Stephan Mühr

The Horizon of the Horizon

On the Physical History of Gadamer's Fusion of Horizons

Abstract: In this paper, I trace how and why physical concepts of telescoping from the sixteenth century begin to travel through different disciplines and, in so doing, change their meaning to become hermeneutic metaphors. It can be proven that Gadamer's concept of the fusion of horizons [*Horizontverschmelzung*] is itself a derivative of such conceptual history originating in physics but that it becomes a fuzzy construct for an anti-methodological or anti-scientific conception of truth or reality. By tracing these travelling dynamics, one can observe that such a travelling or metaphorizing concept influences the target as well as the source field or discipline, as well as changing its own semantic shape. This paper thus also contributes to the understanding of the dynamic relation between terminology and subject conceptualizations, an issue equally relevant to the natural sciences and the humanities.

1 Introduction

Since the twentieth century,¹ physics and (the study of) literature share a recognition of the epistemological inadequacy of structuralist notions of language, in other words, a growing understanding that one signifier (or one empirical datum) does not represent one concept of truth or signified reality (cf. Foucault 1970). Strictly speaking, this commonality consists in the fact that both disciplines have overcome a mechanistic world view. Admittedly, this paradigm shift has not yet been completed in the wider public domain. This means that we are faced with a tangle of non-simultaneities and mutual transferences between theory cultures.² In particular, the extremely popular and broad fields of communication and media are still dominated by a structuralist understanding

¹ In the twentieth century, this insight was achieved in physics long before the corresponding insights in the so-called humanities (cf. Mühr 2002).

² Cf. Vol. 28 (2002) of the *Jahrbuch Deutsch als Fremdsprache* that focuses on the transfers between disciplines and theory cultures. See also Koschorke (2012) for the social and cultural sciences, describing transfer processes from synchronic to diachronic, from static to dynamic, and from closed or known to open and unknown paradigms or scientific models of reality, language or semiosis.

of language, which is limited to an information-theoretical level and essentially relies on a stable code, and on a clear relation between the object and its name, signified and signifier, as its point of departure.

By contrast, we can regard Gadamer's hermeneutics largely as an attempt to overcome what he calls the forgetfulness of language [*Sprachvergesenheit*] of modernity, in analogy with Heidegger's forgetfulness of being [*Seinsvergesenheit*], anamnetically.³ If we read *Truth and Method* in this fashion, it can be said to argue for the specific epistemological reach of the validity [*Wahrheit*] of the arts and humanities. *Truth and Method* is an answer of sorts to the excommunication of the arts from the sciences which, according to Gadamer, began with Kant and was completed by Dilthey (cf. Grondin 2000, 40). Nevertheless, the work still contains an undercurrent of partially mechanistic ideas and perceptions from physics itself, because the metaphors emerging from these perceptions are deeply woven, as a paradigm, into the fabric of the European culture of science, as a narrative claiming to guarantee truth and reality. The focus of this chapter is a reconstruction of Gadamer's understanding of the construct of the horizon, and of fusions of horizons [*Horizontverschmelzung*], as a result of a longstanding tradition of adopting and adapting optical metaphors that have become commonplace in scientific expression since Galileo, and can be traced as epistemic narratives or figures of thought right up to *Heisenberg's Uncertainty Principle*, which in German is commonly known as a theory of *Unschärfe*. Aside from aspects of a culture of science and the transitions between theory cultures, I am interested in the baggage of the underlying epistemological issue, namely the question of the representative character of concepts and terms. What Edward Said (1983, 226–247) calls *travelling theory* and Albrecht Koschorke (2012, 166–169) describes as the migration of concepts is *in nuce* the process of “metaphorising” or transferring, which is indeed a poetic-rhetorical process, because it does not obey the laws of logic and displays an aesthetic playfulness.

The research in this chapter forms part of a larger project on cultural scientific formations of infinity. Thinking the infinite overtaxes our imaginative faculties: we can think it, and yet we cannot imagine it. Modern mathematics can work with infinities (by working around them), but it is exactly those work-arounds that have transformed the incommensurability of a *representation* and imagining of infinity into a practice of neglected and neglecting non-knowledge [*Nichtwissen*]. How has this incommensurability been dealt with in European history? Which epistemological integrative achievements have the individual

3 See the anecdote about Gadamer in Grondin 1994, xiii–xiv.

explanations of infinity brought about? And which interactions with other epistemic and semiotic fields have emerged from this? This chapter alludes to the dynamics of such transfers of figures of thought, or metaphors, in order to show how they transmit the baggage of meanings and how they influence the meaning-making in the target context. In order to study these dynamics, it is helpful to use a historical approach which I call “transformation history.”

2 On the transformation history of optical figures of thought from Galileo to Gadamer

2.1 Prolegomena

Optical metaphors is a heuristically obvious interface between physics and hermeneutics. In the process of the first secularizing trends in the attempt to interpret texts (including profane texts) correctly in the eighteenth century, an entire visual vocabulary (clear/unclear [*deutlich/eindeutig*]⁴) and concrete optical terms, such as *Skopos*, point of view, vantage point [*Sehepunkt*], be clear [*einleuchten*], and horizon were adopted in the early hermeneutics of the eighteenth century. The reason for this expansion of the range of optical metaphors for aspects of understanding lies not only in the emergence of a new paradigm of empirical science (which implies an epistemic revaluation of the senses), but also, simultaneously, in the achievement of an abstraction *away from the senses*, which began with, and can be typified by, Galileo and his use of the telescope. Equating what is seen through the telescope with reality is not an empirical observation at all, but is itself a highly abstracting, *medializing* transmission process that could only find a foothold as scientific truth with the help of various supporting rhetorical conceptions.⁵ One might even argue that optics (as applied geometry) only entered the discipline of physics through the Copernican Revolution,⁶ before it could come to serve as a template for other processes of understanding, such as textual interpretation, because of its far-reaching

4 Cf. Mühr 2001, 425–432.

5 This becomes clearest through the subsequent assumption that we live on a globe, which contradicted all *common sense* of that time. Cf. Blumenberg 1975, I, 147–299.

