle and multiple interpreters involved represent strategies for implementing intersubjective validation and critical checks for what the sought-for experience may entail, how it unfolds, and what the impact of the researcher's definitional biases may be.

The Reward: Structured Consensus Categories

Beyond safeguards, these strategies contribute to the inquiry in a positivistic sense. With the Awe and Wonder Project, this contribution became visible in the 'consensus categories'.[351] As the research team compared the descriptions and their respective interpretations, an initial sorting occurred where certain statements about the experience seemed akin to others since they aligned with the (morphing) working definition. For example, statements such as "[it was] more than I could take" and "my senses were overloaded" could be categorised into subgroups of the emotion – in this case, the group labelled them 'overwhelmed'.[352] These groupings of statements were plentiful. Gallagher and colleagues arrived at 34 underlying categories, even after merging and cutting

[350] Gallagher et al., 24.
[351] Gallagher et al., 28 – 30.
[352] Gallagher et al., 27.

the 48 subgroups with which they began.[353]

These consensus categories were found as consensual groups within the validated statements. They exemplified how the astronauts' statements were treated *as data* even as the analyses were built on an interpretation that needed validation. One must remain conscious of this ontology—the categories derive from data, while they are interpretations of expressions of an internal experience: "We should think of the consensus categories then, as approximations, not of the objects of [the emotion] but of the experience of the [emotion]; not of the face, but of an experiential faciality".[354]

The potential use of consensus categories justified their effort, as the researchers used them directly to grasp the phenomena and shape subsequent experiments. They also supplied a concrete tool for the study's analyses. For example, the next step was to recreate the conditions experienced by the astronauts in a lab on Earth and have test subjects undergo them again. Here, the categories were used in post-experiment interviews "in order to determine whether we were able to [successfully] replicate the astronauts' experiences".[355]

In another analysis, the consensus categories were cross-referenced with psychological questionnaires to see whether certain

[353] Gallagher et al., 28.
[354] Gallagher et al., 128.
[355] Gallagher et al., 21.

personality traits corresponded to certain variations of the experience.[356] Later on, they were cross-referenced with physiological measurements taken during these lab experiments to see which brain activities correlated with certain variations of emotion.[357]

Nonetheless, researchers can use consensus categories for more than cross-references and proofs. An excellent example of their utility comes from the work of Antoine Lutz and the late Francisco Varela, who used previously established consensus categories to train participants (and researchers) to recognise and quickly sort their experiences accordingly. In Lutz's and Varela's case, this process enabled the participants during the experiments to indicate immediately through shorthand signals what they felt at a specific moment while undergoing physiological measurements.[358]

Putting recursions into place enables a stepwise refinement of the experiment. Consensus categories are fed back into the experiment or the ensuing analysis and revalidated. They also become a tool to "triangulate" the structures of the experience in tandem with other methods, both empirical and analytical. As with the consensus categories and their correlations described above, triangulation "involves using a kind of second-order analysis". As Shaun Gallagher explained, "We first generate data in various ways and then pay attention to the similarities and differences in those

[356] See, e.g.: Gallagher et al., 51.

[357] See, e.g.: Gallagher et al., 96 – 101.

[358] Lutz et al., "Guiding the Study of Brain Dynamics by Using First-Person Data."

results. […] As [this approach] is used and as it matures, it attains more clarification".[359]

Note that these are general movements. Research teams do not need to build recursions in the same way. Instead, they can and should adapt, improve, and simplify them as needed, depending on the specific research question, materials, and participants.

Before I explain how this thesis implemented a recursive design, let me summarise the argument:

1) When researching experiences, one must address *definitional bias* and assumptions tainted by operative needs regarding what comprises the experience in question.

2) One way to do so is through the *recursive re-evaluation* of the definitions and the application of *intersubjective validation*, which become stronger through *factual variations*.

3) A productive and previously tested tool for recursions is the formulation of *consensus categories* sourced from subjective descriptions. The categories provide accuracy, relations, and consistency in each recursion while describing subsequent parts of the study and analysis.

[359] Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 61.

Statements about Experiences and the Explication Interview

Generating consensus categories from iterative experiments is a general strategy. A concrete step of this strategy is the acquisition of actual statements about the experience. For instance, one can search for existing sources (e.g., the texts written by astronauts in the Awe and Wonder Project). However, this thesis did not follow that approach. Alternatively, one can generate the statements by approaching experiencers directly, which raises new questions. In fact, it touches on a common set of problems concerning the accuracy of the descriptions of the experiences.

Potential inaccuracies can creep in at various points. For example, the descriptions of the experiences studied may be – as in this study's case – given after the experience is over, which makes one ask how accurately they are remembered. Moreover, if a conversational interview produces the statements, how much can we attribute to the interviewee and how much is influenced by the interviewer? Descriptions in a natural language may also be unfit to approximate certain emotional, sensory, or bodily aspects of experience. Thus, while a post-generation treatment of the statements occurs in some form of a phenomenological reduction, scrutinising the genesis of our descriptions absolutely has merit and affects the suitability of the source materials to work with.

Back when Merleau-Ponty wrote about the Schneider case, he could only access Schneider's experience through third-person accounts.

He even went as far as treating a description of Goldstein as Schneider's literal words.[360] While Merleau-Ponty's methodical conclusions from these statements still have value today, his blind trust in Goldstein makes it easy to see how he could have gotten it very wrong.

Simon Høffding and Kristian Martiny summarised several critiques of the Schneider case and concluded that when "third person data is [...] used philosophically for the factual variation", [...] "there is an epistemological discontinuity between others' data and one's own interpretation". The goal is to bring the descriptive encounter and the analysis into "constant interchange, in epistemological continuity".[361] Thus, Høffding and Martiny proposed a concrete tool: the 'phenomenological interview'. First, it is worth considering historical roots.

Only 20 years ago, Natalie Depraz, Francisco Varela, and Pierre Vermersch noted that concrete phenomenological methods for validating findings and statements were scarce,[362] along with the shared problem of different research domains as "the multiple gradations of the collective or intersubjective dimension: [...] the first-, second- and third-person positions".[363] Since then, multiple

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[360] See: Jensen, "Motor Intentionality and the Case of Schneider."

[361] Høffding and Martiny, "Framing a Phenomenological Interview", 547.

[362] In the previous decades, they worked on the epistemological basis for validating phenomenological findings: "In fact, in the year 2001 we find ourselves in the paradoxical situation of treating problems of validation without having the means of presenting detailed research projects using the proposed methodology".
See: Depraz, Varela, and Vermersch, On Becoming Aware, 79.

[363] Depraz, Varela, and Vermersch, 80.

projects have taken this issue to heart. One prominent approach was the 'explication interview' – the basis for Høffding and Martiny's phenomenological interview and the 'micro-phenomenological interview' established by Claire Petitmengin's lab.[364]

Developed by Vermersch (and expanded by Petitmengin), the explication interview revolves around a particular, lived experience instead of general descriptions.[365] It mitigates the intersubjective perspective by handing it over to a separate step of reduction and analysis. The interview's core task is to stabilise

> "[…] the attention [on the concrete experience] by inviting the interviewee to suspend any other concern, by reformulating the last pieces of the report given in order to constantly question the interviewee, and finally by bringing the interviewee back to the thread of descriptions if she starts judging or explaining it."

The results are descriptions for a selection of "slices [of the

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[364] Micro-phenomenology came out of Varela's work, with Varela being Petitmengin's PhD supervisor. However, her 'micro-phenomenology laboratory' really put the interview and its analysis at the centre of a research network that organises trainings and features scientific, clinical, artistic, and epistemological work concerned with the method.
See: Petitmengin, "Microphenomenology.com – Home."
See also: Heimann et al., "The Lived Experience of Remembering a 'Good' Interview."

[365] Orig. "entretien d'explicitation".
See: Vermersch, L'entretien d'explicitation.
& Petitmengin, "Describing One's Subjective Experience in the Second Person."

experience] situated in time and space", for which the "interviewer constantly leads the interviewee to turn her attention from the 'why' and 'what' of experience to the important 'how' of its givenness".[366]

Another structured variant is Depraz' interpretation of the elicitation interview, which incorporates an especially "embodied introspective methodology".[367] In explication and elicitation interviews, the role of the interviewer is a second-person position, "neither the disembodied scientific community [nor] the direct experience underlying the first-person position. Rather, a second-person position is an exchange between situated individuals focusing on a specific experiential content".[368]

As a result, the interviewer attaches themselves to the experiencer's process of accessing the experience. Thus, the interviewer serves as a tutor or facilitator by making sure the guidelines of the interview are upheld, expression is encouraged and nurtured, and the statements are validated during the interview. This relationship is marked by trust and checks for mutual understanding and accuracy. While the interview is focused on the phenomena and is

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[366] As explained by:
Høffding and Martiny, "Framing a Phenomenological Interview," 550.

[367] According to Depraz:
"1 | re-living (not remembering from afar nor reconstructing); 2 | first-personally describing (not explaining nor arguing); and 3 | analyzing an individual, specific, lived experience while identifying it through embodied contents and processual dynamics (not in the formal way of universal and necessary static categories)".
Depraz, "An Experiential Phenomenology of Novelty: The Dynamic Antinomy of Attention and Surprise."

[368] As originally demanded by:
Depraz, Varela, and Vermersch, On Becoming Aware, 81.

semi-structured in how they are accessed, it is also an open, patient conversation that allows the interviewee to stay in the remembered moment, find their words, and question themselves.

Moreover, the interview is holistic towards all expressive capabilities of the interviewee, including gestures and mimic, timing and pauses, tiny scribbles and the whole stance of the body. Hence, the interviewer becomes "a witness who notes non-verbal, para-verbal, and epi-verbal indicators" and "a companion attentive to what is expressed across the grain of what is said, and who uses these signals to get you going again so that you can explain what you meant but didn't say".[369]

The Phenomenological Interview

Claire Petitmengin's extensive work concerning the explication interview is one pillar that Martiny and Høffding referred to for conversations as access points to noticeable and (at first) unnoticed aspects of an experience. The explication interview is part of the background for their "first tier" in a phenomenological interview: "a short-hand term for a phenomenologically informed or phenomenologically enhanced qualitative interview" that produces first-person descriptions.[370]

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[369] Again, these guidelines were formulated by Depraz, Varela and Vermersch: Depraz et al., 74.

[370] Høffding, Martiny, and Roepstorff, "Can We Trust the Phenomenological Interview?"

Nevertheless, Høffding and Martiny stressed differences. While the explication interview aims for the interviewee to re-enact the experience, the phenomenological interview is the experience of "co-generated description of [another] experience".[371] This other experience is still the experience sought after, but Høffding and Martiny argued that we should understand the interview as an experience in its own right.

This viewpoint results in a shift of responsibility concerning the analytical potential. Is the interview doing the work, or is the uncovering of structural aspects of descriptions a separate step? In this thesis, I subscribed to their observation that while the guided interview itself can already perform parts of the bracketing of the natural attitude, it *does not need to* and bear this weight alone. First-person descriptions can have value, even if they need further treatment.

In Høffding's and Martiny's phenomenological interview, the act of conversation is explicitly responsible for creating an explanandum while untied from expectations of immediately uncovering structural insights or even unnoticed aspects of the experience.[372] What matters is that the produced descriptions come from open questions and are detailed accounts of a specific situation – of intentions, embodied aspects, and mental processes underlying the

[371] Høffding and Martiny, "Framing a Phenomenological Interview," 554.

[372] It led to some confusion and discussion that Petitmengin and Bitpol called the (yet) unnoticed aspects of an experience 'pre-reflective'. I refrained from using this term in this context and only used 'unnoticed', as suggested by Dan Zahavi See: Zahavi, "Varieties of Reflection."

moments of action perception.

In Gallagher's terms, tier 1 or 'the conversation' is comprised of partly bracketing through guided attention on the experience and partly "reflective intimacy with the experience".[373] The latter is achieved as the interviewer and interviewee spend even the shortest moments within the experience while practising an accepting stance towards how it presents itself within the conversation. Depraz called it 'letting go' of how we want and expect the experience to be.

Gallagher, in the Awe and Wonder Project, stressed that achieving tier 1 requires "a level of established dynamism between the interviewer and the participant". Like Høffding and Martiny, he accentuated the co-production of the descriptions with the interviewer, who "does some of the cognitive work for a phenomenologically untrained participant" and maintains the bracketing and intimate focus "on the participants lived experience in a manner the participant may not be able to do on his own".[374]

However, this focus is not a one-way street: the guidance of the interviewer is a reciprocal dynamic. While the interviewer acknowledges their interest in the experience's structure and the influence they have over the directions and emphases of the descriptions, they also need to tap into their restraint and patience to take an intuitive and receptive stance towards what the interviewee is actually saying. This "tacit knowledge", as Høffding

[373] See: Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 63.

[374] Gallagher et al., 83.

and Martiny called it, "leads [the interviewer] to modify his next question" in an interactive dynamic[375] that has intentions but also expects to be surprised. The expectation of surprise marks the interactive (and not reactive) nature of the interview.

A phenomenological interview also differs from an explication interview in that it is not dedicated to a semi-structured format. The explication interview has clear rules for how to focus on a moment from the abstract to the tiniest detail, how to change perspective from the dynamics of change to the feeling of an isolated moment, and how much time to spend on those and even how to phrase questions, especially when the interviewee cannot elaborate further. Høffding and Martiny did not dismiss these techniques but argued that they could not form a strict recipe for experiential structures. The aspiration to perform the epoché solely in the interview is misleading because the interviewee does not have access to the invariant and often abstract "ubiquitous dimension" of the experience. Therefore, the interview should not follow a prescribed structure. Instead, we should view it as a commitment to exploring and understanding possible explanandum.[376] This commitment follows four phenomenological principles:

> "1) To the thing itself: using the interview to acquire detailed first-person descriptions of an experience in question.
>
> 2) Invariant structures: Using the interview to grasp the

[375] Høffding and Martiny, "Framing a Phenomenological Interview", 542.
[376] See: Høffding and Martiny, 543–44.

invariant structures of experience.

3) Subjectivity cannot be reduced to objectivity: In the interview, the first-person perspective needs to be understood on its own terms.

4) Enaction, embodiment and embeddedness: Phenomenology construes subjectivity as embodied, enactive, and embedded. The interview directly confronts us with these aspects of experience."[377]

While the resulting conversation will not be without interpretation on the interviewer's side, every notion of the conversation is flexible to be "revisited and re-interpreted" under the dominant mission "to get descriptions that are as clear, detailed and unambiguous as possible".[378] It is "a loop of auto-generation and co-generation", as the interviewee generates the experience in the moment of remembering and is guided to the parts that are relevant for the actual investigation.[379]

Høffding and Martiny were cautious concerning the question of applicability for the phenomenological interview. They thought that "it is certainly not relevant to engage in a demanding interview if one wishes to conduct classical phenomenology", which is especially true if one seeks to perform the eidetic variation in the interview.

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[377] Høffding and Martiny, 560.

[378] Høffding and Martiny, 547.

[379] For more clarification of the authorship of the description see The Epistemological objection in:
Høffding, Martiny, and Roepstorff, "Can We Trust the Phenomenological Interview?".

However, its descriptions become relevant for "experiences that are not available to one's own first-person perspective", so they can provide access to factual variations and make them available for the researcher's work of reduction and "cross-fertilization" from other sources.[380]

How, then, does a phenomenological interview play out? Since there is no prescribed semi-structured format, no straightforward answer exists. However, there needs to be transparency for each interview guide and its development process for every respective study. In my next chapter that documents the actual experiments, I explicitly discuss my interviews and how they came to be. However, a few aspects must be clear beforehand.

For instance, a proper phenomenological interview needs time and does not cut short its interviewees when they have potentially fruitful things to say. Often, the interview's length ranges from 45 to 90 minutes, but this timeframe can vary. If the researcher is only interested in a particular aspect, the interview may comprise only one question that is expanded as much as needed for the answer to reach a certain level of clarity. In contrast, if the situation of interest is opaque and complex in its influences and contexts, it may make sense to let a participant undergo several experiences and interview sessions to look at them repeatedly from different perspectives.

Hence, phenomenological interviews are very time- and labour-intensive. Moreover, groups of participants are often not large. In

[380] Høffding and Martiny, "Framing a Phenomenological Interview", 561.

fact, a single interview can produce a multitude of relevant statements that are complex enough to warrant a thorough analytical and philosophical interpretation.

Analysis of a Phenomenological Interview

Its analysis makes the most significant distinction between a phenomenological and an explication interview. Because this interview is not introspective,[381] the description alone is insufficient and must be thoroughly treated to be suitable for a phenomenological interpretation because the collected descriptions concern the 'what' of the experience, even if they already applied the lens of guidance for 'how' this what was like. By itself, the explanandum is still singular and specific. It may contain but not identify the invariant relations and structures that phenomenology is suited to find, as guided descriptions contain "good pointers to understanding those [contextually] located underpinnings".[382] Thus, this analytical treatment, tier 2 of the phenomenological interview, starts before the actual conversations.

The guidance for an interview involves an analytical approach to being actively aware of one's framing of the situation, how to

[381] Høffding and Martiny positioned themselves in line with Dan Zahavi and Shaun Gallagher when they said, "Phenomenology is not an exercise of looking inside the mind (introspection), but among other things a way of describing the external world and simultaneously analysing the co-dependence of mind and world".
Høffding, Martiny, and Roepstorff, "Can We Trust the Phenomenological Interview?".
[382] Høffding, Martiny, and Roepstorff.

translate this framing into points of interest for the interview guide, and how to bracket theories and assumptions from the wording used by the interviewer. It is important to consider which questions properly touch on research questions of "a phenomenological nature [which] that the interview(s) ideally can help enlighten".[383] This issue may sound trivial, yet in practice, clarifying and sorting a participant's experiences requires so much work that the interviewee must immediately identify and maintain a focus on previously deduced relevant aspects.

Next is the question of the validity of the collected statements. Here, explication and phenomenological interviews share the concept of 'performative consistency'. Therefore, a statement is not evaluated by its relation to an external objective truth, "but according to the manner of its genesis, the quality of contact with the experience in which the description originates, and the remoteness of its source": "The validity does not in the first place concern the descriptions, but the acts of re-enacting, turning attention, stabilizing attention, etc. performed by the interviewee."[384]

This process happens during the conversation as the interviewer probes statements for coherence, requests reformulations and connections to previous statements, and is aware of changes in the interviewees' confidence, reflective consideration and care. However, it also happens afterwards. After the transcription of the

[383] Høffding and Martiny, "Framing a Phenomenological Interview", 557.
[384] Høffding and Martiny, 557.

interview, the statements are explicitly checked for coherence and contradictions. Coherence must be upheld within single statements and between similar statements. Moreover, they are not only coded for thematic relations. For example, individual statements from different themes may be dynamically connected, so these connections can be another aspect that requires coding.

Notably, this process alone presents a sufficient standard to mark any single statement of the final collection as 'valid'. The same applies to the standard of the 'clarity' of the description. During the interview and in a preliminary reading, performative consistency makes it possible to consider 'more' and 'less' valid/clear statements. However, during the conversation, no statement is "wrong or incorrect" as long as the interviewee stands by it.[385] While the interviewer confronts the interviewee concerning confusion and apparent contradictions, tier 2 weighs the statements in the comparative analysis of different statements and the interpretative work done from the phenomenologists' point of view.

The comparative analysis of statements within a single interview effectively amounts to a close reading of it as a self-contained text. Emerging thematic similarities form of statements are the only source used to collect the concepts belonging to the experience. They form the *emic* basis for the experiential categories in play, which are only later brought into contact with *etic* ideas and theories – after the researcher is confident about their inherent

[385] Høffding and Martiny, 558.

structure or dynamic.

Hence, the interpretative answers of the analysis start with the particular experiences. From there, increasingly more generalised insights can be deduced. The concrete handling of statements and categories may vary depending on the experiences, the participants, and the amount and quality of the interviews – another reason that transparency and consistency in the methods are crucial for a phenomenological interview.

The preparation and the process of the interviews, as well as the actual statements and methodological considerations, must be laid out to enable other researchers to retrace the study's decisions and interpretations. For consistency, Høffding and Martiny referred to the internal "technique or analysis strategy throughout the process" so that "one's analysis of the meaning of the interview follows from its content", as well as external consistency. These confrontations of one's interpretations of the world outside the study occur "by participating in the discourse and applying what has been found in practice and interventions".[386] External consistency happens in formal and informal settings and can range from testing insights in another version of the experiments to small discussion groups and

[386] These principles apply to most established scientific practices, of course. However, interviews and their statements about experiences are under special scrutiny for their validity since they lack widely established standards of practice. Hence, Høffding and Martiny took great care to identify where they would be applied for the phenomenological interview so that they are "in no principled way less reliable or valid than other quantitative or experimental methods in general". Høffding, Martiny, and Roepstorff, "Can We Trust the Phenomenological Interview?".

widely acknowledged presentations to using the insights in therapeutic or artistic practice – as long as the results and observations actively flow back in a continuous body of work.

At this point, the statements of the interviews have undergone a first treatment. They are weighted and coded and form a first batch of thematic categories. They form a good basis for the recursive movements and search for consensus categories that Gallagher et al. proposed.

This Thesis: Consensus Categories from Phenomenological Interviews about a Recursively Informed Situation

For the experiments of this thesis, I searched for factual variations of the experience of establishing a relationship with something or a lack of relationship that I called a thin meaning. I sought moments of realisation of the unfamiliarity of something and the ensuing or parallel establishment of new relationships with it. To achieve this experiential situation, I followed the idea of a recursive design for the experiments to inform and adjust the definition of this experience.

A direct result of this approach was the concept of a 'thin' meaning I presented in Section 3.2. In fact, the experiments documented in the next chapter started with a different definition, which originally sought an encounter with a near-complete *lack of contexts or meaning*. This working definition is where I started. I used it to

create conditions for suitable materials and approaches for the first interview guide:

> Meaningless is an immediate, felt relation to an object, process, or environment, which primarily comprises insecurity, ambivalence, instability, apparent association, and/or confusion.

However, my initial pilot study findings, as detailed in Section 4.2.5, shaped a more nuanced understanding of 'thinness' within the environmental and relational contexts of the participants' goals. This finding was possible because the first two of three iterations were partially intended to collect as much feedback as possible on the circumstances of feeling disoriented and unfamiliar with something – or when people judged something as novel while experiencing it. In contrast, the first working definition made use of emotional states deduced from my personal introspection in the non-phenomenological sense of the word. It was based on what my colleagues and I experienced in the past as unfamiliar: feelings of 'insecurity', 'ambivalence', 'instability' and states of apparent or reflective 'association' and 'confusion'. These feelings were experienced as an immediate relation to either objects or processes of an environment. Hence, they had the character of urgency and were coupled with the world, not moments of introspection or contemplation. Over the first two iterations, the definition shed some of these ideas while incorporating others. Thus, I understood the participants' statements much more to revolve around their apparent possibilities to act and understand.

This is a disclaimer about my presuppositions as the investigator, which I tried to exclude from the conditions for suitable materials and the interview guides. Please understand this statement as an explicit invitation to read the next chapter as an intersubjective check on bracketing my initial interests and potentially directed interpretations.

When I proposed this project for a PhD thesis, I was originally interested in rhythms and patterns as binding factors in the perception of unfamiliar situations. I hoped to observe “play as the invoking element of perception when it comes to identifying, interpreting, and transforming rhythms” in situations of “ambivalence and novelty”. I assumed unfamiliarity would mostly highlight individual strategies of pattern recognition to make sense of phenomena perceived as ‘new’. In addition, I hoped to see “modes of rhythmic interaction and reaction” in the experiments. (All quotes are from my 2019 project proposal at RITMO / University of Oslo.) I assumed that pattern recognition was the most crucial perceptual strategy for the participants, while they would also show bodily and behavioural dynamics that enable them to relate to patterns of the environment. However, these ideas were not taken up in the analysis in Chapter 5 since the interviews did not contain sufficient or coherent corresponding descriptions. Instead, I followed Gallagher’s proposal to form consensus categories fed solely from what the interviews provided.

Consensus categories were the main tool of my analysis and represented consistent statements from within single interviews

and between participants. Thus, the different steps of the phenomenological method were distributed between the actual interviews, the formation, and the interpretative analysis of the consensus categories. Suspending beliefs and theories about the experience (i.e. bracketing) happened through the guided conversation and in the treatment of statements to prepare them for categorisation.

Moreover, gaining intimacy with the domain (i.e. the reduction) also happened on both sides. While I, as the interviewer, developed strategies to bring the participants' attention back to how they felt and acted, the selection and interpretation of their statements were also focused on the experience, not the objects of the experience. The same applied to the comparative analysis of statements from different participants and how the resulting thematic categories relate to each other.

Finally, this comparative analysis produced several rounds of intersubjective validation as I "elucidated differences and similarities" to carve out "invariant features of experience" within and between the three iterations of interviews.[387] Intersubjective validation also happened regarding my interpretative reading of the statements as I presented the consensus categories to other readers from the research cluster at RITMO and my supervisors. I also presented them at international conferences and workshops.[388] I

[387] In Shaun Gallagher's words: Gallagher et al., A Neurophenomenology of Awe and Wonder: Towards a Non-Reductionist Cognitive Science, 10.

[388] At the time of finalising this script, there were two presentations:

chose to employ a phenomenological interview per Høffding and Martiny and the analysis of consensus categories because they embodied the principles of the phenomenological method and translated them into a practical research design.

The main work packages for the experiments derived from this approach were as follows:

1.) Using the preliminary working definition to identify and select suitable experiential materials (VR artworks);

2.) Experimental sessions with participants under different main aspects:

- confirmation of assumed properties of the material and technical feasibility;
- recursively refining the definition of the experience;
- collecting as detailed as possible descriptions of the revised aspects from the definition.

I unpack these two steps further in Chapter 4, which documents the experiments. The remaining package was

3.) The formation and analysis of the consensus categories.

Pleiß, "The Affective Cycle of Orientation in Unfamiliar Contexts within an Aesthetic Virtual Reality Environment."
& Pleiß, "The Affective Cycle of 'Affording' in Unfamiliar Contexts within a Playful Virtual Reality Environment."

This third step was subdivided into three parts. The first part, hermeneutical analysis or close reading, validated each interview separately parallel to its dissection into discernible statements. These statements were initially sorted into emerging themes. Afterwards, they were treated for a phenomenological understanding by bracketing non-experiential aspects while reducing essential components of the experience.

Finally, the statements were even more closely examined and checked. Subsequently, the categories were formed, as the statements were read for their comprehensive correlation and coherence. Clusters became visible with their respective relationships and structural connections.

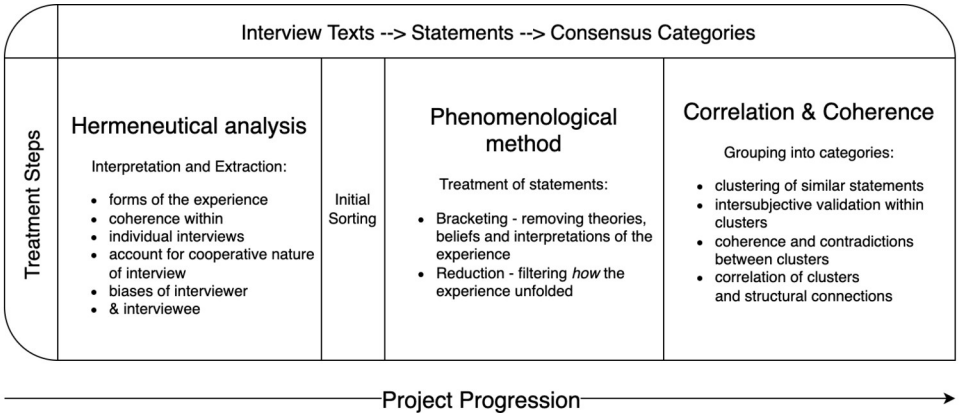

Figure 3.1. Steps of the analysis of the collected interviews.

The first two steps were clear before the point of actual implementation. However, the layout of the analysis only emerged

after I started the pilot iteration of interview sessions. I had to see the number of statements my interviews produced as well as the detail and depth they achieved. In addition, there were no clear best-practice examples that proposed a concrete workflow, so I developed them at the start of the experiment phase. First, I sought virtual artworks in the wild and developed a catalogue of suitable candidates" for the participants encounters with something unfamiliar and thinly contextualised.

4. The Experiments: Three Iterations of an Unfamiliar and Context-thin Virtual Reality Environment

This chapter documents the process of three experiment session iterations and their respective interviews, including the search and the reasoning behind the artwork used as the experimental setting. The experimental work consisted of three work packages:

1.) the selection of the experiential environment (i.e. the VR artwork);

2.) iterations of experiential sessions and phenomenological interviews;

3.) the collection and analysis of the consensus categories.

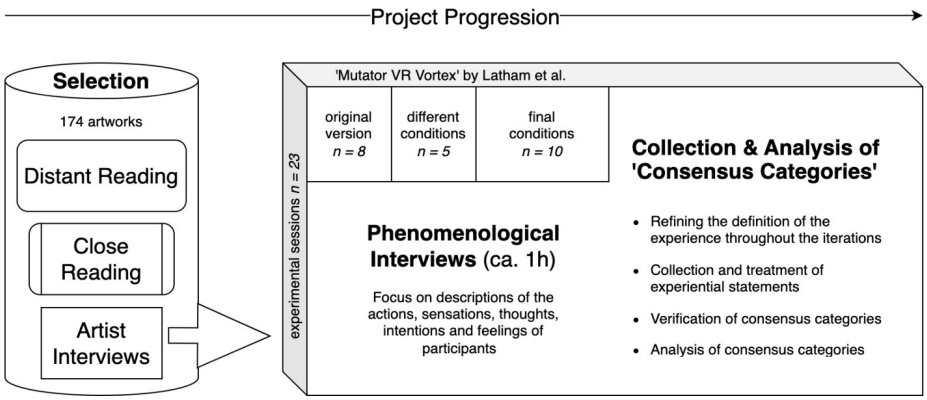

Figure 4.1: Details of the work packages.

Here, I mainly describe the first two packages and each iteration of the experimental sessions while highlighting the methodological refinements implemented in response to emerging insights. As a first overview, I provide the outlined strategy for the interviews throughout the different iterations of the experiential sessions:

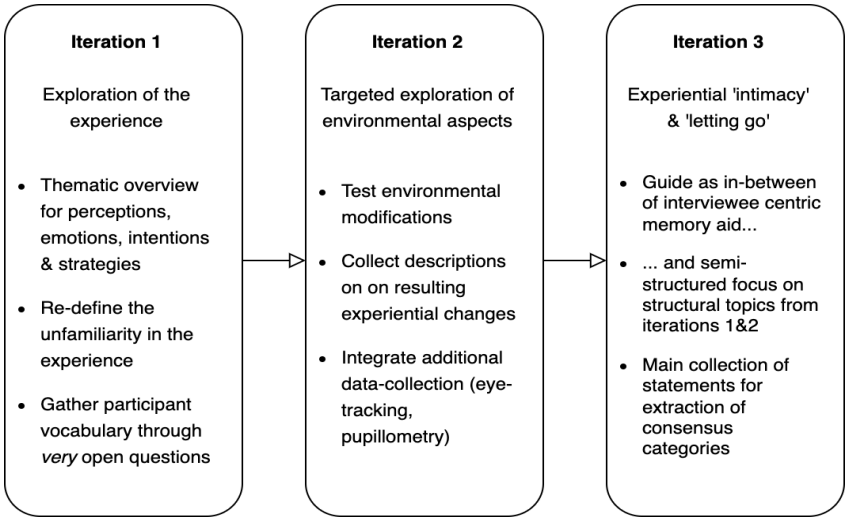

Figure 4.2: Iterations of interview guides.

The progressive development of the experimental design constitutes a significant methodological contribution. It shows how a phenomenological interview was moulded around the specifics of its experimental situation. During my preparation for this thesis, it was difficult to find literature about other projects that illustrated concrete techniques and solved problems for phenomenological interviews, no matter how well-crafted and insightful the analyses of these projects were. By documenting my reasoning and adjustments, future researchers can draw on this chapter to picture an approach to their interviews and plan their experimental design.

4.1 The Artwork:

Mutator VR. Vortex

At the beginning of the experimental work, I still lacked concrete experiential material – an actual artwork. Finding and assessing the properties of what the participants were to experience as ‘novel’, ‘unfamiliar’, and ‘context-thin’ was as important as the experiments.

Criteria for the Artwork as a Suitable Environment

The proposition behind this project was that, when encountering something very novel and unfamiliar, the participants would actively engage their meaning-making capacities in distinctive ways. These encounters would highlight particular modes of sense-making that would remain unrecognised in more familiar contexts to reveal fundamental aspects of how the participants realised meaning or actively investigated relationships with new phenomena.

As outlined in the methods of Sections 3.2 and 3.4, this *establishment of relationships* was the result of a particular contextual relationship. I first hypothesised the underlying relationship to be characterised by feelings of 'ambiguity', 'instability', and 'confusion' about the current environment. Hence, I assumed objective qualities to evoke these experiences that I should watch for in a VR artwork: visual composition, physical geometry, and audio signals that the study participants had not experienced before, at least not to a degree of associative power.

An artwork as the virtual environment could qualify as a factual variation, as a significant number of its aesthetic aspects might not have been part of the participants' previous lives. As theorised in Section 3.2, this artwork could isolate the abilities that enable subjects to identify, categorise, and use the elements of a new environment. It could be an opportunity to describe the recognition, interpretation, orientation, and familiarisation with the

environment. Crucially, the subjects had no previous experience with the elements in the environment to draw on, with as few as possible categorical associations.

The artwork I sought comprised a set of phenomena and dynamics that were isolated from the everyday world. Nevertheless, I needed a complex environment that offered rich possibilities for agency and movement to make it more ecologically valid. Complexity also helped since, by definition of the epistemological nature of the project, I could not 'know' what capabilities were important in this encounter.

Nonetheless, in a complex environment, the participants needed to be provided with a broad range of possibilities to deploy their bodily capacities freely. They had to be able to act out intentions that were unforeseeable to a single researcher. At the same time, the environment needed to be self-contained. Ideally, it would not refer to contexts other than those it established through its contents and their internal relationships. If the environment were rich in semantics or sensations that were easily related to previous experiences, it would be more challenging to distinguish the actual contextual orientation from the use of pre-experimentally formed memories and relationships.

The VR equipment sealed off the visual and auditory space via the headset and headphones to exclude the everyday world. Modern VR hand controllers could even give the study participants manual agency. By visually representing their hands (or, depending on the

interpretation, the objects in their hands), the participants could reach out and manually interact with the VR environment as they would with their physical surroundings. Hand controllers also allowed the participants to move around the virtual world more easily.

Nevertheless, limits existed to what extent we could recreate the actual physical world in VR. For instance, leaning on a virtual surface would not block the participants' movements, while the controllers would limit tactical feedback to adjustable vibrations. However, the current technological capabilities still allowed for the immersion of the participants in an environment that was potentially filled with abstract entities and governed by novel rules and behaviours.

Such a virtual world was not novel by default – it had to be designed and created that way (see Section 3.3). Even beyond such an artistic intent, the artwork had to meet functional conditions. For example, artists might fill their VR with inconspicuous symbolism, or they might focus on storytelling rather than creating an environment to explore. The artwork could also force its users (i.e. experiencers) to do or perceive things with little or no agency in certain places.

Therefore, I had to establish criteria to ensure that the artwork created this novel experience, with some participant agency and freedom of exploration involved. The artwork could not relate directly to nature or cultural objects, which, for most experiencers,

would have a high potential of carrying a concrete meaning or memory, nor could it position itself in an obvious cultural or historical way. Instead, the artwork had to be abstract or coded in such a way that its message was either hidden, indirect, or disguised. The recipients would need to labour for a significant time to find its meaning either during the experience or in hindsight.

Furthermore, the artwork needed to allow the participants freedom of intention rather than dictating or otherwise prescribing their responses. Finally, it had to allow the experiencers to come to their own conclusions rather than 'telling' or directly communicating a particular idea.

Initially, these conditions resulted in six necessary criteria. Thus, the VR artwork had to fulfil the following to be considered for the study:

A) *Environmental*: The artwork had to focus on a spatial environment, not a single or small group of objects.
B) *Multimodal*: The artwork had to provide input to the senses of sight and hearing, as well as spatial orientation and the ability to move.
C) *Uninterrupted orientation*: Orientation, interaction, and movement modes could not be restricted or changed at any time or in any spatial dimension (i.e. no 3D video sequences or constricted movement 'on rails').
D) *Unreal*: The visual and auditory input had to differ from everyday life, with no clear representation of real-world

objects and no shapes or forms that would otherwise be closely associated with real-world objects or sounds.

E) *Abstract*: The formal and aesthetic composition of the VR artwork had to not result in clear metaphors, symbolism, or narratives (whether in the form of visual texts or audible speech).

F) *Culturally ambiguous*: The formal and aesthetic composition could not refer to a specific historical event, cultural phenomenon, or famously known aesthetic composition or style.

Two additional criteria represented desirable attributes of an artwork that could simulate a dynamic, manipulable world in which actions have consequences:

a) *Environmental dynamics*: The artwork had to exhibit internal dynamics, such as the movement, progression, or interaction of its elements. These internal dynamics might or might not be immediately apparent to the participants.

b) *Agency beyond spatial orientation*: The artwork had to allow for some form of interaction between its elements and the participants, including physical manipulation, communication, or expressions of awareness of the participants' presence and perceptual actions (e.g. the ability to respond to what the participants were looking at).

