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Natures of Color: The Literary Environments of Adalbert Stifter and Paul Scheerbart

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By

Sorrel Hannah Dunn

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Abstract

This dissertation examines how nineteenth century German literature constructed and experimented with an entangled concept of “the environment” based not in (Romantic) philosophical and literary conceptions of nature, but in the theory and science of color perception. As the visual point of interaction between an observer and their surrounding world, color became a particularly generative phenomenon for imagining and experimenting with human-environment relationships. Likewise, it is particularly suited to tracking and intervening in the historical development of these conceptions of environment, because it so readily slides among scientific, literary, and cultural domains, all functioning within a complex act of perception, which the black and white of the literary text makes visible.

The first chapter establishes the scientific-theoretical framework for what I call “the nature of color” through a comparative analysis of Johann Wolfgang von Goethe’s *Zur Farbenlehre* (1810) and Jakob von Uexküll’s term *Umwelt*, which he coined in 1909. Uexküll was particularly interested in Goethean color theory, and I show how he developed Goethe’s conception of color into a dynamic, fully-fledged concept of environment. Despite their different fields of study, this chapter reveals how both Goethe’s and Uexküll’s work transforms “nature” into “environment(s)” by examining the natural world as it surrounds its participant-inhabitants and as it is constructed through their observations and actions.

The next two chapters examine the nature of color as it appears in the literary environments of Adalbert Stifter (1805–1868) and Paul Scheerbart (1863–1915). The combination of these authors is new and, in German studies, unexpected, but I show how both engage with the Goethean conception of color—as the visual interaction point between an observer and their surrounding world—and transform it into a paradigmatic environmental

phenomenon: a visual microcosm of Uexküll's *Umwelt*. Establishing Goethean color as an important model for Uexküll's concept of environment reveals a rich genealogy of color-based environmental thought and research spanning the generations between. It is this tradition of empirical and psychological research, rather than a chain of literary inheritances, that forms the backbone of this project, and opens a common space of analysis for Stifter's and Scheerbart's works. The "nature of color" is thus formally grounded—in Uexküll's reception of Goethean color—and historically rooted—in nineteenth century empirical-psychological color research.

Reading Stifter's *Der Nachsommer*, *Bergkristall*, and "Die Sonnenfinsternis" and Scheerbart's *Lesabéndio* and *Das graue Tuch und zehn Prozent Weiß* against influential color research and psychology of their day—primarily Johann Friedrich Herbart (1776–1841) and

Gustav Theodor Fechner (1801–1887)—I contend that Stifter's and Scheerbart's literary color experiments explore and initiate processes of mutual formation, both physical and affective, between observers and their surroundings in which existence and reality are anchored not by a set of invisible (physical) laws, but by the visible, aesthetic processes of the perception and interaction of color. Ultimately, this study presents an aesthetically-based understanding of human ecology that is rooted in the German tradition of color theory and that emerges through, and is visible in, the same patterns of harmony and complementarity as color itself.

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Am farbigen Abglanz haben wir das Leben.

—Goethe, *Faust. Der Tragödie zweiter Teil*

Introduction

Having failed to return a prism borrowed from Councilor C. W. Büttner, Johann Wolfgang Goethe found himself one day in November of 1789¹ face to face with the man's messenger, who was determined to take charge of the instrument once again and deliver it to its owner. But looking through the prism—since he insisted on taking it out of its box at least once before relinquishing it—Goethe found that he did not, as expected, see the white wall of his chamber striped with the colors of the rainbow. Only, indeed, when he turned his prismatic gaze towards the window, and the dark borders of the window *panes*, did he notice that their edges “am allerlebhaftesten farbig erschienen.”² In that moment, Goethe recalls, “erkannte ich, daß eine Grenze notwendig sei, um Farben hervorzubringen, und ich sprach wie durch einen Instinkt sogleich vor mich laut aus, daß die Newtonische Lehre falsch sei.”³ At this point, of course, “war an keine Zurücksendung der Prismen mehr zu denken,”⁴ and, wheedling yet another extension to his loan, Goethe embarked in earnest on the research that became, in 1810, *Zur Farbenlehre*.⁵

By holding it directly up to his eye like a lens, Goethe was not using the prism at all as Newton did—shining light through it from a small aperture and into a darkened room—and it is no wonder he failed to see “die ganze weiße Wand nach verschiedenen Stufen gefärbt.”⁶ But Goethe centered the human eye, and, having forgotten what he learned about Newtonian optics

¹ Ruprecht Matthaei, “Über die Anfänge von Goethes Farbenlehre,” *Viermonatsschrift der Goethe-Gesellschaft*, Vol. 11 (1950): 249–262, 250.

