

Sailing by the Stars: Constellations in the Space of Thought



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Auch die sternische Verbindung trägt.
Doch uns freue eine Weile nun
der Figur zu glauben. Das genügt.

—Rainer Maria Rilke, *Sonette an Orpheus*, XI.

I.

In a footnote to his early essay “Force and Signification” from 1963, Jacques Derrida considered the contemporary vogue for the notion of “structure” in the following terms. “In order to assess the deep necessity that underlies the undeniable phenomenon of fashion, one must proceed initially by the ‘negative path,’—the choice of the word is initially a—structural, of course—ensemble of exclusions. To know why one says ‘structure’ is to know why one ceases to say *eidos*, ‘essence,’ ‘form,’ *Gestalt*, ‘collection,’ ‘composition,’ ‘complex,’ ‘construction,’ ‘correlation,’ ‘totality,’ ‘idea,’ ‘organism,’ ‘state,’ ‘system,’ etc. One must understand why each of these words revealed itself to be insufficient, but also why the concept of structure continued to borrow certain implicit meanings from them and allows itself to be inhabited by them.”¹

¹Jacques Derrida, “Force and Signification,” in *Writing and Difference*, trans. Alan Bass (Chicago: University of Chicago Press, 1978) 301.

Though Derrida has conceded the relevance of the term “structure,” a term that, particularly in its contrast with “genesis,” has a central importance for this phenomenological phase of his theoretical career, the “negative path” of the footnote that passes through this remarkable chain of substitutions, the Greek transliterated, the German italicized, the French (original, here translated) in quotation marks, calls into question the ultimate adequacy of any theoretical term. The metaphor of a path, the notion of revealed insufficiency, the suggestion of continued borrowing all lend to what might at first be understood as a synchronic differential paradigm an implicitly diachronic dimension. Not that the series as such is to be understood as a chronological or even logical sequence; what substitutes for what, when, and why, this is all left indeterminate by the path, surrendered to the closing “et cetera” and the invisible principle toward which it gestures. One might say this indeterminacy is its “negative” character. And yet the ideal of knowledge proposed here, an ideal in which why one says one thing and why one does not say another both converge in a decision, is exposed to an irreducible historicity. The renunciation that jettisons these alternative philosophemes in favor of “structure” does not simply cast them into oblivion but relegates them to a partially superseded history of prior statements. The choice in favor of “structure” is an historical choice, and draws its significance from its contrast and continuity with the entire historical tradition within which it occurs.

The striking heterogeneity of these terms, in which the inclusion of *Gestalt*, organism, state seems designed to interfere with any straight-forward reduction of the chain to the Husserlian tradition from which Derrida is emerging, raises the question of what encompassing tradition might be at stake in the choice. If *eidōs*, essence, form, construction, complex, system, totality and idea all seem to echo Husserl’s analyses, none of them could be called uniquely Husserlian coinages, and the absence of such terms as “monad” or “*Esistenzial*,” indigenous to particular philosophies, reinforces the sense that this path traverses nothing less than the anonymous terrain of western philosophical reflection. But at this level of generality, how are we to understand the “et cetera” that gestures toward that terrain? What else does it include, and in particular, could we locate within it the word that interests us here, and that is conspicuously absent from Derrida’s list? What sort of a philosopheme is “constellation,” and what relation does it have to the quasi-synonyms for “structure” that Derrida identifies? Could we call this series itself a constellation? And if we did, to what would we have committed ourselves?

As an expository term, the word “constellation” serves to hold a set of disparate elements provisionally in place, without attributing to their assembly or conjunction any positive meaning. When we speak of a “constellation” of factors or a “constellation” of texts, we imply merely their simultaneous presence for reflection in some context we intend to illuminate, but the scientific anachronism of the term serves to suspend any prior reasonable characterization of that context. If the meaning of “constellation” in a theoretical context is largely underdetermined, if the term serves the heuristic purpose of suggesting a unifying principle at stake among a collection of objects while precluding any precipitous commitment to a positive characterization of that unifying principle, it may seem that we can, and indeed ought to avoid any attempt to characterize the term positively. Having recognized its tactical function in the exposition of argument, we should not expect that the word can be semantically redeemed in any other terms than the eventual conclusions of the particular arguments in which it appears. And none of these arguments *concludes* that something is a constellation. Rather, a posited constellation of factors or elements, of forces or reactions, is shown eventually to be something of determinate theoretical interest. To reflect upon the word “constellation” in its positive significance independently of this preliminary operational role in theoretical discourse is metaphysical hypostasis of the crudest sort. What does “constellation” mean as a theoretical term? *Stricto sensu*, nothing. It holds open the site of eventual meaning, presenting an occasion for conceptual reflection and analysis that will always ultimately be characterized in more respectable terms.