Preliminary Discussion with Curators and Audience Perception

Armed with these initial criteria, I contacted several curators known for their work with VR material to gauge whether such artworks existed and how VR artists would react to their work being used in a scientific study. After all, using and analysing an artwork in the context of an experiment would demystify it to some extent by revealing the craft and the motivations behind it. It would also make the artist more vulnerable because the experiment would document the intentions and strategies to conclude how successful the artist was with their work or even their personal life. I wanted to tread lightly and build a trusting relationship with the artists and curators involved in VR-related work in the interest of potentially extended collaboration.

My curatorial conversations occurred in June and July 2020 with the two people who responded to my outreach: George Vitale, the director of Synthesis Gallery in Berlin,[389] and Tina Sauerländer, in her function as the director of the exhibition platform peer to space.[390] These conversations lasted approximately 40 minutes each and produced useful connections to the artists with advice on how to be as open and direct with them as possible. They also gave me interesting insights into the VR art scene at that moment in time.

I hoped that there would be an interest in 'experiential' works in the

[389] http://www.synthesis.gallery/

[390] http://www.peertospace.eu/

sense of Alva Noë (See Section 3.3) as a relatively new medium (e.g. VR) with its different modes of representation and interaction to offer a rewarding playground for artists to reflect on perception. Unfortunately, George Vitale could not confirm this trend while noting that perceptual states (e.g. disorientation and novelty) "are not really a focus for many artists".[391] While he agreed VR could be associated with either disorientation or ambiguity, he felt that most artists treated these as by-products "of the general technical situation of VR", its overwhelming novelty for people new to the medium. He added, "It's a marginal problem for them, but they're always aware of it". Hence, disorientation and ambiguity were part of the process as a problem to be addressed rather than an experience to be focused on.

This issue led me to ask how artists considered the perceptions of their audience and how they formed expectations about the impact of their work. Vitale said that this process probably varied from person to person. However, he could not name any artists who 'tested' their work on an audience or were otherwise particularly inquisitive about the audience's experience. Instead, artists generally used their own experience as a benchmark while "look[ing] for spontaneous flow; [...] it needs to make sense inside".

This approach implied much implicit knowledge by the artist about how to achieve that 'sense', as well as a certain confidence in that knowledge. However, Vitale assured me that for most, "focus[ing on

[391] All citations in this section:
Vitale, "VR Experience Does Not Mean Art."

the audience] is not a concern". I wondered about the discrepancy between the artist's intimate familiarity with the work and the audience's relative unfamiliarity. Here, Vitale thought that a simple introduction to the work would bridge this gap.

Vitale then emphasised that art usually does not occur in a vacuum, so audiences rarely encounter works without some sense of context beforehand: "Facebook events, press texts – it starts even long before they come to the gallery". Artists and curators, of course, are well aware of this notion and cultivate the audience's initial curiosity as to what the artwork is about.[392] Subsequently, artists leave their audience alone because "every experience is unique", as it should be. Therefore, in Vitale's opinion, artists tend to leave the audience to themselves.

After this conversation, I suspected it would not be productive to approach numerous artists immediately or look at the artistic process involved in a broader sense. Nevertheless, I wanted to see whether artworks that focused on the perceptual situation existed, so their respective creators had to reckon with the disorientation and ambiguity that the media configuration of VR evoked. Hence, I

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[392] Giorgio Vitale was not an impartial observer with this statement. He advocated for the general curatorial position that virtual reality as a medium should not stand for itself when used as art:
"I expect the experience inside of the VR headset to begin only as the experience outside ends. Visitors need to be introduced to the VR piece by the means of the outside experience. What makes a VR artwork is the fact that it should be the VR technology plus something else – from paintings and sculptures to an A/V set up and performance art".
Vitale.

proceeded to inspect actual VR artworks.

The Selection Process: Distant Readings

The next step was to find a sufficiently large and promising collection of VR artworks to apply the selection criteria. As outlined in the methodology chapter, I assessed various VR artworks, first in a distant reading and then in a close reading. Therefore, I needed a broad and informative catalogue of VR artworks.

I contacted Tina Sauerländer again because of her diverse experience as a curator and organiser of VR art. Sauerländer had numerous insights into the scene through her work on exhibitions in Europe and the United States, as well as at institutions including ZKM Karlsruhe, HeK Basel, Halcyon Arts Lab in Washington, and Parsons in New York.[393] More importantly, she was a co-founder of 'Radiance VR', an open electronic catalogue for visual and media artists who use virtual and augmented reality in their work.[394]

At the time, Radiance VR's self-stated mission was to introduce VR art to researchers, museums, and curators worldwide, as VR was still a niche in the art world in terms of exhibition volume and

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[393] CV of Tina Sauerländer:
Sauerländer, "CV Dr. Tina Sauerlaender — peer to space", peertospace.eu, captured on Jan 15, 2021, https://www.peertospace.eu/tina.

[394] Radiance VR UG, "Radiance VR – The International Research Platform for VR Experiences In Visual Arts", radiancevr.co, captured on Jan 15, 2021, https://www.radiancevr.co/.

market share.[395] This mission to make VR art visible without promoting a specific roster of artists meant that Radiance VR was open to anyone. Artists could become part of the database through their initiative or by responding to team members as they mapped out the scene.

Sauerländer stated that the scene at the time mainly encompassed artists based in Europe and North America. The database included works from 37 countries around the world. This collection was particularly beneficial because the selection criteria I previously collected concerned the structure and method of the artwork rather than thematic or cultural constraints.

[395] The official mission statement for Radiance reads:
"Radiance is a research platform and database for VR art. Its mission is to present artists working with VR from all over the world to create visibility and accessibility for VR art and for faster adoption of virtual technologies. The platform works closely with artists, institutions and independent curators to select the highest quality of virtual art for public institutional exhibitions".
See: Radiance VR UG.

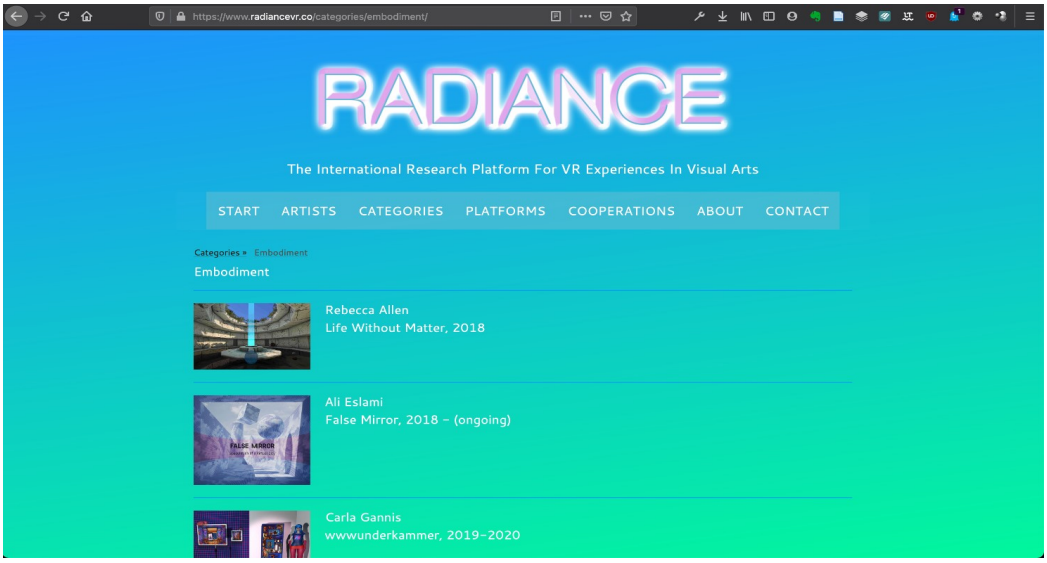
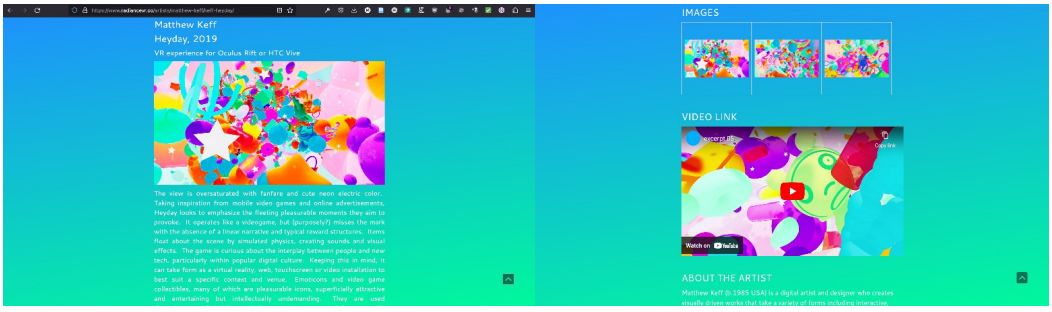


Figure 4.3: Screenshot of Radiance VR's website version of their catalogue. Artworks can be filtered for keywords ('categories') and platforms.



Figures 4.4 and 4.5: Screenshots of Radiance VR's detailed listings. Each artwork is presented with descriptive text, some screenshots, and, sometimes, an additional video.

With Tina Sauerländer's approval, I accessed Radiance VR's whole catalogue. The initial vetting through distant reading included all

174 artworks by 165 artists at that point. The catalogue mainly consisted of contact information of every artist, several images from each catalogued artwork, and a corresponding text description. The images were either screenshots from inside the digital part of the work or pictures of the exhibition setup. In addition, a variety of keyword categories were intended to help with the search and navigation (e.g., '360° video-based', 'embodiment', and 'feminism'). Approximately one-half of the listed artworks had a short video that showed the work, which was often an uncommented screen capture of the piece with runtimes ranging from a few seconds to several minutes. These materials allowed me to conduct a distant reading and select a first shortlist in three steps:

1. The screenshots and descriptive texts were checked for criteria A), B) and C): apparent spatial and encompassing environments and a PoV experience with freedom of movement.

2. Both the descriptions and screenshots again were checked more carefully and excluded when they mentioned criteria D), E) and F): real-world objects, metaphors and symbolism, historical events, and cultural/aesthetic phenomena (e.g. biographical situations, internet memes, colour codes, and specific game genre aesthetics).

3. The remaining artworks were thoroughly rechecked, with a focus on additional video material in the catalogue and

further media provided about other artists and exhibition websites. All necessary selection criteria were checked in this step. In addition, I noted when the artwork seemingly featured a dynamic environment or intended to give agency to the user in some fashion.

As a result of this distant reading, I created a shortlist of 18 artworks, two of which had the same creator, while the rest were by different artists.

The Selection Process: Close Readings

According to the planned methodology, the next step was a close reading of these artworks. Hence, I acquired access to the actual pieces, which is usually unavailable. (Even unknown artists often make their living, or at least finance their work, by exclusively exhibiting and selling these pieces.) Once again, Tina Sauerländer was a great help by actively putting me in touch with the 17 creators of the 18 artworks and endorsing my request for full access to examine them for a research project. Ten artists responded within a few weeks.

Eventually, I received six artworks digitally and two video documentations of 20–30 minutes in duration that gave more detailed insights into what was happening inside these creations. Six of the works were designed for Oculus or HTC Vive headsets and were compatible with either. Two were designed for mobile

headsets, running in a web browser, or as an app for smartphones and were fitted with a VR kit that supplied lenses, a viewing screen, and straps to affix the rig to the head.

The consequent close reading required approximately one week with each of the eight remaining works to explore them fully and ensure they would uphold my criteria. I also took my time to experience the type of agency[396] and the emotional setting they offered to the participant. Using the original consumer version of the Oculus Rift (CV1) and smartphone-based VR, I accessed all works available as executable programmes.

Five of the eight artworks still contained concrete objects, narrative speech or text, or other semiotic symbols. In addition, two artworks were site-specific, an exclusionary criterion I had not previously considered. One was still abstract, so it remained on the shortlist for the time being. Thus, three artworks remained.

Workshop Interviews with the Artists

Even though I spent several days with each of the three artworks, I only checked the selection criteria against the evidence of my senses and judgement. Thus, everything hinged on my personal interpretation. To validate or reject these pieces, I wanted an expert opinion from people who knew them intimately. Ideally, these experts had to know all the context and background of the artworks

[396] In the games study sense of the word – the user's technical abilities to act intentionally within the environment and my resulting subjective experience of control and influence.

and possess more information about how they had been received so far. Thus, I needed to talk to the artists using in-depth workshop interviews as the most suitable format.

All three artists agreed to talk to me: Lance Putnam from the United Kingdom (representing an artist team), Mohsen Hazrati from Iran, and Alex M. Lee from South Korea (now based in New York). The conversations lasted 50–80 minutes and were focused on the respective works, their context, the design process, and the intention behind the work. I conducted the interviews via Zoom and recorded them due to the emerging COVID-19 pandemic.

Figure 4.6: Screenshot of one of the three workshop interviews, here with artist and researcher Dr Lance Putnam. Putnam worked with William Latham and Stephen Todd on *Mutator VR. Vortex*.

The workshop interviews had specific aims. First, I sought the artists' perspectives on what was going on in their artworks. In particular, we discussed the nature of their visual and auditory elements, as well as the behaviour and states of those elements. Hence, I ensured that I had missed nothing.

Subsequently, I required something quite unusual in the visual arts world: the artists' detailed interpretations of their works. I needed these commentaries for two reasons: to determine the artists' intentions and motivations and to gather background information and context for the work. Both aspects produced points of reference for my interpretations and the study participants later. As for the selection criteria, this information was important to identify existing symbolisms with which I was not personally or culturally familiar.

We also discussed how these artists expected people to make sense of their works. Asking for their expectations tapped into explicit experience with audiences on the ground and implicit knowledge about the subject.[397] This discussion further deepened my understanding of how the artists wanted their works to feel to their audiences.

Another talking point was whether the artists thought they had realised their intentions for the piece – or if it even mattered since

[397] I understand implicit knowledge here as actionable yet unreflected perceptions and habits gained through practice, dialogue, and experience.

the relevance of this success is not always obvious. After all, with VR art, a 'successful' work may not be fully immersive and self-sustaining. Audiences may perceive it as poorly executed or obvious in its materiality, media, or genesis. Nevertheless, how it addresses these relationships can have great artistic value. As a result, audiences may find themselves less immersed in the work's content and more preoccupied with how the content relates to the real world, the artistic process, and the technological context behind it. I needed to filter out works with this tendency to maintain an experimental focus on perceiving the artwork as a self-contained environment.

Of course, most artworks reflect the discourse surrounding their medium in some way. The question was how strong this notion was and at what point the audience would consider it. Hence, my final questions related directly to the audience's potential feelings of unfamiliarity and disorientation. The artists had to assess whether, upon entering the artwork, the audience would focus on its content or its technical and medial configuration. How engaged would they be? Would they experience this moment as unfamiliar or disorienting?

These workshop conversations were the last step in the close readings. The final assessment was the central question: Does the artwork offer the experiencer a confrontation with something intentionally novel or unfamiliar while expecting them to cope? The artists had to confirm this reading of their work and support their view with impressions and feedback from their real audiences.

These conversations served as a counterweight to my personal experience and interpretation during the creation of the shortlist.

As it turned out, the artists' intentions were different from my experiences. In the end, only two artworks fulfilled all the necessary criteria. Luckily, one of them also showed promising potential in the supporting conditions of environmental dynamics and additional experiencer agency.

Close Reading Mutator VR. Vortex

The artwork that fulfilled the selection criteria best and held up to the artist's assessment was *Mutator VR. Vortex*,[398] which was created by the *Mutator VR* team, a collective led by the computer art veteran William Latham and accompanied by the three mathematicians/artists/programmers Stephen Todd, Lance Putnam, and Peter Todd. *Mutator* was first a series of exhibitions starting in 2013, as the result of a decade of work with computer-generated visuals by Latham. The visual technology used in these exhibitions then evolved into *Mutator VR*, a different series of VR artworks that started in 2016. These works adapted the core ideas and algorithms of the organic-looking and fractal-like warping visuals to 3-dimensional virtual environments. *Mutator VR. Vortex* is a single work in the series that sets out to create "an immediate immersive experience for users, a surreal space that operates

[398] Latham et al., Mutator VR. Vortex.

according to unreal rules, where users quickly realise that their actions directly affect the space".[399]

While several screenshots of *Mutator VR. Vortex* are displayed on the following pages, they do not do justice to the spatial dimension, behavioural dynamics, and general atmosphere of the piece. I therefore highly recommend watching the promotional video that the team created at https://mutatorvr.co.uk/portfolio/mutator-vr-vortex-on-htc-vive-video/.[400] However, bear in mind that the videos and screenshots reduce a VR user's tilted 110° view to a geometrically rectified cutout. They also lack the depth of field of a stereoscopic image. As a result, the images and videos appear dense and are often more chaotic and object-filled than the VR experience with a headset on.

[399] Latham et al., "Exhibiting Mutator VR."

[400] Video of Mutator VR. Vortex on the portfolio of the artist collective: Latham, "Mutator VR."

Figure 4.7: Screenshot taken from a 2D screen representation of the 3D stereoscopic view inside *Mutator VR. Vortex* (2017).

Mutator VR. Vortex (hereafter *Vortex*) is an abstract, spherical world filled with apparently alive beings that seem to move around in all three dimensions at will. It places the experiencer in the middle of the sphere, where they can float around without being tethered to any plane or object. The borders of the sphere seem to be 10–20 metres away at the start. Inside, it often hovers a soft fog that renders the sphere difficult to discern as a concrete structure. However, when it is, it emerges as a network of braided vines made of some organic material. Within that sphere, the experiencer often encounters other, more colourful vines. These seemingly grow right

through the sphere, sometimes in a shared direction and other times by branching out.[401]

Three sorts of beings also roam around. They often appear to be a blending of plant and animal. Made of a material similar to the vines, they sport different colours and additional physical characteristics (e.g. differentiated body parts and filaments). These beings, called 'agents' by the artists, rotate and move in all dimensions, often in groups while also individually.

The concrete shapes of these vines and beings, as well as every other geometry encountered in the sphere, result from an "interactive, generative approach to create abstract worlds, in contrast to the figurative content of many contemporary VR artists".[402] This means that every time the work is started up as a computer programme (and sometimes when the experiencer interacts with it in a certain way), it generates anew, with notably different outcomes for its geometry, colours, lighting, movements, and even sounds.

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[401] Technically, there are only two vines, "a primary 'trunk' curve and a secondary curve to ornament the trunk". However, they wind throughout the sphere several times and appear to be multiple vines.
See: Putnam et al., 153.

[402] Latham et al., "Exhibiting Mutator VR," 274.

Figures 4.8 and 4.9: Variations in colour, geometry, lighting, and sound.
Screenshots from a 2D screen representation of the 3D stereoscopic view inside

The actual manifestation of these generative elements depends upon underlying principles realised via complex mathematical algorithms. The code generating the 'art', then, is the actual artistic expression. It produces the visual and acoustic representations for the experiencer. Latham called these production-principles manifested as code 'genotypes' that use variables added through random modifiers or experiencer interaction. The genetic code, in turn, expresses itself in a 'phenotype' of visuals and sound.[403] The underlying principles and their work are purposeful and aesthetic. In the team's words, they create a "FormGrow grammar of mathematical rules, inspired by nature, with mutation for subjective exploration of form space".[404]

For example, the geometry of the vines and most parts of the agents and beings are actually modified algorithms for specific geometrical ellipses. These ellipses can be found in physics and nature, especially in the calculation of neutrino rotations in subatomic physics. To create objects from them, the rotating algorithm 'draws' a 3-dimensional structure behind it so that these elliptical objects are simultaneously combined, multiplied, and cut.

[403] See: Latham et al., 278.

[404] Latham et al., 247.

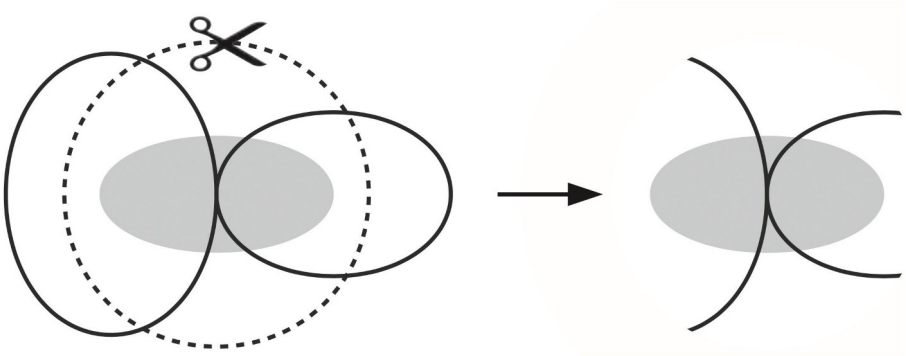

Figure 4.10: An example of the underlying rules sets based on curves and rotation algorithms – the simplified principle for the filament cutting of agents within Vortex. "On the right is the result of the cutting operation — a branching structure. The grey ellipse represents the body curve for reference."
Taken with permission from: Putnam, Latham, and Todd, "Flow Fields and Agents for Immersive Interaction in Mutator VR," 151.

Figure 4.11: Illustrative examples for generative geometry and colour patterns for

agents within Vortex. Taken with permission from Putnam et al., 152.

The resulting structures are then animated. Similar to being alive, they exhibit behaviours like morphing, moving, and emitting sound. They can also interact with one another, the environment, and the experiencer through movement. These behaviours follow strange rules that are unrealistic in a typical human environment. However, the principles found in nature inspire them.

For example, the beings and vines undergo a pulse-like morphing, where they expand and contract for a second or so. The programme couples this pulsation with the generation of sounds, which are unique for each object class and spatialised for each agent. The artist designed these sounds to "emulate animal-like sounds that may consist of chirrups, rhythmic patterns, rest phases, trills, and frequency sweeps". Hence, the responsible algorithm initially finds a 'tone', a 'portato', and a 'chirp' for each of the three classes of agents while "modulating the frequency of the tone by the chirp and then multiplying the resulting tone by the portato".[405]

Another strange principle underlying this virtual world is the beings' movement that works in non-existent ways in the physical realm of a human experiencer. The virtual beings do not move themselves (i.e. via autokinesis) but are moved by the environment, each other, and the experiencer because of the influence of invisible

[405] Putnam, Latham, and Todd, "Flow Fields and Agents for Immersive Interaction in Mutator VR," 151.

force fields everywhere that act like gravitational attractors and repellents with different spreads and intensities. Because so many force fields are in play, it is challenging to pinpoint any one in most circumstances. Instead, the beings 'flow' through space, often in groups, in a manner which the artists described as "fluid"-like dynamics.[406]

The beings' movements and sounds follow principles similar to those behind the generation of the shapes: basic mathematic functions (with complex implementations) rooted in fundamental physics. The artists labelled this a "unified approach" and hoped it would propel an "increased sense of 'realism' of the world as [these principles] offer a form of environmental consistency".[407]

Aesthetically, the artists described this world as inspired by nature and surrealist art "such as Roberto Matta's *The Vertigo of Eros,* André Masson's automatic drawing, and the fantastic surrealism of H. R. Giger".[408] In my workshop interview with Lance Putnam, he talked about the general intention of having these principles connect to "create a more complex whole out of the parts":

> "Our aim was not to replicate familiar natural forms and processes such as landscapes, organisms, life cycles, or ecosystems, but rather embody a basic particle system with organic shapes and sounds and let the user explore emergent properties of a unified

[406] Putnam, Latham, and Todd, 142.
[407] Putnam, Latham, and Todd, 138.
[408] Putnam, Latham, and Todd, 140.

force-based dynamical system." [409]

How the experiencers' exploration actually works is also fundamental to the understanding of *Vortex*. In contrast to Vitale's description of most VR artists as disinterested in their audience's experience, the *Mutator* team prioritised interaction and exploration in their work's design and sought insights from their audience. In the workshop interview, Putnam identified no formal evaluation since the artists collected hundreds of short questionnaires at exhibitions that informed their later work. Regarding earlier pieces in the *Mutator* series, this feedback strongly focused on how alien the phenotypes appeared: "Users' facial expressions during the experience and comments after ("weird" is the most common, matching the intended aesthetic) [are] our best indicator of whether we have succeeded".[410]

[409] Putnam, Latham, and Todd, 140.

[410] See: Latham et al., "Exhibiting Mutator VR", 277.

TABLE 1. A balance of "real" and "unreal" features in *Mutator VR* creates a surreal aesthetic.

***Mutator VR* Feature**	**Real**	**Unreal**
FormGrow: Pseudo-Natural 3D Organic Forms		•
Nonrandom: geometric forms		•
3D forms self-intersect		•
Cutter: not realistic but feels natural		•
No gravity: surreal floating forms		•
Standard Perspective	•	
True eye height: avoids confusion	•	
VR room orientation: matching reality avoids nausea	•	
4342 Room/viewer scale changes: *Alice in Wonderland* effect		•
Lighting and Shadows in style of Salvador Dalí	•	
Torch flashlight and headlight: increase immersion	•	
3D Textures: Objects Move through Texture		•
Feedback: but not true raytracing		•
Synthesized audio		•
Recorded sounds	•	

Figure 4.12: Latham et al.'s self-assessment of *Mutator VR*'s 'real' and 'unreal' features. Taken with permission from Latham et al., 275.

As seen in this table, the artists explicitly thought about where to

place *Vortex* in the realms of the 'real' versus the 'unreal', which helped me to assess the work related to the original artistic intent of being unfamiliar or novel to a recipient. Their aesthetic aim was to create a surreal experience that found a balance between 'just' unfamiliar expressions and such wild outcomes that the recipients would "become disoriented and lose interest".[411] The resulting aesthetic language of "fantastical realism"[412] worked by combining familiar physical effects (e.g. light reflections on surfaces and fog) with unfamiliar geometries and behavioural dynamics.

As the team refined the experience of the geometry in its earlier works, *Vortex* was shaped around the idea of straightforward experiencer interaction, which struck a balance between "artist-imposed constraints and freedom of user choice".[413] Thus, Putnam explained that the character of the work shifted from the presentation of the generative phenotypes as beings to their habitation of a dynamic world that felt like it could be explored.

In addition, the experiencer has freedom of movement in all three dimensions, just like the beings. By using the two handheld controllers, the experiencer can 'glide', 'float', or 'flow' through space upon command. The internal mechanism for this operation follows unfamiliar rules. Visually, two slightly curled 'rods' or 'coils' represent the controller in the VR. Therefore, the experiencer sees

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411 Latham et al., 275.

412 Putnam, Latham, and Todd, "Flow Fields and Agents for Immersive Interaction in Mutator VR", 139.

413 Latham et al., "Exhibiting Mutator VR", 280.

their hand position and rotation in space, as well as their hand movements. Pointing one hand in a specific direction and then pressing a button on the real-life controller 'moves' the experiencer in that direction while releasing the button stops the movement. In addition, in a suitable exhibition setup, the experiencer can turn and move in real space as well (e.g. by walking) and find these movements accurately translated into the VR – even though in the virtual world, they are still floating.

Some effort was also put into using the available interactions to give the experiencer a sense of 'being there' in the world. The artists mainly tried to achieve this aim by exploring the possibility of influencing the environment. In this thesis' context of embodied perception, it is worth mentioning that the strategy for invoking this feeling started with the acts of 'looking around' and 'moving about'. The virtual and invisible 'head' of the user is equipped with a flashlight effect that shines a light (and creates shadows) in the general direction of the experiencer's gaze. Similar flashlights are attached to the virtual hands (or coils) of the experiencer to illuminate objects or structures that the experiencer points at.[414]

Nevertheless, the coils have an even greater unfamiliar impact on the environment. They can create gravitational sinks that attract beings and become part of the web of interloping force fields by controlling the beings' overall movements. These sinks occur in two ways. The first involves an active process that produces a strong and

[414] See: Latham et al., 79.

sprawling attractor. When the experiencer presses a trigger button on the controller, the virtual hands contract and "coil up" to resemble spirals or springs "according to the amount of attractive force they exert". This gravity-sink forces beings to flock towards the position of the experiencer's virtual hands.[415]

Simultaneously, the coils passively and perpetually emit a strong repellent force with a very short range at their tips, which directs agents away. These can be used to "push" the beings away via hand movements. This effect happens despite no tactile interaction between the coils and the beings' bodies, in the sense of two solid physical materials displacing each other.[416] In fact, the experiencer can move through the vines and agents using their virtual body and the coils. To reduce the number of agents that can inadvertently move through the experiencer's 'head', a third repellent is positioned there to push most of the beings away before it happens. The artists noted that the third repellent "[increased] the users' sense of the agents being aware of their presence in the space".[417]

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[415] Putnam, Latham, and Todd, "Flow Fields and Agents for Immersive Interaction in Mutator VR", 148.

[416] See: Putnam, Latham, and Todd, 148.

[417] Putnam, Latham, and Todd, 150.

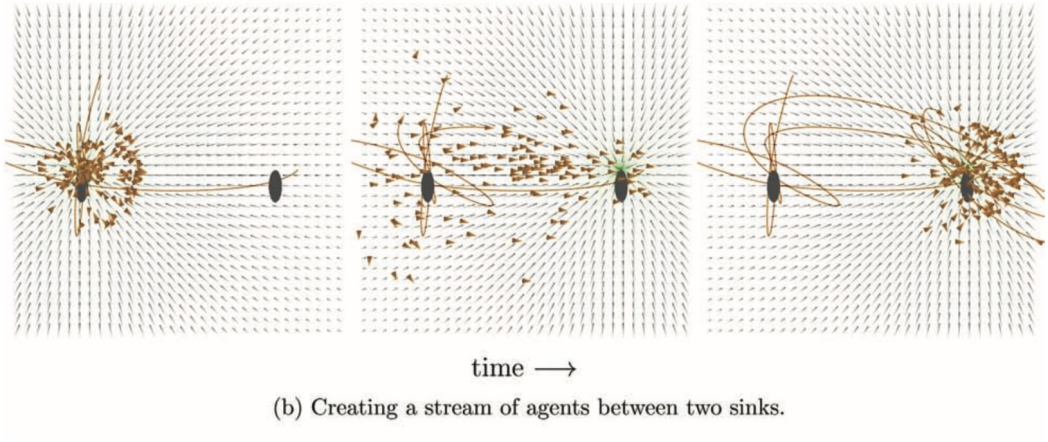

Figure 4.13: Illustration of 'beings' / 'agents' being moved by two force fields interacting with each other within *Mutator VR: Vortex*. Taken with permission from Putnam et al., 149.

With random force fields in the environment, forces between the agents, and the capacity of the experiencer to attract or push agents away, the artists found the resulting behaviour of the agents to be reactive and organic, even unpredictable. The following describes a static situation wherein both hands are curled up for over 30 seconds: "While most agents approach and remain in the vicinity of the user, some may never approach the user, and others may exhibit more sporadic behavior between the former extremes."[418]

With these interactions at the experiencer's disposal, the focus of the work resides in exploring. Due to the forces emitted by the hands and head of the experiencer, 'perceiving' as an act impacts

[418] Putnam, Latham, and Todd, 148.

the environment. For the artists, the objects and dynamics comprising the world of the artwork are supposed to be "rich and unfamiliar enough to provoke continual exploration and [a] sense of discovery", so they "should contain elements of fantasy, novelty, complexity, and surprise to make them intrinsically motivating". At the same time, the experiencer's interaction with them should "be emergent without predetermined goals so that the users have more opportunity to construct their own experience".[419] Besides this exploration, no narrative exists because it would detract from the interactions and the world.

After putting on the headset, the virtual world of *Vortex*, a "force-based dynamical system", appears to first-time experiencers free of an explanation or introduction. At no point does the work present information about its genesis or its creators' intentions. The dynamic nature of this system, its character as a 'world' rather than a representation, the unfamiliarity of its contents and interactions, and the naiveté forced upon the experiencer when entering it – made *Vortex* an excellent fit for my research study.

I decided that with *Vortex,* I had found an experience that would best suit the exploration of the thesis: aesthetic material that is truly unfamiliar in its surreal and abstract codification. It was multimodal with its visuals, sounds, and interactions through gaze, movement, and hand gestures. Moreover, the exclusion of the external world through the VR equipment and *Vortex's* complexity

[419] See: Putnam, Latham, and Todd, 139.

in its dynamics and world-building made the experience highly ecological. Thus, while still possessing roots in nature and the artistic history of computer graphics, the combination of efforts by the *Mutator* team created an experience that fulfilled my necessary and additional criteria to a high degree.

Next, I needed to find out how people would actually respond to it — how they would behave and what they would feel and perceive as they engaged with it. Therefore, it was time for the first iteration of my experiments and an initial collection of firsthand statements about the experience.

4.2 The First Iteration:

Experiencing an Unfamiliar World

The first iteration of experiments occurred between Summer 2020 and February 2021. From the procedural pilots to the evaluation of the actual first batch of participants, a significant goal was to develop the experimental design and the interview process. The design of the experiment had to adhere to the design principles of experiential data as phenomenological variations while supporting the right experiential conditions and culminating in a concrete technical setup for the experience.

Moreover, the interview procedure had to serve the purpose of ensuring a phenomenological interview and an assessment of the experiential, technical, and practical conditions. This requirement took the form of an interview guide outlining the aims and guidelines of the interviews while providing a semi-structured questionnaire with open talking points for topical enquiries. Notably, this first iteration was suddenly affected by the COVID-19 pandemic and the practical constraints and regulations that were imposed in Norway and Sweden during these months.

After the experiments, the collected data – the fully transcribed interviews – were analysed. Due to the lack of concrete gold-

standards for such an analysis in a phenomenological project, I designed a concrete process for extracting useful consensus categories from relevant interviewee statements. The theoretical methodology outlined in Chapter 3 became a reality. However, with it came many practical issues and questions.

Piloting the Setup, Procedures, and Interview Guide

Before a group of participants could enter the artwork, I piloted the general setup and procedures for the VR experience and the interviews. Thus, I spent more time with the artwork to assess the situations that could occur within it. The general questions were, 'Are some parts of the artwork more conducive to the experience of novelty and unfamiliarity? Are there elements that would obscure or hinder it?' However, having familiarised myself with *Vortex* for a while now, I was not a good candidate to answer this question. Therefore, two colleagues (from non-philosophy fields) who had never seen the piece were asked to provide a fresh look at the first moments with the artwork and alternative long-term impressions.

For the first time, the artwork was staged in line with the research objectives, which meant, foremost, a lack of context. The artwork was to be perceived with no prior knowledge of its content, its creators, or the mechanics and ideas embedded within it. For example, the title was not mentioned. Furthermore, the artists provided a broad description of possible user interactions, which they intended in an exhibition context (the usual curated experience

of the VR art world that George Vitale mentioned). Nevertheless, I decided not to use it. Instead, the first pilot participant was left blinded concerning the controls. As a result, the first participant was so confused in the first minutes by the unknown physical layout of the controller and how it mapped to actions in the VR that they did not engage with the environment at all.

I realised an unproductive version of novelty was stemming from the technical setup, so I needed to establish a certain familiarity with the controller as a physical object. This familiarity should only concern the participant's hand and the layout of the functional buttons on the controller, not the available interactions and their consequences represented in *Vortex's* environment. Therefore, I gave the second participant a brief introduction to the controller. The artwork did not start until they were comfortable finding all the relevant buttons and sticks on the controller. This approach worked much better since the second pilot participant reported being almost immediately engaged with the environment.

This engagement was supported by the reported suspension of disbelief from the two participants. Both reported that the headset maintained a strong focus on the VR in its out-of-the-box construction. They reported no problems with feeling immersed in the experience within 10–30 seconds, so, at that point, they were unaware of anything that happened outside the VR's contents, including noise and light distractions, their seating position, and the image quality of the headset. We tested and confirmed this immersion effect over a longer period of 20–30 minutes, even after

the pilot participants felt they had seen much of what the artwork offered.

The artwork could be physically set up as a standing or sitting experience. When standing, the experiencer could literally walk around the room while experiencing real-world movements translated into VR. However, based on my trials, the downside was that the experience of floating in the bottomless space of *Vortex* was diminished by the haptic and proprioceptive impressions of one's body walking. The pilot participants also reinforced the general warning that standing in VR without the ability to see the ground or one's body could be a highly dizzying situation that would endanger the participants and distract them from the aesthetic phenomenon. Therefore, I used a chair to seat the participants. This seat did not restrict upper body movement while rotating and moving on wheels to ensure they could still look around and move freely.

Variants of the Artwork and the Experience

The technical aspects of *Vortex* as a software also shaped how I initially presented it. The aforementioned instructions come as an integrated file that also outlines the configurations available to set it up. Besides the hardware requirements, *Vortex* requires the commercial software *SteamVR* to run to transmit the data to the VR headset correctly. Keyboard commands exist that an external administrator can use to manipulate the experience by forcing movements on the virtual camera inhabited by the experiencer or morphing the world into a new variant of generative visuals and

sounds.

Ways also exist to alter the conditions of the artwork through ‘command line arguments’ written into the software’s executable file. These modifications seemed relevant for research purposes because of how powerful they could be. For example, they allowed the artwork to run as exactly the same variant of itself every time by feeding it a specific ‘seed’. Seeds are alphanumeric representations of the internal variables used to randomise the generative processes that offer the possibility of generating forcibly different versions of the artwork while consistently recreating those versions that seem favourable. With *Vortex*, however, the seeds did not allow specific features of the artwork to be targeted for change because the artists did not publish the exact ways in which the programme translates a seed into all the different internal variables (representing the generative features). Therefore, using the seeds remained a black box in terms of how they influenced the generative process technically.