² Johann Wolfgang von Goethe, *Sämtliche Werke nach Epochen seines Schaffens*, ed. Karl Richter, Herbert G. Göpfert, Norbert Miller, und Gerhard Sauder, vol. 10, *Zur Farbenlehre*, ed. Peter Schmidt (München: Carl Hanser Verlag, 1989), 910.

³ Goethe, *Zur Farbenlehre*, 910.

⁴ Goethe, *Zur Farbenlehre*, 910.

⁵ Both Frederick Burwick and Ruprecht Matthaei have excellent delineations of the periods of Goethe's color work. See Burwick, *The Damnation of Newton* (Berlin: Walter de Gruyter, 1986), 10, which is a revision to Matthaei, *Goethes Farbenlehre* (Ravensburg: Otto Maier, 1971), 205–206.

⁶ Goethe, *Zur Farbenlehre*, 909.

as a youth, was guided by his own instinctive sense that colors would appear first and foremost *there*. He recounts: “Eben befand ich mich in einem völlig geweißten Zimmer; ich erwartete, als ich das Prisma vor die Augen nahm, eingedenk der Newtonischen Theorie, die ganze weiße Wand nach verschiedenen Stufen gefärbt, *das von da ins Auge zurückkehrende Licht in soviel farbige Lichter zersplittert zu sehen.*”⁷ Although Goethe was correct in expecting the prism to refract light, separating it into its component “farbige Lichter,” he changed his results by positioning his own eye in the place that, in order to see the stripes, he ought to have positioned the sun. For the rainbow to have appeared, the sun, the prism, and the wall would need to have been connected, as it were, along a single axis. And it was evidently alien to Goethe’s instincts to be as apparently un-involved the appearance of the world around him as it is necessary to be when standing off to the side while sunlight shines through a prism and ranges itself in colors on the wall. The colors that Newton observed existed independently in the world; Goethe’s colors, with the eye as their sunny starting point, emerge within a different logic, and appear along a personal axis. As Frederick Burwick sums it up, “Newton’s experiment was objective...Goethe’s experiment was subjective.”⁸ Whether they are inside the eye or out on the wall, Goethean colors connect the observer with their observation, rendering those two ‘poles’ of the world’s appearance mutually dependent—and rendering color itself the primary means of investigating their relationship.

The *Farbenlehre* was immediately rejected by large swaths of the scientific community on the basis of Goethe’s polemic against Newtonian thought—a topic that long dominated both

⁷ Goethe, *Zur Farbenlehre*, 909–910.

⁸ Frederick Burwick, *The Damnation of Newton*, 11.

criticisms and apologies for the text.⁹ Yet its influence in natural-scientific research and literary creativity, particularly of course in the German-speaking world, has nevertheless been widespread and long-lived. This tradition of Goethean-inflected scientific inquiry is the historical backbone of this project. Just as Goethe's color theory inspired further empirical research, so, too, did artists and authors during the period between Goethe and Uexküll reflect critically on and creatively transform colorful questions of human-environment relations in their work—very often in response to recent scientific research. I share the view expressed by Anne Harrington that although “the statements of science do not ‘mirror’ the realities of nature in some simple, detached way,” scientific research does “engage phenomenal realities that ‘talk back’ ...in ways richly generative of human meanings and social imperatives.”¹⁰ The nature that “talked back” to Goethe—and the nature whose promises and problems ensuing generations of Goethean-inspired researchers and writers would investigate—was one in which subjects and environments formed a harmonious whole.¹¹

⁹ See Burwick, *Damnation*, 9ff. Burwick outlines points regarding which Newton's theory is incorrect and Goethe's correct, and notes several early criticisms of Newtonian theory that emerged beyond the partisan realm of the Goethe-Newton debate. These have predominantly had to do with physiology's formative role in color perception, (20ff). “[I]t was not,” as Heather I. Sullivan notes, “until the twentieth century's increased understanding of the neurological processes of perception, quantum mechanics, and chaos and complexity theory that scholars began to see that Goethe's critique of Newton was not just a smattering of insights mixed in with a larger body of work based on poetic misunderstandings” (“Goethe's Colors: Revolutionary Optics and the Anthropocene,” *Eighteenth-Century Studies*, 51.1 (2017): 115–124). Needless to say, even without these later explanations for Goethe's stance toward Newtonian optics, the paradigm-shift that his *Farbenlehre* offered was appreciated and explored.