But to imagine that by recognizing the heuristic function of the word constellation we have circumvented any substantive question about its meaning is to presuppose all too precipitously the self-evidence of reasonable thought. Because the word constellation opens onto reasonable discourse without being entirely circumscribed in its content by rational concepts, we are justified in asking how this link to reason is possible. Not just any word can play the role constellation plays in philosophical inquiry. In Derrida’s footnote, the word “ensemble” serves a similar preliminary place-holding role; the path is an “ensemble of exclusions.” But it is not a trivial question whether that similar role renders “ensemble” philosophically indistinguishable from “constellation.”

As a metaphorical vehicle, the word “constellation” invokes an outdated cosmology of concentric spheres; astral constellations themselves appear as planar arrangements of what are, in reality, widely dispersed

astronomical bodies in the depths of universal space. Constellations as such are not “out there” at the edge of the cosmos, they appear to us, from our position, eyes raised, on the surface of the earth. It took watchers of the skies many centuries to recognize the discrepancy between this apparent space extending between our terrestrial observation-point and the fixed stars at its extreme limit and the actual contours of universal space in which discrete bodies move in gravitationally-dictated patterns. The historical process through which this discrepancy was elaborated is punctuated by profound transitions. Looking back we imagine at the prehistoric origins a mythic, cosmogonic space traversed by superhuman intentions, a space unlimited by internal causal regularities but hosting rather the antagonistic wills of the gods. This is the space in which constellations first appear, set among the fixed stars as the gift of immortality and a permanent recollection of individual mythic destinies. Careful observation of the regularity of celestial movements transforms this mythic cosmos into a law-governed astral environment, and eventually into the astrophysical universe we inhabit today. In the course of this development, the constellations lose their self-evidence and remain in the night sky merely as familiar patterns without scientific significance.

And yet the unimaginable distances at which their components lie and the immemorial antiquity of their designations are not accidental to their metaphoric perseverance. “One might think the atmosphere was made transparent with this design,” Emerson reflected in his treatise *Nature*, “to give man, in the heavenly bodies, the perpetual presence of the sublime.”² And we remember that Kant himself was famously moved to assert that, “two things fill the mind with ever new and increasing admiration and awe, the oftener and more steadily we reflect on them: *the starry heavens above me and the moral law within me.*”³ The proximity of astral constellations to transcendental thought is borne by the stars themselves.

In the millennia through which their names and shapes have come down to us, constellations have retained two primary connotations: astrological influence and navigational assistance. In both cases, it is the space between the constellation and the human observer that is at issue. This, then, is our first recognition. The term constellation, which

²Ralph Waldo Emerson, *Nature*, in *The Essential Writings of Ralph Waldo Emerson*, ed. Brooks Atkinson (New York: The Modern Library, 2000) 5.

³Immanuel Kant, *Kritik der praktischen Vernunft*, in *Kants Werke: Akademie-Textausgabe*, vol. 5 (Berlin: Walter de Gruyter, 1968) 161 [A289]; *Critique of Practical Reason*, trans. Lewis White Beck (Indianapolis: Bobbs-Merrill, 1956) 166.

appears to be merely a synonym for a collection or arrangement, and whose meaning therefore seems to reside primarily in the relations among the elements constituting it, in the underdetermined unifying principle subsequent discourse intends to clarify, is already in fact the volatilization of any self-evident relation between the immediate observer and the objects at the limit that is observed.

II.