6 One could argue that this optics is not a physics discipline at all, since neither a point nor a line is an object of physics; optics is rather applied geometry. Optics is only physical inasmuch as it examines the reality of the quality of light itself.

changes to our world *view*.⁷ But in this transmission, there were also some counter-reactions: so, conversely, many unanswered questions in physics, about space and movement, or about the continuum, long remained unresolvable, according to Kvasz's (2008) theory, or "submerged" (Michel 1986)⁸ because of the canonization⁹ of this visualization paradigm. Even Newton's law of gravity is more of a proposition than an explanation, since Newton was unable to explain what gravitational force *actually* is, and why it "holds the world together from the inside," as Goethe was to argue, quite rightly, some 100 years after Newton.¹⁰

These interactions in the process of the transmission of optical figures between the cultures of knowledge can be identified – as undercurrents – in Gadamer's work. Optical metaphors are embedded in the rhetoric of his work as epistemically active paradigms. To analyse the function of Gadamer's concept of a horizon, it is therefore important to recapitulate the history of its origin and transformation.

2.2 Galileo's rhetoric of the telescope

Visuality is an ancient, multidimensional transferred field of knowledge that has always shifted between optical, perception-psychological and epistemological facets; in this regard, we need only consider Plato's *Allegory of the Cave*. The issue of deception of the senses stands in a critical relation to knowledge which can be abstracted from pure empiricism. Ladislav Kvasz (2008, 11–86) has demonstrated a surprisingly regular oscillation in the history of mathematics from

⁷ It is for precisely this reason that Heidegger (1975) writes about "Weltbild" – a concept that derives from the technological scientific paradigm.

⁸ I am very grateful to Idette Noome for her support in all translations. Only quotes from Gadamer's *Wahrheit und Methode* are taken from *Truth and Method* in the second revised translation by Joel Weinsheimer and Donald G. Marshall (cf. Gadamer 1998). The German original quotations are given as footnotes, with the original page numbers. For quotations from Gadamer, the German quotations show page numbers for the German text, the English quotations show the page numbers and year of the English edition.

⁹ Cf. Witthaus 2005, 53–88.

¹⁰ This optical *phase* in the history of science, which one can trace, with Kvasz (2008), from Galileo to Leibniz, is particularly obvious in the development of infinitesimal calculus, where more must be achieved than abstraction: it must overcome visual evidence and solve the understanding of instantaneous velocity, but it also must perform the metaphysical task of cybernetics of origin (emergence), and of unity (or wholeness of the universe).

antiquity to the present between symbolic (arithmetic) and iconic (geometric, or in this context, visual) languages, which can only be explained by mutually concealing problem areas. However, as Hans Belting shows in his work *Florence and Baghdad: An Occidental-Oriental History of Seeing* [*Florenz und Bagdad: Eine westöstliche Geschichte des Blicks*] (2008), the shift from a free seeing (view) to an organized representation of that which is seen (image) is a paradigmatic shift toward modernity from a theory of seeing to an image theory of knowledge [*Erkenntnis*]. This can be traced quite concretely in the history of the telescope. In this argument, I draw on the dissertation by Witthaus (2005), who demonstrates in Galileo's work the "implementation of the telescope and microscope as optical instruments in the rhetorical repertoire of the scientific prose of the seventeenth century" (Witthaus 2005, 14).¹¹ This occurs particularly by means of figures of speech relating to visualization, a "holding up to the viewer," which Aristotle had already described as "a bringing to life" or "making current" (*energeia*) and later as the figure of speech he called *evidentia* as a "form of detailed description of impressions of that which is seen" (Witthaus 2005, 15)¹² and is "somewhat similar to *ekphrasis*, the description of an image" (Witthaus 2005, 15).¹³ Creating *evidentia* is precisely what a telescope as a knowledge-generating instrument does, and thereby the telescope itself becomes a reified rhetorical *instrument*.

The originally purely rhetorical *evidentia* itself becomes an independent empirical scientific paradigm – there is a certain irony in this, as this new *evidentia* opposes the pure rhetoric of Ancient philosophy, or criticises its excessive reliance on the senses (Witthaus 2005, 67).¹⁴ But the irony goes deeper, because, if rhetoric is regarded as "a technology designed to provide certainty" (Witthaus 2005, 22),¹⁵ the production of evidence is a medium of that which is immediable [*Mittel des Unmittelbaren*] (Witthaus 2005, 22). And here the problem of representation crops up again, as "the optical instruments of early modernity put not only their objects, but also the process of seeing itself, in the eye of the beholder" (Witthaus 2005, 27).¹⁶

11 Transl. by IN. "Implementierung der optischen Instrumente Tele- und Mikroskop in den rhetorischen Haushalt der Wissenschaftsprosa des 17. Jahrhunderts" (Witthaus 2005, 14).

12 Transl. by IN. "[...] Form detaillierter Deskription von Seheindrücken" (Witthaus 2005, 15).

13 Transl. by IN. "[...] in gewisser Nähe zur Bildbeschreibung (*ekphrasis*)" (Witthaus 2005, 15).

14 In this way, in the emergence of the empirical sciences, there remains an undertow of Platonic figures of thought.

15 Transl. by IN. "Technologie zur Schaffung von Gewissheit" (Witthaus 2005, 22).

16 Transl. by IN. "Die Sehapparate der frühen Neuzeit stellen nicht nur ihre Objekte, sondern den Vorgang des Sehens selbst vor Augen" (Witthaus 2005, 27). Aside from the actual "message from the stars," the telescope communicates its own entry into scientific

Witthaus's approach to Galileo's application of the telescope is influenced by Heidegger's critique of technology,¹⁷ which became foundational for his student Gadamer, but was also well received by the Frankfurt School, and centers on Heidegger's description of framing [*das Ge-stell*] as instrumental reason [*instrumentelle Vernunft*].¹⁸ According to Heidegger, the modern "turning to the world [...]" happens in a mode of a fixating positioning" (Witthaus 2005, 23),¹⁹ from which a scientific- or civilization-critical conceptualization of a "reified" world (Lukács) or "second nature" (Adorno) emerges. Linguistically, the "*Ge-stell*" is merely a construct(ion) – in the word "*feststellen*" we can still trace the fusion (cf. Gadamer) of a mechanistic activity with its methodological-scientific claim to knowledge. The corresponding discourse of power and subjugation has frequently been analyzed in critical theory by authors like Adorno, Foucault, Horkheimer and Feyerabend.