Besides entering a seed manually, the software has a range of presets, which are set seeds for generative variants that were carefully chosen by the team of artists. Lance Putnam explained that they selected these preset seeds because of how different they felt compared to each other in atmosphere and tone, primarily facilitated through different combinations of darker and brighter colours, the shapes of the agents, and the density of the structural components (e.g. the vines and outer cage). The preset outcomes also had to “feel interesting” and covered much of the range of

variations that the generative system could produce.

After some time experimenting with manual seeds, I agreed that the presets offered more contrast in compositions than the average random variations. Moreover, I did not want to presume whether specific aspects of the aesthetics would influence the felt 'novelty' – be they darker or lighter environments, more spiky or more round agents, or more or less colourful materials. Thus, I decided to use the presets in the first round of experiments. With their help, I exposed the participants to the range of different manifestations of the work while relying on the same underlying 'strangeness' of the generative processes.

Nevertheless, the experience could still be altered by factors outside the actual artwork. The discussions with the two pilots revealed they had different questions about the procedure and nature of the experience before entering the VR. I included the possibility of asking the attending researcher these questions before entering the VR without distributing concrete information to reduce the impact of assumptions on the experience. Many of the questions related to the contents of the artwork. By answering that the participants should not know about these contents beforehand, the participants could set aside their concrete inquisitive interests in favour of a more open, receptive mindset.

An even bigger factor in how different the descriptions of the experience turned out was the duration: how long the participants remained inside *Vortex*. The first participant spent exactly 15

minutes inside before I pulled them out, which was enough time for them to feel that they had seen almost all the objects their version of *Vortex* offered, even after spending much time understanding the physical controls. When we talked afterwards, they had various theories about what they saw and why they interpreted it as they did. However, I realised that the period of feeling 'unfamiliar' with the environment had passed for them, so I asked if they could remember the time before they had formed all these opinions. They could not because those moments seemed categorically out of reach.

To test this notion, the second pilot spent only approximately 10 minutes inside during their first run. Here, the feedback interview revealed that they could remember a few specific moments before they felt oriented to and acquainted with the environment. However, the experience of 'lack of context' and 'unfamiliarity' still seemed too far in the past to be really memorable while too overlaid with later reflections and theories. Therefore, I shortened the experience even further for the first actual group of participants. Five minutes provided a good start, with the possibility of adjusting this period between sessions according to the quality of the reports received.

The Experimental Sessions

The first batch of experiential sessions was anticipated to generate a broader set of firsthand descriptions of the participants' initial

perceptions and emotions after entering the VR artwork *Vortex*. Since I used the presets discovered in the pilot, this version of the work was intended to be shown in actual exhibitions of the *Mutator VR* series. At this stage, I collected accounts from five new participants via post-experience interviews, which was sufficient to discern the variations and commonalities in the descriptions while being manageable for the hour-long interviews required for the initial assessments of the artwork and setup. The interviews were intended to be as proximate to the experience as possible and did not need to follow a preconceived structure or definitive questions because I wanted the participants to speak candidly about everything they remembered. The three goals for this first iteration of data gathering were

- to collect initial evidence regarding the degree and nature of the unfamiliarity during the initial moments of a first encounter and whether participants felt like they had to make sense of it right away;

- to use this evidence as data for a foundational analysis of the reported perceptions, behaviours, and emotions;

- to develop the technical, social, and methodological setup of a VR experience followed by a phenomenological interview.

In summary, the data were intended to help me map out the experience and use insights to refine the definition of the designed

situation for the experiment. As with the pilot test, these sessions coincided with the Spring 2020 outbreak of the global COVID-19 pandemic and the resulting lockdown in Norway, so it was especially important to refine the setup in advance.

The Setup

Like many scientific projects in 2020, the sessions with the recruited participants faced many restrictions due to the pandemic. First, it was impossible to invite the participants to a lab, especially in succession, so I invited them to a private home or a rented private space. Both were not shared with colleagues or students so that access could be controlled easily. I also allowed at least three days between the participants' visits, so the data collection with five participants for this iteration required over three weeks.

The pandemic also impacted equipment availability. *Vortex* was originally designed to be exhibited using an *HTC Vive Pro* headset and a workstation with a *Nvidia GTX 1060* graphics card.[420] The controls were specifically mapped to this headset's 'wand-like' controllers that feature a touchpad under the thumb. The artwork also took advantage of the headset's eye-tracking feature to alert the agents when the experiencer was looking at them and trigger an attracting force to make them then appear to move towards the experiencer's position.

[420] Putnam, Latham, and Todd, 141.

Since I could not use the existing Vive Pro at the labs of the University of Oslo, I initially used a private *HTC Vive Cosmos* instead, which did not have an eye-tracking feature. This headset employed inside-out tracking, which made it easier to set up the experiment without an external tracking system in a multi-use space. While this headset included visual and auditory features similar to the Vive Pro,[421] its controllers were much smaller and lacked the aforementioned touchpad for the thumb while replacing it with a joystick.

This joystick was mapped to the same input from the touchpad through an additional action: 'clicking' or pressing the joystick downwards before moving it in the intended direction, which proved to be an additional challenge that complicated the associated action of moving within *Vortex*. Hence, it was necessary to add an explanation for these movement controls to the introduction of the pilot sessions. However, since this joystick mechanism only made sense within *Vortex*, it was not completely determined that all participants mastered the finger movement before the artwork started up.

The headset was set up in the middle of a room with a swivel stool that had no backrest. As planned, the chair ensured that even those participants with no VR experience or any inkling of the work's floating sensation were comfortable and remained balanced while

[421] Specifically, a similar FoV of 110°, a similar image refresh rate of 90 Hz, and quite similar resolutions of 2880 × 1600 and 2880 × 1700 pixels. Both headsets also featured higher-quality integrated headphones.

turning 180° in each direction and enjoying the complete range of motion with their arms and upper bodies. The participants were not prohibited from standing up or walking around during the experience; however, they were allowed to do so if they wished to.

The rest of the technical setup was the same as in the pilot sessions. Because of the unavailable labs, the artwork was rendered by a gaming notebook computer equipped with 16GB RAM and a mobile GTX 1060 graphics card. This system displayed *Vortex* without rendering lags, artefacts, or stuttering. The notebook was placed three metres away from the chair and headset to allow sufficient space for movement. A couple of seats and a microphone were juxtaposed for the post-experience interview.

Several hygiene measures were in place, but the emphasis was on the integrity of the experience. The participants were not asked to wear a protective face cover since it would be visible in the headset and more noticeable on the face as the headset pressed it against their skin. Instead, the room was aired out constantly before and during the experience, while the one attending researcher wore a fully protective FFP2 mask at all times. The participants were encouraged to wear face covers as soon as the experiences concluded and during the interviews.

The equipment was outfitted with cleanable covers that were thoroughly disinfected before and after each session. In addition, the equipment went untouched for 72 hours between sessions to allow all remnants of the virus to die off. The participants were also

checked for symptoms the day preceding the session, the day of the session, and three days after the session (before the next participant was allowed to enter). Each session began with a short questionnaire on the participant's symptoms and travel behaviour ahead of the actual session.

These technical circumstances were later addressed in the post-experience interviews. The session concluded with these control questions. I report on the participants' responses in the following results section.

Procedures

The experiment session was divided into two parts: the VR experience and the post-experience interview. The interview, as mentioned, followed the experience almost immediately.

The nature of *Vortex* as VR and what it entailed was only foreshadowed via a general consent form for participation and never actually described. Thus, in all preceding conversations, I avoided describing what to expect inside *Vortex* while merely hinting at it with the terms 'unfamiliar', 'abstract', and 'artwork'. I also officially told the participants about the research interest as 'the perception of unfamiliar environments' according to guidelines of the Norwegian Agency for Shared Services in Education and Research.

The actual sessions started with me showing how to put on the headset and use the controllers. The participants also found a 'hint

sheet' on the floor in front of their seats that explained the controllers' relevant buttons for *Vortex*. Again, the participants were not told what would happen when they used the controllers. Instead, they had to figure out how they could move or interact within the VR environment.

All participants were verbally encouraged to 'do whatever you want' within the experience. Hence, they decided how to behave or what to pay attention to. They were not told how much time the experience would last, except that it would not be very long and would be stopped from the outside. To relieve the consequent sense of time pressure, I also told them they could continue the experience after the interview for as long as they wanted. Finally, they were assured of no jump scare or direct threat to them. This statement was added after the first participant expressed fear that the experience might become uncomfortable in that regard.

The participants then put on the headset and found themselves in the *Steam VR Home*, a representation of a barren wood cottage that serves as the basic user interface for starting VR applications. This virtual waiting room allowed the participants to check whether the headset was sitting correctly so that they had a sharp rendering of the virtual environment before *Vortex* actually began. The calm space also allowed the participants to experience how their hands were represented via the controllers in a VR and how they could move their head, upper body, and hands.[422] As soon as the

[422] Prior work with inexperienced VR users revealed the tendency for them to simply freeze until something happened directly in front of them.

participants reported clear vision and the ability to move around, *Vortex* was started from the outside.

The participants were then left undisturbed for five minutes, after which the end of the experience was announced as the application promptly stopped. As a lesson from the pilot sessions, the experience duration was halved to five minutes to ensure that most participants still felt sufficiently unfamiliar during their interviews, with no possibility of seeing all the objects and dynamics of the artwork. It still required an appropriate amount of time to take in the environment, execute a few acts of orientation, and experience the consequences.

The interviews began immediately after the VR session and an optional short comfort break. They aimed to last approximately 60 minutes, though one concluded after 55 minutes while another extended to over 80 minutes.

Participants and Documentation

This first experimental iteration included five participants beyond the two for the technical pilot sessions: three males and two females. Their ages ranged from 28 to 55 years old. Three reported no experience with VR, while two reported using basic headsets for handheld devices once before. Each participant reported normal or corrected-to-normal vision.

The participants were recruited from a wider circle of private contacts to guarantee safe behaviour according to the COVID-19

requirements at the time. They had different nationalities but mostly hailed from Western countries: two were Canadian, while one each was Turkish, Swedish, and German. Four interviews were conducted in English because the participants reported fluency. The other interview (with the German participant) was conducted in German.

To document each session, I used a video camera to record the participants while using the VR. This camera's view was aimed at the participants' bodies but did not include their heads to ensure more privacy. This recording allowed me to later assess movement activity, body posture, and outside circumstances – especially if interpreting the interviews deemed this assessment necessary. In addition, the contents of the participants' FoV inside the VR were shown on a screen in the background of this recording. The interviews were recorded with a standard audio recorder and later transcribed in their entirety for analysis.

The First Implementation of the Phenomenological Interview Guide

Every phenomenological interview is an exploratory enterprise, as discussed in earlier chapters. However, this first iteration of the post-experience interviews needed to be especially open to build a foundation of descriptions. As stated earlier, one goal was to reaffirm and further define the unfamiliarity of the experience. The artwork could fulfil the material criterion of having the potential to

impart the sensation of a 'lack of orientation' or 'lack of environmental information', but was it actually experienced as such?

Therefore, the interview collected the emotions and perceptions, along with the concepts the participants used to describe their experiences. An interview guide outlined the procedure and aims of the conversation. This guide also defined the planned length of approximately one hour, but the conversation could continue if the interviewee stated more to report. Also included in the guide was a general structure of the talking points.

Each interview started with a series of questions intended to refresh the participants' memories of the experience, especially the first few moments. The first question was open: 'What was your general impression of the work?' The participants could then talk until they stopped on their own. The second question was then, 'When the artwork appeared around you, what was the first thing you remember – the first thing you noticed?' After this question, the next five to 15 minutes were dedicated to follow-up questions about what was experienced, especially early on. The participants recalled all aspects of the experience and described them as they saw fit, including the visual appearance, sounds, behaviours, and interactions. This phase of the interview sought to stir the participants' memories ahead of what was to follow.

The two fixed questions and the ensuing 'recollection phase' of the interview were also used to gather vocabulary from the participants,

share it with them, and avoid imposing outside terms and expressions later on. As a general strategy, I wanted to use the participants' vocabulary as much as possible. If something was unclear or absent, I requested more explanation rather than introducing new vocabulary to remedy the lack. One successful method involved repeating the participants' keywords in a summary statement and asking them to verify it.

> *Interviewer:* "So, you are saying you saw these 'roots' first, and then 'decided' to 'float towards' them, which is when you noticed the 'small fish' all around you?"

The recollection phase of the interview typically transitioned smoothly into a conversation concerning *how* the VR experience unfolded, how it felt, and what their intentions and actions were during it. This 'explanation phase' of the interview traded a fixed list of questions for an aggregation of everything the participants remembered about the experience. We zoomed in on each remembered event by using structural 'blocks' to glean more details.

As the interviewer, I relied on empathic assessment regarding whether the interviewee had fully addressed a block – that is, whether the participant spent enough effort on focusing on it. The prompts followed the model of open questions and tracked the participants' lines of thought while steering them back to the inquiry about 'what it was like' and 'how they did it'. These structural blocks were as follows:

- What did you perceive? What were your actions?
- How did you understand or relate to this?
- How did it feel (emotionally and in your body)?
- Did that change? How?
- What did you intend to do? What did you expect?

In reality, these blocks were addressed several times because new aspects to consider constantly emerged. The perspectives often mixed and merged during the back-and-forth of the conversation (e.g. when the participants addressed aspects on their own or when they raised them in the context of another question). The following excerpt illustrates this dynamic of a participant describing his actions, feelings, and expectations when he 'floated' around in the artwork:

> *Participant (8:18):* "It felt so [...] something about the motion being absolute, not being relative to the direction I was looking. [...] I'd expect it if I press forward to fly the way I'm facing. [...] And I felt like it was a little restricting that I would just float a little slowly in whatever direction the joystick was pressed."
>
> *Interviewer (8:54):* "What do you mean, it felt 'restricting'?"
>
> *Participant (8:57):* "It just felt like I moved a little bit slowly. It felt like I couldn't really get a good idea of what was behind me unless I spun in my chair. And I just felt that I wanted to move forward. And then, [...] I don't know how to describe

> that […] but kind of move more like an airplane or like a fish. And [instead], it sort of felt like I was just hovering back and forth."
>
> *Interviewer (9:29):* "But can you describe the actual feeling? How did your body feel like when you felt 'restricted'?"
>
> *Participant (9:40):* "I think the best way to explain it was: I knew there was a world behind me. […] I couldn't get a full picture of the environment. […] I wanted to have the sense of stepping back and walking *around* the little amoeba things which were floating there, but then they would kind of float past *me*."

When the experience seemed like it had been thoroughly described, I asked the participants if there was anything they would like to add or clarify for me as the interviewer. This exchange usually happened around the 40-minute mark. If there was no expressed need for further explanation, I asked a few additional exploratory questions — checks on whether the participants could remember otherwise unmentioned aspects through any association with concepts used to find the initial experience.

This approach was a trade-off. I violated the principle of having no presupposition by introducing the terms but only *after* the collection of an unspoiled description. However, I explored whether the subjects could use the terms to further hone in and better remember aspects that were previously omitted. Thus, my

questions were a way to uphold the principle of 'directing attention' to certain aspects already present in the participants' descriptions. During the interviews, I posed these exploratory questions using a common opening prompt: 'Did your experience entail or could you associate it with…

- meaning?'
- patterns?'
- progression?'
- presence?'
- playfulness?'

Interestingly, I usually did not need to ask about all of these concepts because the participants previously used one or two of them earlier.

While the participants talked about these associations (in connection with the earlier explanations), I asked them to differentiate between their perspective of *looking back* at the experience and their concrete memories *during* it.

I concluded the interviews with control questions concerning the interview dynamic. These focused on the participants' ideas about the experience not covered by the questions and whether the conversation fell short in addressing the most important aspects of the experience. The questions usually started with

- 'Was there some aspect of the experience that you felt you

could not explain adequately or that was misinterpreted during this interview?'

While this question looked for shortcomings in the interview guide (e.g., if the guide missed important aspects), it also represented an opportunity to receive feedback on the interview technique and comprehension of the interviewer. This question proved useful for the reworking of the interview guide in each iteration of the sessions.

The last questions focused on the participants' suspension of disbelief during their VR incursion:

- 'What about other influences? To what extent were you aware of the technology and setup of the VR environment during your experience?'

This initial iteration of the experimental setup had to show its viability as an experience shaped by the *content* of the VR artwork rather than any awareness of its *technical particulars*. These final questions interrogated the participants' suspension of disbelief vis-à-vis the artwork as an immanent environment. After the participants gave their initial answers, I followed up with more detailed questions (e.g. 'What about the room you were in? Did you notice something happening there while in the VR? When you think about the controllers, the headset, the chair you sat on, were you thinking about these things during the experience?') Investigating the participants' attention and states of mind during the experience

helped me assess the technical and experimental setup and consider the overall suitability of VR artworks as experiential research objects. At this point, the interviews ended.

Evaluation: Confirming and Improving the Experience

The first iteration of sessions aimed to gather descriptions of experiential content: engagement, emotions, intentions, and actions. Here, statements about being inside *Vortex* formed a first draft of consensual categories drawn from groups of statements about apparently similar experiences shared by the participants. These categories sought to establish and reaffirm an overview of the experience relatively independent from my assumptions about what *Vortex* would be like for other people. They also highlighted the most interesting or undesirable aspects of the artwork to prepare the subsequent iterations of the experiment.

Confirmation of the Assumed Engagement and Immersion

The first thing I checked on was the last set of questions during the interviews: the general suspension of disbelief, media self-referentiality, and an assumed focus of attention on the experience. This evaluation assessed how reliable the combination of *Vortex* with a standard consumer headset, the duration and procedures of the experiment, and other situational circumstances were for evoking the focused experience of *being within* the artwork.

When asked about the influence or felt presence of these circumstances, all participants reported certain moments of being disturbed by what they thought the experience should be like. Here, it was important to distinguish between the origin of these disturbances. Did they result from the overarching configuration or a mismatch of individual expectations and internal specifications of the artwork? For example, one participant (who was very successful in finding interactions) reported, “I just felt like the place didn't have, I don't know, second-order interaction. […] It felt like that was it. It felt like I couldn’t go any further. So, it gave it this flat feeling”.

This participant experienced the constraints of the VR’s medial configuration: its technical code. However, how *Vortex* provided interactions was part of its internal ‘world’ and the experience it actually intended to evoke. Experiencing these constraints was a part of the reality of *being there*, so how one coped with a related mismatch of expectations – or how they structurally appeared in the first place – required further examination. Nonetheless, it did not point to a technical, social, or physical influence from outside *Vortex* concerning the experience.

Indeed, real external influences were reported. The headset and earphones used were not always 100% sound-insulating, so external noise was sometimes audible. The headset also had some areas with thin edges where the foam between the skin and the plastic was not completely insulated, so the light shined through. These small

cracks were most noticeable when the participants looked down at the tip of their noses and squinted slightly. Then, they could actually see a blurred section of the outer floor below. These were not obvious sensations, but they were theoretically perceived throughout the experiment, as one participant explained:

> "I noticed a little bit. I mean, I could hear you. I could hear the floor creaking a little bit at certain points [...] I could hear a little more than just the music or the sounds of [Vortex ...] so slightly. Of course, I'm always aware that I'm here in [this external] room, sitting on the swivel stool, holding these things."

Another participant, when asked if they were aware of the technical equipment and the physical space outside the VR, exclaimed, "No! You lose that!".

It turned out that these sensations did not play a significant role in what the participants described as 'the experience' of *Vortex*. Their attention quickly excluded disturbances, and while still being a part of the context of why the participants were *in* the artwork in the first place, *being in it* did not involve the incorporation of external sensations. However, was that, by definition, a result of the question of what it meant to be 'inside' the artwork, or was it because the actual experience locked these sensations out? The participants could actually report a change in their awareness of the outside world, as the previously mentioned participant explained:

> "I was worried at the beginning of putting on this mask [with the visible cracks of light]. I figured, maybe that's going to be disturbing. [... But then], I think I was sort of involved in the world in a way, sort of focused on that. So, I didn't see [...] didn't think about it anymore."

Another participant added, "There's always this contact with reality. And [though] I know that I'm in a VR, you kind of lose yourself in it." They emphasised that this effect was especially stronger with the abstract artwork than with the introduction in the waiting room "where you sort of [practice] in a more reality-like world. I paid notice to [the external influences] more easily there than when I was in this 'other' world".

This notion was so strong that even when these sensations could have a concrete impact on their situation, the outside disturbances were ignored for the sake of experiencing the inside. One participant explained they were slightly aware of a cable hanging on their back and shoulders, going from the headset to the machine. At one point, they briefly thought about how this cable would probably restrict their movement, especially since they could entangle themselves in it while turning around. Nevertheless, they quickly experienced the urge to "fuck that. I want to see what's behind [me inside this world]" and turned around. This example was extreme, mostly because the participants simply could not remember being aware of anything not belonging to the world of *Vortex* during its' runtime.

Thus, every single participant denied a distracting effect or influence of almost all physical sensations coming from the external world. Whether it was the weight of the headset and cable, a slight blurriness of the display at the edges of the FoV, the sweat that could accumulate where the headset pressed against their faces, the cold and hard plastic controller in their hands, or the sound and light disturbances mentioned above, none of these physical influences distracted from the experience 'inside' the artwork for more than a few seconds. For the most part, these sensations were not present and could only be attributed to the introduction phase and the moment the headset was removed at the end of the session.

A similar effect occurred regarding the perceived lack of bodily sensations. As mentioned, there was no visual representation of the participants' bodies sitting on a stool with both feet on a rigid floor in the physical world. This concrete posture was absent in *Vortex*. Instead, one floated in space without a stool or a bodily mass. However, once again, the participants reported that they "don't think about the rest of my body. At all!". This case was another where the outside world lost significance, even when it apparently might be from an objective standpoint. The same participant highlighted the effect of this subjective significance: "Thinking back [on how I perceived my body], I almost don't even remember my hands. I just remember the interactions."[423]

[423] The participant clarified they were aware of the hand representations: the virtual coils. Here, they solely referred to the proprioception and tactile sensations of their physical hands. This differentiation is important later in the analysis.

Only one notable exception existed to the immersive effect of the VR: the layout of the controller. Their aforementioned combination of actions to initiate movement proved too problematic due to the different hand controller model from the one the artwork was originally designed for. Three of the five participants reported significant time spent concentrating on how to use the physical interactions of their fingers in combination with the controller's buttons. This issue did not render the experiments useless; fortunately, there was still much time when the participants felt they could concentrate on the artwork while not being distracted by this translation of physical movements. The problematic distraction was mainly for the first one to three minutes. In two cases, it returned after several minutes. However, as a direct result of this feedback, it was inevitable that the successive iterations used the intended controller version to evoke a greater sense of immersion.

The part of the introduction that addressed the controller was also improved. I excluded the schematic diagram on a sheet of paper and only left an oral explanation of the relevant parts of the controller. Instead, even more emphasis was put on letting people take their time in the virtual waiting room to try the controls. In particular, I encouraged everyone to try every single relevant button and movement with the controllers while looking and turning around. The latter sought to counteract lingering attention to how the stool, cables, and potential lack of situational awareness might restrict their movements.

One other important feedback concerned the speed of the virtual avatars while floating around. Another three of the five participants reported being emotionally involved with how slow movement felt with the help of the controllers: descriptions included “a little bit trapped”, “little bit frustrated [...] and tense, how my body felt”, and “a bit restricted”. These emotions did not align with the aim of an ecological experience, especially since this restriction influenced the general movement and basic interaction with the environment through different PoVs. As a direct improvement, I made changes inside the artwork. The next iteration included a higher movement speed,[424] ideally to an amount that translated to a speed perceived as slightly faster than ‘real-world’ walking related to the distances and sizes of objects inside the VR.

The last important feedback concerned the time spent in the VR. Two effects were reported. The first aspect was how certain memories of moments in the VR still felt inaccessible because of the amount of time that had passed. Two of three participants reported that certain memories felt like they were slipping away during the interview: “It is crazy to me how quickly it’s disappearing as we talk about this”.

The length of the interview certainly contributed to this effect, as did the amount of detail we tried to cover in that time. However, lengthy interviews were also productive – not one of the five interviews ended prematurely because the conversation ran out of

[424] How this was implemented with the help of the artists is explained in the documentation of the second iteration in Section 4.3.

details to uncover. As a compromise for further iterations, I varied the duration of the experience with even shorter stays in the VR to maintain the same level of care in zooming in on details during the interviews while reducing the number of events that one-half of the participants would have to remember. Combined with longer stays in the VR for the other half of the participants, the likelihood of seeing all the relevant parts of the experience was still maintained.

The second aspect of the time spent in the VR concerned the participants' expectations. I mentioned in the introduction that their time would be limited. I even used the term 'quite short' in two introductions. It turned out that this description felt "like a challenge" to some of the participants: "I knew it was a time limit to a degree. [I felt like] I need to figure [the artwork] out before my time runs up".

Indeed, putting the participants under this kind of pressure was unintentional and seemed unnecessary for the experience of novelty. I was also concerned that it could lead to further associations or presumed expectations of performance or competition in the participants. Therefore, I changed this part of the introduction with no mention of the time spent in the VR. Instead, it only introduced the auditory signals given by the researcher (or, in the third iteration, by the software) to mark the start and end of the experience.

The Descriptions and Proto-consensus Categories

The next step was the extraction of experientially relevant statements. The five hours of interviews were transcribed in their entirety.

Harvesting Relevant Statements

The transcribed texts then underwent interpretative filtering. I combed through the individual interviews for statements that described 'the experience' as opposed to opinions about why the participants experienced something, statements addressing aspects outside of the experience, thoughts that did not pertain to the experience, or statements identified by the participants as judgements arrived at during the interview rather than during the experience.

What remained were descriptions of perceptional acts and all kinds of emotions and intentions, the contents of the experiences, and the patterns the participants identified within, as well as statements about the participants' agency during the experience. I grouped statements that spoke to the same perception or emotion but were given at different points in the interview for each participant or from different perspectives.

However, what was still missing for a telling overview of the experience were the causal and temporal relations of these statements. Thus, I developed a shorthand system to make these visible, reread the interview, and applied this simple system of

markers to connect statements in what was so far only a topical database:

- temporal: simultaneously – tS
- temporal: immediately before – tB
- temporal: with time distance before – tBLag
- causal: concordant/complementary – cC
- causal: led to (active drive towards something) – cL
- causal: resolved by (passive persistence until something) – cR

This intermediate system was intended to make tendencies and inconsistencies visible, not to work out structures definitely. Nevertheless, highlighting obvious connections helped me understand how single statements in fact are part of a fluid and multifaceted experience. The connections were also reused as a blueprint to establish timelines for actions and experiences, as I describe in the documentation of subsequent iterations. The temporal markers were intended to create such timelines from the start, whereas the causal markers were meant to establish qualitative connections between the statements. Only strong and direct connections were captured by the causal markers – if an emotion explicitly led to another emotion, intention, or perceptual act (e.g. 'I felt nervous. I wanted to see what's behind me. So, I turned around') – or if a part of an experience changed only after something else happened (i.e. found 'resolve'; e.g. 'I had this feeling of being restricted in my movement. This changed only later after I

focused more on how the organic structures were morphing and less on myself interacting with the world').

As explained in the methodology chapter, it is important to highlight that these steps (e.g. the identification of relevant statements and the marking of their connections) were not neutral or objective extractions and arrangements of the data. Here is concretely where my version of Gallagher et al.'s hermeneutical work from the *Awe and Wonder* Project started (see Section 3.4), based on the texts' internal consistencies and connections. Even if the participants articulated how things happened for them in great detail, some uncertainty often persisted over shared references or understandings of relational phrases like 'right after' or 'because of'.

It was especially necessary to consciously interpret expressions when the interviewees did not use explicit relational statements but only seemed to refer to a specific part of the experience (e.g. when first describing an initial 'interest in *more far-away structures*' and later saying 'after I realised I could not *go far*' without explicitly equating the latter 'far' with the former 'far-away structures'). In those cases, I carefully reread the interviews to see whether this type of interpretation was supported or contradicted by any related statements. At this point, the interview practice of repeating critical parts of the participants' statements back to them proved especially useful and sometimes revealed misunderstandings.

Due to these two steps, I produced lists with interconnected experiential statements for each interview. The following task was to group these statements into a first iteration of consensus categories, so I searched for labels for the statements to see if they overlapped intersubjectively. Here is where the theoretical step of phenomenological reduction was implemented in practice using two measures. First, I 'freed' the statement from individualising aspects (e.g. specific personal associations, memories, and comparisons). Here is an example:

> "The first thing I actually discovered: it was like I was just immersed in algae. Because these green bands were around me, I thought [...] like underwater, right? And you are sitting in such a 'pot' of algae. I am trying to get rid of them with the joystick [...] so that I can look at it from the outside. Am I in the middle of it? Because I don't know actually what it is, [...] so [I do it so that] I can look at it better."

Here, the participant compared the experience with being underwater. Right from the start this seems like a highly concrete association. Later in the interview, it turned out that they had been a diver and remembered their former diving experiences. However, this statement did not mean that they thought that the VR artwork and diving were consistently similar, especially after the first few seconds in the VR. Instead, they used their diving vocabulary and comparisons to communicate. The analogy served as a starting

point for them to explain the differences between the two and how the VR experience felt unique. While I later specifically asked if they thought *at the time* that they were underwater and how that feeling changed (the response: 'No, it did not'), the exemplifying statement could also be stripped from this personal association, which was the reduction of individual particulars to arrive at the structure beneath. After this treatment, the statement read as follows:

> "The first thing I actually discovered [was] I was immersed in [objects associated with nature]. Because these [...] were around me, I thought: 'I am sitting in a [container filled with objects]. I am trying to get rid of [the objects] with the joystick [...] so that I can look at it from the outside. Am I in the middle of it? Because I don't know actually what it is [...], so [I do this so that] I can look at it better'."

Thus, the statement became more comprehensive and could be broken down further, as was necessary in this case.

The final step was to 'translate' a statement into more transferable parts and terminology. This highly interpretative task was conducted carefully and was sometimes flagged for further intersubjective validation at the researcher's level at a later time. The example here was translated into three different accounts, which were connected just like the overarching statement was connected to other parts of the interview. Labelled, they read as follows:

‘Feeling surrounded by objects’ tS/cC ‘urge to get a visual overview’ tB/cL ‘pushing objects away with hands’.

With these general labels, I formed actual groups of statements for the first time: proto-categories outlining tendencies to form consensus categories later. Using these micro-accounts of experiences, I found it much easier to compare them with statements from other participants. For example, someone might report a “wish to see the surroundings from afar”, which would fall in the same category as the here-used ‘urge to get a visual overview’. Since I could see intersubjective overlaps, the first version of a category for an intention emerged:

→ Intention: Acquire a visual overview

Differences in how experiences played out also became visible in this step. For instance, another participant reported a “feeling of [objects] being too close to my face”, which also led to ‘pushing objects away with hands’. However, ‘objects being too close’ and ‘being surrounded by objects’ did not seem to be similar experiences, so they did not fall into the same category. Nonetheless, they could still form consensus categories when similar experiences were found in other participants’ statements.

Treating these found experiential statements in the interviews finally resulted in a draft list of consensus categories, which were consensual in two senses. First, they appeared more than once between subjects quantitatively. Second, they were hermeneutically validated intra- and intersubjectively; other statements from the

same interview either validated or disqualified them because of how they fit. At the intrasubjective level, every statement was treated as if the initiating interviewee were speaking. The same was true at the intersubjective level, where I compared statements across the different interviews to see how they correlated or appeared inconsistent.

An example of this validation was how one participant reported an 'urge to find all possible interactions' while another considered the 'desire to watch the environment change passively'. Looking perfectly viable on their own, these statements contradicted each other, so I considered the circumstances that would allow both statements to be true at the same time for similar experiences. This approach did not mean they were disregarded as source material to form consensus categories, especially when further interviews added additional perspectives (as they did). Nevertheless, at this point, they could not coexist as consensually shared aspects of the experience. Instead, they made sense in the later version of my consensus categories, where they contributed to different categories altogether. However, for this overview, they could not hold their ground as consensual experiences of an 'unfamiliar' environment.

Proto-consensus Categories

Subsequently, the data became expressive. The grouped and validated statements formed a new definition of the situation directly based on the experiencers' direct impressions using their terminology. How did these descriptions compare to the initial

definition of ‘novelty’, the one used to select the artwork? The first categories of treated statements from these interviews are shown below. Since only five participants were investigated using developing interview techniques, they served as proto-consensus categories hinting at tendencies.

n = 5	**Prevalent and highly prevalent experiences**
n = 4	**Expectations of 'more':** The continuous hope or positive expectation to experience more content (e.g. objects, dynamics and interactions, and variations thereof)
n = 4	**Inability to make use of spatial references:** The inability to relate to the space and act upon the surroundings because of unknown spatial existences, positions, distances, sizes, and movements
n = 4	**Desire to orient oneself:** The general urge to establish 'bearings', as in spatial references to oneself, as the result of → Inability to use spatial references
n = 4	**Desire to experience more elements:** The general urge to 'see' what there was and 'what it was like'. Congruent to → Expectations of 'more'
n = 4	**Desire to experience different perspectives:** The specific urge to move around, zoom in and out, and turn around to 'see' what there is and 'what it is like'.

	Connected to → Desire to orient oneself and → Desire to experience more elements
n = 4	**Desire to reach out:** The specific urge to get close to objects (approximately within touching distance or closer). Connected to → Desire to experience more elements.
n = 3	**Desire for control:** A bodily tense feeling, a feeling of restriction, or a feeling of frustration that motivated overcoming an experienced lack in the degree of expected control of one's abilities in the environment
n = 3	**Alienated/out of place:** The experience of a major lack of references and overwhelming differences to the 'reality' of former experiences

The above table shows the prevalent categories found, with at least three of five participants experiencing them. They comprised one overarching expectation and a lack of spatial reference, different urges or desires connected with behaviours, and being affected by the differences between the artwork and the everyday world. The first overarching observation was that they did not neatly fit the

definition of a ‘lack of meaning’ but described a particular and already impactful relationship. However, an overarching theme was the desire for more, so I started calling the situation a perceived ‘thin’ meaning.

The → Expectations of ‘more’ were that of the artwork providing an ongoing stream of new objects, dynamics, and interactions to be discovered. The → Inability to make use of spatial references described the inability to execute perceptual and manipulative actions in space because the positions, dimensions, and behaviours of its perceived entities were not yet assessable. It was congruent with the immediate intention to establish these relationships and orient oneself.

Next were different urges, desires, or drives as the result of the overarching experiences. These categories concerned felt intentions or motivations to act in a certain way. Most notable was the → Desire to experience different perspectives, the intention to move to reach different visual perspectives on the environment, along with the → Desire to reach out, the intention to bodily engage to move close to objects and “be near” to them, to touch them.

One drive or intention did not seem directly tied to the lack of spatial reference and expectation of more: the → Desire for control, a strong drive to understand one’s impact on the environment in parallel with the bodily skill set of acting out the movements and gestures involved reliably.

All the shared aspects of the experiences thus far were related to unfamiliarity and orientation in a physical, bodily sense. Interestingly, they were more concerned with what the participants could *do* and less with what they *perceived*. Apart from the → Expectations of 'more' (which provided the background for the action-related categories), these categories seemed not to speak about the artwork as an aesthetic environment.

Only one more consensus category was more involved with 'how' *Vortex* appeared to the participants. The statements summarised by this category were more abstract and broader, which is why I gave it the faceted title → Alienated/out of place. It included statements like being "completely out of my element" and "outside of anything I've experienced in real life before". Another participant explained that they could "tell [what they perceived] from reality". This experience was not pleasant but was described an "eerie feeling". This category was also slightly less prevalent, with only three explicit examples from the five participants, so two participants did not report experiencing 'qualities' of Vortex at all, except for associations after the fact. Even this category was not concerned with the internal relationships of the artwork (e.g. the composition of colours and forms) but with how its contents related to former experiences.

Notably, no statements concerned aspects of *Vortex* that could be categorised as 'familiar', 'natural', 'oriented', or other opposites of the aim of a 'novel' experience. Coming purely from the

participants' vocabulary, the stand-alone category of being → Alienated/out of place seemed to strengthen the assessment that *Vortex* was indeed an artwork evoking a 'novel' and unfamiliar experience. However, its informative potential was restricted to the relationship with former experiences and did not say much about *how* the artwork appeared as an enduring present. If at all, I could only deduct that the aesthetic *how* did not seem to play a significant role in the participants' experiences – somehow, only their own actions and impact did.

This issue raised an immediate question: Was this a feature of the shared experience or an outcome of the specific interview situation? It seemed apparent to me that many of these categories were not exhaustive and could be further investigated. Maybe there was not enough focus and time spent with the participants during the interviews. There could be other reasons actions were so heavily present in the interview. Perhaps it was because of how the experience was retold in the 'recollection phase', because the interviewer lacked the skills to make the participants dive into the 'how' properly, or because the participants wanted to show how well they performed (through actions) in an experimental setting.

Therefore, I decided that the next iteration of experiments should focus on these questions even more and incorporate the previously found proto-consensus categories to reveal subsequent aspects of the experience that had not yet been revealed or would result in better descriptions and subcategories of what was seen so far.

Therefore, the interview guide had to be revised.