The space of this relation between literal constellations and the observer on the ground is the space in astrology of occult influences. However rationalized and coherent contemporary astrology may be, irrationality characterizes its entire project. This view of astrology as the negative counterpart to enlightened rationality animates "The Stars Down to Earth," Theodor W. Adorno's 1953 analysis of the *Los Angeles Times*' astrological advice column. Neurotic compulsiveness, Adorno there maintains,

is intrinsic to the astrological pattern itself: one believes he has to obey some highly systematized orders without, however, any manifest interconnection between the system and himself. In astrology as in compulsive neurosis, one has to keep very strictly to some rule, command, or advice without ever being able to say why. It is just this "blindness" of obedience which seems to be fused with the overwhelming and frightening power of the command. In as much as the stars as viewed in astrology form an intricate system of do's and don't's, this system seems to be the projection of a compulsive system itself.⁴

Adorno's commitment to rational transparency makes him particularly sensitive to the dangers inherent in astrological unreason. The space between the system of astral influences and the petit-bourgeois Los Angeles newspaper reader is incomprehensible, and so Adorno's sociological perspective can locate only neurotic compulsion there. By contrast, the navigational use of the night sky would seem to remain entirely within the reasonable control of the autonomous sailor. As passive guides to orientation, constellations no longer mediate the mythological space of occult influences but have immigrated entirely into the geometric space of the modern universe.

Kant's famous concluding period from *The Critique of Practical Reason* on the wonder inspired by the starry heavens—a text that now adorns

⁴Theodor Adorno, *The Stars Down to Earth*, in *Gesammelte Schriften*, vol. 9.2, ed. Rolf Tiedemann (Frankfurt am Main: Suhrkamp, 1997) 52.

his grave in Kaliningrad—makes no mention of constellations. As befits the great Enlightenment, it is resolutely the order of the Copernican universe, its “worlds beyond worlds and systems of systems”⁵ that gives rise to admiration and awe. Constellations can exemplify nothing for Kant but the contingency of the empirical, however useful they might be to the disorientated sailor on the featureless ocean. This is the implication of the one place where Kant does mention them, in the small but fascinating essay from 1786, “What is Orientation in Thinking?” There, “*Sternbilder*,” constellations, appear in the course of an argument in favor of an irreducible subjective aspect orientating objective knowledge of the world.

Thus, in spite of all the objective data in the sky, I orientate myself *geographically* purely by means of a *subjective* distinction; and if all the constellations, while in other respects retaining the same shape and the same position in relation to each other, were one day miraculously transposed so that their former easterly direction now became west, no human eye would notice the slightest change on the next clear [*sternhellen*] night, and even the astronomer, if he heeded only what he saw and not at the same time what he felt, would inevitably become *disorientated*. But in fact, the ability to make distinctions by means of the feeling of right and left comes quite naturally to his aid—an ability which, though implanted by nature, has become a habit as a result of frequent practice; and if he simply directs his eyes to the Pole Star, he will not only notice the change which has occurred, but will still be able to orientate himself in spite of it.⁶

The argument draws a clear distinction between the spatial relations holding among the elements of a perceptual situation and a more fundamental orientation anchored in the perceiving subject. Because formal spatial relations are inherently reversible, it makes no sense to imagine that they are intrinsically orientated without reference to an irreversible instance. The orientation left/right only has meaning with respect to a situated awareness to which the spatial relationships among phenomena—North, West, South, East—present themselves.

Kant introduces this argument and identifies this geographic orientation only in order to develop it toward a notion of *logical* orientation in thought by means of heuristically accepted regulative ideas. “Finally, I can extend this concept [i.e. orientation] even further if I equate it

⁵Kant, *Kritik der praktischen Vernunft*, 162 [A289]; *Critique of Practical Reason*, 166.

⁶Immanuel Kant, “Was heißt: Sich im Denken orientiren?,” in *Kants Werke: Akademie-Textausgabe, Abhandlungen nach 1781*, vol. 8 (Berlin: Walter de Gruyter, 1968) 135; “What is Orientation in Thinking?,” in *Kant: Political Writings*, ed. Hans Reiss, trans. H. B. Nisbet (Cambridge: Cambridge University Press, 1991) 239.

with the ability to orientate oneself not just in space, i.e. mathematically, but also in thought, i.e. *logically*.⁷ This generalization of the sense of orientation rests on Kant's view of transcendental subjectivity as the source of both the transcendental intuitions that structure perceptual *Verstand* and the transcendental ideas that orientate the reflective use of pure *Vernunft*. For Kant, then, the notion of orientation can be taken to operate without any immediate reference to the existence of objects in the world. Reason in both its theoretical and practical employments is orientated by its inherent need to proceed in accordance with certain principles, and in particular to assume as a regulative hypothesis the existence of a Highest Being. Thus, the key element in Kant's geographical analogy is the singular Pole Star, corresponding to that Highest Being, and not the inverted, disorientating constellations.