Nevertheless, there are complex interactions between the development of the *Ge-stell* as a scientific instrument – in other words, one that is aimed at finding evidence, in the sense of truth – and the artistry of rhetoric, as the rhetorical term *evidentia* shows. Indeed, Witthaus claims that optical instruments were born out of the written word (2005, 53),²⁰ citing as proof the instrumentalizing of optics ranging from the reading stones used before the invention of spectacles and glasses to the fact that even today, when we visit an optician, we are asked to decipher ever smaller letters (Witthaus 2005, 53). According to Witthaus (2005, 54), the coupling of these two domains – reading as rhetorical imagination of a content that should be regarded as *true* at least fictionally, and optics itself as the scientifically transformed rhetoric of *evidentia* – requires three postulates, which I interpret in the context of transpositions (metaphorics) as *tertia comperationes*:

- a) Sequentiality and concentration (Witthaus 2005, 55): the simultaneity and shared spatiality [*Gleichräumigkeit*] in the act of reading and seeing/observing is broken up into view points [*Blickpunkte*] or suspended images – a highly abstracting process, which Gadamer refers to as heuristic horizons.

communication ["Das Teleskop kommuniziert neben der eigentlichen 'Sternenbotschaft' seinen eigenen Eintritt in die wissenschaftliche Kommunikation"] (Witthaus 2005, 64). So, the medium is the message of the stars. See also Gailei 1987.

17 Cf. Heidegger 1975.

18 Max Horkheimer (1967), *Kritik der instrumentellen Vernunft*. It is the German translation of his book *Eclipse of Reason* (1947).

19 Transl. by IN. "[...] Hinwendung zur Welt [...] im Modus des festsetzenden Stellens" (Witthaus 2005, 23).

20 Transl. by IN. "Die Geburt optischer Instrumente aus dem Geist der Schrift" (Witthaus 2005, 53).

- b) The reading of the familiar [*Lektüre des Altbekannten*] (Witthaus 2005, 55), which is seen better or more clearly only with the assistance of instruments.
- c) A problem of storage/retention [*Problem der Speicherung*] (Witthaus 2005, 55), which results in follow-up discourses [*Folgediskurse*], for example, further reproductions – in Galileo’s case, an entire network of illustrations, ekphrastic descriptions, publications and advertising campaigns, which Witthaus describes as a media event [*Medienereignis*] (Witthaus 2005, 53–63).

Witthaus’s “establishment of wonderment as a guiding impulse of a scientific reception attitude” (Witthaus 2005, 70–73)²¹ is not convincing. Admittedly, it is clear, that, with *evidentia*, Quintilian addresses the emotions of the listener/viewer “by placing him/her in the role of an eye-witness” (Witthaus 2005, 70),²² and that Pseudo-Longinus takes this further in the distinction between the clarity of the picture, which is seen increasingly soberly in the sense of *perspicuitas*, versus the rhetoric of shocking [*hekiplexis*] elicited by poetry. But this distinction can only be made from the current vantage point, since we now think of literature and the (natural) sciences as separate concepts. But this distinction does not apply to Galileo’s astronomical treatise *Sidereus Nuncius* – which is an adept reapplication of the Christian rhetoric of Revelation, which it indeed used with the intention of shocking and leading to boundless admiration and wonderment. With Galileo, we look in vain for an “objective tone” (Witthaus 2005, 68; cf. Mühr 2001, 113–119). I have previously described the reapplication of the idea of divine unity to nature (Mühr 2001, 113), which calls for participation, in line with the rhetoric of *evidentia*, and, at the same time, has missionary-religious overtones (Mühr 2001, 114) and is meant to result in unbounded admiration – not least for God, who, after all, created this world (and the moon). One could therefore argue that this is where instrumental reason entered the scientific vocabulary; equally there is a rhetorical elevation of *evidentia* to an absolute, if not the sublime, hypertrophy of enthusiasm, which phenomenologically stabilizes the *enormity* of the new.²³ It is here that the counter-discourse to rationality begins, a discourse which led, via the Cambridge Platonists and English Sensualism, to pietist

²¹ Transl. by IN. “Etablierung des Staunens als Leitaffect wissenschaftlicher Rezeptionshaltung” (Witthaus 2005, 70–73).

²² Transl. by IN. “indem sie ihn in die Rolle eines Augenzeugen versetzt” (Witthaus 2005, 70).

²³ Here, I am referring to Waldenfels (2006), who describes the perception of “the other” phenomenologically, in particular to the perception of the cosmos (Waldenfels 2006, 16–19) and to his notion of pathic response (Waldenfels 2006, 38–46).

Empfindsamkeit, and which represents the psychological or reception aesthetics counterfoil to empiricism.²⁴

From this, according to Witthaus (2005), we can deduce that it is with Galileo that we find the beginnings of a re-functioning in scientific rhetoric which elevates the instrument (the *Ge-Stell*) to an immanent *ingredient* of empirical research. In this genealogy of the rise of optical instruments in physics, we can also see the transposition and expansion of telescopic and optics and its language into the understanding of general issues, which for a long time were also metaphysical issues, precisely because Galileo's *Sidereus Nuncius* is also a "message/messenger" (according to its title), a "transmission."²⁵ After all, with its rhetorical *evidentia*, the rhetoric of the telescope carries with it the power of religious persuasion as (Hebrew) *Kabod* or as Christian *Gloria*.²⁶ Being deeply embedded in the Christian faith, early physicists up to Newton himself believed they could see (in a literal sense) or reveal (in a religious sense) the glory and greatness of God's creation better with the support of their new instruments. It is precisely the emotional, *aesthetic* aspects of this evidentiary technology that provided the impetus for the migration of the terminology, the wonderment and amazement, the aesthetic aspects of seeing [*Anschaung*], which are always also interpretations.