The data found in the first iteration did not end here since more categories appeared, not as often but still coherently and connected to the prevalent ones. I called these 'congruent categories of the experience':

$n = 5$	**Congruent experiences**
$n = 2$	**Focus on interactions:** An almost exclusive attention to interactions. Congruent with → Expectations of 'more' and → Desire for control
$n = 2$	**Not connected:** A particular feeling of being estranged/not belonging in the environment as the result of the → Desire for control, plus an experienced lack of understanding of the consequences of one's actions
$n = 2$	**Joy of control:** A rewarding feeling when actions felt impactful and their consequences were understood as the result of the → Desire for control, plus the felt achievement of control over time
$n = 2$	**Trial and error:** Being engaged with the environment

	through a stance of 'trying out' and 'permutations' of different actions without being certain of their consequences as the result of the → Focus on interactions
$n = 2$	**Hope for impact:** A positive expectation or hope for consequences of one's actions. Congruent with → Focus on interactions and → Trial and error
$n = 2$	**Unpredictable impact:** The inability to predict the consequences of one's actions and behaviour. Congruent with → Desire for control
$n = 2$	**Passive taking-in:** Being engaged with the environment through a stance of passive attendance (i.e. no manipulation) and yet with active observation. Congruent with → Desire to experience more elements

These congruent categories were causally connected to the prevalent categories. Some were truly congruent and appeared as a part or subcategory of their 'parent' (e.g. → Focus on interactions). Other categories were the result of their parent, which 'led to' them (e.g. → Trial and error), with a few requiring the fulfilment or

sustained non-fulfilment of their parenting intentions (e.g. → Not connected).

Of course, these congruent experiences appeared like their prevalent parents strongly focused on actions and consequences. However, they also started to paint a picture of the complex felt relationship with the environment. There were strategies for the participants' intentions (e.g. → Focus on interactions, → Trial and error, and → Passive taking-in) as well as details for how their feelings addressed the environment (e.g. → Hope for impact and the → Joy of control).

Here, I use → Not connected to point out several elements of these experiences:

> **Not connected:** A particular feeling of being estranged/not belonging in the environment as the result of the → Desire for control plus an experienced lack of understanding of the consequences of one's actions.

First was an overarching intention: the motivation to achieve control over how one was related to the environment. Next was the factor of experienced time. While the interviewees did not literally mention time, it manifested as the stringing together of events that seemed to have significance for the participants' intentions. The final element was the participants as actors, as subjects *in* and *of* the environment. They described feelings of *not belonging* that was unusually detached from the environment after actively trying to be

involved with it. Whether the environment seemingly acted impervious or the participants judged that they lacked the necessary skills ("I felt a bit stupid" → Desire for control), they were clearly self-involved. In all these categories, there was never 'just' an aesthetic phenomenon or a perception of the environment isolated from intentions.

Nevertheless, it was too early to draw conclusions concerning the shared experience with *Vortex*. Even with the congruent categories, these descriptions still lacked depth. Indeed, more participants could reveal other aspects of the experience. The focus of the interview guide needed revision to zoom into the categories previously found so that future interviews could reveal more contexts.

Revising the Definition of 'Thin Meaning'

To make improvements to the interview guide and future experimental designs, I compared the found consensus categories with my starting point of a 'lack of meaning' situation:

> Working definition – Original:
>
> ***Meaningless*** is an immediate, felt relation to an object, process, or environment that primarily comprises insecurity, ambivalence, instability, and/or confusion.

Did the participants experience *Vortex* as such, or were there

notable differences? For one, they certainly experienced a relationship with the environment and its elements. It was also an immediate and significant relationship since it comprised the consensus categories almost exclusively.

In a functional sense, this initial definition was productive. Translated into the material search for an artwork, it meant seeking representations that participants "cannot have experienced before, at least not to a degree of associative power".[425] It is safe to say this goal was reached since the participants did not have concrete associations during the experience. They did not perceive *Vortex's* elements as variants of familiar associations (e.g. animals, plants, mathematical problems, and whatever else one may see represented in such a world). They felt the elements were novel: 'not part of their as-of-yet experienced world'.

However, was the relationship with these elements comprised of "insecurity, ambivalence, instability, apparent association, and/or confusion"? There was confusion in the sense of spatial disorientation, with ambivalences in the sense of → Not connected and → Alienated/out of place (and instead belonging where?). Nonetheless, few consensus categories spoke to these qualities.

A critical gap existed in the participants' descriptions since it was seemingly not experienced: no participant paid attention or reflected upon representations. Even more surprising, they did not report having expected representational meaning either. While it

[425] See Sections 3.2 and 3.4

was technically not a 'part' of the experience, this gap was still a consensual description – of what the experience was not – because I could confirm it through direct queries. Three participants did not remember expecting, being concerned, or thinking about what *Vortex* represented at all:

n = 3	**No representational meaning expected:** A complete absence of expectations for narrative or representational meaning in the environment

I found this omission surprising. I expected to see a few participants engage with the environment through active reflection of what they perceived and comparisons with earlier experiences. However, no one reported this activity, nor did these three participants even try to – or remember being concerned with whether this meaning could even be found in the environment. The assumed experience of ambivalence and confusion did not exclusively refer to representational meaning, but it was meant to include it.

Furthermore, experiencing the variants of 'insecurity' and 'instability' was not really reported. Some participants felt "cautious", while others did not. One participant even felt "at peace" with the environment, which seemed contradictory. Moreover, while the participants were unsure about their actions and impact,

they did not wonder about the nature of the environment. While they were curious and asked themselves, “what it is”. The question turned out to be: ‘What is it to me and my actions’?

Therefore, the next iteration of experiments and interviews used the revised version of the definition that I introduced in the method chapter, which reflected the gap of representational meaning with a strong focus on action, the body, and the self that the participants described:

> Working definition – Iteration 1:
>
> ***Thin meaning*** is an immediate, felt relationship to an object, process, or environment that is perceived as not yet experienced. The relationship is primarily a need to establish a bodily connection about which the subject feels ambivalent or confused. This need also takes precedence over associations, reflections, and cognitive analysis of the relationship and the phenomenon in question.

4.3 The Second Iteration:

Modifying the World

The second iteration of experiments occurred in June 2021. The

primary aim was to zoom in on issues raised by the first iteration (e.g. the weight of the participants' actions during the interviews, distractions in the artwork and expectations raised due to the setup and introduction). Most importantly, this round of experiments was about making changes to the artwork by creating variations of the factual variation to identify specifics of the experiential situation that might be detrimental to the current definition of thin meaning and novelty.

The Experimental Sessions

This iteration was comprised of a shorter series of sessions with four participants. Two were German recruits who each piloted three configurations of *Vortex*, accompanied by a modified interview. The other two participants were Swedish recruits who completed a regular session but with notably different variants of the artwork, followed by an even further reworked interview. The interviews were audio recorded and transcribed, and the sessions were video recorded, as with the first iteration.

In addition, this iteration saw testing for incorporating pupillometry data. I wanted to establish whether it was possible to meaningfully record and process the gaze and pupil size of the participants to accompany the phenomenological data. Therefore, the first two participants also piloted a pupillometry setup. The entire iteration produced datasets for pupil position, gaze vectors, and pupil sizes for both eyes. All participants had normal or

corrected-to-normal vision, with one wearing glasses. The actual PoV of the participants was recorded as well, in concert with the pupil data, with the help of a programme called OBS Studio (Open Broadcaster Software),[426] which recorded the rendered image[427] shown to the participants' right eyes.

The Setup

A few notable changes were made to the setup compared to the first iteration. The session time was still set at five minutes for the two regular sessions, but the two participants experiencing different *Vortex* configurations had longer sessions of up to 20 minutes. On the technical side, another kind of VR headset was introduced: the HTC Vive Pro Eye, which had the exact controllers for which *Vortex* was originally designed. This change removed the complicated interaction for movements of the last iteration. Instead of inside-out tracking, the Vive Pro Eye used two external infrared cameras, which needed to be installed in a room and calibrated each time they were set up. This issue was not a problem for the smaller set of participants in this iteration.

Most notably, the headset had built-in pupillometry cameras[428] to

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[426] See: Open Broadcaster Software, "OBS Studio," obsproject.com, last modified July 28, 2025, https://obsproject.com/.

[427] The VR headset continuously rendered two images, for each eye respectively. These were treated by the computing machine as two separate external screens. OBS could only capture only one of these streams of images because of how it accessed the render pipelines.

[428] A proprietary solution developed with Tobii cameras and software: tobii AB, "Eye tracking technology for VR - VIVE Pro Eye with Tobii," tobii.com, last

record both eyes. These images were processed by the headset's driver software and computed into values. These processed data were then made accessible through an application programming interface (API). To use these data, I developed the first version of C++ software that continuously drew data points from the API and synchronised the data stream with the runtime of the experiment. This script ran beside the artwork and the OBS screen recording on the mobile machine from the first iteration.

Since the setup now included this eye-tracking capability, I could also turn on the artwork's internal capacity to recognise the experiencer's gaze. The artists called this built-in feature 'eye interaction'. Thus, looking at an agent for more than one second or so would activate a gravity well that slowly drew the agent towards the experiencer's head. This additional interaction method was intended to immerse the recipients in *Vortex's* world even further by making its inhabitants react to their simplest acts of perception. This reaction did not happen instantly because of the delay in gaze recognition. Even then, the new gravity well only slowly exerted the effect. Nonetheless, as an observer, the experiencer was no longer a 'fly on the wall'.

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modified May 18, 2022, https://www.tobii.com/products/integration/xr-headsets/device-integrations/htc-vive-pro-eye.

The artwork and its internal configuration underwent the most significant changes in this iteration. During this time, I again contacted Lance Putnam to discuss the possibility of modifying the artwork. As a result, Putnam and the *Mutator* team were immensely helpful and provided me with a modified version of the piece. This modification was not a specific change to the artwork but provided built-in access to several internal parameters that were normally hidden from other parties. Indeed, exhibition staff and curators should not change these aspects because they belong to the realm of artistic fine-tuning that could profoundly impact the experience. Thus, I could change these parameters for each run of the programme but not after a session had started.[429]I wanted to use these parameters to see how the current definition of the experience and the previously found consensus categories would hold up against variations of the artwork.

The first quality to be changed was the density of *Vortex's* elements. The underlying question here was whether the reported categories of orientation and action were so focused on spatial aspects because of the seemingly chaotic bustle of the artwork's agents all around. In other words, how much were the participants occupied with the initial recognition and tracking of unknown moving objects in contrast to being engaged with their unfamiliar features and dynamics? I used a parameter called 'numMutoids' to change the

[429] This was because these aspects are startup parameters. The programme recognises and integrates those values when it first loads.

total number of generated agents in the environment to test this question. By default, the count was 128 objects based on a possible range of 16 to 128. This count did not include the more static ‘vines’ but only those agents freely moving within the sphere.

The next quality altered was the geometric complexity of the agents. Putnam included a parameter governing the intensity of visual features on each of the three classes of agents called ‘mutoidComplexity’ with a value range between 0 and 6. The default on the original artwork was a setting of 5, which meant that it was impossible to increase the visual complexity to a significant degree. However, a very low setting produced geometric bodies that no longer looked like they were composed of several parts. Instead, they just resembled one or two partially inflated animal balloons tangled together. A way to describe these outcomes could be that the lower settings produced simple geometries rather than the intricate structures of the higher settings, where different forces or laws visibly shaped their core and appendages.

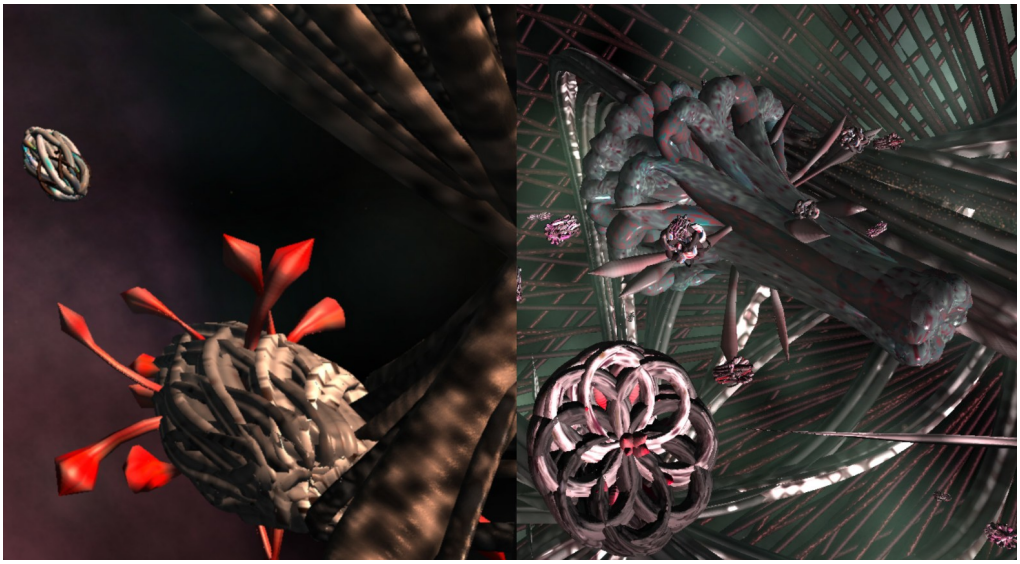

Figure 4.14: Examples of agents generated on the high end of the complexity scale.

Figure 4.15: Examples of agents generated on the low end of the complexity scale.

The ongoing effort to achieve a highly focused experience was still

considered. Based on the previous feedback, I knew that the most significant issue was how the movement speed inside *Vortex* was perceived as frustratingly slow. As mentioned above, I wanted to remedy this issue by achieving a perceived movement speed similar to or slightly faster than walking in the real world. This speed would be familiar to most people, so I assumed it would arouse the least amount of attention. The parameter for this change was called 'flySpeed', which represented the maximum movement velocity of the inhabited camera within *Vortex* in metres/second. A slower speed was also possible to achieve through the careful use of the controller. Notably, flySpeed only affected movement initiated through the controller's touchpad, not the real-world movement translated into the VR by position tracking. It turned out that the original value used by *Vortex* for this was 1 m/s, while the average walking speed over a greater distance for adults was between 1.24 and 1.43 m/s, depending on age and height.[430] After testing these speeds myself, I increased the value above the average to 1.5 m/s, which felt empowering enough because it translated to an able, fit adult's jog in approaching an object quickly and decisively over a short distance of a few metres.

The Interviews

Revising the interview guide for this round of experiments was

[430] Schimpl et al., "Association between Walking Speed and Age in Healthy, Free-Living Individuals Using Mobile Accelerometry—A Cross-Sectional Study."

more concerned with techniques than topics. The greatest concern from the previous iteration's assessment was whether the conversation flow and dynamics might have influenced the reported emphasis on actions and interactions. I had to check if the interviewer signalled too much interest in actions, so the interviewees should be guided more towards contexts, feelings, and moments of reflection. Double-checking the experience of representational context was important. The term 'meaning' could also mislead the interviewees.

The interview guide already covered these aspects as talking points. Thus, the first measure taken was to highlight these points and note that the interviewer should attempt to address them for every moment that the participants focused on.

I also went back to the former interviews and listened to them again. This additional training allowed me to identify situations where I might have felt satisfied prematurely, with descriptions somewhat limited to actions. Hence, I prepared two additional strategies to break free from descriptions that were too narrow.

Previously, I queried different aspects by asking about their connection to specific descriptions (e.g. "What did you feel when you did X?" or "When you remember doing this Y – what exactly did you think [reflect] at that moment?"). Unfortunately, this line of questioning was often answered with another retelling of the perceptions and actions at the moment. However, while relistening to the interviews, I noticed certain ways of asking widened the

interviewees' focus during moments of being stuck. These questions addressed the moment as a whole, offered a change in perspectives, and were free of previously introduced vocabulary and former descriptions. Simple questions like 'What did that do *to you*?', as opposed to what 'they did', potentially helped the participants to focus on feelings again. Moreover, "*Why* did you do this?" broke from a description of 'what' happened to potentially focus on intentions and reflections again. The theoretical role of the 'how' in a phenomenological interview is translated here into other question words, which were carefully chosen to add to how the interviewees already accessed their memories. Thus, the new strategy was not to introduce new questions in the interview guide. Instead, it was about paying more attention to *when* to ask them while phrasing the questions in a naïve, unspecific form.

The second strategy pertained to feelings, especially when the participants reiterated a particular word they thought best described their experience. This precise vocabulary could have been the reason for relatively few consensus categories for feelings. I found a few examples where it was productive to ask what the specific word meant: "Can you describe to me what it actually feels like to feel X?"[431] This seemingly naïve question was not intended to

[431] An example from the first iteration:
Participant: "[Not reaching a point of interest] felt frustrating".
Interviewer: "And how does it feel to be frustrated? When you think about how your body actually felt, can you describe that feeling?"
Participant: "I would say maybe a little bit tense. I'm trying to […], and it's not really working. […] So, it's a little bit of tension, like a physical feeling".

create an objective description of a subjective feeling but to encourage the interviewee not to settle on a specific term by using broader, less specific terminology in their description. Hopefully, this approach made it easier to find more similarities in the descriptions during the analysis.

The Evaluation

This iteration's evaluation was mainly about the changes in the experience invoked by the artwork modifications. Another issue was the participants' expectations concerning the term 'artwork'. It was also important to check the quality of the collected pupillometry data. Furthermore, the extraction of consensus categories was streamlined and improved.

Artwork Modifications: Higher and Lower Intensity

The first two participants, with their three sessions each, piloted the artwork modifiers in different constellations. One participant started with geometric complexity and agent count at the lowest possible values, which represented a low-intensity version of the artwork. The other participant experienced the artwork in the intense version, with both values at their highest possible settings. In the participants' second session, one value was set in the middle of its range while the other value remained the same as in the first session. In the last session, both values finally moved a half-step towards the other end of the possible spectrum.

3–5 min	P1	P2
First	High Complexity, High Count	Low Complexity, Low Count
Second	High Complexity, Medium Count	Low Complexity, Medium Count
Third	Medium Complexity, Low Count	Medium Complexity, High Count

As a result, both participants had one very unfamiliar experience with different manifestations of the possibilities *Vortex* was capable of. In the second session, the sensory stimulation in terms of the total number of possible points of interest changed, so the participants could observe and report how well they could now take in what they perceived. In the third session, the count changed again, along with the complexity of the objects. The participants were not told about these changes, so it was interesting to see whether they even noticed what had changed and how their engagement differed.

Concerning the total count of agents (or the density of objects), both participants had difficulty engaging with the environment at both

ends of the value spectrum. From the 16 to 128 possible agents in a scene, the high end of 128 was perceived as “hard to take in”. This high end was the default setting of *Vortex* in a regular exhibition case. Here is a description of what this number visually means: 128 agents did not fill up the space because most of them were still tiny (ca. 10–50 cm in size). However, when they crowded around the experiencer, they filled two-thirds of the FoV. In this scenario, the number of visible agents made it challenging to visually follow a specific object or overview how the objects moved about and reacted to their environment. This challenge was especially profound at the start of a session when the experiencer was placed in the middle of the sphere and surrounded by objects on all sides.

At the other end of the spectrum, the lowest possible count was experienced by both participants as calm and focused, even “serene”, which made it visually easy to follow certain objects. However, one participant failed to report on two of the three classes of agents, which meant that so few individual agents were in the expansion that they missed several of them. In comparison, the medium setting of 64 agents was still experienced as “quite calm”, and both participants could report on all classes of agents. The medium setting also facilitated moments of ‘being surrounded’, which were rather fewer. Nevertheless, they had the “potential to overwhelm” until the participants actively moved away from the crowd of agents around them.

In terms of complexity, the highest setting of 6 was not recognised by the participants as different to the medium setting of 3. They did

not even notice the change. The value used in an exhibition setting here is usually 5. A complexity of 0 was reported as much less interesting and “somehow broken or glitched”. At the same time, this setting was described as “slightly less aggressive”, while the participants’ engagement was simultaneously more focused on the vines and static objects and the whole “atmosphere” of the scene. While this effect was interesting, the notion of ‘interesting’ objects seemed more favourable to me to achieve the experience of something ‘unfamiliar’ yet intrinsically motivating or rewarding to explore.

As a result of these reports, I decided to generate two general settings for sensual intensity. The ‘higher’ intensity comprised a density of 64 agents and a complexity value of 6, which was close to how *Vortex* was intended to be experienced by its authors, with almost imperceptibly more complex objects but a 50% reduction in the number of agents to reduce the possibility of being overwhelmed and unfocused. The ‘lower’ intensity reverted to the original complexity of 5 but even further reduced the agent count to only 16. This low setting introduced descriptions of the experience that definitely did not include situations of being surrounded by agents and becoming spatially disoriented. Therefore, the ‘lower’ and ‘higher’ intensities were used from here on in an alternating fashion. They were tested with the two remaining participants of the second iteration, who confirmed the reports of the two piloting participants.

The technical setup of the pupillometry capture and data collection proved successful and reliable. Vive Pro Eye's software automatically checked the pupil position related to the built-in cameras. The script created during this iteration automatically consulted this internal mechanism and recalibrated for a subject if the driver software deemed it necessary. The recording script also handled synchronisation with external recordings using markers. After the introduction and before the final start of the artwork's runtime, manual input by the researcher triggered an acoustic signal that was recorded by the external cameras and the internal screen recording. The same happened for a second signal at the end of the runtime. The pupillometry data stream was marked simultaneously with these signals, which allowed the different recordings to be linked.

A technical problem was the necessary computing power for all these processes on the same machine. Rendering the artwork, processing the 120hz data stream, and capturing an additional high-resolution screen record proved too straining for the VR-ready notebook, which resulted in a notably reduced performance after a couple of minutes and stuttering rendering after about 5–6 minutes. Since it was now necessary to use fixed infrared cameras for the VR headset, I exchanged the notebook with a stationary and more powerful desktop computer featuring an RTX 3070 GPU and 32GB RAM.

The introduction was also revised. I wondered whether mentioning that the experience entailed an ‘artwork’ would have a noticeable effect on the experience. The term certainly carries numerous expectations and provides context for many people, which was not necessarily counterproductive because it could motivate focusing on and exploring the artwork. However, it could also favour or obscure phenomena depending on contexts (compare, e.g., with your own subjective approach to art: mind wandering, historical analysis, analysis of artistic craftsmanship, cultural identification, depersonalisation, and religious contextualisation). Depending on the expectations a participant brought to the experiment because of this term, their experience might have to be treated differently or disregarded completely.

I spontaneously added a corresponding question in the post-experiment interviews. For all four participants in this iteration, the expectations were highly vague or challenging to trace. Take this excerpt as an example:

> *Participant:* “I wasn’t really thinking of it being artwork, I guess. No.”
>
> *Interviewer:* “Okay. Because you mentioned that ‘it doesn't look like an artwork’.”
>
> *Participant:* “Yeah. That’s true. I mean, that initial impression was just like, ‘Oh, this is not what I was

> expecting'. So, I guess, kind of behind that thought is the idea of 'What is an artwork?' or 'What can an artwork can be?' But that wasn't the explicit thought. That was [only] implicit in 'this is unexpected'."

In this case, the participant seemed to have a reference point for her expectations but could not point to what this reference entailed. Pre-reflectively, she had a judgement, however, that the reference and what she actually experienced did not align to a high degree. While this pre-reflective process was out of reach for the phenomenological interview, the role of the participants' expectations was not obstructive to the experience of unfamiliarity, novelty, or lack of meaning. The judgement still contributed to experiencing unexpectedness, which was also confirmed as something unfamiliar during the interview.

So far, 'artwork' seemed to carry an openness that invited a focus on the content of the piece without the participants expressing a need to clarify it in advance. However, I also realised there still was potential for highly influential expectations from future participants. While the term was not omitted from the introduction, I was careful to use it as little as possible. In addition, I introduced the reflective question about the participants' artwork expectations as a standard item in the interview guide and added the repeated inquiry, 'Do you do/think/feel [this] commonly, in context with art or digital media?' as a general safeguard.

I only applied the full process of distilling and extracting consensus categories to the two participants who experienced a session in either the lower- or higher-intensity configuration. This process became more streamlined. The structural markers to connect statements temporally and causally were inserted only in the hermeneutic phase – the identification and verification of relevant statements within a text – rather than applying them to statements within the database. Previously, this extra step in the transformation of transcribed speech resulted in reduced phenomenological data designed to help understand the statements. However, looking at the markers embedded in a complex database was quite incomprehensible and did not provide new insights at this late stage of data processing. However, looking at the text of the interview marked with these references throughout, and even during the early stages of the first readings, was a great help in interpreting the statements and assessing their coherence.

I also started to group statements during the transfer into the database. These were not consensus categories, but groups defined by the situation the statement was about. Did it mainly refer to an action, a moment of reflection, or a moment where an emotion was the central element? Moments that appeared quite often or were referenced within one text several times even received a subgroup. This approach was another method to easily overlook potentially connected statements in a complex database.

These methods catered to an interest in similar statements. The last improvement of the extraction process also worked in this sense. Next to ‘about-a-moment’ groups, I introduced groupings concerned with the self of the participants. When an interviewee discussed their agency, their purpose (or role), or intentions and expectations in great detail or a more abstract sense, these statements formed groups of their own. Sometimes, it was possible and necessary to include a statement in several groups at the same time.

With only two participants treated this way, it did not seem appropriate to form and validate consensus categories from their experiences. Instead, their statements started the refined database, which also included the upcoming third iteration of experiments.

4.4 The Third Iteration:

Experiencing Thin Context

The final iteration of experiments started in December 2021 and lasted until February 2022. This iteration was by far the largest and the main source for the phenomenological analysis in Chapter 5. It aimed to collect a robust and extensive corpus of statements for the refined database developed in the second iteration. To focus on the aspects highlighted in previous iterations, I adjusted the interview guide again. Pupillometry data were collected throughout this iteration, and extensive tests were performed to determine how these data could be used in combination with consensus categories. Nevertheless, I did not explore this avenue further – the 'why' for which I report here as well.

The Experiment Sessions

The roster of participants for this iteration was recruited publicly. International students, visitors, and staff attended the experiments at the University of Oslo, Norway. In total, ten participants completed evaluable sessions and interviews conducted in English. Their ages ranged from 23 to 60 years old, with seven identifying as

male and three identifying as female.

They all reported no or only marginal experience with virtual realities, except for two participants who had worked with VR intensively before. Their expectations and internalised behaviour with VR were actively reflected in their interviews, which were heeded in the evaluation and reduction of their statements. Similar situations arose from different professional backgrounds: a sound designer, a graphic designer, digital game enthusiasts, and a philosopher all brought specific approaches to *Vortex*, which were reflected and treated as such. The newly introduced questions about prior expectations and the term ‘artwork’ were often the starting point for these reflections.

Again, the interviews were audio recorded and transcribed while the sessions were screen and video recorded with a focus on body movements while collecting pupillometry and gaze data.

Procedures

Notable changes in the experimental procedures were concerned with recruitment and session duration. As the recruitment was conducted publicly, the question of motivation for the participants was raised. I made a conscious decision not to offer a reward for participation but to recruit solely based on an interest in experiencing something new. The aim was to reach participants with a high level of intrinsic motivation to focus on the experience rather than ‘serving time’ for external motives.

To arouse this 'interest' and emphasise the potential manifold experience, the advertising calling for participation promised a 'new world' or 'interesting environments' of a 'digital artwork'. The only other terms used were 'novel' and 'virtual reality'. On the visual side, the minimalistic call for participants showed the deployed VR headset in a positive and abstract style. I did this not to prematurely introduce the actual content of *Vortex,* other loaded references to art, or depictions of VR that could be considered too contextual depictions (e.g. technical, gamified, or futuristic).

Figure 4.16: A version of the third iteration's call for participation using poster printing and digital use.

This approach sought to prevent concrete expectations about the experience from the researcher's side as much as possible while

encouraging active exploration in contrast to passive perception experiments that students at a university may be already familiar with.

After the mandatory COVID-19 checklist, the participants went through the revised introduction from the second iteration and the warm-up session to become familiar with the VR's control scheme. Immediately afterwards, the artwork appeared. The runtime or duration of a session was either three or six minutes, which alternated between the randomly ordered participants.

The Setup

The technical setup for this iteration was almost identical to the last one, with the tested combination of a desktop machine with the Vive Pro Eye and external trackers delivering tested sensory immersion, reliable performance, and simultaneous signal capturing. During the interviews, we made additional materials available, like a whiteboard with coloured markers and a screen showing different elements of *Vortex,* to reference what the interviewee was describing. These materials were to be used carefully to provide more starting points for the interviewees to express themselves. Thus, they were only introduced when the participants struggled verbally with a concrete explanation.

Artwork Alterations

As mentioned, the work during the second iteration led to two *Vortex* configurations that were especially interesting for this final

data collection. These ‘higher’ and ‘lower’ intensity settings were used and resulted in two groups of participants, which were otherwise randomly mixed in age, gender, and experience with VR. Both had fewer objects or agents than the original version of the artwork, with the ‘lower’ configuration having a significantly reduced population that led to more encounters with single agents than small groups of them. Furthermore, the movement speed of the participants’ camera body was significantly increased, as described in the second iteration as well.

The Interviews

Once again, the interview guide for this iteration was revised. This final version can be viewed at full length as an attachment to this thesis. The guide changed even more from an outline of structured talking points to a dramaturgy of the conversation while still covering all relevant perspectives of the participants’ experiences. The idea of the interview guide also underwent a change of perspective. From a list of checks and rules for the interviewer, it became a guide for the interviewees to stay with their memories while the interviewer only took on the role of a guide to help them. To support this, the interview guide, as a physical, paper-printed tool, had much white space added to be used for notes about what the interviewees said.

The biggest change was ensuring that the interviewer spent a certain amount of time on different ways of discussing the

experience. Like chapters in a dramaturgy, I structured the interview in timeframes that were dedicated to a part of the journey through memories. These timeframes were not dogmatic. They could bend or flow while giving the interviewer a clear idea of what they usually needed to achieve by exploring what the interviewees brought to the table. I set these timeframes according to examples of former interviews where a similar deep dive was highly successful. At its core, the idea was that the interviewer did not have to rely on intuition to judge when a topic was exhausted due to an external guide based on experience.

In the first ten minutes, the participants were asked to speak freely about their impressions of the piece. Called 'setting the scene', this introduction phase hinted at strong impressions that occurred, which were later used for follow-ups. During this time, the interviewer also concentrated on collecting vocabulary from the participants to include in their questions.

A 20-minute-deep dive into the experienced emotions followed this scene setting. This focus on emotions was placed so early in the interview because their details seemed to fade or become a part of post-experience theories quickly in the former iterations, especially compared to actions or the perceived content. The emotional perspective in this timeframe was also accompanied by a question about moments of meaning or a lack thereof, which set the tone of the whole interview – to think about what the piece was *to* the participant – while clarifying that the interview was about them, not about a meticulous description of the contents of the artwork.

Next were 10–20 minutes of exploring some of the mentioned moments in aspects other than emotions. While actions and the contents were usually already a part of the participants' statements, this section introduced broad terms to enable the interviewees to shift their perspective (e.g. 'space', one's 'self', 'satisfaction', 'disappointment', 'skills', and moments of feeling unable or unprepared). This method evolved based on the different interrogative pronouns from the previous iteration.

At this point, the interview was near the 40-minute mark, so the interesting details were well established. The interviewee was 'in the zone'. Here, it seemed safe to zoom out to enable the interviewees to think about the connections between the previously described moments and the bigger picture. I asked about their 'expectations' and 'intentions', about 'significance' and 'directing attention'. I introduced the terms 'exploration', 'curiosity', and 'play' while assessing how they would fit into the participants' experiences. The slightly removed perspective was also an opportunity to ask about the difference between reflective and reactive moments, 'comparisons', and intuition. From here, the interviewer summarised the moments collected thus far back to the interviewees. Together, they ensured that the order and connections were accurate.

The last five to ten minutes were reserved for the previously discussed probes and checks: prior intentions and expectations brought into the experience, the quality of the interview discussion, the suspension of disbelief, the mediality of the artwork, and the

experimental setup.

All previously discussed rules for the interviewer applied to these sections. However, the final interview guide put special emphasis on changing perspectives for every moment the interviewees described – between staying in the moment at a particular point in time and then switching to describing it as part of a succession of moments – a flow of things. As always, the interviewees were brought back to the 'how' repeatedly. How did it unfold? How did the world do this? How did you realise it? How did you do the next thing? How did it feel?

Finally, two new rules manifested themselves in the guide's terminology. First, the term 'relate' was often used not to invoke descriptions of actions. What was your relationship to this object? How did you relate to this event? In the same spirit, to avoid the dominance of contents and actions in the descriptions, the guide tried not to ask 'what' the participants 'perceived' but 'how' they 'realised' it.

Too Much Complexity for Pupillometry Normalisation

The initial integration of eye tracking and pupillometry in the second iteration generated promising technical results. The recording setup functioned reliably in synchronisation with the VR experience. However, after extensive analysis and consultation with colleagues, the decision was made not to pursue pupil dilation data

analysis due to two significant methodological challenges.

First, controlling for the influence of illumination proved excessively complex in a dynamic VR environment. The surrounding visual field, including background illumination, contrasts, and even the immediately preceding light conditions significantly impacted pupil reactivity. Thus, accounting for these variables would require developing a computational process for each individual frame of each participant's experience. Unlike traditional pupillometry studies where illumination is carefully controlled and held constant, the interactive and dynamic nature of the artwork made such standardisation impossible.

Second, and perhaps more critically, interpreting pupil data would be ambiguous in this complex phenomenological context. Traditional pupillometry studies typically isolate a single emotional state or cognitive function (e.g. fear, joy, or working memory), which allows for a more straightforward interpretation of arousal patterns. In contrast, our artwork presented a multifaceted environment that potentially engaged many potential emotional and cognitive responses simultaneously. When observing pupil dilation in such a rich context, the underlying cause became impossible to determine reliably: Is the participant counting objects (i.e. working memory), experiencing fear, excitement, erotic stimulation, intellectual challenge, or recalling an unrelated memory? Since I did not use trained participants who could narrow this interpretation with shorthand signals during the experience, this interpretative ambiguity was problematic. These

methodological difficulties led to the conclusion that pursuing pupillometry analysis would not yield interpretable findings proportionate to the effort invested.

However, the eye-tracking component of the data collection could present valuable opportunities for the trial stage of future projects. Rather than analysing pupil dilation, the gaze data could be used in two potentially productive ways. First, computational analysis could identify episodes of either unusually erratic or notably calm gaze movement for each participant to establish a personal baseline against which deviations could be measured. These identified episodes could then be manually analysed through the video recordings to determine what objects or elements had captured attention during these distinctive periods. In a final step, these moments could be cross-referenced with the interview data to explore how the participants described these experiential episodes.

Alternatively, future analysis could begin with the interview data to identify key moments where the participants described significant shifts in attention or perception. These could then be used to examine gaze behaviour immediately before and after reported transitions to potentially reveal patterns in how visual attention shifted during phenomenologically significant moments. Nevertheless, pupillometry was excluded from this project.

The Evaluation

The third iteration collected rich participant feedback that highlighted patterns of experiential reports emerging from the semi-structured interviews. I focused on key experiential categories that directly related to thin meaning and immersion in a virtual environment.

Presence and Absorption

A central goal in selecting *Vortex* was its capacity to create an engrossing yet context-thin experience. Again, in this iteration, the overall participant feedback revealed a consistently high level of presence and absorption, with the majority reporting strong immersion in the virtual world. This absorption manifested through reports of "feeling completely disconnected" from the physical environment or directly being "very present". One participant articulated this state as being "completely enveloped in that world", while another described feeling "definitely there".

However, the quality of presence also revealed nuances. Participant i3-P05 appeared as an outlier and described a layered or oscillating presence rather than complete absorption: "I go in and out of the amount of immersion that I'm in". However, this participant also differed from the others in several ways. For instance, they had more previous experience with VR than the others, reported a unique focus "about the experiment [...] what you're doing and how you're designing it", and noted their vision "feels like I'm wearing

the wrong prescription" because their "interpupillary distance is lower than the minimum" of most VR headsets – a statement I could not verify.

Another participant insightfully characterised the immersion as neither "fully in the world, nor fully out of the world", which suggested a liminal experiential position. This experience of presence is further addressed in Sections 5.1 and 5.2 of the analysis.

Significantly, most participants reported that their awareness of the physical environment (i.e. the experimental setup, headset weight, and external sounds) quickly faded after the initial orientation. This outcome confirmed that the artwork and technical setup successfully minimised extraneous distractions that might have disrupted the desired experience.

Body Schema and Proprioception

The most complex aspect of the feedback involved the participants' sense of embodiment and body schema in the virtual environment. While *Vortex* was partly selected for its capacity to create novel bodily experiences through floating and disembodied movement, the participants' responses revealed an intricate spectrum of embodiment states.

Most participants reported a partial or transformed sense of embodiment, which frequently manifested as a body schema extending from approximately the "upper chest or bottom of the neck" upward, with numerous participants reporting a

disconnection from their lower body. While this partial embodiment created a deviation from stereotypical embodied experience, it maintained a sufficient bodily presence for orientation.

The virtual hand representations proved particularly significant in mediating embodiment. Several participants described these not as literal hands but as “tools” or “extensions” of their physical bodies, sometimes “floating close” but “not part of my body”. On the interaction side of the environment, these statements revealed how the participants actively negotiated the relationship between their physical body schema and the virtual representations by precisely referencing the gap in understanding concerning the interaction contexts that this study sought.

Agency and Environmental Interaction

A critical dimension of the feedback concerned the participants’ sense of agency and ability to interact with the virtual environment. Here, the reports revealed matches and mismatches with the research intentions. While *Vortex* was selected partly for allowing interaction beyond mere observation, multiple participants reported limitations in their sense of agency as “quite slim overall”, or “I did not feel that I had any impact” despite attempting to touch objects.

After the interviews were concluded, many of these participants entered the VR again with some additional explanations about the

controls and mechanics of *Vortex*. Often, the feeling of limited agency was resolved, so it became apparent that they had not discovered all of its interaction possibilities and control modes during the limited timeframe of the sessions. However, this constraint might have served the research goals by heightening the participants' awareness of their unknown potential for such relationships. These participants continuously expressed an active engagement in establishing relationships with the environment.