It is with respect to the Pole Star that an inherent sense of right and left appears. But where for Kant this example merely evokes in the sensory realm the general situation of transcendental reason in the noumenal domain of human freedom, for Martin Heidegger, returning to this discussion in 1927, this spatial orientation is itself already evidence of an irreducible existential situation. In his discussion of the spatiality of *Dasein* in *Being and Time*, Heidegger finds in this preliminary moment in Kant's argument an unintended indication not of the impulse of that reason that is transcendental subjectivity but of the existential "Being-in" that conditions *Dasein* before any quantitative notion of extension. "The *a priori* of directionality in terms of right and left, however, is grounded in the 'subjective' *a priori* of being-in-the-world, which has nothing to do with a determinate character restricted beforehand to a worldless subject," he says there.⁸

The alternative implications the word "constellation" provokes between astrology in a space manifesting occult influences and navigation in a space subordinated to geometric calculation is thus not entirely congruent with a distinction between irrationalism and rationalism. Navigational orientation already requires a supplement—whether transcendentially subjective, as in Kant, or existentially fundamental, as in Heidegger—for the rationally transparent domain of objective spatial relationships. By way of the notion of orientation, the notion of a constellation raises the category of space itself as a

⁷Kant, "Was heißt: Sich im Denken orientiren?," 136; "What is Orientation in Thinking?," 239.

⁸Martin Heidegger, *Sein und Zeit* (Tübingen: Max Niemeyer Verlag, 2006) 110; *Being and Time*, trans. Joan Stambaugh (Albany: State University of New York Press, 1996) 102.

philosophical problem. The contrast between Kantian *a priori* transcendentalism and Heideggerian fundamental ontology suggests, both historically and within the tradition of philosophical reflection, that the appropriate locus for an inquiry into this problem is the transcendental phenomenology of Edmund Husserl.

III.

The question of space and spatiality is not merely one challenge among others to phenomenological descriptive procedures. “Despite all the antagonistic motifs which animate phenomenology, space’s privilege therein is in certain respects remarkable,” Derrida writes in his introduction to Husserl’s *Origin of Geometry*.⁹ Clearly the question of space in its vast phenomenological generality is closely connected to the status of geometry, but this ought not lead us to conflate the two issues. The question of space inhabits the foundations of Husserl’s philosophy. Phenomenology emerges ultimately into the sea of temporality; temporal finitude is the horizon of its account of the world. But this priority of temporal finitude is achieved precisely by overcoming the spatial intuitions involved in our understanding of the world.

The first extended analysis that Husserl conducts under the rubric of the “phenomenological reduction” is an exhaustive investigation of spatial perception, preserved in the 1907 lectures titled *Thing and Space*.¹⁰ These discussions present a patient reconstruction of spatial awareness of a physical environment on the basis of immediately available contents of consciousness. “We will refrain from any judgment about real existence,” Husserl summarizes the method; “our world is, so to speak, the world of absolute givens, absolute indubitabilities, the world of ‘phenomena,’ of ‘essences,’ in short, what is unaffected by the positing of real existence or nonexistence” (*DR* 140). Because he begins from the subjective immediacy of sensory awareness, Husserl’s reconstruction proceeds toward a complete account of spatial possibility through various distinct stages of increasing complexity, each of

⁹Jacques Derrida, *Edmund Husserl’s Origin of Geometry: An Introduction*, trans. John P. Leavey, Jr. (Lincoln: University of Nebraska Press, 1978) 83.

¹⁰Edmund Husserl, *Ding und Raum: Vorlesungen 1907*, eds. Karl-Heinz Hahnenegress and Smail Rapić (Hamburg: Felix Meiner Verlag, 1991). Translated as *Thing and Space: Lectures of 1907* by Richard Rojcewicz (Dordrecht: Kluwer Academic Publishers, 1997); hereafter cited in the text as *DR* with the page number of the German edition, which the published English translation also provides marginally.