This shift in the paradigm of the history of science is therefore based on a dialectic: *because of the fixing of the position of the object of research by the instrument, it is inevitably medialized, which in turn, rhetorically, as a fixing of the subject, leads to a liquefaction or making fluid.*" The reality (actuality) of an immediate perception of an object (i.e. which is not fixed or made lasting by any medium) is completely momentary and unique. It is free from human *beholding*. A physicist of such phenomena may write about what the reader should do in order to repeat a similar/the same perception/observation (e.g. Goethe's *Farbenlehre* contains descriptions of color by explaining what to do and how to hold objects against light etc.). A mediated perception that has been literally *captured* on a picture that claims evidential truth, can now travel to other people and even into other media, because the medium now is the

²⁴ A third aspect is a concomitant anthropocentrism, which can be traced back to Descartes's *cogito ergo sum*. Cf. Blumenberg 1975, I, 80–98 and 200–246; Belting 2008, 229–281; Waldenfels 2006, 20.

²⁵ The telescope itself then becomes *book-like*, something in which we can *read*. If one considers that Galileo sometimes sent telescopes with copies of his book (Witthaus 2005), the title "message/messenger from the stars" becomes ambiguous: it refers to that which is contained in the book and to the telescope itself.

²⁶ In this regard, cf. Mühr 2001, 215–216. and Hoepps 1989.

message/messenger. In the case of the telescope, at least, it forms part of the message. I claim that this development is the reason why the optical terms, as a third step of *mobilization*, started also to become fluid and travel to other areas and become metaphors (which means *carriers*) for *other* truths.

In Albrecht Koschorke's work *History of the Horizon* [*Geschichte des Horizonts* (1990)], we find a similar argument regarding the dialectical dynamics of development, even though the work focuses on discourses relating to literary depictions of landscapes. Koschorke, like Witthaus (2005), maintains that in the period of the Copernican Revolution, "from the aporetic of the thought of fixed boundaries arises the general conception of a progressive and infinite shift of the horizon" (Koschorke 1990, 9).²⁷ In his second chapter, "The opening of the horizon" (Koschorke 1990, 49–75),²⁸ he describes the same dialectic of suspension and liquefaction for the development of central perspective in the history of art as Witthaus claims for Galileo's rhetoric of science. So central perspective suspends "the mobility of the viewer" (Koschorke 1990, 49)²⁹ and "[coerces] the eye to [look at] an absolute momentary presence" (Koschorke 1990, 63).³⁰

On the one hand, the vanishing point and horizon as prerequisites for the construction of a "perspectivally correct picture" (Koschorke 1990, 49)³¹ continue the ancient discourse of thought on the One and the Whole (cf. Horstmann 1993). On the other, they bring about the "discovery of the horizon as the liminal figure of immanence [...] via the centering of the subject" (Koschorke 1990, 49):³² "every image corresponding to the entity of the perspectival field of view [is], as it were, framed by a silent margin of the unlimited multiplicity of possible images" (Koschorke 1990, 50)³³ which can only be epistemically organized by the viewer. Mathematically speaking, the vanishing point refers simply to what was, according to Euclid's fifth theorem, incommensurable then: the point at infinity where parallel lines meet.

27 Transl. by IN. "[...] treibt die Aporetik des Denkens fester Grenzen die Generalanschauung einer progressiven und unendlichen Horizontbewegung aus sich hervor [...]" (Koschorke 1990, 9).

28 Transl. by IN. "Die Öffnung des Horizonts" (Koschorke 1990, 49–75).

29 Transl. by IN. "Motilität des Betrachters" (Koschorke 1990, 49).

30 Transl. by IN. "[...] [verpflichtet] das Auge auf eine absolute momentane Präsenz" (Koschorke 1990, 63).

31 Transl. by IN. "[...] perspektivisch richtigen Bildes" (Koschorke 1990, 49).

32 Transl. by IN. "Entdeckung des Horizonts als Limesfigur der Immanenz [...] auf dem Weg der Subjektzentrierung" (Koschorke 1990, 49).

33 Transl. by IN. "[j]edes auf die Entität des perspektivischen Blickfeldes abgestimmten Bildes [ist] gleichsam von einem Schweigerand der unbegrenzten Vielzahl möglicher Bilder umrahmt" (Koschorke 1990, 50).

So, if the concept of a boundary in the sense of unitary enclosure [*Einheitsstiftung*] is taken further in the direction of dialectically implying its opposite, in other words, the transgression of boundaries, then the term *boundary* as an edge, as a limit, becomes the term *horizon*. Ontologically and metaphysically, it is then only a small step to Leibniz's "best of all possible worlds" because if once the limits of perceiving truth or "the world" has opened up to infinitely possible worlds, human perception and intellect in their godly origin must exactly perceive that.

In his third chapter "Semantics of the infinite landscape" (Koschorke 1990, 76–172),³⁴ Koschorke shows how, at the end of the Middle Ages, infinity, as a theological predicate of God, first becomes conceptualized in a spatial sense, which then leads to the extinction [*Auslöschung*] of the above concept of the boundary as the principle of an edge or limit, and shifts toward the temporalization, toward a shifting boundary [*wandernde Grenze*] (Koschorke 1990, 76), and finally toward the bourgeois notion of progress (Koschorke 1990, 78) and the "awakening of a historical sense of possibility" (Koschorke, 1990, 77):³⁵ "A horizon of history that is open to the future – and that means: one enabling human creative freedom – corresponds to the opened horizon of a spatial experience" (Koschorke 1990, 78).³⁶

But we always need to remember the semantic baggage of a secularized rhetoric of revelation that is carried along in this historical transformation of concepts, and that ultimately leads to the historicization of the formerly optical horizon concept.

2.3 Chladenius's vantage point theory

Let us now engage in the game of the transposition of rhetorical *evidentia* to scientific evidence.³⁷ If the *horizon opens*, this means that knowledge travels or

³⁴ Transl. by IN. "Semantik der unendlichen Landschaft" (Koschorke 1990, 76–172).