More positively, several participants also reported satisfying interactions with specific elements of the environment. One participant described interactions with the controller as "quite satisfying and reinforcing". Others were content with movement alone, while many reported not thinking or feeling special about their interactions but simply continuously attempting engagements.

Illusion and Perceptual Disruption

Vortex was chosen partly for its self-sustained environment and abstract, non-representational qualities that – in theory – would require active sense-making from the participants. The general feedback confirmed that this environment successfully created productive perceptual tensions in everyday environments.

One recurring observation concerned objects that passed through the virtual body without collision. Several participants noted the physical quality of virtual objects in general, like lacking "true mass or volume". Other prevalent reports described the objects as having

unnatural textures, unnatural colours and lighting, and opaque movement patterns. Rather than undermining the experience or disrupting absorption, these perceptual novelties were reported as heightening the participants' general awareness and engagement.

Temporal Aspects and Exploration

A noteworthy pattern that emerged in the participant's experience timelines concerned the unfolding of the experience. All participants described an initial period of technical orientation and control familiarisation, followed by more naturalistic exploration. Hence, future studies may benefit from a better separation or prolongation of the technical acclimation period.

Several participants also noted time constraints affecting their exploration. Certain explorations were deemed impossible because "I did not have time for [it]". This comment demonstrated a temporal awareness and how the participants actively prioritised certain forms of engagement within the constraints of the experimental session.

The Interview Process

The interview process received positive feedback, with the participants generally feeling understood and able to articulate their experiences adequately. No particular complaint was reported about not being able to articulate oneself or having aspects of the experience left out in the conversation. It was repeatedly mentioned that probing questions revealed aspects that the participants were

not aware of initially but reliably felt as a genuine part of the original experience.

The Descriptions and their Initial Groupings

The final version of the treatment method for the interviews now looked like this:

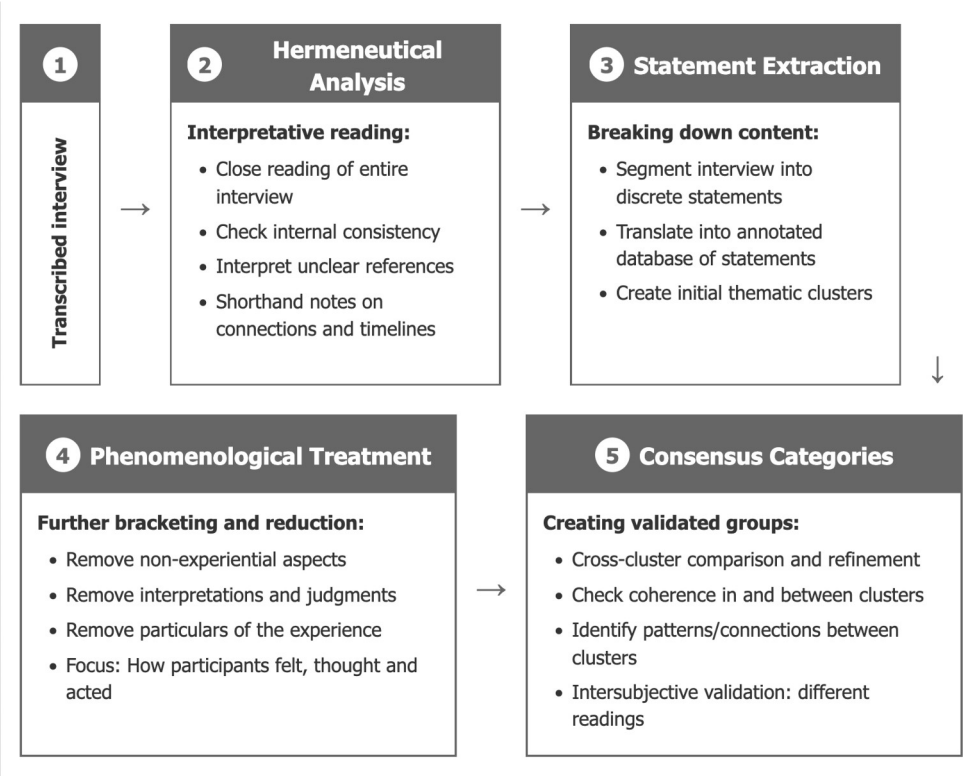

Fig. 4.17: Detailed treatment of iteration 2 and 3's interviews into consensus categories of descriptions.

Again, the extraction and general grouping of the participants' statements happened after the transcription and hermeneutical

reading of each interview. As proto-categories in the third step, they should be understood as thematic clusters of participant statements rather than final consensus categories or even deducted analytical concepts. They represent the initial organisation of the rich qualitative data of roughly 220 original statements gathered in this third iteration, as well as the second. There was a wholly distinct grouping of partially overlapping statements only about actions and choices, which I explore in the next chapter. Here is a summary of the conversational themes as they appeared in the interviews:

Emotions (and Affective Concepts)

The group → 'Emotions' was medium-sized, with approximately 15 statements from eight participants. It covered various emotional descriptions, including novelty judgements like feelings of safety, calmness, smallness, wonder, appreciation, and excitement. The participants frequently described the environment as 'peaceful", "safe", or inducing a sense of "pleasurable wonder". In addition, there was the distinct group 'Fun' with nine statements from five participants describing enjoyment derived from control, novelty, and immersion. The group 'Negative Emotions' was comprised of eight statements from five participants describing disappointment, annoyance, or discomfort, mainly as a result of interactions.

Meaning-making Processes

Several groups were formed around how the participants found or struggled with meaning. → 'Finding Meaning: Purpose & Roles' was

comprised of 24 statements from 11 participants about establishing a sense of purpose, exploring agency, and defining their relationship to the virtual world. → 'Meaninglessness & Lack of Context' included nine statements from seven participants discussing the absence of familiar references and meaning. → 'Obscuring Meaning: Disorientation' contained six statements from four participants describing experiences of disorientation due to lacking frames of reference. → 'Ambiguity' was comprised of only three statements from two participants about hard-to-discern (i.e. not unknown or unexpected) roles, expectations, and the effects of their actions.

Unfamiliar Body and Body Image

The group → 'Unfamiliar Body' held 13 statements from ten participants describing reactions to the unfamiliar virtual body, including control limitations and (not) developing an intuitive understanding of movement. It also included actions and their effects on the environment.

Absorption

In → 'Being there: Absorption' there were 11 statements were from seven participants explicitly describing states of immersion, focus, engagement, and lack of reflection.

Reflection and Coming-to-presence

Two groups captured different aspects of reflective awareness.

→ ‘Being There: Coming-to Judgements and Associations’ split from → ‘Absorption’, as its seven statements from five participants described a passive process of realising associations or judgements without active reflection. The big → ‘Circumstances of Reflection’ held 20 statements from nine participants addressing when and how reflection occurred, if at all, during the experience, ranging from passive comparisons to active thinking about objects.

Play

Another sizeable group to explore was → ‘Play/Experimenting’, with 32 statements from ten participants detailing the joyful processes of testing interactions, exploring possibilities, and establishing relationships with virtual entities.

Curiosity Patterns

Curiosity emerged as a rich thematic area with three subgroups that played a main role in the analysis. → ‘General Curiosity’ included 15 statements from nine participants expressing a broad desire to explore and discover. → ‘Concrete Curiosity’ included ten statements from seven participants describing specific focus and urges to interact with particular elements.
→ ‘Exhaustion/Saturation of Curiosity’ was comprised of 20 statements from nine participants detailing how interest waned after their exploration reached its perceived limits.

The group → 'Intersubjective/Recognition of Agency' was a medium-sized group with ten statements from five participants describing their intentions to communicate, perceptions of agency, and judgements about lifelike qualities and expectations of being recognised by the environment. In addition, five statements from five participants comprised the group → 'Change', which noted how environmental changes affected attention and exploration.

This thematic grouping revealed the multifaceted nature of the participants' experiences. In Chapter 5's analysis, I flesh out the experiential structures I identified within and throughout these statements

5. Analysis:

The Interview Statements

The focus of this investigation was understanding the phenomenological landscape for the desired experience of unfamiliarity and thin contexts. It tracked the intentions, perceived outcomes, and consequences of the participants' actions, including how expectations and stances transformed throughout the experience, while examining how these engagements related to the participants' affective responses. The dataset for this analysis was exclusively drawn from Iterations 2 and 3 of the experiment sessions, as these employed a refined interview methodology distinct from the exploratory approach of Iteration 1. However, the initial iteration's findings reinforced the fundamental situation of encountering unfamiliarity that this study sought to understand.

5.1 Overview:

What was observable

First, here is a report of the experiential aspects that were raised during the interviews – what the participants spoke about that resulted in reiterated themes and perspectives. It includes a check

on the general perceptions of the environment.

The Experience in Language: Unfamiliarity, Lack of Expectations, and Bodily Exploration

Of the 12 valid sessions, n = 8 participants (66.67%) made direct and unprompted use of the terms ‘unfamiliar’, ‘alien’, ‘novel’, or ‘abstract’ to describe the environment. The visuals and spatial composition were especially perceived as unfamiliar: “You don’t know what kind of space you are in. […] You had no clue. You might as well be thrown into the desert or whatever”.[432]

These terms often occurred in tandem with the participants’ expectations: “‘Alien’ is the best word. It just felt like […] not in my expectation”. Other terms occasionally used were “chaotic”, “unexpected”, the “change or dynamics within [the environment] were not predictable”, and “[I was] not able to associate [what I experienced] with one single thing”. However, the occurrence of expectations in statements was characterised by persistent questioning rather than clear comprehension: “I was just thinking the whole time like ‘What are these? What do these do?’”. Some participants even described how the environment did not prompt a comprehensive expectation at all: “I don’t think I had the expectation that it would make sense”.

“Disorientation” was not a dominant term but reoccurred for n = 5

[432] All statements in this subchapter are from the participants in Iterations 2 and 3.

participants (41.67%), as manifested through general confusion, spatial disorientation, and a loss of control. One participant described the fundamental challenge as “it’s disorienting in the way that it’s difficult to get a sense of the room; […] things are not composed the way things are in reality”. Notably, ‘dizziness’ and vertigo (associated with spatial disorientation) were reported only twice, with one instance lasting a short time.

However, the participants also described orientation as the core of the experience, with one stating, “I felt like that was one of my main missions: to sort of orient myself”. Nevertheless, ‘exploration’ was the more universal concept used. For their overall modus of engagement, n = 6 participants (50%) used the term “exploration” while describing it as their main goal or role in the experience. Overlapping with this cohort, n = 9 participants (75%) used the term “to explore”, while another n = 9 participants (75%) used the terms “trying out”, “play/to play”, ‘or “experiment”.

These findings reinforce that the setup invoked a novel situation that was engaged with some motivation. Nevertheless, some caution needed to be exercised in the analysis, as certain moments could be identified as not belonging to the desired experience.

Caveat of the Material: Occasional Excessive Demand

Sometimes, Vortex and its abstract forms, movements, contrasting colours, unusual embodiment, and hidden control abilities created conditions where the participants’ coping skills proved insufficient.

They experienced a skill inadequacy that manifested across multiple dimensions of perception and embodied interaction. When the experience was notably strong, I did not consider them a productive part of the desired experience, as they were environmentally too demanding – the participants were only concerned with being overloaded. Statements connected to these experiences were generally considered unreliable and disqualified for further analysis. These episodes occurred during the experience or disqualified statements about a specific aspect of the experience. Luckily, an entire session never had to be excluded from the dataset.

Two distinct yet interconnected forms of competence deficits were reported. Direct skill deficits (n = 3) manifested as explicit incompetence with the virtual environment's control systems, exemplified by the participants "feeling of a kind of incompetence" for basic movements and spatial orientation. Moreover, learning and adaptation challenges (n = 3) demonstrated that the participants experienced a failure to establish a reliable predictive understanding, with one noting not being "able to sort of establish a cause and effect between what I did and how [the world] reacted".

Parallel to these competence issues, a few participants experienced the virtual environment as placing excessive demands visually, dynamically, and spatially. Cognitive overload (n= 2) emerged when the participants felt "overwhelmed" by multiple simultaneous processes, so they were unable to maintain attention according to their expectations. This feeling was compounded by disturbed

absorption (n = 2), where technical disruptions made the participants primarily aware of their mediated presence in a virtual environment. These two participants experienced it as “distracting”, which “made [them] think analytically and disturbed the flow”.

Time pressure constraints (n = 2) introduced an additional layer of excessive demand, which transformed what might have been exploratory engagement into strategic calculation. The participants reported awareness that their experience “would end at some point outside of my control”, which led them to “maximise the information” they could extract, rather than allowing for an exploration on their terms. Because this temporal urgency could have altered the character of their engagement, it was also considered as an unwanted demand.

Embodiment and Bodily Awareness

Beyond the caveat of excessive sensory demand, clear statements about the participants’ perceptions of their bodies were grouped into two categories of the same size. The first one was called → Explicit bodily self-awareness (n = 7 participants; 58.3%). Here, the participants were compelled to attend consciously to normally tacit bodily processes. One participant described the explicit need to “connect that feeling of my arms doing this with seeing these [hands] and then seeing how those [hands] combined with my movements are affecting the environment”. This hyper-attention to their extended proprioception was an embodied awareness moved from the background to the foreground. However, a similarly

prevalent group of descriptions showed an alternative → Bodily absorption, where n = 7 participants (58.3%) reported explicitly "forgetting about myself" as attention was drawn outward.

These descriptions led to the question of when body perception dominated the participants' attention. A systematic verification of the quote revealed a complex and counterintuitive pattern, which challenged simple assumptions about bodily awareness in this unfamiliar environment: heightened bodily awareness occurred simultaneously with environmental absorption, instead of replacing it.

Three participants (n = 3; 25%) clearly demonstrated both dimensions within the same experiential episode. They reported embodied understanding through action-perception that was "quite satisfying and reinforcing", while also describing complete environmental immersion where they "felt quite engaged in and immersed in the environment". Paradoxically, the same participant described action guided by bodily "feeling" while simultaneously reporting, "I forgot about myself actually [...] because my attention was focusing more on the objects".

Rather than body perception 'taking over' when familiar contexts are absent, this comment suggests that embodied awareness and environmental focus operate as complementary orientational modes that can alternate or co-occur, which reveals multiple attentional streams rather than producing a single dominant framework. While this description was not a dominant one, it

warrants further research since it suggests that embodied self-awareness and environmental engagement are not an either–or dynamic.

Foci of Attention, Intentions and Affects

The intentions, foci of attention and affects of the study participants took up a large part of the interviews and generated rich descriptions. Below, I summarise the resulting consensus categories.

Foci of Attention: Orientation of the Self and Markers of Motor Signification

Concerning the focus of the participants' attention, two main themes arose during every interview, which are introduced here in the participants' words. The participants were quite communicative with their reflections on what they were attentively aware of.[433] The description often began with *self-orientation* – "What do you do with things?"– and a pre-reflective approach to it. The participants were mainly concerned with themselves and their potential actions as sense relations, which was not environmental perception but a *self-awareness of spatial and agential disorientation*: "It felt

[433] As the following statements often reference participants' theories about their experience, I present them here as themes and not explicitly as consensus categories of the experience. Participants' theories were ignored in the analysis, but I ended up agreeing with them during my interpretation of the consensus categories.

dissatisfying to have this lack of control over the environment".[434] They recognised their lack of understanding regarding their possibilities for action. Exploratory intentions were often not reflective, participants simply "went with things [and did not] formulate thoughts about it". Strikingly, the experiences were never described as goal-directed manipulations or investigations but were always concerned with the very possibility of meaningful action, where familiar motor habits provide insufficient guidance. This generates what some participants describe as 'dissatisfying', an urge 'still-to-be-satisfied' or a want 'to know more'–both result in a need to change perspectives and to move around.

Crucially, this initial disorientation is instantly embodied as a problem of actions and the self. The resolution came not through reflective analysis, but through a continuous focus on action capabilities and how they *belonged* to the environment. As one participant notes, it becomes a question of one's "existence" – tied to *what one is* in the particular environmental context.

The second aspect further delved into the role of action-perception as a *motor signification* of the new environment:

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[434] Sara Ahmed's two-fold directedness can add to this:
"First, I am directed toward an object (I face it), and then I take a direction toward it (for instance, I might or might not admire it)".
The participants likewise oscillated between sheer motor probing and valuation by admiring, ignoring, or rejecting features whose other contextual meanings are provisionally bracketed, so that "what appears quickly disappears under the blanket of the familiar".
See: Ahmed, Queer Phenomenology: Orientations, Objects, Others, 28.

> "[If] I was moving in a physical gallery space, I would not try and touch that art, but I would want to. […] When I see a nice sculpture, soft marble or something weird and pokey, like, I want to get tactile with the thing. But I'm an adult, and I don't do that. But there's something about [this] virtual space that makes it feel like you're alone […]. The instinct is to reach out and touch it and see if it will be scared of my touch. Will it […] will it go towards it? Does it not recognize that I am there? Am I just air to it? […] I guess to establish what relationship do we have, me and this [thing]?"

The participants immediately recognised the *extended nature* of their embodied possibilities within the virtual environment. Because of the factual variation of the isolated environment, they experienced a suspension of familiar social and cultural constraints that typically govern engagement with aesthetic objects. More significantly, the participants reached out and were primarily concerned with the consequences of their actions in the environment: establishing their relational presence within an environment with yet unknown action possibilities. This response was not a cognitive puzzle about object properties but an embodied inquiry into the boundaries of environmental responsiveness. The participants sought to understand not what the virtual entities *were* but how they might *matter* in relation to their embodied agency.

Significantly, both quotes can be interpreted to contain an underlying expectation that there "should be more" to discover. This interpretation points to an experiential structure emerging

from this analysis: the anticipation of one's motor capabilities and the affective drive to establish the motor significance of environmental features.

Main Intentions: Embodied Exploration

The main themes emerging from the interviews were reflected in the collection of the participants' expressed intentions for action perceptions and interactions. The participants demonstrated their awareness of intentions towards discovery, control, and spatial orientation, which revealed six discernible categories of intentions.

The most pervasive intentional structure was → Curiosity-driven investigation (n = 10 participants; 83.3%), which was expressed as an underlying motivation that permeated all other forms of engagement. The participants consistently expressed variations of "What more is there to find out here?" and "Let's see what this is…". This curiosity was described as an embodied urge for active exploration rather than contemplative observation and strategies. Curiosity played a greater role in the central part of the analysis.

Closely related was → Playful experimentation and trial and error (n = 9 participants; 75.0%), expressed through statements such as, "Just trial and error […] I do this, and what's the result?". These outcomes were framed as an attempt at exploration and problem-solving action. One participant exemplified how this drive "feels playful because it's like a challenge in my head. […] How do I get these [representations of] hands to do something? [Playing around]

was my main drive the whole time. How can I make something happen?"

While 'play' as a concept is often characterised as simultaneously purposeful and open-ended, the participants. did not describe such concepts. Rather, these descriptions revolved around actions with open expectations and intrinsic motivation for them. Sometimes this intention manifested as systematic experimentation as the participants described "trying different permutations" while focused on their actions and "the special [...] thing I need to do".

Three intention categories emerged with equal frequency (n = 8 participants; 66.7%): → Understanding one's agency, → Exploration as a primary role, and → Proximity seeking and tactile contact. While these categories were prevalent, I underscore that they did not present as phenomenologically distinct but connected to the descriptions of → Curiosity-driven investigation and → Playful experimentation and trial and error.

The intention to understand one's agency was the participants' wonder about their capabilities, such as "How much influence can [I] have on the environment?" and "[...] trying to figure out everything I could do". The participants expressed that the boundaries and possibilities of their agency remained unclear. They actively investigated their capacity for action, which became the object of explicit concern.

Proximity seeking and tactile contact revealed the awareness of an

embodied drive toward objects in the virtual environment. The participants expressed it as “I just wanted to get close to it. I wanted to hold it”. Moreover, they “had the urge or the wish to get inside of it, really close to it”. Furthermore, → Exploration as a primary role was what the participants understood as their fundamental role or purpose within the virtual environment, which was mainly expressed as the answer to a concrete question from the interview guide about what the term “meaning” meant to them regarding the experience.

Finally, the intent for → Connection and intersubjective engagement (n = 6 participants; 50.0%) emerged through expressions such as “whether or not I would be able to connect with [the virtual entities]”. This intent was an awareness that the participants wanted to understand how to act upon objects and relate to them as potential subjects. These categories are dissected in Section 5.2.

Notably, all participants expressed strong intentions to act through their virtual bodies, while simultaneously acknowledging the limitations of not fully understanding how to do so. Strikingly, the intent to stop bodily engaging and contemplate was never expressed: “You just kind of want to experience [...] to look at it in different ways, you just want to feel it in a way”.

Affect: Attunement and Openness

The emotional landscape of the participants’ VR encounters

comprised three fundamental attunements. These affective patterns — curiosity as the primary orienting mood, agency-based oscillations between frustration and enjoyment, and receptive states spanning calmness to wonder — together comprised an emotional infrastructure through which my subjects navigated the *Vortex*.

→ Interest as being attracted by something/curiosity (n = 9; 75%) emerged from the data as the dominant statement about emotional attunement. It structured the participants' entire engagement with the virtual environment. A combination of calm alertness and embodied questioning characterised it. For one participant, being attracted felt like "a calming notion". However, most participants described this curiosity not as cognitive interest but as an embodied urge that compelled movement and action and drove all exploratory actions.

A quote that played a greater role in this analysis was, "What more is there to find out here?" Deeper questioning often revealed that this curiosity operated below the threshold of comparative thinking. Phenomenologically, it revealed itself through specific bodily questions – "What is this?", "How can I get there?", "What can I do with this?" – which arose simultaneously rather than sequentially. As one participant noted: "There were at least three thoughts in my head all at once". For another participant, curiosity took the form of an almost anxious desire not to miss anything: "I regretted that choice" when venturing too far from objects, driven by the feeling that "there's lots of things there that I haven't looked at". The temporal structure of curiosity showed a consistent pattern: initial

calm wondering (i.e. “Let’s see what this is”) that evolved into more urgent, embodied questioning about agency and interaction possibilities. This pattern suggested a structure to this attraction that played a greater role in the next section of the analysis.

While curiosity was a foundational attunement, moment-to-moment exploration was determined by two affect groups: → Disappointment and frustration (n = 7; 58%) and → Enjoyment and fun (n = 6; 50%). They were connected in what I call the ‘twins of agency’: they emerged as dialectically intertwined emotional responses to the same fundamental concern (i.e. embodied agency), with several participants experiencing both emotions in temporal succession or even simultaneously. Something being “frustrating or disappointing” was expressed as the recognition of constrained agency, when discovering “I couldn’t work out what it was doing” or feeling “slightly annoyed” at “not being able to figure out how they worked”. One participant described “a feeling of incompetence” alongside “disappointment in myself”.

Crucially, fun emerged precisely when agency was successfully established. The participants described control as “quite satisfying and reinforcing”. They experienced, “I liked it when I could do stuff in my environment”, while” finding it “kind of fun to be completely enveloped in that world”. Explicit frustration only developed when they failed to extend to deeper environmental manipulation. Enjoyment and disappointment in this experiment scenario were complementary aspects of the same underlying drive towards meaningful embodied engagement with the world, with frustration

serving as the negative disclosure of agency's limits, while fun marked its successful enactment.

Beyond these dynamics of active engagement, a different set of affect groups profoundly connected as complementary modes of receptive engagement: → Calmness (n = 5; 42%) and → Positive wonder and awe (n = 4; 33%). Calmness provided the attentive grounds for aesthetic appreciation to unfold: "I was just appreciating. […] You're not feeling or thinking anything. […] It's a beautiful thing in front of you; you just look at it". Another participant experienced "rather beautiful colours and shapes" while simultaneously feeling "not at all frightened" and no "anxiety about this world". Another described this world as feeling "surprisingly safe" and "quite calming". This sense sometimes enabled the unhurried attention necessary for a "certain amount of pleasurable wonder" aligned with the prolonged "taking in" of the world's aesthetic features. Those participants experiencing wonder also described bodily and activating sensations, a "breathlessness [… a] gut reaction, not as a metaphor but as an actual feeling in the gut". In the end, both affect groups shared a stance of openness and receptive appreciation.

These three affective clusters appeared to be rooted in fundamental existential concerns: the drive to understand and orient oneself (i.e. curiosity), the need to act meaningfully within one's world (i.e. agency-based emotions), and the capacity for a receptive appreciation of environmental qualities (i.e. marking openness). Rather than representing discrete emotional states, they comprised

an integrated system of embodied attunements. Strikingly, beyond these categories, no other consensual affect was found, which led me to an investigation of their central role and connection to actions that culminated in a cycle of affective self-enabling.

5.2 A Self-enabling Cycle of Affective Mediating Actions

This part of the analysis investigated consensus categories related to intended and realised actions and their associated affective implications. To this end, "meaning" was my point of departure; specifically, what kind of meaning emerged for my participants during their sessions in *Vortex VR*. As a result, I had three main observations that emerged from the connections of consensus categories:

1) Action was at the core of experiences faced with contextual scarcity. This observation was the most obvious in my experiments. It presented itself as action being the first context of orientation, at least for this particular and designed situation. I primarily explain action using the participants' notions of meaning and additional categories of engagement I found.

2) Within the participants' experiences, a structural cycle was apparent, comprised of affective states and actions. These were not

vastly different affects or actions. Rather, the cycle involved varying degrees of seemingly similar affective and actionable relationships. This cycle of actions and stances enabled the participants' relationship building with the world and produced the world 'at hand', as a self-enabling cycle.

3) The varying quality of actions revealed a certain category of actions, which I coin 'mediating action potentials'. These subjective possibilities for relationship building occurred within a world characterised by how much one was unsure about their consequences or even their suitability. Hence, these mediating potentials differed from habitualised action-expectations in a phenomenological sense and the analytical category of 'affordances'. Moreover, the former were part of the latter's constitution.

Actions, Sense-making and Unreflective Presence

After compiling the consensus categories from the interviews during Iterations 2 and 3 of the experiment, the first step was to take a step back. Having gained an intimate understanding of the database, I described and discussed the most apparent takeaways with my colleagues. The most obvious aspect visible to all participants was a certain general mode of engagement that was consistently displayed throughout the duration of the sessions. One participant's comment, introduced above, encapsulated the key aspects so nicely, so I want to share the extended quote from their

interview:

> "It felt dissatisfying to have this lack of control over the environment, and I started to look for [...] when things change and which way and whether things are reoccurring. What do you do with things? The boundaries of your existence there. [...] No, I [didn't think about it actively]; I just went with things. You don't formulate thoughts about it. [...] It's positive in the sense that things are interesting; there's still more to be known. [Instead of comparing it to reality], things were sort of more abstract in a way, and that brings a bit of a curiosity to see how things are composed".

Several concepts must be unpacked here. For now, note how this idea illustrates testing the boundaries of one's own reach and existence through one's actions, which is directly connected with the positivity of following one's curiosity and directing attention accordingly.

Categories of self-found meanings

The start of the interview guide focused on the participants' experiences with the meanings within the artwork, particularly its unknown contexts. This focus was a significant part of allowing the participants to lay the groundwork in terms of vocabulary and content that mattered to the experience. It included the participants' interpretations, which were later filtered, and crucially, how they arrived at stances about what they encountered

there. This line of questioning mainly produced a comprehensive group of statements that I initially labelled 'found meanings' and later complemented with the consensus category of experiencing 'lacking meaning and lack of context'. These parent categories were too broad to describe specific processes, but their internal consistencies were useful for showing what was at the centre of the participants' attention – what they valued and expected.

There were two distinct subcategories of meaning that the participants attended to. This differentiation was interpretative but was based on their statements. It did not originate from the interviewer's questions that introduced the difference. Depending on their root category, the relevant statements were either about how the participants arrived at meanings or how they lacked or missed them.

The first of the sub-categories was *referential* meaning in the sense of "this [abstract object] represented/resembled a fish", and "I saw the inner workings of a human body cell". Both were real examples from the interviews. The second subcategory was *actionable* meaning in the sense of 'it [the abstract object] was meant to be used in a certain way', and 'Here, I was supposed to do this [action x]'.

Of course, a phenomenological investigation could not overlook a third category of meaning: the 'object-as-it-is-given', which means taking an object as a means within itself, as self-sufficiently present, to be perceived and understood as part of the world. I elaborate on

this aspect and statements concerning it shortly. For now, it is important that the first two categories were mostly in the participants' focus when asked what they made of the experience. Since this differentiation was derived from their statements, I want to first explore their relationships within the data without immediately elevating them to a theoretical finding.

Action is everything…

The first structural feat of the action–reference differentiation was that one subcategory was much more predominant than the other. The occurrence of *actionable* meanings, with meaning as the enactable body within the virtual world, outnumbered representational meanings by far.

This outcome became initially visible in the self-described 'missing' meanings in the category of → Lack of meaning and lack of context. As these were direct statements, only n = 7 of the 12 participants answered directly to that line of questioning (e.g. "I didn't understand the meaning of things", "It wasn't meaningless", and "But I don't know how it was meaningful, really"). Indeed, all these participants reported missing representations[435] with descriptions like, "It's [the] opposite of a neon sign that says 'bar'", and "I could

[435] Naturally, referential meanings were described in the interviews. They included describing the world as "underwater" or like the "inner-workings of a cell". However, most times, the participants seemed to find these references in hindsight during the interviews. As such, they were judgements made as reflections for the conversation, not something the participants were occupied with, thought about, or acted on during the actual experience with the VR.

only [manipulate] objects [...]. That was the only meaning I saw in there". In contrast, only one participant reported their actions to be missing meaning, in the sense of how the world had no value because they "couldn't measure things":

n = 7 (12 total)	***Lack of meaning and lack of context***
n = 7	**No reference/representation found:** The experience, its objects, and world could not be associated with any symbols and references to real or fictional objects, narratives, or processes.
n = 1	**No actionable meaning found:** The experience was so devoid of interaction that it could not be valued or understood through actions.

In individual cases, this absence of representational meaning was reported as a drive to explore and "a little disconcerting", but mostly, it had no further consequences for the participants.

In contrast, what meaning was found? Regarding referential meaning, little meaning was found. The participants associated objects with a handful of particular things (e.g. "DNA-like helix structures" and animals like "fish" and "snakes"). These were few in count and frequency.

Nevertheless, what was lacking in references and representations was made up for by descriptions of actionable meaning, with many specific actions and subsequent attributions, which I address shortly. However, there were also overarching narratives of action: what the participants saw themselves doing, their expectations and

intentions concerning their relationship with the artwork, and how these played out. These descriptions formed another overarching consensus category → Meaning: purpose and roles, which contained coherent reports from two-thirds of all participants.

n = 11 (12 total)	***Meaning: purpose and roles***
n = 8	**Understanding one's agency:** The experience of one's actions and their consequences as a continual focus within the artwork were reported as a self-aware and self-prescribed role that was fueled by an urge or restlessness to act.
n = 6	**Exploration:** A self-awareness of a sustained and self-prescribed focus on discovering elements of the artwork, their compositions, and behaviours. It was reported mostly as an active process of movement and interaction (n = 5). More passive taking-in through perpetual actions only (e.g. looking around and a visual focus on single objects) was also reported (n = 1).

n = 4	**Self-world belonging:** A self-awareness of a sustained focus on the relationship of oneself and the world, how one is integrated, especially whether the objects and processes of the world incorporate one's presence and actions.
n = 2	**World comprehension:** A sustained focus on 'what' the artwork comprises, including its objects and their features. In contrast to → Exploration, this focus was only realised after the fact. No self-awareness or perceived role was reported.
n = 2	**External role:** A sustained awareness of a goal perceived as external. Cases investigating the research intentions behind the experiment (n = 1) and expected exploratory behaviour (n =1) did not result in → Exploration but in → World comprehension.

The most prevalent experiences were variants of a self-awareness of striving towards certain understandings or possibilities: → Understanding one's agency in the context of interaction with the artwork and the → Exploration of the elements of the artwork through active engagement. As abstract as they sound, the participants experienced these precise attitudes during the sessions: "I was [only] thinking 'Oh, I want to explore, I want to see what's here and what's happening and what happens if I try this and that'."

In addition, one-third of the participants reported a direct awareness of establishing how the virtual world recognised them: their sense of → Self-world belonging. This awareness could result from their perspectives as impactful actors, as in pondering, "If I could change the world […]", with an interest in the world's perspective: "Do you know that I'm here?". In these cases, the corresponding actions did not feel like just *belonging* to the participants. Instead, they were aware of a co-constituting nature of their relationship, the environment was perceived as welcoming exploration with a hopeful interest in "whether or not I would be able to connect with [it]".

Two participants reported a lack of self-awareness regarding their striving for meaning. They reflected on their experience as being occupied with a form of → World comprehension, which meant they only took in the features and dynamics of the world without being able to report experiencing themselves as part of the world inside the artwork. Nevertheless, they performed exploratory and perceptual actions to "understand what's going on". However, this intention was never apparent. It did not belong to them or the world. Indeed, the performance of the actions was the only thing that the participants consciously registered.

One of these participants also belonged to cases experiencing an → External role. These were two instances where the participants expected the meaning of the experience to be clearly derived from outside the artwork. Indeed, this phenomenon was common. For example, various participants reported being concerned with the

purpose of the experiment or something the experimenter said during the introduction or in the VR waiting room. However, as soon as the virtual artwork began, either immediately or within seconds, they lost interest in what the researcher or the artwork's creator expected of them. Instead, *being in* the VR environment and fully present in it fully captured their attention, except for two cases where one participant remained aware of an expectation to "explore", while another participant was occupied with understanding the overarching research question for the experiment.

Nevertheless, even in these cases without a self-awareness of an experience-inherent striving for meaning, actions remained at the centre of the experience. This notion was strongly supported by the sheer number of reports on how actions comprised the 'what' of the experience: what the participants attended to and how it mattered. This 'how' was usually time-related to other actions, specific intentions, and expectations for a particular object or between different, specific objects. Descriptions of manipulative, explorative, and perceptual actions of this nature comprised a significant portion of all the interviews, so much so that from all 350+ relevant statements of this collection, one-fifth (approximately 70) were solely focused on how *particular* actions played out. In addition, over one-third of the statements (approximately 130) were concerned with notions of being directly intertwined with actions (e.g. 'play/experiment', 'curiosity', and one's 'body'). They collectively demonstrated a clear tendency since they comprised

over one-half of all statements describing what the experience was like.[436] In comparison, all terms with a much less clear link to concrete actions (e.g. longer-lasting emotions, thoughts, and perceptions) together accounted for just over two-fifths of all relevant statements.

… as Action Becomes the First Context

The following are observations about what comprised most of what the participants reported on – what they had access to. Hand in hand with the experienced purposes and goals, an obvious picture emerged: The specifically chosen and reinforced setting of missing context played out strongly, focused on action.

Action as meaning also mattered differently from representational meaning. In the few cases where the participants reported on representational meaning, it was not a primary factor in decision making and did not significantly charge the experience with corresponding emotions.[437] Meanwhile, meaningful actions were

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[436] How these proportions were registered was slightly flexible since the statements could belong to several consensus categories simultaneously. Parts of a longer statement could also comprise smaller statements about something else, which made them subject to interpretation concerning which statements could be counted as duplicates, recurring, or independent. To show coherent tendencies between overarching categories, the text here and further on relies on the minimum count. The problem only arose in operations overarching the more precise categories, which are presented in this thesis as tables.

[437] Emotional reactions to certain associations did occur. Again, these reactions only happened afterwards during the reflective look back in the interview. They simply did not appear in the foreground of the participants' experiences: "I knew it in the back of my mind".

actively explored, assessed, and reassessed; they were important for decisions.[438] They were charged with value through emotions; they were affective. Most consensus categories revolving around action featured feelings of attachment, longing, excitement, repulsion, satisfaction, and boredom.

The timing was also curious. Upon reviewing the collected timelines of how each experience unfolded concretely, it became clear that emotionally charged actions were present from the start. Almost immediately, the participants acted manually through their hands and their hands representing controllers. Initially, most were startled and overwhelmed by all the new sensations for a few seconds up to a minute.[439] Moreover, only two of 12 participants stayed still for more than a minute. These 'lingerers' reported being immersed and attentive while taking the artwork in without reflection, narrating thoughts, or judgement. Nonetheless, they even slipped into action.

All participants except for one took a positive stance in their exploration towards the artwork (ranging from "calm" to "curious" and "observant" to outright "excited"). They experienced a desire for impact, for the consequences of their actions as something they

[438] How these decisions played out and the role of potential actions are addressed in later sections of the analysis.

[439] The participants did not have the means to judge these periods exactly. The wording ranged from a "few moments", "seconds", and a "half a minute or so" to "a minute or two". I validated these estimates with the screen recordings of each participant, which clearly showed that when they started to move decisively towards objects, reach out, or physically tried to manipulate them.

valued. One participant was “amazed by the options”, even though they “didn’t know what [I] was going to find or [to] expect”. Another tried to “get a sense of what things were, how they interact with you, how you can interact with them”, while another said, “I didn’t feel like I had to interact, it was more that I *wanted* to interact”.

The timelines showed that actions were immediately at the centre of the experience. From a first visual orientation (including head movements), the participants quickly began investigating the potentials of movement and manual interaction while continuing to explore through purposeful interaction. According to the 4E perspective, interactions are required for objects while dynamics must be ‘at hand’ and actualised in the experiencer’s world. Critically, this experiment did not intend to confirm this notion, but the reported experiences were remarkably consistent. The potential for manual action, in the absence of other apparent contexts, was the first context of subjective experience.