which is formally infinite but all of which are orientated toward an ultimate “objectivity” (*Objektivität*) whose unity is secured by the unity of consciousness itself. Starting with the simplest epistemological situation, the direct unmoving perception of a static, unchanging physical body, Husserl systematically develops the notion first of a coherent visual field within which the objective thing is a principally unending virtual series of inevitably partial perceptions. To this he then adds the system of kinesthetic sensations that identify changes in the observing position itself. Together these then constitute a higher-order oculomotor field, whose perspectival coherence allows for an elaboration sufficient to account for the lateral movement of elements within the perceived environment. To this still essentially two-dimensional abstraction, Husserl then introduces systems of regular expansion and contraction of bounded surfaces, which serve to reveal the relative position in three-dimensional space of the “Ego-point” (*Ich-Punkt*). “Only when expansion [*Dehnung*] is added do we have the full presentational material capable of presenting space” (*DR* 238).

The order of nouns in Husserl’s title—Thing, Space—thus accurately reflects the conceptual position of space in this theoretical elaboration; not, as with Kant, an *a priori* geometric space as a simple intuitive condition that is subsequently occupied by conceptually substantive things—not Space, then Things—but rather things as systems of intentional perceptual regularities with objective space as the ultimate framework that accommodates all their conceivable permutations. Space in this theory becomes a hypothetical order of virtual locales, the unchanging “system of places” (*Ortssystem*) (*DR* 183 *et passim*) of an infinite number of potential realizations, only some of which are ever actualized in qualitative conscious perceptions. As the implicit, infinite host of the ultimate unity of irreducibly subjective and finite perceptions, space is no longer a simple medium but rather a barely conceivable virtual space whose perceptual precipitate in consciousness is the actual environment we experience. To the contemporary reader, Husserl’s account recalls nothing so much as a description of the simulations of three-dimensional environments from a first-person perspective generated by graphical computer programs, the results of computational algorithms at work in computer games and flight simulators, for instance. Such algorithms project bounded chromatic changes on a stationary screen in such ways as to create for the user the appearance of localized movement and rest of distinct objects in a space “beyond” or “behind” the screen, while the user’s input simultaneously creates global changes that mimic shifts in the observ-

ing perspective, of the screen as a framing boundary. The former images are comparable to what Husserl calls the “image-continuum” (*DR 187 et passim*) intended by conscious perceptual acts; the latter, user-initiated, changes correspond to Husserl’s “motivating kinesthetic series” (*DR 190 et passim*). The analogy is perilous, of course, because the computer screen and the user-controls are themselves objects in space, while in Husserl’s account neither the visual field nor the kinesthetic conditions affecting it are to be understood as spatial but as conscious acts that together *signify* spatiality. Yet the comparison can perhaps help to clarify the fundamental difference between the independent movement of persistent things intended as self-identical by consciousness and the perspectival alterations introduced by our own voluntary eye- and body-movements.

This basic distinction between the “K-series” of kinesthetic changes and the “b-series” of geometrically-coherent images is the fault-line in Husserl’s early account. His phenomenologically-reduced starting-point precludes any axiomatic distinction between inside and outside when accounting for the space of physical things. Things are not “out there” in any ultimate exterior; nor, as consciously perceptual intensions, do they concede any ultimate status to psychic interiority. Husserl imagines the patterns of comprehensible abstraction implied by the continuities and discontinuities in immediate perceptual experience as systems of virtual intensions radiating throughout a logical matrix. Within this matrix, physical things are nothing more than the limits at which certain of these intensions converge on posited persistent identities, limits whose identical persistence consists in turn in nothing more than the validating realizations of the conscious intensions that accommodate them in a continuously unfolding experiential flux. The logical matrix of phenomenal intentionality manifests the exteriority of space as the operative distinction between the variety displayed by a series of visual impressions and the sorts of alterations introduced into that variety that correlate with a series of kinesthetic sensations.

These two aspects of spatial perception are thus intimately connected, since any kinesthetic change must be reflected in changes in the visual field. But as Husserl insists, the two sorts of series cannot be correlated at the level of individual essences, since in principle any kinesthetic position could be linked to any visual field (*DR 170*). Nor do they have comparable functions, since the kinesthetic sensations, not being *about* themselves in an intentional sense, exhibit merely temporal continuities, while the visual impressions are always providing new content. Thus the phenomenological correlation between possible

systems of kinesthetic sensations and possible configurations of the visual field can only be described at the global level: that correlation is the infinitude of the oculomotor field.