³⁵ Transl. by IN. "Erwachen eines historischen Möglichkeitssinns" (Koschorke, 1990, 77). In modernity, the Pillars of Hercules no longer serve as a boundary or frame, but symbolize an opening for the search for new worlds, in other words a breaking of the frame (cf. Koschorke 1990, 78–83).

³⁶ Transl. by IN. "Dem geöffneten Horizont der Raumerfahrung korrespondiert ein auf die Zukunft hin offener – und das heißt: menschliche Gestaltungsfreiheit ermöglichender – Horizont der Geschichte" (Koschorke 1990, 78).

³⁷ This explains the need to engage with a situation as a condition for hermeneutics (Gadamer 1990 [1960], 273). Cf. Mühr 2012a, 908.

expands. But this also applies to the hypothesis of the opening of the horizon itself, as its own terminology expands.³⁸ Chladenius's work *General Historical Science in which the Foundation Is Laid for a New Insight into All Kinds of Learning* [*Allgemeine Geschichtswissenschaft, worinnen der Grund zu einer neuen Einsicht in allen Arten der Gelahrtheit geleyet wird* (1752)] can serve as an example of this opening or literal "in-sight" [*Einsicht*]³⁹ and expansion "into all kinds of learning" (Chladenius, 1752, title),⁴⁰ through optical terminology to hermeneutics. In order to analyze this expansion, I trace the argument in the first three paragraphs of Chapter 5, "Of the observer and vantage points."⁴¹ The heading of the first paragraph is "The observer is central to a narrative" (Chladenius 1752, 91).⁴² Here Chladenius argues that "events, and therefore also history, [...] are alterations of their real things" (Chladenius 1752, 91),⁴³ which would also occur even without witnesses. However, in the recognition [*Erkenntnis*] of history, the observer or witness becomes the necessary medium:

Only, in the recognition of the events, and the narratives that flow from them, it is equally necessary to pay attention to the observer and his/her traits, as to the matter itself.⁴⁴

(Chladenius 1752, 92)

This distinction – seen as a process – recapitulates, as Belting (2008, 229) puts it, the step from a theory of seeing to an image theory. According to this quasi epistemologically critical argument, §2 of Chladenius' work explains why this seems self-evident for the recognition of "corporeal things" [*körperlicher Dinge*], but the optical term "vantage point" needs to be expanded for historical recognition (historical knowledge):

Because it is thus evident with bodies that their changes and traits take a completely different form once the observer has taken a seeing position to them, depending on whether he/she is near to a body or far from it, stands higher or lower, whether he/she pays attention or not. The fixed stars, as all learned people know now, are suns, for those who are

³⁸ Cf. Blumenberg (1975, I, 310–340), who shows how Copernicus himself was styled as a world shaker.

³⁹ The original object of this 'in-sight' was the *camera obscura*. Cf. Belting (2008, 104–143).

⁴⁰ Transl. by IN. "[...] in allen Arten der Gelahrtheit" (Chladenius, 1752, title).

⁴¹ Transl. by IN. "Vom Zuschauer und Sehepunkte" (Chladenius 1752, Ch. 5).

⁴² Transl. by IN. "Der Zuschauer ist bey einer Erzählung eine Hauptsache" (Chladenius 1752, 91).

⁴³ Transl. by IN. "[...] Begebenheiten, und mithin auch die Geschichte, [...] Veränderungen derer würcklichen Dinge [sind]" (Chladenius 1752, 91).

⁴⁴ Transl. by IN. "Allein bey der Erkenntniß der Begebenheiten, und denen daraus flüssenden Erzählungen, ist es eben so nöthig, auf den Zuschauer und dessen Beschaffenheit Achtung zu geben, als auf die Sache selbst" (Chladenius 1752, 92).

close enough to them, but for us they are tiny lights in the sky, because of the indescribable distance. The moon is sometimes full, sometimes half full, sometimes even less illuminated, namely in front of us [...].⁴⁵ (Chladenius 1752, 92)

This quote testifies to the origin of the vantage point theory taken from telescopic;⁴⁶ it is a direct history of effect [Wirkungsgeschichte] of the rhetorical figure of speech of *evidentia* used by Galileo, with reference to the problem of identifying spatial depth, which is solved by central perspective.⁴⁷ But in this process, it takes the dependence of the vantage point as a necessity of the fixing of the image in the telescopic image along, the dialectic of image-fixing and simultaneous relativization or transgression of image-fixedness is traveling!

From here it is a small step to a metalingual expansion of these optical terms into historical science, a step which occurs in §3:

In sensing/experiencing bodies one pays most attention to seeing [...]. However, to use historical recognition, this concept must also be extended somewhat even for visible things.⁴⁸ (Chladenius 1752, 93)

The object-linguistic recognisability [Begrifflichkeit] of the vantage point is extended from a locus or point to an entire *situs*. Chladenius's preliminary definition of the vantage point here is the "locus at which the eye of the viewer is" (Chladenius 1752, 93)⁴⁹ and he claims that it has already been explained fully in optics (Chladenius 1752, 93). However, in the course of his chapter, this *locus* [Ort] is expanded to a *situs* [Stand], which eventually includes the whole soul of

⁴⁵ Transl. by IN. "Denn so ist bey Cörpern offenbar, daß ihre Veränderungen und Begebenheiten eine gantz andere Gestalt bekommen, nachdem sich der Zuschauer in Ansehung derselben verhält, ob er nahe oder ferne, höher oder tieffer stehet: ob er achtung giebt, oder nicht. Die Fixsterne, wie itzo alle Gelehrte wissen, sind vor diejenigen, die nahe genug sind, Sonnen, vor uns aber, sind sie wegen der unbeschreiblichen Weite, kleine Himmelslichter. Der Mond ist bald voll, bald halb, bald noch weniger erleuchtet, nemlich vor uns [...]" (Chladenius 1752, 92).