Was this primacy a question of the general availability of action potentials for reflective or cognitive actions? Due to the nature of this phenomenological study, I cannot speak to the mutuality of the environment and the subjects bearing affordances from an ecological perspective. However, from the first-person perspective, there was a clear primacy of manual action contexts.[440]

[440] Consider this notion from an ecological perspective. There are more forms of attunement to an environment than embodied action. As Read and Szokolszky explained, the “mutuality” in life systems is inherent in all kinds of layers interacting

The data speaks to what kinds of context the participants realised and their stances towards them. The extent to which their experiences revolved around own actions invites a closer look at the self, emotions and their relationship to these actions. The participants tried to realise 'what it was' they experienced through actions. How did they do this? Did they even have a choice?

Unreflective being there

To ask about choices and judgements was a routine technique for the interview. When would they occur, how were they achieved, and what did they feel like? The choice for interactive exploration, it turned out, was never a real one. Not once in all the interviews did a participant report having juggled other options (e.g. active exploration and passive contemplation) or even degrees of one of them. This observation stands out against an otherwise high tendency of the participants to emphasise their decisions and motivations. Even more remarkable is how occupied all participants were with directly engaging the unfamiliar environment so that they did not reflect on what was happening at all.

One thematic category that showcased this notion is "being there: absorption and presence". It began as a collection of statements about being "immersed" in the experience, as a few participants had used that term. The title switched to 'absorbed' when I noted a more

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with each other within an environmental niche, from the cell up to reflective consciousness.
See: Read and Szokolszky, "Ecological Psychology and Enactivism."

common denominator of “not feeling or thinking anything”. The lack of thinking mentioned here referred to thoughts that one ‘can put into words’, while missing feelings pointed to no awareness of inner states: “I forgot about myself”.

Furthermore, the participants reported not being occupied with how *th*e world they experienced was connected or intertwined with the everyday world outside the VR, nor did they search for or compare it with previous experiences. Instead, they purely focused on the apparently self-contained world of the artwork and their immediate actions within it. Hence, I labelled the experience as ‘highly absorbing’.

Of course, I still had to check for different experiences that the participants did not immediately associate with opposing this absorption. My primary interest here was periods of reflection. By asking about reflection (if the participants did not raise it), I identified moments during which the participants stepped back from their engagement with the artwork to consider more than what was apparently in front of them, no matter in what direction. Surprisingly, there were no reports of a mental detachment from the immediate environment. Therefore, I selected the term ‘unreflective’, as in not reflecting or being conscious of a mental process of reflection. Note that this term differs from ‘pre-reflective’ because the label of “unreflective” does not implicate assumptions about processes outside of the awareness of the participants. It is here merely shorthand for not having experienced awareness of one’s reflection.

Nonetheless, one exception surfaced. In this case, the participant described a continuous awareness of "experiencing someplace else" besides the world of the VR artwork: the physical room where the experiment was conducted. The emphasis was on the continuous awareness because many of the participants described a feeling of being "in-between" places or being "tethered" to the tactile and interoceptive impressions of the chair and other factors in the experiment room (e.g. the floor, a breeze, and underlying sounds). For them, these feelings lasted mere seconds and appeared only occasionally.[441] In the outlier case, however, the awareness was ongoing and dominant over the feeling of "being there" in the artwork's world.

On the one hand, this awareness clearly contrasted with how much the other participants felt transported into the virtual environment. On the other hand, even the outlier case did not further reflect on this feeling or any other relationship between the content of the artworks and the outside world. While they had immediate associations (e.g. "like floating in space [...] with some strange geometric things in it"), these associations were not explored or assessed further. Moreover, they did not impact their judgements, feelings, or behaviour to a noticeable degree.

[441] … with a tendency to trigger in the first minute of the experience and when the participants had to deal with physical implications of the real world, like turning the chair, locating buttons on the controllers, or noticing cables from the headsets on their extremities.

n = 7 (12 total)	***Being there: absorption and presence***
n = 6	**Unreflective, absorbed local presence:** The experience of being somewhere (here: the virtual world) without reflecting on relationships of this somewhere to other places and/or contexts, which was accompanied by an awareness of one's' focus on the world and its contents (n = 5). There were reports of a particular awareness of one's actions inside that environment (n = 3) and a dominant appreciation of its contents (n = 3).
n = 1	**Unreflective, split local presence:** The experience of being in separate places simultaneously (here: the virtual world and the experiment room), being at least to a degree while continuously aware of how these places were related and especially how one's own body connected to them. Apart from this, further reflection was offered on relationships to other places and/or contexts.

n = 0	**Reflective local presence or reflective detachment:** The experience of an environment/object characterised by conscious reflection of its relations to other environments, former experiences, and social, cultural, and representational meanings. It could be accompanied by experiencing being present in that environment or by feeling detached from it.

Frankly, a great deal of evidence indicated the participants did not consciously reflect on what they experienced. They only acted on it. All these statements were similar, as they were engaged but exhibited an unreflective form of 'being-there', even when the boundaries of 'there' appeared blurry sometimes. Nevertheless, it did not mean that there were no assessments or judgements, only that they did not take a step back from what was immediately perceivable and attainable.

Considering what was observed about actionable meaning, the picture emerged that what was in front of them was the opportunity to act. How much and to what level of satisfaction was another question. However, this focus was what concerned the participants: figuring out the boundaries of what it meant to be in that environment. This focus was "all-encompassing"; the rest of the world and, similarly important, the rest of the self did not play significant roles.

Even the consequences of their actions were not considered. They had intuition and expectations about the immediate consequences of their actions, yet they did not 'plan' sets of experiments nor 'plot' deliberate courses of interest through the environment. They did not even try to 'anticipate' chains of events, group dynamics, or more than immediate reactions to what they were doing. Indeed, these were neither terms used by the participants nor discernible structures found within the data.

Thinking visually or narratively, comparatively or otherwise conceptually, or in a linguistic sense was also seldom reported. Three to four cases existed, depending on the interpretation, but they were connected to external disturbances and particular moments in otherwise unreflective engagements throughout the experiment. In the participants' words: "You were doing *your* thing [and] felt immersed". "It was just an experience. I wasn't comparing it to anything". "I didn't think, 'Oh, what happens if I do this?' I just did it".

A Self-enabling Cycle of Action and Affect

Now that the dominance of actions is clear, it is time to unpack exactly *how* they stayed at the centre of the participants' experience. One thing I soon discovered was that all this acting and interacting had a profound emotional impact on the participants.

Initially, numerous statements described "curiosity" and "boredom". The participants used these terms, which often served

as the starting or sometimes culminating point for many in-depth discussions during the interviews. A common question to start with was what curiosity or boredom felt like in the body. In a second step, I inquired whether these experiences were positive or negative.

Boredom was reported as neither a particularly negative nor positive feeling. Indeed, descriptions of "boredom" were always unspecific. In contrast, "curiosity" seemed to be more accessible to the participants and was described as emotional, positive, intentional, and reward-expectant moments. It also presented as a bodily stance, meaning that actual bodily faculties (e.g. alignment, gaze, and movement) were intentionally directed.

However, the concrete dynamic between the experiencer and the world was still unclear at this point. Nevertheless, curiosity presented itself as a relationship of primal affection, of values and mattering, which resulted in kinaesthetic dynamics of approximation or aversion. Hence, I grouped the participants' statements using these terms as a relationship between affect, attention, and the body.

Modi of Affective Curiosity

The resulting collection was extensive, with over 40 distinct statements from almost all participants. Within this collection, three distinct consensus categories around curiosity emerged. As states or modi of the same being-with the artwork, they seemed

connected. This connection was foremost through the persistence of attended objects, their features, and the spaces that emerged between them and the subject, all of which I call ‘points of interest’ (PoIs).[442] These categories were also connected through the affective relation to these PoIs, which were not distinct emotions but transformed ones. The three categories were → General curiosity, → Particular curiosity, and → Exhausted/saturated curiosity.

[442] Points of interests (PoIs) are objects of potential relations, potential targets of intent. As such, they can be acknowledged through any modality. Moreover, since they are subjective phenomena, they may not have a material correlate and can exist in the subject's mind only.

n = 11 (12 total)	***Curiosity***
n = 9	**General curiosity:** The feeling of being equally and indiscriminately drawn towards distinctively different PoIs (e.g. objects, features, and places). Only PoIs that appeared to be unknown ("not similar" to known PoIs) were included and seemed to be pre-reflectively registered. General curiosity could present itself either as the urge to experience increasingly more or not to miss out on possible encounters. It was described as a receptive state, with a positive anticipation ranging from "calm" to "restless".
n = 7	**Concrete curiosity:** The feeling of being drawn towards a particular PoI, with the motivation to maintain a stable focus of attention, combined with the urges to establish proximity (often: manual reach) and interact. It was often reported with high expectations for the impact of one's' actions.

n = 9	**Saturated/exhausted curiosity (boredom):** A decline of motivation to engage a particular point of interest, which was more often a neutral feeling than slightly disappointing. It was often described as a result of unmet expectations, no (further) impact of one's actions and/or a judgement of familiarity with a PoI independent of its value for oneself. As a result, a state suspiciously similar to → General curiosity was reported: a receptive and anticipating stance towards other/different PoIs.

These three states were causally linked to each other, although an unequivocal, systematic starting point of their linkage was not discernible based on the statements. What was observable from the timelines was that → General curiosity appeared at the start of the experience, when the participants were immersed in the aesthetic environment. There was an awareness of 'things' that existed around the participants. However, they were unspecific or abstract because they were merely characterised by a handful of features or relations which were immediately at hand (e.g. "the really big thing", the "group of smaller ones somewhere above me", and "the one closest to me"). This state of anticipation, of readiness, was already connected to the world. It was a stance of being kinaesthetically grounded in a 'here', informed by movement. The movable body provided a structure of relations to act upon (e.g.

exploring, turning, and looking around; a fixating standstill; or a perspectival shift through movements which were already in motion). One participant described it as bodily posing a question *to* the world (and not, for example, linguistically to oneself): “What more is there to find out here?”.

→ General curiosity very often transitioned into → Particular curiosity. A typical statement for this category was, “I was drawn to this [object] because it had [property X]”. Here was a particular focus of attention, which was enacted through bodily alignment towards a single PoI. Even though the quote used the term “drawn-towards”, it “was equally often described in the sense of ‘attending to’ something. Thus, it was impossible to distinguish clearly between active versus passive engagement from these statements.

However, what was observed was that there was an emotional drive to get close to or reach out to the PoI (often to the point of expected physical contact). Often, this drive was complemented by the explicit intention to interact with the PoI and high expectations that this interaction would have consequences and be impactful. This attitude and relationship continued throughout the actual conduct of the interactions, the exploration of a PoI.

Nonetheless, these motivating feelings reached a point of exhaustion, yet how it happened was not immediately apparent. What was observable was that → Exhausted curiosity was characterised by a notable absence of the previous positive affect towards the PoI: “I wasn’t really drawn to [the explored object]

anymore". This absence did not necessarily result in negative feelings. However, some participants reported a degree of disappointment when their expectations of the engagement were not met. However, overall, this state "wasn't negative, wasn't a bad feeling." Instead, the participants "feelings towards [the object] became neutral", which did not mean that the PoI no longer mattered or had no value. Conversely, they "knew what they were about". Moreover, this knowledge critically preceded a shift of attention by letting go of the current focus on a PoI: "I closed the book on those [objects]".

At this point, the term "boredom" sometimes appeared. However, it was inconsistent. Often, the participants refrained from using it after some reflection because a felt absence of interest or a neutral interest characterised the experience better.

Here, I emphasise the connections among these three categories. They were different modi of engagement within a continuous being with something. One could trace the connection between the three categories throughout single reports, which meant that I could discuss the transitions from one to the other with the participants by following their affective relationship and engagement with particular objects. Moreover, although different orders were sometimes possible, the most common pattern was that *g*eneral curiosity led to an engagement with an object and its features through particular curiosity, until it somehow reached a threshold of capabilities or options, at which point exhausted curiosity appeared.

Something interesting stood out in the comparison of statements from general curiosity versus exhausted curiosity. They were often similar in how the participants were aware of the environment as a wholesome background, including the fact *that* they were aware of it and how the environment appeared as a collection of related PoIs. As one participant said after their relationship to a PoI was exhausted: “It felt like there were other things around me that I wanted to look at as well”.

These unspecified “things” formed a backdrop of basic knowledge about the world: they existed, and they had properties that somehow belonged more to the overall structure of the environment than to a single object (e.g. the participants were aware of and constantly readjusting their estimates of the quantity of these objects and their general directions.) This awareness sometimes also included movements (i.e. ‘something moving away from me/moving together’) and visual contrasts (i.e. ‘something brighter/redder […] than the rest’). While the participants usually realised this kind of information after a concrete engagement with a PoI, the referenced objects were always something different from this concrete object of interest and remained abstract. They were only hinted at.

The participants’ acquisition of this information did not seem to be accessible to them for reflection in the interviews, so they might

have unconsciously and pre-reflectively registered it.[443] The backdrop of abstract PoIs represents a form of tacit knowledge about 'stuff' related to 'other stuff', both of which are not yet part of the network of relations to oneself. All unattended PoIs already had such relational-to-others features. But it was those features that were known, not the objects themselves as coherent entities. As a result, the participants wanted and *needed* to complement and integrate this stuff-of-features through bodily alignment and interaction here described as particular curiosity.

The quoted participant continued to describe a shift in the balance of emotional force between their last concrete PoI and this backdrop of unattended PoIs: "Once I had looked at it, my motivation to look at it became more neutral. […] The other things around me had more interest. […] I wasn't satisfied with that. Because maybe [the other objects] are more satisfying!" Moreover, other participants described the same shift: "[…] and then my feeling towards looking at other objects was still very positive. I'm still interested in looking at [those]."

Hence, the absence of the previous excitements acted as a void that could not be sustained. The current engagement became irrelevant; it was not affective enough anymore in the face of *the sense that there was more*. The initial stance of readiness of expectations for the next potential relationship took over. The affective dimension of

[443] There were only a few examples where one PoI was already focused on by the participant and then actively dropped, because another PoI appeared closer and easier to reach.

curiosity revealed itself to be a cycle.

The Context of Interaction and the Self-enabling Self

Because of this cycle, the participants shifted from one PoI to the next while transforming them from feature-defined into interaction-defined. Therefore, a set of features became an attended object that provided more features while establishing its relationship with the participants as subjects. Thus, it became clear how the PoIs mattered to them. While → General curiosity was a stance of readiness and anticipation, this anticipation was simultaneously inwards and outwards. Inwards, there was the notion of '*I* am going to matter', which was the flipside of '*this* is going to matter' because the PoI mattered only through the 'I'. It mattered because now it was about who *they* were in that environment.

As soon as a concrete PoI was attended to with → Particular curiosity, this anticipation was transformed into particular expectations through actuation or acting-upon. It transformed the lived reality by becoming "familiar" with the PoI, as numerous participants said. Structurally, this familiarity seemed to be the entanglement of their concrete actions with consequences. From visual perspective shifts and movements to manual manipulation and even talking aloud,[444] the thing became something, while the participants became someone. For them, what it meant to be 'I' in

[444] Several participants spoke to attended objects during the experience. Examples included, "And who are you?", Will you hit me?", Can I pet you?", "Go away"!

the environment was defined by this entanglement, by their relationships to the world. Even if some participants behaved restrainedly or passively (e.g. acting as distant observers), they now described a form of being there rather than just the anticipation of abstract possible relations.

However, what I call local saturation and the drive to connect disappeared. Why? There was only one kind of outcome for participants attending to an object. It was represented in the category of → Exhausted curiosity, which was reached when – despite their hopes and excitement – the participants'' actions had no further effect on the PoI, as it did not immediately reveal more features or relations (e.g. "I didn't feel like I was able to affect it"; "You still can't find out the answer"; I was "not succeeding").

It was not that every engagement with a PoI resulted in disappointment. Rather, there was a state of diminishing excitement because there were no more options to establish new relationships with the object apparent. Notably, even when possible interactions were discovered, the participants did not attempt them over two to three times (as established by the screen recordings; the interviewees' statements supported this notion, albeit with anecdotes), yet they still experienced this shift in attention. Therefore, the actual perceived value of a PoI did not influence this exhaustion; only the potential for *more* and *new* interactions (or their recognisable impact) did.

A caveat accompanies this observation: the choice of artwork. By

design, *Vortex*'s interaction possibilities are often quite indirect, which was advantageous for an experiential variation of novelty that somewhat resisted easy resolutions while allowing the participants to realise and the researcher to observe the situation for a prolonged period. Nevertheless, it might have tainted the category of exhausted curiosity because, by design, there were no highly satisfying resolutions of the participants' expectations for their actions. This is important to keep in mind for the scope of this analysis: What I am describing here are structures of experiencing lacking context, and that specifically includes the context of *meaningful interaction*. The work that the VR as a factual variation does here is that it forces a repeated *dealing with* the situation. Thus, the process of coping is highlighted, but not all of it outcomes of are considered – and especially not satisfying outcomes.

Crucially, the dynamics of general curiosity, particular curiosity, and exhausted curiosity presented themselves as the capability to cope with a lack of context through establishing relationships. They were motivational motors, the dynamics that enabled one to act, which comprised the process of becoming *someone here* and bringing forth *somethings here* in the environment with the same motion. No evidence supported the idea that this happened in a narrative sense but only as a concrete set of possible actions, experiences and their impacts, and the consequent values of PoIs. From this possibility space, a subject emerged:

> I am the one *who can* do X and play with these things. The things become *tangible for me* as I am doing X and playing

with them.

This dynamic gave the participants the tools to act on greater needs, intentions, and ideas by bringing outside experiences inside. As I previously showed, this process was not a one-way street. The cycle of self-enabling continued as long as there was an anticipation of "more", which overtook the participants' attention as soon as a local interest was saturated. It was even existential because it had a higher priority than particular interests while addressing the role of the self in the novel situation. It was an orientation that involved learning about contexts through action, through perceptual and manipulative acts, a learning-by-doing approach to understanding oneself.

Nevertheless, this cycle was not absolute or all-encompassing. The experiential horizon of the possibility of existing outside the immediate environment was always present. In the interviews, the control questions about suspension of disbelief made this notion clear. The participants never forgot that they could take off the headset or where they were in real life as the abstract boundary of that which appeared 'immediate' in the first place!

However, as soon as the participants were reminded of a need that was not related to the environment (e.g. through strong external stimuli or interoception), the horizon moved and integrated this reminder into the experience. Hence, it was not a 'complete absorption' since the participants' selves outside the experiment did not disappear. Nevertheless, it was also neither affected by the

sensual confines of the experimental setting nor relevant for the anticipated aesthetic art experience that the participants were told about beforehand.

Nonetheless, something was missing in this account of a self-enabling and affective cycle: the actions themselves. Therefore, the following section features how they produced a world 'at hand' or qualitative degrees of it.

The Before-affordances: 'Mediating' Action Potentials

Here, I address the perception of concrete objects to zoom in on the actions and intentions enacted within this cycle, to differentiate between them, and to see their consequences for the participants.

The Object As-it-is-given

Earlier in this analysis, I mentioned two distinct categories of meaning that the participants identified when asked to describe their interpretation of the experience. While their concrete wording focused on representational and actionable interpretations of what was meaningful, the participants also offered a third response that was conceptually more indefinite and not referential. Instead, these answers directly emphasized what was conveyed by the artwork. These statements often incorporated two parts:
(1) 'I did not concern myself with meaning', and
(2) 'This was just objects and features'.

Here is a good example: "I was just appreciating the colours. I didn't think back then. [I was] not feeling or thinking anything. […] It's a beautiful thing in front of you; you just look at it".

Such statements concerning *that perception happened* were scattered through the consensus categories, connected to different situations. They addressed only the perceived 'what' (the content and features of the participants' perceptions) and the circumstances of becoming aware of them.

Occasionally, the participants even found dynamics and relationships within the environment that had meaning for them. One participant identified the shape of the objects as "orbital"-like, which indicated how they recognised a specific orbiting movement within them. Another participant identified a connection between a group of objects and a colourful line that appeared behind them while they moved; As such, they recognised this connection as continuously "building" a greater structure.

In such cases, the objects, as sets of features, were complemented by properties of interworld relations. However, the participants did not need to refer explicitly to previous experiences to ascribe these relationships. Indeed, they were not representational: the objects were not perceived as referring to satellite orbits or copying the building techniques of spiders. Instead, they just orbited or built: "This was more colours and shapes without something conceptual or cultural. […] I didn't find any of that kind of cultural leaning. I wasn't actively looking for it".

Furthermore, in most cases, the participants faced the objects and PoIs in their own right. Apart from the previously mentioned action potentials and self-referential potentials, the objects as their sensually given features were enough. The participants grasped the objects "as-they-were-given", how these objects appeared was already meaningful.

This observation invokes Sara Ahmed, for whom the invisible horizon that lets indeterminate objects emerge "gives objects their contours, and it even allows such objects to be reached". The horizon points somewhere unknown and makes what is "here" feel unstable and thus strange,[445] which is how the participants referred to these objects – as something "strange" that their attention was focused on.

Actions Entangling Objects

Such objects as-they-were-given, which only appeared as partially integrated features, were what the participants described as the targets of their affective curiosity. However, somehow, the same objects also belonged to the experience of meaningful actionable relations. Therefore, I inspected the actions involved and how they addressed the objects as-they-were-given.

Consider that the participants experienced 'actionable' meaning.

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[445] Their strangeness "seems to reside somewhere between the body and its objects", a vitality that "brings these objects to life and makes them dance." See: Ahmed, Queer Phenomenology: Orientations, Objects, Others, 55 & 160 – 63.

However, initially, most objects were not interpreted or recognised as having a potential use. What kind of work was necessary for PoIs to obtain this actionable meaning? Did the experience of action potential even belong to something other than these objects?

To find the answers to the above questions, I dissected what the participants perceived and described as actions. Therefore, the first step was gathering a broad category of statements about action potentials. It included attempted actions and all intentions to enact something. The collection held approximately 70+ statements – enough to form a separate section of my database. Within it, several approaches to actions became visible, often in moments of decision. Hence, many of the statements pertained to circumstances and intentions, in addition to the actual actions performed and their unfolding consequences.

Once again, the most striking aspect of this collection, at first glance, was what it did *not* contain. It did *not* include statements about concrete actions with specific consequences in the Gibsonian sense of 'affordances' (e.g. 'greeting', 'riding', 'asking' or 'luring'). Instead, the expectations around these actions were more general. Here is a reoccurring example: One participant wanted to push an object. But they did not intend to make it behave (i.e. 'float') in a specific way (i.e. a concrete direction). More openly, their expectation was to see if they "could move it around" – whatever 'moving' and 'around' might mean. In fact, to establish the boundaries of an action potential seems at the very heart of the participants' intention. And yet it included the expectation that

there is at least one version of 'moving round' possible for this object in this environment.

Here is the structure of the situation as I see it. For the participants, the object was flat at this point. It only had features that were visually or audibly immediate but were not integrated context. Nevertheless, the participants expected the object to have this hidden nature of context. One could even say that a black box comprised what the object was, while the veil of its potential relationship to the participant was its most important and defining characteristic. Hence, it seemed to be the substance of the 'more' in "there had to be more there". This 'more' was not a feature, and it did not emerge from nothing. It was an experiential horizon that took contour. Initially, it was the broad, general expectation of mattering towards the environment that sparked → General curiosity. However, here, it then became an expectation of possible relations on the horizons of → Particular curiosity.

This 'more' is just an analytical concept to grasp an aspect of this experiential structure. However, what exactly was the participants' corresponding expectation enacted in the performed actions? It could not be something concrete since the PoI was still flat. Therefore, they aimed at its most relevant feature: the veil. When a participant said that they wanted to "see what happens", "engulf [it] or do something interesting like that", "interact", or "probe [it] and see what was up", they did not expect the PoI to be and do what an already known object would be or do. Instead, they expected their actions to have consequences, which is exactly what they were

either disappointed or satisfied with – what affected them.

During the phase of → Exhausted curiosity, experience adds to the intentions. The PoI became no longer flat. Instead, it was acted on and realised in some relationship to oneself. It became an entangled object, part of one's network of relationships.

Again, when examining the timetables for each participant, during one encounter, they noted other PoIs without being aware of them They continued attending to them for the duration of the experiment, regardless of its variation The entanglement with the environment became more complex as the time spent in the artwork increased. What seemed to emerge for the subjects was a fluid map of possibilities for action and spaces of higher or lower impact value.

Forms of Action

To account for the actions of the participants, I could not solely rely on their statements since they did not represent actual performances. However, I could use the screen recordings of their points of view and video recordings of their upper body movements for reconciliation. During the interplay with the timelines from the statements and several case descriptions, it was possible to categorise the participants' actions into three overarching kinds, which appeared temporally consecutive:

First phase:

Orientation by **direction of attention** and physical movements

All participants exhibited the same spatially orienting actions in the first moments of their session in their timelines. These were simple movements of the head and upper body, usually to face different directions from the spatial position they found themselves in at the start of the artwork. Looking up 90° to their left and right by turning their heads was the most common first movement, followed by a quick look 50° upwards and downwards. Most participants then tended to what was immediately in front of them: objects they could observe just by slight head movements. This part of the phase lasted from the first 15 seconds to one minute. Only four of the participants turned around completely by bending the upper body or swivelling the stool at this stage.

Locomotion then followed this focused visual orientation. Their ways of moving differed significantly, with two participants barely moving at all. Three participants moved with the help of the controllers in a slightly random manner because they never fully grasped how their actions translated into the desired movement directions. However, the rest of the participants moved more confidently, still at different paces and with varying directions (i.e. some mostly moved forward, others moved back and forth, while yet others explored more systematically according to their judgements about the space they were in).

Notably, both visual orientation and subsequent locomotion as a

combined phase were not limited to the beginning of the experiment; they recurred repeatedly for almost all participants in between occupation with specific objects or PoIs. This phase ended when attending to a particular PoI, as the participants directed their visual orientation and locomotion towards it. Even if they lacked perceived control over their locomotion, their intention and expectation to approach the object remained.

Second phase:

Reaching out

Either at the point of directed attention or when an object entered the participants' fields of view in a perceived proximity, they all reached out. Hence, they habitually, while also being aware of their intention, used their real-life arms, hands, and head to situate their represented virtual hands or their fields of view closer to the PoI.[446]

Two found consensus categories are important here. First, one-half of all participants directly reported the → Urge to move closer to a PoI (n = 6), which occurred despite some participants not yet having figured out *how* to move with the controllers. Nonetheless, they knew – at the moment – that they would "find a way to move there". Second, a slightly larger group reported an → Urge for

[446] "The nearness of such objects is a sign of an orientation I have already taken", Sara Ahmed noted. What the following categories also showed, then, was the rapid recalibration of previously culturally habituated action potentials (e.g. 'do not touch artwork'), which were suspended in this environment.
Ahmed, 58.

proximity to a PoI (n = 7) to immediately interact in some manner, which happened with the repeatedly expressed expectation of being able to "touch" the PoI or have any impact on it by provoking an event of close proximity.

Even without explicit statements, the timelines showed that obtaining contact with the PoI was prevalent for all but two of the participants. The actions performed by this majority ranged from a single, hesitant hand movement to a minute-long series of different actions involving hands, head, and the whole body on and around an object. From "looking around" to "touching" , "pushing/pulling", and "grabbing", as well as from "being close" to "entering" an object, various ways and strategies were expressed for reaching out to a PoI.[447] The nature of the participants' physical relationship to the objects – how they occupied the same space together – was as important as experiencing different spatial perspectives or sensual features of a PoI. However, this observational interpretation was not a direct deduction from the interview categories.

Third phase (not always reached):

[447] The role of touch comes into focus here, both in the context of the situation and concerning its place in perceptional structures. It has been proposed that "touch [might be] an effective exemplar for enactivism because it depends upon bodily activity to a greater extent than the other senses and/or in a distinctive way". However, Matthew Ratcliffe argued that "there are insufficient grounds for maintaining that touch is somehow 'more enactive' than other senses, [so] the most plausible case for [a possible] primacy of touch involves an appeal to its diversity, rather than to any particular characteristic of touch". While I in fact considered these thoughts, I could not establish that the participants' statements conclusively spoke to them.
See: Ratcliffe, "Perception, Exploration, and the Primacy of Touch."

Proto-gestures

After some time of reaching out, the participants often acted out what I call 'proto-gestures'. These were apparent gestures because of how they appeared to an outside observer: complex actions directed at the PoI that implicated an intersubjective relationship between the subject and the object of interest. I say this because the participants *seemed* to express intent and expectations for what they would do.

A few examples of these proto-gestures were that one participant tried "to pet" several objects, while another one "fed" them. Still another participant "poked" and "provoked" several objects. Several participants also "waved" at objects. Initially, with the hindsight of the interviews, the participants understood their actions as gestures and named them according to conventions as such from their everyday life. However, these initial descriptions did not encapsulate how they experienced them during the experiment.

When I spoke to the participants about their concrete intentions and expectations at the time, the descriptions changed. The approaches in this phase varied so widely that the descriptions did not form more specific consensus categories but produced several case descriptions for what it meant to 'feed', 'hit', or 'poke' an object. In all these cases, the concrete intentions and expectations differed from what one would expect from such gestures.

Most strikingly, the participants did not have a particular behaviour of the objects in mind for a reacting to their own actions. For

example, for “feeding”, the participant did not expect the objects to reveal their mouths or display happiness or caution. Instead, one participant talked about whether they “would be able to connect with [the objects]”. “Hitting” or “provoking” an object was not about destroying it or triggering a certain response; it concerned a more general notion of “Can I get them?” and “Oh, come on. Do something!”. Moreover, “poking” was more about the participants’ virtual bodies than the PoI: After discovering that their coil-like virtual hands could extend and contract, their associations went from “that’s probably useful for something” to “so, poke something with it”.

Therefore, even though these actions appeared to be specific gestures with communicative or causal intent towards something external, they were, in fact, still concerned with the participants’ internal capacities – specifically, their *ability* to establish an intersubjective relationship. The interviews clarified that their intentions and expectations were about whether and to what degree they could impact the environment. The participants used previously internalised gestures as tools to test this ability but not in their inherent contexts. Instead, these gestures were acted out without knowing the outcome. They also came without a concrete expectation that they would have any impact at all, even if the participants desired it. Hence, I consider them *proto*-gestures.

The only intention of proto-gestures is to provoke any intersubjective dynamic, if possible, to reveal itself in some form. They address a PoI as something that has the capacity to act upon

the fact that it *is being addressed*. However, since this ability is unknown, the only presupposed condition for these actions is a consequential existence of oneself. Proto-gestures test the conditions for possible gestures – the bodily incorporating of intentions in a physical world while discovering "others" out there who are fundamentally able to recognise one's lived-out intentions.

Mediating Affordances and Habitualisation

Notably, the repeating phases of orientation, reaching out, and then gesture-like actions taken together steer towards establishing one's capabilities to be impactful in the environment. This effect aligns with the extant literature on ecological movement and action. Compare, for example, how Shaun Gallagher summarised Husserl's 'I can' as the "potential/anticipatory kinaesthetic sense of […] how I will move" since that sense "informs […] how I can respond to the world".[448] The whole of the participants' experiences revolved around this 'informing how to respond'. Thus, the experiment offered insights into the nuances of the rather abstract dynamics of ecological interactions expressed in terms such as 'affordance', 'action potentials', and 'habit', which made it possible to differentiate them further.

Consider one of these nuances. While all the participants' actions approached the world, they did not have an inherent end to them. Indeed, they did not have conditions that rendered them as failures or successes. They were not part of an established dynamic between

[448] Gallagher, "Social Kinaesthesia," 23.

a concrete way a thing is and the subject's intentionality. Instead, they embodied an enabling dynamic between ways a thing *could* be and what one *could* intend to do with it.

Therefore, the concept of 'affordance' is imbued with more structure when experimental observations are added to it. In the Gibsonian sense, an object usually affords an action through its entanglement with prior experiences. My experimental situation did not yield descriptions of this kind of affordance, specifically how an object appears tangible and actionable because it is "at hand" in a particular way. One exception was that the objects seemed to afford general perspective and movement through their spatial distribution and apparent 3-dimensional givenness.

The participants' PoIs were never objects 'at hand', nor did they present or invoke internalised possibilities for actions and interactions. This statement does not imply that no affordances were present. Instead, the actions were not afforded by the concrete object but were afforded by an expected 'type' so general that its horizon was merely a general possibility for sensual, physical, and social interactions. The expectations here were so broad that any action possibility was not provided by an object-centred habit but only by the perception that the PoI appeared *as an object*, as a potential target of intent. Initially, the PoI was not concrete to the participants, so the expectation of what it afforded was not concrete.

What all three types of observed action had in common was that,

while they were concrete actions, they were not concrete in their effects or outcomes. Visual orientation and movement, reaching out, and proto-gestures – these actions were expected to do *something*, but the participants did not know what they would do. How could they? Throughout the described phases, the participants' existence within the artwork's world needed to be established. They had to experience *themselves being-in-the-world* as much as they wanted to grasp it.

In this sense, all these actions had a mediating character. They mediated one's capabilities as something that existed, related to the given environment. In other words, they mediated agency. They did so because they uncovered factual sets of possible actions while enacting the participants' structural situatedness, their bodily, environmental, and social conditions for acting. During this enactment, experiential knowledge was acquired, and expectations were built up. Hence, what was 'established' through this process were (analytically describable) affordances in a more Gibsonian sense, as they were specific as subject–world dynamics and integrated a certain type of object with a much more specific horizon.

This development of an observable structure is also applicable to the concept of "habit". For Merleau-Ponty, as his translator Donald Landes noted, "Lived experience is motivated, not caused". While considering the dimension of virtual embodiment in the second chapter, I previously noted Landes' "negotiations" between the subject's intentional trajectories and the phenomenal field in the

realm of habits. Landes stressed how "our habitual body expresses itself through innumerable layers of tasks, situations, horizons, and anticipations".[449]

Habits are not only the accumulated realisation of possible actions over time; they are productive powers of engagement and, thus, a thriving living. They are "at once virtual and as fragile as the actual body that they adhere to", while "existing as an open trajectory of sedimentations". The participants' descriptions of curious stances and the observed cycle of mediating actions were prime examples of this sedimentation and the emergence of habits as exactly that productive force for a subject's trajectories.[450]

While Landes saw the capability for a subject's individual "style" and creativity in them, I propose it is the same objectively arbitrary but subjectively productive motion-already-in-motion that enabled the participants to face the lacking context of *Vortex*'s abstract and unfamiliar world. What I observed was sedimentation through experimentation, the constitution of a relevant self through the extension of the habitual body with new, influential habits.

When a participant described the cycle of going from one PoI to the next, applying mediating actions and how their affective stance changed, I propose it was them attending to their habitual body, "a sort of contraction or synthesis of time that remains open to development and or creative transfer". The participants rendering

[449] Landes, "Habit and Creativity", 45.
[450] See: Landes, 46.

their environment meaningful was even the specific process that Landes described as enabling subjective "creativity" through sense making: "Sense is not an idea or a representation held in the private space of the mind. [... It is] a trajectory of reperformances that at once take up acquired meanings and inevitably alter them".[451]

The only difference in this experiment is that what was reperformed were habits so granular in scope and complexity that they were hardly recognisable as such. However, all mediating actions – from orientation and outreach to proto-gestures – are already habitual patterns of spatial and social relations. While they are trajectories in the sense of Landes, it is useful to distinguish them from other habits because, with mediating actions, the subject only attends to possibilities for introducing "layers" for more complex tasks, interests, and horizons. For the participants, these layers extended beyond what was immediately reachable, since, as trajectories, they all became irrelevant the moment the VR environment enclosed the subjects and cut them off from the world to which they were tied.

[451] Landes, 47.

Cyclic and Self-enabling Affective Signification and Motor-habituation

Here, I return to the concept of a cyclic dynamic. While it is important to examine the transformation of objects and actions, I want to emphasise the emotional dimension of mattering to the participants. As I argued, it is an example of the sedimentation of experience. It also brings forth a minimal form of self, the *I can*.

At the start of their experience, the participants' curious stance and the anticipation of being relatable were the only relation connecting them to the VRs world. Then, actions became the first context. Curiosity was saturated with possible (and impossible) actions and their consequences, a complex web of relations that mattered. Even an uneventful interaction had value for the participants (i.e. when a PoI became "the vine", ").However, it was just a big, decorative vine that the participants could not push or lift. , because the intention was always to integrate the PoI into one's "being-with the world", regardless of how high or low the particular value of the PoI for the subject turned out to be This integration, which makes actionable sense of what is perceived, is also a self-enabling cycle of experiencing oneself as a perceiving subject.