The correlation between a series of kinesthetic motivations and a series of alterations in the visual field becomes meaningful to philosophical reflection only to the extent that it can be reversed in thought.

A certain field of images, filled in such and such a way, is given together with every kinesthetic complex; and a determinate change of the field of images is given with every determinate change of the kinesthetic complex, always presupposing that we still have to do with the constitution of a stationary Object and field of Objects that are unchanging in other respects as well. Every return of *K*, *K'* [the simultaneous arrangement of kinesthetic sensations], etc., into the old constellation produces the same field of images, thus the reversal of the kinesthetic sequences also produces a reversal in the sequences of images, both always in temporal coincidence. (*DR* 201)

This reversibility in theory and not its approximation in actual experiences is what frees the analysis from any commitment to a realized content, whose identity is just the perfect synthesis of these two processes. The conceptual possibility of inverting the oculomotor constitution of the spatial thing without disturbing the correlation between its heterogeneous components maintains in abstraction their distinct contributions. No determinate correlation of kinesthetic motivations and visual experiences need be assumed, but merely that where a given correlation is posited, the same visual field would attend the same "constellation" of kinesthetic sensations were it to return. It is this reversibility that characterizes the logically-relevant uniformities in spatial experience.

In the accumulation and elapsing of the kinesthetic series, the strictly ordered complexes of images in the field undergo, concomitantly, unitary as well as typically and strictly determined sequences and reverse sequences of modifications. These modifications are unitary for the individual images but are also unitary for the figural constellations of the images, for their ordered context. (*DR* 216)

The virtual correlation, then, between the constellation of simultaneous corporeal sensations and the constellation of diverse visual experience is space itself.

Therefore this motivated unity of the modifications belongs essentially to the constitution of something identical, and it is the unity of the modifications that concern the ordered context [*Ordnungszusammenhang*], or constellations of places [*Lagenkonstellationen*] which are founded by means

of the images and which allow them to be grasped as unified complexes. Likewise, this unity pertains to those constellations of places which affect every individual image and which are founded in its distinguishable pieces. In the consciousness of unity that penetrates these modifications of the ordered contexts, the order of space is constituted. (*DR* 217)

The word “constellation” here—characterizing sometimes the simultaneous arrangement of corporeal sensations and at others the immediate diversity of visual experience—is no *terminus technicus*. Rather, it appears when the theoretical limits of a resolutely abstracted spatial experience are encountered in any direction. And in the constellation of places that underlies the manifestation of objective identities, Husserl labels the most general dimension of spatial abstraction phenomenology can reach.

IV.

Near the very end of *Thing and Space* a problem emerges almost as an afterthought: What are the implications for the conception of an objective space exposed to kinematic change when the entire frame of reference is in motion, as when an observer sees the passing landscape from the window of a moving vehicle? When we sit in a moving car, Husserl notes, our kinesthetic impressions are at rest, while our visual field presents motion outside ourselves. “In the first place, stationary kinesthetic states, connected to stationary images, motivate stationary Objects [*Objektruhe*]. Here I have a stationary kinesthetic state connected to moving images of the surroundings and to stationary images of the car and of my Body. Yet this does precisely not mean that the surroundings move but, on the contrary, that they are stationary. And it does not mean that I am stationary but that I move (am moved)” (*DR* 282). Husserl analyses this by comparing the situation to one in which I move independently alongside the moving car, that is, in which my own perceptual situation is simply movement within a stable frame of reference, and my stable perception of the moving car is easily explained. Then, the kinesthetic impressions associated with this separated situation are vicariously replaced by the corporeal vibrations and sounds typical of being in a moving car. This ad hoc solution to the problem of movement of the frame of reference testifies to the fact that Husserl does not see this complication in the relation of kinesthesia to visual alteration as particularly significant. “To be sure, we must note, however, that the title of kinesthetic motivation also includes, in part, very different series, ones which can appear vicariously for one another” (*DR* 283).