⁴⁶ Admittedly, Chladenius writes in §12 that he is drawing on the concept of the vantage point as posited by Leibniz, who used it "here and there even in metaphysics and psychology" ["hie und da denselben selbst in der Metaphysick und Psychologie gebraucht hat"] (Chladenius 1752, 101). The relation to optics is not only given immanently, but is also explicitly mentioned in §3. The vantage point as "locus where the eye of the viewer finds itself [...]" has already been most clearly explicated" ["Ort, wo das Auge des Zuschauers sich befindet [...] ist in der Optick schon alles auf das klärte aus einander gesetzt worden"] (Chladenius 1752, 93).

⁴⁷ Cf. Koschorke 1990, 59–70; Witthaus 2005, 83–89; Belting 2008, 180–228.

⁴⁸ Transl. by IN. "Bey der Empfindung der Körper giebt man allezeit hauptsächlich aufs Sehen achtung [...]. Zum Gebrauch der historischen Erkenntniß aber muß dieser Begriff auch schon bey sichtlichen Dingen etwas ausgedehnet werden" (Chladenius 1752, 93).

⁴⁹ Transl. by IN. "Ort, wo das Auge des Zuschauers sich befindet" (Chladenius 1752, 93).

the observing individual (i.e. the individual who desires to understand), including his/her emotional and rational capabilities and presuppositions. This extension of the vantage point, which occurs in various stages, culminates in the following definition of the term, reformulated for the historical sciences:

The vantage point is the inner and external condition of an observer, insofar as a certain and particular way of looking at and perceiving things present flows from that condition. A concept that is equivalent to the most important ones in all of philosophy [...].⁵⁰
(Chladenius 1752, 100)

It is worth noting the importance that Chladenius attaches to this new construct. It makes Chladenius's "vantage point" [*Sehepunkt*] a direct precursor of Husserl's concept of the horizon.

2.4 Gadamer's concept of the horizon and the fusion of horizons

Gadamer does indeed adopt the construct of the horizon from Husserl (cf. Gadamer 1989, 245–248 and 1990 [1960], 249–251), but he also reconsiders the problem of the temporal continuum and the issue of instantaneous velocity, as a metaphor for a moment or point in time [*Zeit-Punkt*]. From Husserl's "flow of experience" [*Erlebnisstrom*] of time (Gadamer 1989, 245 and 1990 [1960], 249), it becomes clear that "the discreteness of experience [...] is not an ultimate phenomenological datum" (Gadamer 1989, 245).⁵¹ First, this is a critique of Kant, who saw the horizon as a condition for our recognition [*Erkenntnis*], "the determination of the scope and the boundaries of human recognition" (Engfer 1978, 1198),⁵² thus, in its former meaning as an edge, a margin, a boundary [*Rand*]. Second, it subliminally actualizes (if we translate metaphors back into the physical realm) the problem of the extent of the *Zeit-Punkt* (or of instantaneous velocity), which is, after all, only a mathematical, and not an empirical, unit, because in this stream of time, the temporal expansion of a point in time

⁵⁰ Transl. by IN. "Der Sehepunkt ist der innerliche und äusserliche Zustand eines Zuschauers, in so ferne daraus eine gewisse und besondere Art, die vorkommenden Dinge anzuschauen und zu betrachten, flüßet. Ein Begriff, der mit den allerwichtigsten in der gantzen Philosophie im gleichen Paare gehet [...]" (Chladenius 1752, 100).

⁵¹ Transl. by IN. " ... die Einzelheit des Erlebnisses [...] kein letztes phänomenologisches Datum ist" (Gadamer 1989, 245).

⁵² Transl. by IN. "die Bestimmung des Umfanges an der Grenzen der menschlichen Erkenntnis" (Engfer 1978, 1198).

tends to zero. This is a perfect correlation to differential calculus because, although the difference (change) in one *point* cannot actually be stated, nevertheless dx is a mathematical construct to calculate with. Likewise Gadamer (with Husserl) assumes that the ever-changing horizon cannot be described due to its mobility and the mobility of time; nevertheless for *heuristic* purposes of understanding the concept of fusion of horizons, one must first state the term of a fixed horizon.

Third, it points to the opening of the horizon, because the focus is directed precisely at this boundary. The undertaking “critically”⁵³ reflects its own limitation, albeit no longer in landscape paintings and literary images as Koschorke was to demonstrate, but, about 300 years after Galileo, in a theory of knowledge [*Erkenntnistheorie*]. If we use Koschorke’s (2012, 116–136) semiosphere model, adapted from Lotman, as a basis to describe this process, we can speak of a diffusing penetration of meaning that has migrated from the periphery into the (cold) center of the concept of recognition [*Erkenntnisbegriff*], which elicits a nuclear fusion (producing heat, change). “The flow of experience has the character of a universal horizon of consciousness, and only from it is the discrete experience given as an experience at all” (Gadamer 1989, 245).⁵⁴ Thus the flow of experience is essential. However, it cannot be represented consciously in this form, but can only be represented as a particularity, which is not in itself essential. The horizon itself – seen as time – is in constant flux; a “fixed” moment (as experience or *Erlebnis*) only exists as a derivation: “even in a perfect ‘epoche’ – bracketing the being posited by scientific knowledge – the world still remains valid as something pregiven” (Gadamer 1989, 246).⁵⁵

From this purely constructed validity, Husserl derives the construct of the life-world [*Lebenswelt*]. According to Gadamer, “[a]s a horizon phenomenon ‘world’ is essentially related to subjectivity” (Gadamer 1989, 257),⁵⁶ which we, “‘exist[ing] in transiency’ [or the ...] constant movement of relative validity “(Gadamer 1989, 247)⁵⁷ have always quasi-experienced as a pregiven. But as a

53 Kant’s use of the term “Kritik” also demonstrates this shift from an essentialist whole (as a symbol of knowledge) to its boundaries or limits, because *kritein* is what I can distinguish visually.

54 “Der Erlebnisstrom hat den Charakter eines universalen Horizontbewusstseins, aus dem nur Einzelheiten wirklich – als Erlebnisse – gegeben sind” (Gadamer 1990 [1960], 250).