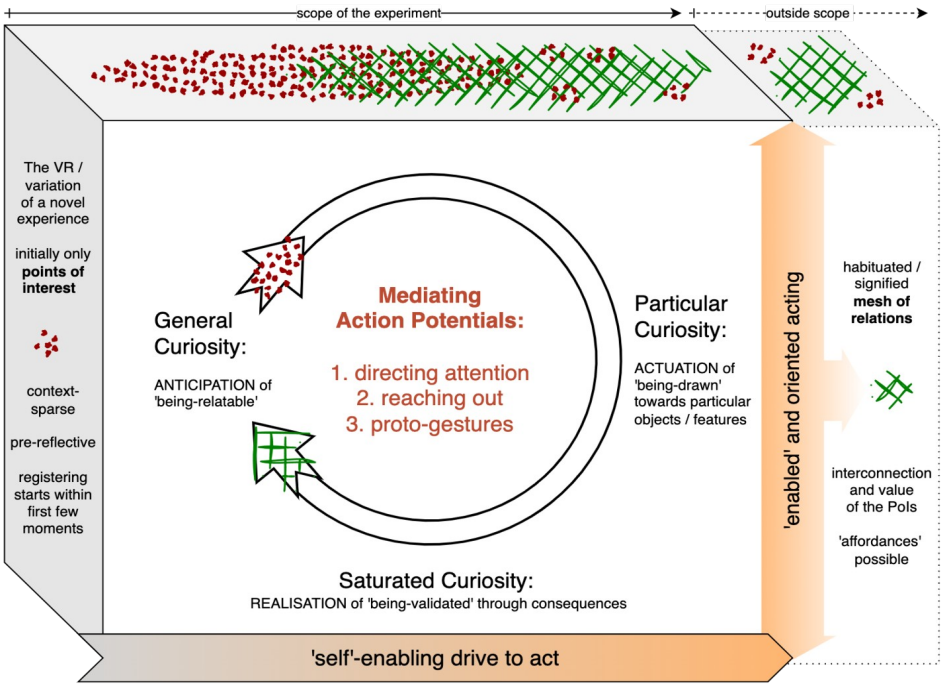

Figure 5.1: The self-enabling cycle of affective signification through mediating actions in a context-sparse VR environment.

The strange experience of the abstract VR made it possible to observe this self-enabling drive, the changing relationship of *how it mattered*. The unknown world of PoIs gradually became a familiar something through an action-centred being-with its objects. These actions, as discussed, served a mediating and enabling function for the intentional body of the subject rather than being part of an object-specific affordance or habit. Moreover, these actions transformed the affective relationship of curiosity towards the immediate environment, which started with an *existential anticipation* of being relatable-to-the-world and shifted to a

particular pull or *draw* towards actuation and then the acting out of mediating actions. Through this occupation came the *realisation of value* as the consequences of these actions. Their value signified the objects and the actions in the same movement. They pointed to each other.

The potential mediating actions were pre-reflectively at hand. The participants realised them through the intentional application of their body schema, without a concrete expectation of consequences. These consequences then became knowledge about themselves and the environment, a somewhat saturated curiosity that is constitutive of what I can now understand here as 'affordances' from a systemic perspective and 'habits' from a subjective perspective. It became visible how these capabilities relied on actual experience of actions, experience which was habituated in the sense of being integrated in the participants' body schema.

As capabilities, they emerged in this cycle, at least when we agree to understand them as 'concrete object-oriented action potentials with outcomes that seem foreseeable to a subjective valuable degree'. Throughout iterations of the cycle, the anticipation of being relatable was continually more realised and lived through at least once. Because it was affective, the cycle imbued these relationships of potentials with values – it established signification.

Two-thirds of the participants labelled *Vortex* as "unfamiliar" or "alien", as explained earlier, so their testimonies echoed Antony Fredriksson's claim that alien environments resist immediate

domestication. Nonetheless, their iterative approach of a frequent *instrumental orientation* revealed a tension already foreseen by Fredriksson: genuine to-attend implies "refraining from projecting one's habitual points of reference".[452] In contrast, this study's participants oscillated between such open attention and the rapid re-inscription of the alien into familiar action schemas. This ambivalence was a decisive feature of the observed curiosity loops.

The cycle propelled the subjects through their PoIs, one after the other. In the relatively small scope of my experiments, there was never a distinct stage reached where the participants made use of this signification. For example, they never took a step back from this form of engagement and reflected on what they had experienced. Moreover, they could never evoke other experiences.

Outside of the experimental scope, with more time spent inside the VR, there is probably a point at which other experiences become relatable and comparable since immediate interactions and outcomes have become more familiar. I propose that such a reflective stance towards the artwork is only enabled by the observed cyclic affect–action dynamic. This cycle is the motor for subjective relationship building, enabled by the mediating actions characterised by how much one is unsure about the consequences or even the suitability. This motor became observable for the participants and the interviewer together because of the factual variation of the artwork – how the experience was designed and

[452] Fredriksson, "The Alien World, Attention and the Habitual."

isolated from everyday experiences.

The scope of the experiment had limitations, of course. Real-world, everyday experiences would complicate the cycle because they are, to a high degree, not novel or context-sparse. So, our familiarisation with them would happen under numerous pretexts. I cannot imagine a situation for an adult that does not involve its introduction or facilitation –spatially, temporally, sensually, and socially. It is essential to emphasise that the observed dynamic here needs to be understood only as primal and for environmental contexts, not as the complete picture. However, for this cohort of participants, it was a general capacity to cope and thrive in this context-sparse environment.

Moreover, the scope of the experiment was not limited only to the *thereafter*. The tacit registering of PoIs was a moment *before* which the reports could not explain. How it happened seems to be pre-reflective and unconscious, so it was also inaccessible to the participants. The participants could not recall *how* or *why* certain objects and their features were pre-registered.

Despite these limitations in the observation, there is reason to believe that the self-enabling cycle is not bound only to this aesthetic environment. The experiment brought the cycle to the forefront of the experience – how an experiential artwork can make its recipients attend to their perceptions. The implication is that the cycle is not dependent on a particular material encounter, such as the one this VR evoked, because the observed mediating actions are

not a specific group of actions defined by manual or physical parameters. They are defined by their intended and expected function to relate in the face of unfamiliar phenomena. In other words, they are the means of an affective being-with aimed both outwards and inwards to constitute the subject's subjective position and boundaries.

5.3 Perceptual Stances through Ruptures of Sense and Appreciating Dwelling

In Chapter 2, I described a theoretical framework for "ruptures of sense" – moments when the familiar structures of embodied perception collapse, which presents a fundamental challenge to the perceptual optimality and demands immediate attention and reconstructive action. The corresponding check on the collected statements revealed that n = 11 participants (92%) experienced complex → Multimodal disruptions that triggered emergent action patterns. This remarkably high incidence suggested a deeper investigation of the role of ruptured sense within the structure of this aesthetic encounter.

Disruptions of Embodied Expectations and Aesthetic Emptiness of the Object Horizon

A robust form of disruption was manifest through violations of basic spatial orientation that the participants described as deeply "disconcerting": n = 5 participants (42%) experienced → Fundamental spatial–gravitational disruptions. One participant captured this disruption's essential character: "disconcerting […], disorienting […] to be thrust into a place with no bottom, but not feel like I'm falling", which led to the immediate need to "figure out what everything is". A more pervasive but less radical experienced rupture type involved the → Partial breakdown of normal embodied agency, experienced by n = 8 participants (73%). These disruptions centred on gaps between felt embodied presence and its world effects, which created what one participant described as "I have no idea what [I am] doing to [the] world", followed by the immediate exploratory response: "I found the right hand' controller, I seemed intuitively to know what I could do with it [i.e. reach out]".

The intentions and reactions in both categories seemed to be a pre-reflective body-schematic engagement that was already the result of what Maxime Doyon called with Husserl "motivated expectations", the dimension of intentionality including bodily awareness while reacting to the abnormal reality confronting implicit expectations.[453] Therefore, the sudden break in felt regularities was more than a

[453] Doyon, "On the Phenomenology and Normativity of Multisensory Perception", 118.

cognitive anomaly. Following Bernhard Waldenfels, it "interrupts the familiar formations of sense and rule, thus provoking the creation of new ones".[454]

Crucially, the disruption of the alien bears a 'previousness'; it strikes us differently *before* it is addressed and has a *duration* of disrupting, which lays the groundwork for a difference in perceptive modes or stances I found in this and the next section. The disruptions posterior comprises the reactive movements of wanting-to-know: the previously described forms of curiosity and their motivated exploratory actions. Therefore, the anterior shock and the posterior typifying labour belong to a single temporally articulated episode, continuously recolouring the specific event that set it in motion.

Beyond these general aspects of embodied disruption, particular structures belonging to *Vortex* as an (intended) aesthetic environment are of special interest. Here, I found descriptions that matched Mark Johnson's identification of aesthetic contours and Wittingslow's structured redirection of attention (both in Section 3.3). With n = 10 participants (83%), there was a high rate of describing → Felt aesthetic contour responses that generated immediate actions. Clearly discernible was how attention, as the awareness of a phenomenon, followed these contour disruptions (e.g. when patterns in textures or rhythms in movements emerged as anchor points from previously hard-to-grasp sensations for 50%

[454] Waldenfels, Phenomenology of the Alien, 36.

of the participants). The effect seemed even stronger for intensity changes, including the density of objects, the speed of objects, stark colours and contrasts, and proximity for 75% of the participants.

The complexity and length of the experiences relative to these phenomena made it difficult to dissect and analyse these statements further. However, it seemed apparent that the contours were organised as pre-reflective attractors. Thus, they appeared in the participants' awareness without them being aware of organising, filtering, or directing action perceptions. Moreover, they had an immediate effect on attention and actions (e.g. the participants described experiences like "the object is pulsing", which immediately "generated "this really strong urge to touch it" or intensity changes where "the colours are moving; it's not static colour", which created sustained engagement).

While high-conceptual focus points and redirections of attention by the artworks' authors remained outside the scope of the experimental setting due to its short duration, I am confident that my interpretation of it as a successful redirection towards the thinness of aesthetic markers and the few apparent contours. During the short duration of the experiment, *Vortex* provided no other kind of shared aesthetic phenomenon (e.g. focal points, clear and dominant patterns, and external references). These contour changes seemed to operate at the level of what Merleau-Ponty called the "sensitivity that preceded [conscious perception] and that

will survive it".[455] While it was the cooperative interviews that highlighted this aspect of their experiences, the environment provided the participants with initial access to their pre-conscious perceptual sensitivity, which let them construct a narrative around how the artwork appeared even before reflective typification occurred.

As discussed in the previous subchapter on the self-enabling affective cycle, mediating actions, and proto-gestures, these ruptures generated specific patterns of emergent action. Further classifications were challenging because the intent and strategies behind these statements appeared only abstractly[456] and often concurrently. However, I venture here to sketch discernible dimensions of their intentionality.

First was the highly apparent aspect of *immediate embodied exploratory revelation*, a general seeking to establish new body-schematic relations with the unfamiliar environment. *Experimental typification* accompanied it in the sense of trying out consequential actions. The participants tested whether familiar perceptual types were applicable or required modification, often without particular types in mind, but with the ability to name types that were either kindred or analogous to what they experienced. They were aware of the PoI not belonging to a type ('e.g. "definitely not a snake" and "[...] was not thinking about snakes") while

[455] Merleau-Ponty, Phenomenology of Perception, 223.

[456] This outcome was not surprising, seeing how they emerged from a level of pre-reflective awareness.

simultaneously aware of a potential relationship to such types (e.g. "[…] but in the back of my mind, I was asking myself if it could turn out or behave similar to a snake").

Accordingly, the actions manifested *attention redistribution*, with a promise or expectation of restored perceptual optimality, of "getting to know" the type firstly through its embodied ways of being-at-hand while integrable into other trajectories, as Donald Landes described. These actions were his lived out "open and evolving negotiation between myself as a trajectory and the tensions that steal across the [sensual] field".[457]

Finally, the promise of being-it-hand was fulfilled (or not), and the PoI remained of a general type, while the actions continuously carried the outcome as *relational meaning construction* further into the interaction. These aspects mainly characterised the interaction, and they aligned with the familiar unfamiliarity of Husserl's "universal horizon 'object'".[458] Notably, the PoIs in these statements were not completely 'empty' in this universal sense. They still carried types for the participants, like 'digital object', 'virtual', 'moving', and 'coloured'. However, they were empty *enough* – or so 'thin' – in their evoked expectations that the objects appeared somewhere between the archetype of a general object and a distinctly discernible type.

[457] Landes, "Habit and Creativity", 45.

[458] Husserl, Experience and Judgment, 38.

The Concurrence of Aesthetic Flow, Appreciation and Objects-as-they-are-given

In contrast to the fundamental and minuscule disruptions described above, the empirical analysis of the statements simultaneously revealed a crucial phenomenological duality that challenged the singular account of this aesthetic experience. While n = 11 participants (92%) described these rupture-driven engagements, n = 6 participants (50%) also spoke about an alternative perceptive stance that emphasised aesthetic appreciation. Immediate, unreflective reception characterised this mode:

> "I was just appreciating […] I was appreciating the colours. I didn't think back then […] you're not feeling or thinking anything but you just […] it's a beautiful thing in front of you, you just look at it".

Several descriptions expressed in words what was seen in the behavioural episodes, from participants who "observe[d …] and just appreciate[d]; I didn't ask questions" to "admiring colours and shapes, […] how it moves". As mentioned in Section 5.1, the emotional landscape of this appreciation comprised calmness and positive wonder and awe, which led to posterior judgements (e.g. "That's an interesting thing", "[…] a rather nice looking world", and

"They [the objects] were good").[459] There were no judgements for PoI attended to as "uninteresting" or even versions of "unpleasant". Such judgements were only felt *after* an ensuing engagement.

In Section 2.2, I subscribed to Dewey's idea that aesthetic experience is not tied to special objects. Instead, it is a form of perceptual engagement that Maria Brincker specified in her 'aesthetic stance' as a mode of perception enacted through the affordance of disengaging from goal-directed action. Aesthetic appreciation mirrors Brincker's understanding of the aesthetic stance being on the 'edge of action'. Perception remains sensorimotor yet is held back from instrumentality, which creates a perceived space for exploratory, non-practical involvement. The participants only attended to what was later categorised as "interesting" and "beautiful", which showcased the regulation of their openness and attention.

In Section 2.2, I described *Vortex* as a VR experience that affords an aesthetic stance and emerges precisely at points of micro-disruption that later create the felt need to act. This observation was from this consensus category as an example of how the data informed the theory. In the descriptions, the stance often oscillated between passive openness and action-inviting rupture. I relate Brincker's disengagement to Merleau-Ponty's 'communication of the senses',

[459] Two participants stood out when they described the character of what is appreciated beyond "beautiful" and distinct from a perceived aesthetic design goal: "not like the beauty of deliberately made aesthetic object, but beauty and sense of natural beauty" and "it had that organic sense of things [like] not being perfectly symmetrical".

as well as Vara Sánchez's claim that the stance foregrounds unique sensorimotor experience rather than utilitarian goals. With Brincker's words, the participants perceived "in ways we do not in our regular practically engaged modes of perception".[460]

Because the same participants often experienced both modes during a short period, these findings suggest that the experimental aesthetic setting unifies the potential for multiple perceptual stances rather than a single disruptive structure. Here is where Waldenfels' observations about the temporality of the alien come into play.[461] The anterior perception of an interruption ("Widerfahrnis") is enacted in a perceptive stance initiated by the environment, an external force that directs attention. Moreover, the posterior ("Nachträglichkeit") is the unfolding of the alien. Thus far, we have seen engagement as the posterior aspect of disruptions. They change the phenomenal character of the cause of the interruption and of the body itself. However, the account for the motivation to address the interruption in the first place may involve the experience of aesthetic appreciation, which can access the posterior aspect.

The stance of aesthetic appreciation was exemplified by the participants who described "just appreciating; [...] you're not feeling or thinking anything. [...] It's a beautiful thing in front of you. You just look at it".

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[460] Brincker, "The Aesthetic Stance – On the Conditions and Consequences of Becoming a Beholder", 120.

[461] See especially: Waldenfels, Phenomenology of the Alien, 46.

The statements in this category revealed an aesthetic engagement through a kind of *receptive dwelling* – a mode of sustained attention that was not connected to a prior awareness of disruption, as it occurred *during* the disruption. This mode resembled a non-specific definition of a flow,[462] where the participants "seemed intuitively to know what I could do with it" and found that action "wasn't effortful; it kind of just happened". The effortlessness of (often small) action-perceptions demonstrates some engagement through an immediate embodied competence rather than a perceived lack of skill, problem solving, or reconstructive response to something perceived. Self-consciousness recedes, while awareness almost entirely encompasses the qualitative features and dynamics of the PoIs.

This point brings us back to the phenomenological 'object-as-it-is-given' mentioned in Section 5.2.3, as the statements about aesthetic appreciation shared a similar experiential nucleus. Such episodes in the data exhibited an attentional settling in which the virtual phenomenon was apprehended for its sensuous immediacy. The participants "just look[ed]" and "just dwell[ed]" while allowing the object's qualitative texture to unfold without recourse to prior

[462] I want to distance the use of term here from the more concrete psychological use that understands 'flow' as an optimal experience that emerges when challenges equal skills, goals are clear and feedback immediate, where concentration deepens, self-consciousness recedes, the sense of time distorts, and the activity becomes autotelic. The participants' statements did not cover all these aspects, except for their skills and self-consciousness, with an implicit acknowledgement of the clear goal of "to take in" the environment.
See: Csikszentmihalyi, Flow, 42–44.

typification or explicit goal-directed agency.

In phenomenological theory, this receptive dwelling resonates with the noematic object that stands forth 'of itself', independent of pragmatic or representational horizons. Nevertheless, one must be wary, as the interview-based perspective was derived from post-hoc descriptive practice rather than a priori phenomenological absolutes. Accordingly, this stance is best read as a pivot rather than a tier: it marks the moment when the experienced environment's horizon thins enough for the object's presence to eclipse both referential anchoring and instrumental manipulation to disclose the perceptual depth that the participants reported.

Furthermore, a complementary insight addresses the dynamic interplay of rupture and givenness. While sense breakdowns were indeed slightly more talked about during the interviews – their bodily jolt lent itself to vivid recounting[463] – they are not theorised here as a necessary precursor to flow. Instead, the data suggested a cyclical interpretation: disorienting shifts continued to loosen entrenched anticipations, which created an openness in which qualitative aspects presented themselves. This notion again echoed Doyon's emphasis on how 'motivated expectations' usually modulate perceptual normativity and how details are appreciated in

[463] The memories reconstructed in post-experience interviews started with symbolic or action-oriented language because such vocabularies are culturally available and easier to articulated, as mentioned in Section 3.4. Subtle moments of sheer givenness are harder to verbalise and thus risk being underreported, even with an interviewer who tries to identify them, isolate them, and probe them as an artefact of retrospective narration.

an otherwise suboptimal, time- and energy-consuming manner. Conversely, the receptive dwelling of the participants was repeatedly punctuated by their micro-disruptions that energised exploration and marked shifts in the anterior aspects of the overall episode. Thus, the alien had temporality, duration, and causality – but no clear linearity. Therefore, these two modes were not sequential stages but interlaced temporal figures of embodied sense making.

Emerging Self-awareness:
Historicity and Gravitas of Embodied Sedimentation

The question then becomes not whether aesthetic experience requires disruption, but how different modes of aesthetic engagement relate to the overall structure of embodied encounter. Allen Køster identified the temporal dimension as the interplay of historicity, gravitas, and proto-narrative structure, which may help understand how disruption and flow can coexist as complementary aspects in this aesthetic experience.

The experience of being in a self-contained VR environment (i.e. *Vortex*) generated a fundamental disruption to the historical frame of reference that normally anchors embodied existence. One participant experienced it as follows:

> "It's not an out-of-body experience at all, but I did feel like it's a new world, new [objects], which none of them were familiar. So, in that sense, disoriented, not in a physical sense, but more in a mental sense. I did not feel like I found any [reference point]. So that's the disorienting part. The weird part."

In Section 2.4, I mentioned Køster, who described experiences where embodied selfhood encounters disruption to its normal "sedimented" patterns (taken from Merleau-Ponty) because of their

"gravitas". He referenced Waldenfels' concept of the split-self: the experience of both familiarity and alienness that is "profound in constituting my experience of my own existence".[464]

Looking back at the descriptions of bodily awareness in Section 5.1, I performed an analysis and counter-analysis of the descriptions while looking for a heightened or split-self-awareness and their convergence with Køster's account. Together, they supported his challenge of binary frameworks that separate embodied experience into discrete categories.

[464] See: Køster, "Personal History, Beyond Narrative."

First, the participants achieved explicitly conscious access to perception–action coupling processes in their orientation, as evidenced in statements such as , “I can kind of connect that feeling of my arms doing this with seeing these [hands] and then seeing how those [hands] combined with my movements are affecting the environment”, and “[Perceiving the action] was quite satisfying and reinforcing”. These statements aligned with Køster’s critique of rigid separations between pre-reflective and conscious embodied processes. The three- to seven-minute, short VR experience clearly constituted “significant impact” rather than “repetitive exposure” on Køster’s spectrum of gravitas,[465] with the participants reporting profound disruptions such as “I can’t think of any kind of conscious real experience I’ve ever had that I could [compare]”.

Second, as mentioned, some participants explicitly showed both heightened (i.e. → Explicit bodily self-awareness) and diminished self-awareness (i.e. → Bodily absorption, also found in → Unreflective, absorbed local presence**)** within one session, which directly supported Køster’s uptake of Waldenfeld’s split-self, characterised by “both familiarity and alienness”.[466] What he also described as an “experience [of] my own historicity, [which] initially evade[s] narrative form” surfaces here as the disruptions of

[465] “Sediments result from the external pressure the environment puts on experiences, whereby pressure is here 'a spectrum from repetitive through significant impact' for our lives”.
Køster, 176.

[466] Embodied selfhood involves “narrative order and that which has not yet come to a narrative order" co-existing rather than excluding each other”.
Køster, 172.

the most basic bodily history. The shifting of sedimented experiences (e.g. being gravitationally bound, physically displaceable, impactful through manual force, recognisable by agential entities, and [dis]satisfied with action potential) can be productively accounted for with Køster's extended framework of sedimentation and gravitas. Thus, habituation and intercorporeity, the existential hermeneutic repertoire, and affective register all are perspectives on why the embodied experience in this unfamiliar environment operates with complex oscillations of enhanced bodily awareness (i.e. inwards attention) and self-forgetting (i.e. outwards attention).

However, important limitations prevent claiming the full validation of Køster's theory, particularly regarding the temporal scale and durability of effects. The brief experimental timeframe could not capture the gradual domestication or sedimentation that leads up to the narrative self that Køster's full theory requires. Without follow-up data, no evidence existed of lasting attitudinal changes or durable sedimentation in Køster's full sense. One critical exception was that the phenomenological interviews can be understood as manifestations of the narrative self by taking up the rewritten historicity of the experiential self and performing it in a narrative order during the speech acts of the conversation.

Negative and Positive Valence in Different Self-awareness

The above discussion sets the scene for addressing a key question from Section 2.5 by investigating how Erika Summers-Effler's theory of emminding self-awareness aligns with the interview data. Here, I delve into the nuances of her model and explore its compatibility with the interview statements. To approach this question, I identified consensus categories for self-awareness, a process that involved analysing 90+ interview statements and grouping them into two main clusters.

The first group saw n = 6 participants (50%) offering at least one set of descriptions that matched Summers-Effler's predicted looping chain of

> "rupture through external demand → negative affective marker → emminding self-awareness".[467]

In these instances, the participants described an awareness of being unable to predict the environment or their bodily connection to it. Hence, the interviewees' language changed register, with an affect spiked and attention folded back on the body. Strikingly, the pronoun "I" came to the foreground. They remembered actively registering things about themselves as a negative experience (e.g. "[…] no evidence of me being there. [… It was] the most disconcerting thing").

[467] See: Summers-Effler, "Selfing", 117.

However, the affective marker did not need to be dramatic. One interviewee described a quieter but equally telling moment: “I wasn’t sure if I could do anything. […] It kept my attention, […] partly frustrating, like a puzzle”. Even the mild puzzlement was enough to launch a round of emminding in which they monitored both the object and their body for evidence of causal connections. Another participant recounted a stark bodily startle, a “freeze” while becoming “conscious of sitting still”.

The disjunction between anticipated and actual demands indeed seemed to produce Summers-Effler’s ‘bounded self’ in these episodes. These moments were short. However, true to Summers-Effler’s claim, there were indicators that they dominated memory. As speakers, the participants delivered them in long, vivid sentences, whereas extensive stretches of unbroken flow were glossed with few words and abstract phrasing. The last part of this chain (i.e. the ‘mid- to long-term sedimentation’) was not visible in the statements (again, because of the scope of the experience), but it was partially and indirectly represented because this awareness was part of the participants’ memories accessible during the interviews.

A second group of n = 4 participants (33.33%) offered counter-examples in which unfamiliar demand was either
(a) not negatively marked but enjoyed without self-conscious effort or
(b) neutralised through immediate bodily engagement and attention staying solely with external consequences. Two people appeared in both groups, which underscored the situational rather

than dispositional nature of the processes. In other words, long stretches of the experience remained integrated and pre-reflective. The self became salient primarily when the environment pushed back in a negative valence above an individual threshold that was not visible to the participants' awareness.

As a result, some interviewees described disorientation and the resulting demand as exciting or even playful. Thus, what should have been a negative marker instead fueled curiosity and a rapid return to engagement. Their feeling of unfamiliarity elicited a positive valence and yet explicitly bounded self-awareness: it felt "surprisingly safe", yet they were aware of being "small in the space" or that it was "exciting". Nevertheless, they were aware that "I didn't know where I was". In my interpretation, however, this reads as a qualitatively different boundedness from the defensive, problem-solving variety that Summers-Effler derives from negative markers: These are descriptions of a playful surfacing of the self – participants note their bodily limits or orientation, but not as a problem(!). In Summers-Effler sequence, boundedness is corrective and affectively aversive; here it is looser and exploratory, a momentary sharpening of self–world distinction that invites further engagement. And, as presented in Chapter 5.1, a few participants attended almost only to environmental aspects, such as proximity or movement, without ever reporting a bounded phase of or moments of self-awareness. These observations suggested two linked dynamics.

(1) The valence of the affective marker is the pre-reflective charge

that immediately colours an encounter as attractive or aversive, while modulating how a rupture is experienced through a bounded self. Negative valence (e.g. annoyance and disconcertion) propels attention back onto the body and its limits, which amplifies Summers-Effler's emminding sequence. In contrast, positive valence (e.g. playful excitement and pleasurable surprise) invites exploratory engagement and may prevent this contraction.

(2) When a direct body–world coupling is quickly re-established through mediating actions in the self-enabling cycle, reaching out succeeds, locomotion produces avenues for exploration, and integration is restored before emminding gains traction and is memorised, somewhat independent from the rupture's initial intensity.

This evidence does two distinct things regarding Summers-Effler's proposal. First, it confirms a core mechanism when numerous participants reported an unexpected, negatively valenced bodily jolt that functioned as an affective marker and heightened bodily salience while giving rise to a bounded sense of self. What it does not confirm is cognitive or reflective, dialogical repair work.

Second, it extends the model by revealing alternative routes in which the organism strives for perceptual optimality. The contextualising of the selfing cycle re-establishes optimality, while affect still marks where optimisation is required and the participants can memorise them. Nonetheless, positive ruptures show that optimisation can also proceed without casting the self in

a negative light.

Therefore, these statements confirm the backbone of Summers-Effler's model: bounded self-experience reliably appears when external demand for action perception is sufficiently negative in valence. However, demanding novelty can also be experienced positively or quickly reintegrated through mediating actions. Concerning the temporal order of affective marking and self-awareness, establishing strict temporal precedence would require micro-phenomenological interviewing immediately after the rupture or synchronised physiological measures (e.g. skin conductance spikes) aligned with verbal self-reports. Since the statements often first presented embodied affect before articulating self-awareness, the interviews supported Summers-Effler's ordering but did not definitively rule out the reverse.

Passive Coming-to Contexts, Associations, and Meaning

The previous pages traced how unfamiliarity presents itself in this experimental setting and how it elicits orientation tasks (Section 5.1), how these tasks, as an intentionality of the self, spiral into an affect–action feedback loop (Section 5.2), and how distinct perceptual stances crystallise when anchor points emerge (Section 5.3 so far). There was an additional observation of the liminal instant in which explicit meaning *comes to* awareness within this cycle and its perceptual stances.

The observation reported as an *awareness of meaning and contexts* in the moment is experienced in a → Pre-reflective 'coming-to' movement, not as a deliberate effort to grasp or understand meaning or contexts. Together with associations from the world outside the VR environment, they just appear from the back of the mind. Across n = 7 analysed sessions (≈ 58%), the participants recounted a sudden micro-event in which the previously indeterminate scene "just clicked" into recognisable shape. Typical formulations included, "It suddenly dawned on me that the glowing strands must be alive", and "Out of nowhere I realized this blue patch was the centre of everything".

In each case, the explicit grasp of meaning or context emerged only after a period of bodily probing and adjustment, which indicates that what was experienced as a passive coming-to of sense was in fact precipitated by an active but pre-reflective exploration of the environment. Thus, when recognition dawns, it frequently surfaces as an associational echo instead of a full-fledged judgement, as one participant reported that the world "felt *kind of like* [a previous experience]".

Michelle Maiese's critique of modular emotion theories underscores why such similes matter: interoceptive feeling constitutes the representation while lending shape and colour to what is presented.[468] This observation confirms that coming-to is affect-coloured from the outset, not a sterile act of classification. In

[468] Maiese, "How Can Emotions Be Both Cognitive and Bodily?"

addition, the participants were unaware of explicit thoughts about met or unmet expectations. However, they experienced a state of unreflective recognition: “I don’t think during the time I would ever […] like, verbalising the fact. […] It was [more] like a question mark: ‘Oh, is that what this is?’”.

There were two distinct cases reported where thoughts were verbalised. The same participant as before also experienced this episode: “When I'm pressing this button, what am I actually doing to make it transform that way? […] And then I'm thinking: Okay, what kind of logic is that? […] This would be more of a narrative voice. Kind of me reasoning, talking to myself in my head.” Such explicit and foregrounding thoughts were underrepresented, though, and most participants did not remember formulating thoughts, talking to, or hearing themselves. Thoughts were experienced as already present intuitions about what they perceived.

Note that although ‘coming-to’ is felt as a passive arrival at conclusions, it is scaffolded by the exploratory mediating actions documented in Section 5.2.3 and by what the participants termed ‘trying things out’. The body’s motivated micro-tests quietly prepared the click of recognition. Momentary recognitions always punctuated rather than ended the ongoing cycle and stances described above. The appearance of conceptual content did not seem to interrupt the flow of engagement. After experiencing associations, the participants continued to poke, zoom, and rotate without losing their kinaesthetic rhythm. Therefore, the conceptual

flash was a ripple, not a break, in the stream of activity.

One participant recalled approaching an unfamiliar object "almost like an exercise: How can I control my movements in this world?" Thus, this thought rode along rather than stepping in as a separate experienced moment. This outcome aligns with Komarine Romdenh-Romluc's Merleau-Pontyian reading, where "thoughts can play an ongoing role in guiding [...] behaviour" but, ultimately, "the agent's behaviour is initiated and controlled by her apprehension of her environment" – how action perception pre-reflectively presents the world to be at hand as action potentials.[469]

Accordingly, the bodily micro-tests documented in Section 5.2 were not ancillary but constitutive conditions of 'coming-to'. In a handful of cases (though not enough to form a consensus), there was even a clear description of coming-to a conclusion hand in hand with a rupture of embodied engagement that was immediately chased by an aesthetic dwelling which furnished the temporal thickness of Waldenfels' anterior–posterior structure of the alien. Køster's notion of gravitas helps to read these recognitions as micro-sedimentations: each click adds or rewrites embodied history on a scale larger than moment to moment, which produces the oscillation between heightened self-awareness and bodily absorption charted in Section 5.1 and theorised above.

[469] See: Romdenh-Romluc, "Thought in Action", 214.

The Intersubjective Horizon and Embodied Negotiations of Mutual Presence

This chapter presents a consensual description of the stances of the experiment's participants – oscillating between aesthetic flow and disruptive rupture, between sedimenting gravitas and momentary self-awareness – to culminate in the liminal coming-to where meaning flickers into view. I am now poised to attend to a dimension that quietly shadows each of these perceptual realignments: an orientation toward reciprocal presence. This intersubjective stance shows that every adjustment of sense is already a negotiation with a potentially co-constituting Other.

The first appearance of intersubjectivity was the intention of the participants' foundational orientation. One-half of the participants (n= 6) explicitly articulated the consensus category of intent for connection and intersubjective engagement, which signalled that the desire to meet another subject was woven into widespread perceptual comportment. One interviewee voiced the underlying wonder and openness[470] most clearly, as their primary interest was "whether or not I would be able to connect with [the entities]". Even in the earliest phase of general curiosity, the affective tone in voicing the experience was already tilted toward some*one* rather

[470] Waldenfels would phrase this intersubjectivity as anchored in a pre-reflective bodily susceptibility, a pathic affectedness.
See: Waldenfels, "Bodily Experience between Selfhood and Otherness."

than some*thing*.

This *horizon of the Other* was perceptually cued by changeability. In the general category of descriptions about → Perceiving / recognising agency, the six participants repeatedly identified both locomotor and non-locomotor (e.g. axial pulsating and stretching) movement as signs of life: "You can feel they're kind of breathing", and "A moving thing nearby just caught my attention [...] got me trying to interact with them". Such remarks fell under the subcategories of → Vitality perception (felt aliveness; n = 4; 33%) and → Movement-based agency cues (n = 6; 50%), which indicated that a perceived capacity to change (rather than a resemblance to familiar species) is related to a perceptual stance that expects intersubjective relations.

Thus, one may suspect an anticipation of reciprocity, rhythms that sync up and break with one's own. However, only a few statements hinted at this notion since the aspect was not sufficiently explored during the interviews. It would be a fruitful avenue for further research, as the mutual "encroachment" of body and world was a concept from Merleau-Ponty, whereby Jessica Wiskus highlighted the necessity to explore this "noncoincidence opened between the two" through perception as the "inspiration and expiration of Being".[471]

Consequently, the second intersubjective aspect in the statements was how proto-gestures functioned structurally as → Indeterminate

[471] Wiskus, The Rhythm of Thought, 24.

Tests of Reciprocity. Section 5.2 introduced and explained this function, which was more than just an interpretive finding. Indeed, a significant number of participants (n = 5; 42%) explicitly identified it as a separate category of descriptions. Here, exploratory actions (e.g. petting, feeding, and poking) were performed "for the sake of seeing what happens", not for instrumental gain, and reciprocity, as clearly expressed: "Can I affect it? […] What will it do?". Crucially, even non-response sustained the intersubjective stance. If one object turned out to be inanimate, the question remained of who, if anyone, would answer. Failure, therefore, did not negate intersubjectivity. Instead, it amplified its significance for these five participants by dramatising the risk and energy inherent in every attempt at mutuality.

Descriptions of a push–pull dynamic demonstrated that agency ascription is probably not neutral; it always carries normative colouring. What appeared alive also appeared capable of benefiting or harming, welcoming, or rebuffing. Bodily comportment tracked these valences in real time. When attraction dominated the participants approached, circled slowly, and extended their reach. When caution intruded, they retreated just beyond reach while keeping the entity in their peripheral vision.

The phenomenological upshot is that perception of a possible Other reorganises spatial and affective coordinates simultaneously while installing a field of invitations and admonitions that guide motion before reflection intervenes. Interrogations of agency sometimes fall flat. In two interviews, the participants recounted moments

where repeated overtures elicited absolutely no discernible reply.[472]

Nonetheless, there is a methodological caveat to these categories. Intersubjectivity was *not* a guiding construct in the original experimental or interview design. The conversations, therefore, lacked targeted probes while the phenomenological encounter remained necessarily brief, without the depth of shared intimacy that a fuller life–world exploration would demand. These limitations caution against overgeneralisation while simultaneously pointing toward an avenue for future research, where controlled manipulations of responsiveness and extended, immersive interviews can help clarify the experience of intersubjective encroachment while complementing the role of proto-gestures and their evolvement into gestures and sedimented habits.

5.4 Summary:

Phenomenal Structures and Textures

In the introduction to this thesis, I stated a research problem that was to be explored with a hands-on approach of factual variations and subjective descriptions treated as phenomenologically sound

[472] These experiences instantiated a weak version of what Waldenfels calls the "unclosable gap" between antecedent pathos and deferred response— "a gap which cannot be closed and thus requires a creative response".
See: Waldenfels, Phenomenology of the Alien, 31.

data. This problem is the structure of perceptual coping when everyday orientation supports are absent in an experience. What resources can participants draw on to discover meaning where none is yet apparent? What is it like to undergo a transition from alienness to familiarity? In short, how does one act in the face of thin context?

In this chapter, I have presented an analysis of the interplay of affect, intentions, and actions in performative stances and a cyclic dynamic that revolves around the minimal self. We have seen an early segment of *becoming aware* of the potential for relationships in an alien environment.

Therefore, I offer a summary before the conclusion of Chapter 6, which introduces some further theoretical implications. Coping for the participants in this experiment required adopting an affect-driven stance of anticipatory relatedness directly after a remarkably short phase of pre-reflective registering of PoIs (which was partially experienced as sensory overload). In this stance, mediating actions —whose outcome was unknown yet affectively drawing—negotiated a space of possible first contexts. By iteratively trying out and registering consequences, the body and world reciprocally constituted sense before any cognitive typification or reflective stances occurred. This cycle of curiosity emerged as the experiential foundation for coping with novelty.

The structure of this experience comprised five entangled dimensions:

(1) the exploratory intentional arc of curiosity that derives from approaching the opening horizon of an object-in-general archetype,
(2) micro-attunements of affect that colour possibilities as attractive or repulsive in their registering and are immediately enacted,
(3) foundational habitual action possibilities that serve as the resource to recognise and apply mediating action potentials and proto-gestures,
(4) a continuous anticipation of *I-can* agency and impact that serves as the indexical perspective and renders both the awareness of the world and of one's embodied self, and
(5) the historicity of all former elements as affective gravitas of the experienced moments (and their phenomena), which continuously readjusts attention and sediments the habit-forming body schema within the expanding contexts.