Twenty-seven extremely disorientating years later this problem of the movement of an entire frame of reference has grown to be immense. Far from concerning only a marginal complication in an atypical perceptual situation, the relation of an absolutely stationary experiential frame of reference to the knowledge that it is in relative motion poses a challenge to science itself. Astronomy at least since Copernicus has taught us that the earth beneath our feet is in fact only “one of the stars in the infinite space of the world [*Weltraum*].” We know it to be a moveable body (*Körper*) but experience it as an immovable ground (*Boden*), the ground presupposed by any concept of rest and motion. How can the connection between these incompatible perspectives on spatial experience be reconciled? This is the problem to which Husserl addresses himself in the late rumination from 1934, *Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature*.¹¹

The discussion is fragmentary and private, closer to a worksheet than a lecture. In the course of clarifying the difference between the “rest” at issue in the presupposed “earth-ground” (*Erlboden*) and the relative motion and rest characteristic of the perceived world, Husserl returns to the example of the moving train. No doubt the perceptual inversions of rest and motion created when we look out of the window require us to rectify them on the basis of our general understanding of the situation. “But all of this is nonetheless directly referred to the ground of all relative ground-bodies, to the earth-ground” (*RN* 312). The absolute rest implicit in the earth as foundation cannot be understood by analogy with the spurious rest experienced on the moving train, but is presupposed by that very understanding, as the ultimate reference-point permitting such rest and motion to be untangled. “The earth itself in the original shape of its representations does not move or rest, only in relation to it do movement and rest have a sense” (*RN* 309).

Throughout these reflections, Husserl struggles to retain a terrestrial sense of *Boden*. We conceive of the earth as a moveable star by analogy with the extraterrestrial stars we see at night. But we could

¹¹Edmund Husserl, “Grundlegende Untersuchungen zum phänomenologischen Ursprung der Räumlichkeit der Natur,” in *Philosophical Essays in Memory of Edmund Husserl*, ed. Marvin Farber (New York: Greenwood Press, 1968) 307–25. Translated as “Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: The Originary Ark, the Earth, Does Not Move” by Fred Kersten and Leonard Lawlor, in Maurice Merleau-Ponty, *Husserl at the Limits of Phenomenology. Including Texts by Edmund Husserl*, eds. Leonard Lawlor and Bettina Bergo (Evanston: Northwestern University Press, 2002); hereafter cited in the text as *RN* with page numbers from the original German, which are provided in the margins of the published translation. The quotations above are on page 308.

certainly imagine a situation in which direct experience presented us with no heavenly bodies. “Indeed, in fog they are invisible” (*RN* 322). We would have no astrophysics in the ordinary sense in which it developed in actual history, but supposing the invisible stars to be there, our eventual understanding of gravitation and movement could allow us to detect them and so to come to the same conclusion about the earth as we in fact have reached. Physics as science would not be affected by this change. But such an alternate history would nonetheless change the apodictic givenness of the earth-ground that underlies actual humanity. *In fact* the human view of space emerged from a terrestrial perspective that traced the movement of the stars at the limit of its experience. We can imagine different histories—a starless history, or one that took place on two worlds, each serving as ground for an experience of the other (“but what do two earths mean? Two fragments of one earth with one humanity” (*RN* 318)). Each of these might have come to our contemporary understanding by various paths. But we cannot simply imagine that our current understanding of space and our position in it is the ultimate horizon for these matters. If we are to preserve the openness for future discoveries, we must remain able to re-experience the emergence of our contemporary view of space from the original experiences that brought spatiality to us in the first place. Where the current status of our knowledge obliterates the memory of what originally informed it, then simultaneously it obliterates the possibility of its vital continuation. It is because the human adventure is actually occurring around us and opens onto a radically unprecedented future that the actual historical emergence of our understanding must not be forgotten.

It is in this sense—in the sense that the earth is the name for the common history and current relevance of all humanity—that the earth does not move. “There is only one humanity and one earth—all the fragments which are or have been separated from it belong to it. But if this is the case, need we say with Galileo: *par si muove*? And not on the contrary: it does not move?” (*RN* 324). At the end of Husserl’s philosophical career, a career in which phenomenology becomes less and less a *method* of abstraction and more and more an *invitation* to reflection, in which the functional importance of interpersonal transparency and potential cooperation only grows, Husserl reencounters the ancient cosmos in which the constellations were first at home. The pathos of these final reflections, composed by an old philosopher so recently stripped of the academic privileges his lifelong efforts had earned him and confronting an ever more rapidly disintegrating

European culture can be heard in the insistent motif of the *Foundational Investigations*: "The earth is for all the same earth" (RN 315). It has had one history. It will have one future. And not even physics or geometry has yet written it in the stars.

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