55 “[...] im Vollzug der ‘Epochē,’ der Aufhebung der Seinsetzung der wissenschaftlichen Erkenntnis, bleibt die Welt als eine vorgegebene in Geltung” (Gadamer 1990 [1960], 250).

56 “als ein Horizontphänomen [...] wesensmäßig bezogen auf Subjektivität [ist]” (Gadamer 1990 [1960], 251).

57 “[...] in strömender Jeweiligkeit seiend” (Gadamer 1990 [1960], 251).

pregiven, it does not enter into our consciousness of our everyday world. It should therefore be remembered that Gadamer's concept of the horizon is not an essentialist horizon of knowledge, as with Kant, but *a practically purely heuristic construct*, which, as a life-world [*Lebenswelt*], normally does not penetrate our consciousness. (That only occurs in the hermeneutic act of understanding.) Koschorke's fundamental hypothesis that the horizon "is not an object that falls within the empirical realm, but is a constituting line of reference for the order of empiricity itself" (Koschorke 1990, 7),⁵⁸ thus also corresponds with Gadamer's view.

It also reveals similarities to Chladenius's vantage point, which is equally subjective and prescientific, and cannot be objectified. With Chladenius, the vantage point is expressed as something very individual, but Husserl (like Gadamer) regards it as an anonymous intentionality.⁵⁹

On the other hand, the horizon as a *circle* of vision [*Gesichtskreis*] is more than a *point* [*Punkt*] – this argument applies to both Gadamer and Chladenius. In his development of the principle of a history of effect [*Wirkungsgeschichte*],⁶⁰ Gadamer (1990 [1960], 307; 1989, 300) explicates the horizon concept in conjunction with the notion of "situation." The "situation" is a "standpoint that limits the possibility of vision" (Gadamer 1990 [1960], 307),⁶¹ i.e. "the horizon is the range of vision that includes everything that can be seen from a particular vantage point" (Gadamer 1989, 302). Thus he even uses the same word, "point," which Chladenius uses, and which has embedded itself in scientific discourse on the infinity debate since the definition of the vanishing point in perspectival painting (Euclid). However, Chladenius's vantage point primarily designates a place or *locus*, but one that can be expanded; horizon (also an older hermeneutic term [cf. Engfer 1978] to which Gadamer does not return) is rather the designation of an area. There is indeed a parallel between the panoramic, otherwise

58 Transl. by IN. "[...] kein Gegenstand innerhalb des Gebietes der Empirie [ist], sondern eine konstituierende Bezugslinie für die Ordnung der Empirizität überhaupt" (Koschorke 1990, 7).

59 Gadamer (1990 [1960], 186; 1989, 182–183) points out that Chladenius's vantage point should not be read in the Romantic lineage of a hermeneutic methodology, because it focuses on the interpretation of speeches and writings on reason, and less on the understanding of historical texts. Chladenius does, however, use his vantage point theory to enhance historical understanding.

60 It remains a desideratum for now to read Gadamer's concept of *Wirkungsgeschichte* as a hermeneutic alternative to a physical explanation of the time-space-continuum, for example if compared to *Wirkungsquantum*.

61 Transl. by IN. "Standort, der die Möglichkeit des Sehens beschränkt" (Gadamer 1990 [1960], 307).

unfixed circle of vision⁶² and the projected, fixed [*ge-stellte*] circle of vision which one can see when one looks through a telescope. The associated terms “narrowness/expansion” (Gadamer 1989, 302), originally “*eng / erweiterbar*” (Gadamer 1990 [1960], 307), do indeed refer to an ocular, in other words, a lens adjustment, whereas Gadamer’s adjective “*erschließbar*” implies a plurality of horizons. But this idea is not realized in Gadamer’s work.

The next few sentences refer to a gradual expansion of the horizon (Gadamer 1989, 302) or *Schrittgesetz der Erweiterung des Horizonts* (Gadamer 1990 [1960], 307). This set of metaphors of a hermeneutic expansion of horizons corresponds to increasing lens magnification and perhaps a stronger resolution, but not to a change of perspective (or shift of horizons): someone who lacks a horizon “over-values what is nearest to him” (Gadamer 1989, 302); and someone who has a horizon “knows the relative significance of everything within this horizon, whether it is near or far, great or small” (Gadamer 1989, 302).⁶³ This recapitulates exactly the above discussion of the recognition of depth which was problematized by Galileo’s telescope images.

One has to remember that Gadamer sees the horizon only as a *heuristic* self-design. A few pages later (Gadamer 1990 [1960], 311; 1989, 306) he insists, unmistakably, that the representation of a bounded or fixed and foregrounded horizon of the present is erroneous: “In fact the horizon of the present is continually being formed [...]. There is no more an isolated horizon of the present in itself than there are historical horizons which have to be acquired” (Gadamer 1989, 306).⁶⁴ The horizon concept is thus liquified to historical time, analogously to Newton’s fluxions, recapitulating the problem of the moment (in terms of differential calculus: How long is a moment in time? Is there such a thing as instantaneous velocity?) to that of time volumes (in terms of integral calculus: How far has an object moved between two points in time whose distance from each other tends to zero? How much historical awareness/consciousness, in temporal depth, is required to understand a historical text?). So here he goes beyond Kant;

⁶² Only by turning around oneself is it possible to see the entire horizon, and then only with a temporal delay. The Galileian power game of “putting before the eyes” (Witthaus 2005, 53–88) is not possible; the full horizon, as a whole, cannot be seen at once, as part of it is always behind the viewer.

⁶³ “weiß die Bedeutung aller Dinge innerhalb dieses Horizontes richtig einzuschätzen nach Nähe and Ferne, Größe and Kleinheit” (Gadamer 1990 [1960], 307).