Disruptions and aesthetic flow dominated the qualitative texture of the process in this experience The participants reported what 'thin' context felt like as ruptures of sense: spatial and social uncertainty, disorientation, and existential excitement about the partial absence of normal agency. Nevertheless, these shocks opened an empty object horizon in which aesthetic contours (i.e. rhythms, contrasts, and intensity shifts) became salient and were experienced as a flow of perceptual engagement or even complete self-forgetting in an aesthetic dwelling. The exact dynamics of how ruptures and flows are connected was not reliably observed in this study. But it is discernible that they are interwoven and repeatedly initiate each

other: major disruptions either demand engagement or leave participants startled in vertiginous openness, which enables further micro-disruptions which then invite playful and receptive engagement. These demands and urges are felt in the body, and the emerging meaning is therefore inseparable from bodily tensions and their resolution.

The emerging meaning is inseparable from bodily tensions and their resolution. In a highly embodied coping strategy, the subjects in this study relied on a cyclical mediation of action and affect rather than on pre-formed representations, as the body generated a provisional context. Their indispensable skills were sensorimotor openness, affective curiosity, and a particular form of habitual actions and proto-gestures. Their analysis here constitutes the first phenomenological delineation of a self-enabling affect–action cycle, a descriptive locus that has hitherto been absent from the literature.

The phenomenal character of the experience began as destabilising and vague. The world was abstract and difficult to describe; it was not ‘at hand’. However, it quickly morphed into a self-confirming exploration marked by affective colouring while (in successful ventures) growing ownership and agency. While a pre-reflective stream of coming-to associations and thoughts was present in the participants’ back-of-mind, meaning was not formulated or reflected on in the foreground of awareness. Instead, it was enacted through the gestures that then anchored the subject in the not-so-alien-anymore environment.

With these findings, the presented study offers a successful factual variation of experiencing 'thin' contexts facilitated through the specific medium of virtual reality and the structured attention of the particular aesthetic composition of the artwork *Mutator VR: Vortex*. It especially illuminates the experiential self in action and how it is scaffolded by cycles of embodied negotiations conducted through markers of affect and the sedimenting force of intentionality in action perception.

6. Conclusion: Reflections and Final Considerations

With this thesis, I developed a showcase for the concrete exploration of a specific phenomenology of perception. It provided a lens into the experience of a lack of context (Chapter 5.1), particularly by examining how individuals situated themselves and made sense of novel experiences through affective signification and mediating actions (Chapter 5.2) as well as their conditional perceptual stances (Chapter 5.3). In closing, several key theoretical issues merit further elaboration.

Agency and the Experiential Self in Action

The observed and reported experiences in this study documented a pivotal moment in the complex process of familiarisation with a novel environment, specifically by removing contextual cues and common denominators that would usually guide a subject's physical movement into unfamiliar territory. The experimental situation captured only three to seven minutes of initial environmental engagement, which represented a critical transitional phase. During this brief period the participants' reports provided a picture of a

discernible developmental trajectory, from pre-reflectively initiated bodily responses to immediate sensorimotor engagement, and then, in a rudimentary form, emergent goal-directed activity.

This progression aligns with Gallagher's conceptualisation of agency (as elaborated on in Section 2.3), wherein pre-reflective bodily awareness gradually transforms into intentional action through the interplay between minimal and narrative aspects of selfhood. Nevertheless, here we see merely one side of the dynamic due to the time frame and intensity of the experience. Therefore, the participants' embodied negotiations with the unfamiliar environment revealed some phenomenological structures underlying the emergence of situated agency. I described them as the cyclic 'readying' of oneself to introduce one's personal history and overarching trajectories into the unfamiliar situation.

Hence, my approach in this study is relevant to recent philosophical discussions of selfhood, particularly those that focus on lived experience. The conceptual distinction between the minimal and narrative aspects of selfhood, highlighted by Mackenzie[473] and Køster,[474] is reflected in my findings. It seems that the raw environment of my experimental setting helped accentuate the minimal self of the participants, as narrative coherence and reflective stances in general temporarily receded to create a heightened embodied presence. The experiential self emerged through affective significations; whereby sedimentation processes

[473] Mackenzie, "Embodied Agents, Narrative Selves."
[474] Køster, "Personal History, Beyond Narrative."

began to become observable. This was habituation through what Køster termed 'gravitas': the spectrum from repetitive to significant impacts that form our attitudinal structures.

In addition, the experimental method of this study exemplifies the kind of dialectical relationship of the experiential and narrative dimensions of the self that Mette Vesterager described.[475] She argued that these layers are not compartmentalised but fundamentally intermingled. Our pre-reflective experiences form the foundation for our narratives, while our narratives (both personal and cultural) shape our future experiences.

In this study, we mainly saw experiential signification and direct bodily engagement. However, in the interviews I conducted, the participants integrated this dimension into their narrative self-views. Herein lies another great line of investigation: asking whether they do this for conversational purposes only or a more structured integration of their experience.

[475] Vesterager, "Towards a Husserlian Integrative Account of Experiential and Narrative Dimensions of the Self."

The self-enabling cycle and its perceptual stances formed a dynamic foundation for embodied meaning-making. What matters here was not simply the temporal ordering of experience but how pre-reflective bodily engagements established conditions for narrative coherence in the interviews. These engagements in-the-moment could be reduced to representational schemas: they were neither fully thematised nor completely inaccessible to reflection.

What was observable was neither an explicit narrative nor a pre-reflective habitual flow. What I call 'mediating' action potentials operated with more open expectations than partially sedimented or even habituated action potentials. This aligns with what Fredriksson described in his perspective of the beginner, where "attentive perception stands in contrast to habitual ways of perceiving, [...] breaking in on the habitual grants us the possibility of revising our relation to our environment [in] a process of more and more refined actions that 'domesticate' the unknown". In Fredriksson's words, mediating affordances promote the process of becoming "attuned to the present historical world – to our perception – rather than to our preconceptions".[476]

The Atmospheric Drive of Curiosity

The self-enabling cycle enacts an emerging sense of agency within

[476] With this study, I agreed with his observation that "attention is a faculty that requires a refraining from projecting our pre-conceptions on the world". Fredriksson, "The Alien World, Attention and the Habitual."

an unfamiliar environment. However, this analysis still began *in medias res*, with an already operative experiential self. What grounds this self-organisation? Looking at Hermanni Yli-Tepsa's analysis of Merleau-Ponty, I recognise his *primal and atmospheric drive* of curiosity that underwrites the entire cycle to furnish the affective soil from which agency and particulars alike can germinate. The preceding discussion situated agency as an emergent achievement of a near-experiential self negotiating an unfamiliar milieu, but it left unexplored the affective impetus that propels such negotiation. A pre-personal drive of curiosity silently orchestrates the very cycles through which agency—and, ultimately, experienced selfhood—takes shape.

As explained in Section 2.5, Yli-Tepsa understood curiosity with Merleau-Ponty as "the lowest, all-founding interest"– a pre-personal urge to be affected that precedes and conditions all particular drives.[477] Before any object at hand appears, the body lives in what he called a scope of life – a halo of indeterminate affordances whose sole determination is that they *may matter*. My VR sessions provided a rare empirical glimpse of this condition: stripped of familiar contexts, the participants reported a diffuse pull ("i.e. "I just need to see what this place is") that was affectively coloured yet object-blind. These statements coincided with Yli-Tepsa's account to a large degree by showing how curiosity modulates from atmospheric openness to concrete engagement and

[477] Yli-Tepsa, "The Question of Biological Existence in Merleau-Ponty's Phenomenology of Perception," 229.

back again.

Remember the observed three-phase morphology:
general → concrete → saturated curiosity (captured in the modi of affective curiosity table in Section 5.2). They suggest that curiosity is scalar and cyclical rather than linear. The atmospheric pull translates to the observed 'general' curiosity and then narrows into discrete PoIs. Once hyletic clarity is achieved, affect is enacted, and the cycle often reverts to a renewed atmospheric openness. Importantly, mildly negative outcomes – moments that the participants labelled as "boring", "overwhelming", or "exhausted"— still culminate in Yli-Tepsa language as "clarification fulfilment": the object becomes already known as *non-responsive*, which also particularises the relation to disappointment. Even problems of the body schema reinforce the pattern (e.g. the fleeting annoyance with controls was simultaneously reported as "[it] told me what *not* to do"). Moreover, a few reports strengthened Yli-Tepsa's 'pleasure of recognition', the feeling of "this is what I was searching for".[478] These statements collectively suggest that regardless of whether the affective colour is exhilarating, neutral, or mildly frustrating, the experiential arc converges on clarification: object horizons stabilise, and curiosity can loop onward.

The data also show that valence *modulates* the route and tempo toward particularisation but maybe not as straightforward as Yli-Tepsa stated.[479] Negative markers (e.g., annoyance and

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[478] Yli-Tepsa, 231.

[479] E.g.: "painful experiences are pleasurable in this sense, and even that the more painful the experience is, the more it satisfies the curiosity drive".
See: Yli-Tepsa, 229.

disconcertion) in certain engagements contract attention back onto the body and momentarily stall probing, while even positive markers sometimes allow exploration to pause in a state of receptive dwelling. Because extreme aversive episodes were screened out by design, our evidence warrants caution for a direct valence-conditioned interpretation. It leaves open which direction strong negativity may divert the process.[480] The next section on optimality further considers this nuance.

What remains in my observations as well is the descriptive overlap with Fredriksson "beginner's stance" as a perceptual posture that consciously *refrains* from habitual projection and stays attuned to the present historical world (see Section 2.5). The reported perceptual stance during general curiosity carries
(1) open-ended intentionality,
(2) yet-to-be-established normative parameters, and
(3) an active *to-attend* that suspends pre-engagement domestication.
It is a readiness to be guided by attraction and repulsion rather than preconceived aims. The transition from 'general' to 'concrete' curiosity then corresponds to the moment Fredriksson called the "disturbance of the habitual": the body schema renegotiates itself as proto-gestures emerge.

[480] These statements underrepresent the strong negative pole that Yli-Tepsa employed to show the evolutionary utility of curiosity for harm avoidance. My study protocol filtered out extended overload episodes while muting intense aversive clarifications.

As a cycle, the participants slipped in and out of absorbed, goal-blind coping without noticing the transitions, which confirmed that curiosity's rhythm pulsed beneath their reflective awareness. While concrete curiosity carries (even if not articulated) task-like structures of engagement, the orientation phase of general curiosity (i.e. the participants' perspective changes and scanning movements) is better understood as 'proto-tasks' formed by an atmospheric pull – an indeterminate solicitation to *get a grip* rather than a feature- or history-specific goal.

The theoretical pay-off of this account is its integration of the observed mediating actions. They enact a dual-layered structure, where the goal-blind, affectively urging of 'general' curiosity supplies the *drive* to probe, as realised in the mediating actions. They, in turn, pass over the salient anchor points of 'concrete' curiosity as sensorimotor forces.

Hence, the participants' seemingly teleological remarks (i.e. "I wanted to test what the [object] would do if […]") belong to concrete curiosity, while the underlying drive remains pre-reflectively goal-blind while satisfying itself with any *clearer* potential realised. In Merleau-Ponty's terms, the proto-task of curiosity is the continuous expansion of the perceptual field itself. This analysis reconciles Yli-Tepsa's goal-blind drive of biological existence with the agentive phrasing of the reports: telos emerges *through* curiosity, not before it.

This reading deepens the preceding account of agency and

experiential self in a Merleau-Pontyian sense. In this frame, agency is not a faculty layered atop perception but is the self-organisation of disorientation through curiosity. The self-enabling cycle observed in this study re-enacts Merleau-Ponty's 'gearing into' the world. In it, curiosity is the affective force that sediments successful mediations into the body schema, while disappointment equally sediments constraints.

However, the model's consistency and the precise dynamics of valence require further research. Future experiment designs can intentionally let overload run its course or introduce controlled aversive stimuli (e.g. dissonant sound bursts) to map how and when clarification satisfaction exactly plays out. This research can also harvest richer affective colour around clicks of recognition. Indeed, phenomenologically training participants for micro-descriptors (e.g. warmth, ease, and surprise) or focusing on follow-up interviews may elicit better descriptions of the pleasure of recognition.[481] The same is true for the affective texture of 'saturated' curiosity.

Moreover, this study tracked occurrences but not transition frequencies of curiosity. Logging when and how often the participants loop from saturated curiosity back to general curiosity can allow a finer-grained mapping of curiosity's temporal dynamics.

[481] The term was used by Yli-Tepsa, but other ideas about curiosity and instincts were taken up from Matt Bower's reading of Husserl:
Bower, "Husserl's Theory of Instincts as a Theory of Affection," 9.

We are now positioned to ask how the normative texture of sense making modulates the drive. When Merleau-Ponty described the gearing into the world, it is felt as successful when perception "provides me with the most varied and the most clearly articulated spectacle possible, and when my motor intentions, as they unfold, receive the responses they anticipate from the world".[482] Here, the participants' actions were driven by basic expectations about themselves, so their affective relationships to objects shifted as those expectations were fulfilled or exhausted. Hence, this research provides a valuable case study of Merleau-Ponty's framework while raising direct questions about the generality and optimisation of the 'gearing into' – motor intentions as integrating or mediating actions. What are the implications for a normativity of perception, – whether there are better or more successful integrations than others.

Optimisation of Action-perception through Mediation

A significant theoretical implication of this research is how perceptual orientation presents as following a pattern. While I described this mediating engagement so far as 'cyclic', one may also understand it as 'spiralling' towards the affective signification of environmental features that matter to the embodied subject.

This pattern in perception operates similarly to what Michelle

[482] Merleau-Ponty, Phenomenology of Perception, 261.
& Merleau-Ponty, 292.

Maiese has termed 'affective framing' (Section 2.2). It is a bodily (pre-reflective) awareness in action, being "sensitive, in a bodily way."[483] The participants' priorities that emerged reflect Maiese's description as "a spontaneous, non-inferential, and pre-reflective way of discriminating, filtering, and selecting information that allows us to reduce the overwhelming clutter of information".[484] Faced with a multitude of simultaneously uncertain relationships to the environment, my participants' priorities were to overcome this destabilising lack of grip, possibly to enable overarching trajectories of their selves.

What I explicitly interpret from that observation is that the unfamiliarity of the environment presented suboptimal conditions to the *felt ownership* of the experience. Hence, the relationships and action possibilities that are not yet sedimented in my bodily capacities are not my own. In this sense, both Menary's experiential self as the pre-reflective source of a narrative self[485] and Dan Zahavi's pre-reflective self-awareness through ownership of experience[486] can be applied as a frame for the situation. One's self-in-the-world experience needs to be optimised through establishing more relationships and phenomenal qualities of the interactions. It is a pattern of optimisation, not only in the sense of Merleau-Ponty's optimal grip on an object[487], but more specifically the

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[483] Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 529.

[484] Maiese, 524.

[485] Menary, "Embodied Narratives."

[486] Zahavi, Self and Other, 2014.

[487] The classical quote is "there is an optimal [relation, like distance,] from which

motivating self-optimisation of ownership – as in: the experiential self as geared or integrated as a subject-in-the-world.

In addition, the observed exploratory intentions and affects align with the dual mechanisms that Maiese identified as fundamental for the subject-in-the-world: "attraction" and "repulsion".[488] Categorised as states of concrete and saturated curiosity, the participants described a version of this back and forth throughout my study. And Varela and Depraz described "the primordial constitution of self-affection as a dynamic polarity",[489] a polarity that emerged here as the basic affective structure guiding the optimisation cycle or spiral.

The mechanism guided in this spiral is the affective signification of environmental features, which makes signification (i.e. how something matters for an individual) highly visible in this study. It also highlights the prevalence of signification over symbolic or referential meaning attached to an artefact from a

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[the object] asks to be seen". Merleau-Ponty describes this as a "point of maturity of my perception that at once satisfies these […] norms and toward which the entire perceptual process tends".
See: Merleau-Ponty, Phenomenology of Perception, 316.

[488] They serve as attuning functions for 'care', which is Maiese's affective specification of the 'geared' subject-in-the-world. Caring, the subject enacts modes like "fear, anger, joy, and sadness" as a bodily attunement with the world, "which is what anchors us […] and makes the objects and situations we encounter intelligible by virtue of the fact that they matter to us".
See: Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 514.

[489] "[…] a tension that takes several forms: like-dislike, attraction-rejection, pleasure-displeasure".
See: Varela and Depraz, "At the Source of Time."

phenomenological perspective. This distinction is crucial for understanding why the optimisation pattern follows priorities that matter to the embodied subject and not, for example, the coherence of the environment or narrative connections.[490] Merleau-Ponty's concept of signification further enriches this understanding, as it represents "the intuitive coherence things have for us when we find them and cope with them in our practical circumstances".[491] The embodied "practicality" explains why this optimisation pattern is not arbitrary but structured by the lived body's engagement with its environment.

In summary, for my participants, the mediation of action-possibilities is at the structural centre of perceptual orientation. It represents the confluence of embodied perceptual habits, affective signification processes, and opaque pre-reflective mechanisms that allow subjects to navigate, prioritise, and optimise engagement with their environment. All these concepts are thoroughly grounded in phenomenological and 4E cognition frameworks that were concretely observed in this study. Perceptual priorities emerge from affective needs inherent in experiential ownership, rather than being random or even reflective. Their cycle, as detailed in Section 5.2.2, begins with an existential anticipation of being relatable-to-the-world, shifts to a particular pull or draw towards actuation and

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[490] Matching Drummond, who says that signification is "that through which consciousness relates itself to its intended object".
See: Drummond, "Intentionality," 127.
[491] Taylor Carman words in the foreword.
See: Merleau-Ponty, Phenomenology of Perception, X.

then the acting out of mediating actions, which do not fully resemble classical habitual actions. The participants' most fundamental priority was establishing their existence as capable agents within the environment.

A realisation of value is the consequence of these mediating actions. This value signifies the objects and the actions in the same movement. Throughout the cycle they point to each other, that is what signifies them.

The Normativity of Mediating Actions

I also understand this optimisation pattern presenting as a manifestation of perceptual normativity. It seems to support Maxime Doyon's account, where perception inherently "triggers a series of motivated expectations, which may or may not be fulfilled by the further course of experience".[492] These expectations can be understood as a normative dimension of perception itself, – a dimension that persists even in contexts characterised by novelty and unfamiliarity.

As observed in Section 5.2.3, the participants consistently reported intentions and expectations that "steer[ed] towards establishing one's own capabilities to be impactful in the environment", an impact that operates not merely as a response to environmental demands but as the embodied potentiality of *I can*. What the participants optimised for was not predetermined goals but the

[492] Doyon, "On the Phenomenology and Normativity of Multisensory Perception."

establishment of a relational field wherein actions have distinguishable and certain consequences.

In Section 2.5, I mentioned Doyon's argument of striving for optimality as normative. The crucial hint emerging from this study is that the observed expectations in unfamiliar contexts still revolve around realisations of something being true or false. While this referenced 'something' is rooted in neither conceptual correctness nor environmental compliance, the expectations point to confirming or falsifying the subject's capacity to enact meaningful relations: Yes, I can matter with this action within these circumstances. Or: No, I cannot.

The documented mediating actions exemplify what Merleau-Ponty describes as the "renewal of the body schema",[493] as they are normatively structured explorations that progressively reveal what matters affectively to the embodied subject as potentials of their body schema. They are possibly an enacted version of the "sensitivity that preceded [conscious perception]".[494] This enactment may seem counterintuitive to how I analysed the reports, which suggested that they lacked an inherent end or conditions that rendered them a failure or a success. Nevertheless, they express the anticipation of being relatable, which still serves as a condition for their success, even though this issue is so broad that I stick to their differences from habituated action potentials or affordances.

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[493] Merleau-Ponty, Phenomenology of Perception, 143.

[494] Merleau-Ponty, 223.

The evidence of this study suggests that optimisation in perceptual orientation through mediating actions does not abolish normativity. Instead, the former transforms the latter from a structure dependent on familiar types to one organised around the affective signification of potentialities that emerge through active engagement with the environment.

The Intersubjectivity of Proto-gestures

In the light of the present findings, phenomenological intersubjectivity emerges less as an optional add-on to perception than as a latent horizon against which any perceptual orientation already gestures. I have suggested understanding certain reported mediating action potentials of the participants as 'proto-gestures' that test intersubjective relations in the world. These proto-gestures appeared to function, as subtle provocations in the interview data by testing whether an intersubjective dynamic could take hold. These actions addressed PoIs as entities that could respond to being addressed.

Since the capacity of the self–world relation remains unknown in this unfamiliar context, the only presupposed condition for these actions is the consequential existence of oneself, which is visible in the principal traits of mediating actions and reported intentions for connection and intersubjective engagement:

1. Self-referential presumption: While mediating actions

appear outwardly directed, they are concerned with the participants' dialectic capacities to establish relationships with the environment. The potential of this capacity is the very general relation they presuppose.

2. Open-ended expectations: Unlike conventional gestures, proto-gestures, in particular, do not expect specific responses or consequences. They only anticipate a general possibility of a distinguishable response.

3. The intention of establishing one's presence: Their predominantly discernible goal is itself the affirmation of one's local and bodily relevance, which matches phenomenological perspectives on presence as the body establishing its capacity *to matter* in a given environment.

4. Affective marking of intersubjective potential: (Enacted) affect marks consequences, but especially the (absent) revelation of recognition by the environment. Does the Other reveal itself and, thus, intersubjective action potentials by changing some state because of one's actions? Note that only two participants articulated disappointment when no reciprocity ensued, which indicated that the affective appraisal of non-recognition warrants further scrutiny.

These traits characterise reaching out beyond the self-serving or self-referential to create the foundation for intersubjective relationships. The participants came to value parts of the unfamiliar

milieu as agential, especially when movement is registered.[495] However, while the participants also read unpredictability as a sign of agency (i.e. "it felt alive" and "maybe aggressive"), the data also recorded cases where unpredictability remained aesthetically intriguing without prompting agency ascription. A link between unpredictability and expectations of agency (i.e. the Other) therefore invites qualification rather than wholesale endorsement. What is visible is that proto-gestures test the *conditions* for possible, actual gestures – bodily incorporating expectations to be recognised and intentions to discover Others who may recognise one's impact.

This shared stance of intersubjective understanding or openness towards the environment is not confined to concepts of 'living' or 'conscious' things. Rather, in this stance, everything is treated as another subject in the world that reacts to or is affected by one's actions. In Legrand's terms, this stance renders the self-reference of the participants' experience "indexical".[496] The observed stance also evokes the attraction–repulsion dichotomy in an intersubjective

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[495] In theory, the Husserlian conditions for recognising agency in movement are that the perceived movement is
- apparently beneficial to the entity and
- is exhibited in consistent basis.
These seem to be pre-reflective conditions for me, and only a handful of statements in this study speak to them. Still, testing for those with factual variations would be another interesting avenue for further research.

[496] "[…] experiencing presence does not merely depend on appearances but is rather a function of the interaction between the subject and the environment"
See: Legrand, "Pre-Reflective Self-Consciousness: On Being Bodily in the World," 503.

sense. However, the questioning of the interviews was not fine-tuned towards such an association, so this study cannot speak to it. Nonetheless, it appears to be an interesting avenue for further research.

Merleau-Ponty's notion of bodily intentionality may provide a theoretical ground for the intersubjective anticipation imbued in proto-gestures. As a motor action, they begin like a 'kinesthetic sensation': "There is something like a seed of movement that only grows later through its objective trajectory".[497] Though classical kinesthetic sensations "anticipate directly their final position", in contrast to proto-gestures, they do so without a clear sequence to follow. They must be adaptive.

On the other end, Merleau-Ponty describes a proper gesture "as if my intentions inhabited [the Other's] body", an incorporation of internals through an 'intentional object'. It may be the intentional object itself that my participants anticipated in their kinaesthetic seed, pre-reflectively provoking the

> "blind recognition [that] sketches out the first signs of an intentional object. This object becomes present and is fully understood when the powers of my body adjust to it and fit over it. [...] it indicates to me specific sensible points in the world and invites me to join it there".[498]

[497] Merleau-Ponty, Phenomenology of Perception, 96.
[498] Merleau-Ponty, 191.

It is possible to understand proto-gestures as kinetic seeds towards as-if sensible points, potential joint existence, but without having a specific expectation of what will be recognisable from one's own body in another. But although Merleau-Ponty's concept offers an evocative parallel, the dataset contains no longitudinal trace of a proto-gesture crystallising into a conventional gesture and thus no description of experiencing a successful flowering of the kinaesthetic seed.

However, future work can observe longer interaction windows to track such putative growth. It may observe proto-gestures by adaptively incorporating specific expectations and progressing to more recognisable, traditional gestures. Such future investigations can pursue three strands:

First, time-series analyses of mediating actions may reveal whether repeated "failed" overtures eventually refine into mutually legible gestures, as well as when and how the participants enter more reflective or cognitive stances. Second, attraction–repulsion polarity, which was only documented for one-third of the participants, deserves systematic probing. Does affective valence modulate the threshold for agency ascription? Third, comparative studies across media with gradated reciprocity (from inert art-objects to responsive AI agents) can map how proto-gestures recalibrate when the possibility of recognition becomes more explicit.

Potential Contradictions and Limitations

Of course, there are also limitations to these theoretical conclusions. I address two main tensions that emerge between my conclusions and the existing theoretical perspectives. These tensions do not invalidate key claims but situate them within ongoing scholarly debates and point toward possible future refinements.

First, my approach to intersubjectivity is an expanded one. It lacks a confinement related to other conscious subjects, which stands in potential tension with certain phenomenological frameworks. The phenomenological tradition from Husserl to early Merleau-Ponty typically frames intersubjectivity as a relation between conscious subjects capable of reciprocal recognition. Husserl's analysis of intersubjectivity in the *Fifth Cartesian Meditation*, for instance, starts the experience of the Other as another person (i.e. consciousness) who appears in "analogical apperception" to one's own.[499] Similarly, Merleau-Ponty's early work emphasised intersubjectivity as a relation between embodied consciousnesses. Within this tradition, my claim that interactions with non-conscious objects can contribute to intersubjective relations, rather than merely manual interactions, appears problematic. However, I describe the self-enabling dynamic of entering such a relationship[500] before it is clearly recognisable as such for the subject.

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[499] §50: Husserl, Cartesian Meditations, 108.

[500] 'Relationality' is an aspect of the recognition, and I am describing its enabling condition.

Moreover, contemporary scholars (e.g. Dan Zahavi) view intersubjectivity not simply as recognising another consciousness but as a more intricate and fundamental aspect of experience.[501] This view of intersubjectivity involves a reciprocal relationship that does not start with recognition. Instead, it is a foundational dynamic embodied in our neural and physiological responses and may even precede individual subjectivity. My claim is in a particular form of experiencing it: in certain situations of ambiguity, one takes a stance towards the world that assumes the Other before it actually appears. I argue that although I do not describe a fruitful intersubjective dynamic, this stance is characterised by openness and sensibility and the active momentum of gesture-like embodied intentions to recognise and be recognised simultaneously by the Other.

The second objection concerns Michelle Maiese's 'affective framing'. While I refer to it often, it also potentially challenges my characterisation of changes in emotional states as changing (from general to saturated curiosity), depending on the consequent revelation of recognition. As mentioned, Maiese argued that emotions are often more than mere responses to cognitive recognitions but comprise our primary mode of engagement with the world and indeed facilitate action.[502] Affective framing precedes

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[501] "[…] in so far as subjectivity of experience presupposes an apprehension of the distinction between one's own experiences and the experience of others, and of the existence of a plurality of points of view, intersubjectivity turns out to be the fundamental category".
Zahavi, Self and Other, 407.

[502] Maiese, "How Can Emotions Be Both Cognitive and Bodily?", 524.

and shapes our cognitive engagements rather than following from them. This perspective may challenge the apparent sequential account of states of curiosity, mediating actions, and proto-gestures within the affective cycle, where an emotional response appears to follow from the recognition (or non-recognition) of relational potential.

However, I believe my framework already incorporates Maiese's insights and does not abandon its core claims. The emotional dimension of the phenomena reported in this study can be best understood as simultaneously constitutive of – and responsive to – engagement rather than merely consequent to it. What I describe as a sequential cycle is an analytical concept that highlights important moments in a complex dynamic, moments that the participants isolated during the interview and described in a structurally similar manner. Hence, my account does not exclude or deny the affective force behind perceptual processes; instead, it does not especially highlight this aspect of experience as well.

Indeed, the reported emotional states in my account frame the engagement and the action-perception involved. Consider, for example, what I have categorised as 'general' curiosity. As an emotional state it directly influences how the unfamiliar environment is initially perceived and approachable. Through this non-directional attentiveness, general curiosity establishes a readiness for engagement that pre-reflectively filters the visual field into potential PoIs.

Like Maiese's account of an "affectively aroused body",[503] this emotional state allows the participants to make sense of and navigate the world. When they enter the installation, their general curiosity manifests as an atmospheric readiness to engage while pre-reflectively organising perception around what may matter to them. This atmospheric affective state is constitutive of their perception; it provides a fundamental sensitivity that forms the basis for subsequent engagements through all kinds of mediating actions. In the participants' accounts, general curiosity shaped how distinctions emerged in perceptual awareness. Thus, what appeared as "the really big thing" or "the group of smaller ones somewhere above me" already bore the affective significance of being worth attending to.

Let me rephrase this idea through the lens of Yli-Tepsa's (and Bower's) argument: curiosity functions as the process of particularisation and a "primal form of affectivity".[504] General

[503] Maiese, 526.

[504] Yli-Tepsa, "The Question of Biological Existence in Merleau-Ponty's

curiosity is the structuring of how the indeterminate field of experience becomes organised into distinct points of significance, with the added observation that there is an active turning towards the object through a slightly different state here categorised as 'concrete curiosity'. Furthermore, it directly constitutes the action potentials that emerge as mediating actions. The urge to experience more while not missing out on encounters (characterising the category of general curiosity) inherently carries kinaesthetic implications. When the participants described bodily 'posing a question to the world' through exploratory turning, looking around, or perspectival shifts, these were not responses to general curiosity but enactments of it.

The mediating actions and later proto-gestures that subsequently emerged were likewise interdependently constituted with concrete curiosity. Since this affective state encounters points of resistance or salience in the perceptual field, the readiness to engage is channelled into specific movement possibilities (e.g. reaching out, establishing proximity, and manipulation). What sequentially appeared in the participants' accounts as a cycle from general curiosity to mediating actions to proto-gestures is better understood as different aspects of a unified affective–perceptual–motor engagement that can be separated analytically but not ontologically.

While acknowledging these tensions, I maintain that my theoretical

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Phenomenology of Perception", 225.

framework offers valuable insights into the dynamics of intersubjective engagement across diverse contexts, including interactions with non-conscious entities. These limitations do not undermine the framework but highlight areas for further theoretical refinement and empirical investigation. Future work can profitably explore how a proto-gestural approach can be integrated with theories of participatory sense making, affective framing, and embodied coordination dynamics.

Phenomenological Evidence and Mediated Factual Variations

This thesis, and the study it presents, incorporate a tension between classical phenomenological approaches that emphasise the transcendental essences of experience and more recent enactive approaches that grasp concepts, including the minimal self and intersubjectivity emerging from neuroscience, modern psychology, and even evolutionary theories. It also documents my personal journey from theoretical roots in Merleau-Ponty's phenomenology of perception to contemporary enactivism and experimental phenomenology.

What distinguishes my work methodologically is its commitment to factual rather than eidetic variations. By creating a virtual environment that provoked actual encounters with unfamiliarity rather than merely imagining them, this thesis bridges the gap between the depth of phenomenological introspection and the

rigour of empirical investigation. The immersive media technology of the chosen Virtual Reality provided genuine variations in experience while grounding these variations in concrete, embodied encounters that the participants could articulate and researchers can systematically analyse.

This methodological innovation addresses the critique that phenomenology lacks empirical grounding while simultaneously avoiding the reductionism that often accompanies purely empirical approaches. The systematic collection of first-person accounts from multiple subjects experiencing the same virtual environment allows for an extension of the epoché, which reveals structural similarities in how subjects relate to an unfamiliar world. These consensus categories emerge not from theoretical presuppositions but from the suspension, redirection, and letting-go that characterise proper phenomenological reduction.

From these consensus categories, I derive new concepts of an affective cycle of orientation and curiosity, mediating action potentials, and proto-gestures. They offer a valuable understanding of a liminal space in perceptual orientation by acknowledging that intersubjective relations can emerge from basic sensorimotor testing while maintaining that these tests have an affective and existential dimension beyond mere coordination.

At the same time, my account finds strong support in the phenomenological literature on embodiment, presence, and aesthetic experience, while potentially expanding traditional

notions of intersubjectivity in ways that align with contemporary enactive and 4E cognitive science approaches. My findings contribute to our understanding of how perception functions not merely as passive reception but as active sense making that is fundamentally embodied, affective, and oriented toward signification and self-discovery in unfamiliar contexts.

7. Addendum

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7.2 The 3rd Iteration Interview Guide

Interview Guide:

Mutator VR – Iteration 3

Audience Interviews

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Who

The interviewees for this pilot study are 10-20 random participants, found through public recruitment (Covid-19 appropriate). They have now been invited to experience an example artwork for 5 minutes and talk about it afterwards. They are meeting the interviewer deliberately for this experiment.

What

The interview is about establishing what the experience inside the VR is like. The interviewer is actively investigating descriptions of 'feelings', as in 'what is perceived' and 'how it feels like'. No further terminology should be given than 'meaning', 'understanding' and '(dis)orientation' - what these terms actually mean should be entrusted to the interviewee. But the interviewer has to follow up on the descriptions that are freely given and encourage to elaborate and clarify. The answers will later be hermeneutically analyzed to define categories for further research.

Where

This interview takes place locally with a VR headset ready, in a quiet and distraction-free environment, immediately or only a couple of minutes after they experienced the artwork.

When / Duration

The interviews should at least have time for one hour of actual interview-time. Interviews can be shorter or longer though, depending on the richness of descriptions and motivation of interviewee.

Start / Welcome

- Welcome and thank you

- Corona first: Symptoms?

  Corona: Contacts 14 days?

  Corona: Travel 14 day?

- What we are going to do:

  Certain duration in this Virtual Reality,

  You will hear several beeps when we end, please take off the headset then,

  You can go back after the interview (no need to rush),

  Feel free to do whatever you want to do and in your own pace,

  interview, we'll take our time there,

  We collect pupillometry, screen + upper body video without your face.

- Questions?

- Controller and headset introduction / warm-up

Questions for audience members

Min 0-10

Setting the scene / reactivating the experience

- What did you think about the artwork?
- How did it make you feel?
  (Reiterate, that this interview is about individual experiences and has no right or wrong answers)
- Broadly speaking: How did you feel and behave in the first minutes after entering?
- → Probe: Was this an experience, that felt initially ’meaningless’, ‘hard-to-grasp’ or ‘disorientating’ to you?

Space for clues to follow up on:

Min 10-30

Emotional activation, Meaning and Relations?

- How did it feel in the very first moments?
- What were your first a) thoughts / b) actions / c) intentions?

A) Remember: it's ok to not have anything come to mind here: What was devoid of meaning / empty / 'hard-to-grasp' / made you feel disoriented?

- *How did that relate to yourself?*
- *How did that relate to your body?*

B) What was meaningful to you?

- *How did that relate to yourself?*
- *How did that relate to your body?*

→ Repeat for each clue: unfolding in time (succession, flow) ***&*** *exp. space in the moment (attention, emotion)*

→ How, How, How …

→ Check: Do you do/think/feel [this] often, in context with art and digital media?

up to Min 40

Probing the found emotional and relational structure

Check if any of these wasn't talked about yet:

- How did you feel in relation to the space?
- How did you feel in relation to your role?
- How did you feel in relation to yourself?
- What skills did you use? How?
- What did you feel you lack skills in? How did that manifest itself for you?

With all that in mind…

- What was satisfying and how?
- What was disappointing and how?
- How were you drawn towards /repelled by something?

→ Repeat for each clue: unfolding in time (succession, flow) ***&*** *exp. space in the moment (attention, emotion)*

Min 30 – 50

In the ZONE

- What did you expect?
- How did you realize these expectations? How were they present? (actuate)

- What was significant for you?
- How did you realize that?

- How did you direct your attention?
  (Did you direct it? Was it drawn by sth.? - How?)

- Did you explore? How?
- Did you play? How?
  → Curiosity, how does that work for you?

- Did you compare memories / spaces / interactions?
- How did realize the space / the structures / the movements around you?

→ *Again a step back, ordering the memory:*

- *How did these things line up? / In what order did they appear meaningful?*
- *Did you focus or approach them /or was it something they did, to you or to other things?*

Min 50 – 60

Circling back...

(Is the repetition fruitful? -> Is the interviewee motivated or exhausted? Here the concrete questions highly depend on former answers and this is just their direction..)

- *Patterns*
  - What was it like, when things/processes did repeat?
  - What was it like, when things/processes did not repeat?
  - What was it like, when things were dense..
  - ..were sparse
  - What was it like, when things were similar..
  - ..were different

- *Progression*
  - What was it like, when things/processes changed?
  - Did they change for you, for each other, or in itself?
  - What was the relationship between these things..
  - ..and between them and you?

- *Presence*
  (also: probe for what influenced the experience apart from the artwork)
  - Where where you? Meaning: Where in a ‘here’ of the artwork? Or maybe more looking forward, looking back, even outside the piece?

… & last probes

Ask about ***opposing ideas, prior expectations and 'artwork'***

Ask about other ***influencing conditions***

Ask about ***suspension of disbelief***

Ask about ***completeness /***
feeling of not being understood correctly