⁶⁴ “In Wahrheit ist der Horizont der Gegenwart in steter Bildung begriffen. [...] Es gibt so wenig einen Gegenwartshorizont für sich, wie es historische Horizonte gibt, die man zu gewinnen hätte” (Gadamer 1990 [1960], 311). However, *de facto*, he does so, cf. Gadamer 1990 [1960], 375–376.

but he actualizes the problem of the (physical) point in time, as addressed above, as *Erlebnis* (Husserl). Hence, Gadamer himself must ask, criticizing himself, if horizons are continually being developed and if therefore there can be no foregrounded horizons, then “why do we speak of the fusion of horizons [...]?” (Gadamer 1989, 306).⁶⁵ His own reply: that is the *scientific* difference from the traditional (life-worldly) projection of the historical horizon [*Vergangenheitsvollzug*]:

To ask the question means that we are recognizing that understanding becomes a scholarly task only under special circumstances [...]. That is why it is part of the hermeneutic approach to project a historical horizon that is different from the horizon of the present.⁶⁶

(Gadamer 1989, 306)

The development of horizons that in themselves [*für sich*] never existed and will only “recombine with what it has foregrounded itself from” is merely a “phase in the process of understanding” (Gadamer 1989, 306–307),⁶⁷ and this process is understood ontologically as an application [*Anwendung*], with which the chapter ends, as the fundamental hermeneutic problem is reiterated, namely the question of how texts are applied in the act of understanding.⁶⁸

This “application” – taking the word application in its mechanistic sense – resembles the problem of representing an effect quantum [*Wirkungsquantum*]. The effect [*Wirkung*] is only effective – it is – by existing. That means it exists, but cannot be determined or “re-presented” in the sense of scientific evidence. As an epistemological model, the notion of a fusion of horizons thus separates something which is not separated *in situ* and therefore has no permanence. But we are reminded that this separation is “necessary to work out the circumstances as a hermeneutic situation” (Gadamer 1989, 306),⁶⁹ and that the fusion of horizons is then imported as a construct to resolve these separations. Hence, because the metaphor of fusion erases difference, it homogenizes. The dialectic between solidification and liquefaction at various levels of expression is strikingly similar to Newton’s theory of fluxion, which sees fluxions as purely mathematical entities whose ontological status must be negated.⁷⁰ We are dealing

65 “[...] warum reden wir dann überhaupt von ‘Horizontverschmelzung’ [...]?” (Gadamer 1990 [1960], 311).

66 “Die Frage stellen, heißt, sich der Besonderheit der Situation eingestehen, in der Verstehen zur wissenschaftlichen Aufgabe wird [...]. Aus diesem Grunde gehört *notwendig* zum hermeneutischen Verhalten der *Entwurf* eines historischen Horizontes, der sich von dem Gegenwartshorizont *unterscheidet*” (Gadamer 1990 [1960], 311, original emphases).

67 “Phasenmoment im Vollzug des Verstehens” (Gadamer 1990 [1960], 312).

68 Grondin (2000, 170) sees this as realization or making real (*Verwirklichung*).

69 “notwendiger Entwurf im Verstehen” (Gadamer 1990 [1960], 312).

70 In this regard, cf. Boyer 1959, 187–202.

here with the phenomenon that in theory of terminology as well as quantum theory, matter or terms always act semi-objectively or as what Koschorke calls “Dispositive mittleren Härtegrads” (2012, 30): the moment a term is taken or empirically experienced (actualized), it will mutate to something else, because this actualization of it influences its ontological status.

With Gadamer, then, the transfer of the concept of the horizon from the history of physics to the notion of a vantage point (Chladenius) and further to his fusion of horizons can itself be regarded as a (now hermeneutic) fusion of horizons.

3 Summary: The horizon and the limits of its representation

The history of the transformation of visual terminology traced above, from Galileo via Chladenius to Husserl und Gadamer, has shown the interactions between scientific and hermeneutic recognition, as well as the retrotransference and masking of problems in physics, for example regarding the continuum and the calculation of instantaneous velocity as markers for singular effects, respecting a singular experience [*Erlebnis*].

The cult of immediacy, which underlies, for example, Heidegger’s animosity to technology, can also be found in Heisenberg’s discovery of the Uncertainty Principle (they are contemporaries, after all), as well as in the assumption of a (metaphysical) “a-tomic” quantum of effect (*Wirkungsquantum*), precisely because it cannot be “re-presented.” The problem of representation that has penetrated scientific epistemology and rhetoric since Galileo’s time as a *Ge-stell* reaches a limit here, because the *Wirkungsquantum* becomes so infinitesimally small that it either “is” – in the sense of “being present” – or represents, in the sense of being traced or measured by instruments, but can no longer do both simultaneously. It is here that the representation paradigm collapses.

Moreover, it is precisely because of this limit of representability that Heisenberg struggled to solve the uncertainty principle; that is, he had to go beyond conventional scientific recognition, which he could only manage to do with the aid of poetry (Goethe’s *West-östlicher Divan* and much physical exercise in Helgoland),⁷¹ thereby reproducing the ancient Christian rhetoric of Revelation in

71 In this regard, cf. Partenheimer 1989 und Mühr 2008, 105–107.

the form of *evidentia*, albeit reshaped with pietist motifs.⁷² Likewise, the limits of the epistemic paradigm of representation are reflected on in Gadamer's concept of the fusion of horizons. But Gadamer recalls it as mimesis, as an imitation of the world – and in the concept of mimesis we should also recollect the impetus of the concept of *anamnesis* (cf. Grondin 2000, 68). The German terms *Repräsentation* and *Vergegenwärtigung* (visualization, which is one of the key terms in cultural memory studies) state precisely the same but inconceivable issue.

In conclusion, we are dealing with the fact that in a number of disciplines (such as quantum theory, mathematics, literature, hermeneutics and philosophy), there exists a similar epistemic problem around the conceptualization of immediacy. Although, at first hand, it seems that every discipline has developed its own “application” or method to speak of and deal with this problem, the analysis of the history of the term “horizon” has shown that these different solutions are highly entangled. The conceptual result of fused horizons is as abstract without the ontologically questionable concept of fixed horizons as is – for that matter – the concept of a differential derivate without given functions to which it is the derivate.

From these findings of the dynamics of interaction between terms and concepts and different research areas or world views, a complex and in particular very dynamic understanding of how human cognition perceives and models reality emerges. It certainly overcomes conventional or structuralist concepts of deterministic representation.

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72 In this regard, cf. Mühr 2012a, especially pp. 912–913.

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