¹⁰ Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton: Princeton University Press, 1996), xxiii.

¹¹ It is important to note that there are further dimensions of historical, natural, and political significance in Goethe's color theory beyond the harmonious mutuality that is my focus, and that has attracted other ecologically minded critics to Goethe, as well. For instance, even as Heather Sullivan acknowledges the historical and political surroundings of Goethe's color research—Germany's increasing modification to the landscape and Goethe's accompaniment of Weimar Herzog Carl August onto the battlefield in the early Napoleonic Wars of the 1790s—she seems unwilling to recognize that color, as “emblematic” of “human-nature interactions,” might also reflect disharmony and conflict (“Goethe's Colors: Revolutionary Optics and the Anthropocene,” *Eighteenth-Century Studies*, 51.1 [2017]: 115–124, 116). Johannes Kaminski, likewise, makes the argument that Goethe uses color observation to “counterbalance the distressing effects of war” and even to “create his own realm of natural

With Goethe's *Farbenlehre* as its lightsource, this study reveals the colors and colorful structures in Uexküll's *Umweltlehre* and in the literary works of Adalbert Stifter (1805–1866) and Paul Scheerbart (1863–1915) as so many refracted bands. I trace a genealogy of German thought and letters in which Goethean color perception functions like Goethe's own concept of an *Urphänomen*: the "wesentliche[] Form, mit der die Natur gleichsam nur immer spielt und

observation" which is "superimposed" over the noise, destruction, and death of shelling of Valmy ("The Euphemistic Gaze: Observing Destruction Through Goethe's Eyes," *Monatshefte* 108.2 [2016], 171–184, 178–79). Hans Blumenberg offers a more granular account of this period of Goethe's life and work, and writes that "Die Farbenlehre läuft durch diese irrationale Kurve hindurch als die zuverlässige Orientierung der Begradigung, die Rückzugslinie des Eigenen" ("An der Quellort der Farbenlehre," *Goethe zum Beispiel*, ed. Manfred Sommer [Frankfurt am Main und Leipzig: Hans Blumenberg-Archiv, 1999], 164–171, 169). As Alexander Honold so aptly unfolds, it is also possible to read Goethean color as acting out its material and historical context. Reversing the overtly holistic frame of Goethe's famous "Hüben und Drüben," Honold suggests that the systematic part of the *Farbenlehre*—in other words, the appearance of color itself—can also be seen as the "Kampfplatz[]" "auf dem der ewige Antagonismus von Finsternis und Licht herrscht" ("Goethes Farbenkrieg," 27). The same could be said in relation to the antagonism between humans and the very landscape, which David Blackbourn unfolds in *The Conquest of Nature: Water, Landscape, and the Making of Modern Germany*. Seth Peabody, in reference to Blackbourn's work, elaborates upon the inextricable entanglement of human (political) and natural (ecological) history, noting how Blackbourn's study "emphasizes that environmental engineering is often pursued within a discourse of armed expansion, and human projects to conquer the natural world often overlap with acts of violence and aggression against other humans" ("Goethe and (Um)Weltliteratur: Environment and Power in Goethe's Literary Worlds," *Seminar: A Journal of Germanic Studies*, 54.2 [2018]: 215–230, 216). Miles Jackson, meanwhile, argues that Goethe used the *Farbenlehre* as a whole to fight a multi-fronted cultural and political battle against extremes: on the one hand, the "tyranny" of Newtonian optics, and on the other hand the "anarchy" of early Romanticism ("A Spectrum of Belief: Goethe's 'Republic' versus Newtonian 'Despotism,'" *Social Studies of Science* 24.4 [1994]: 673–701).

Even as I explore a harmonious reading, therefore, it is important to recognize the complexity and variety of motivations that may have made that harmony such a prominent—and, for the thinkers in the intellectual tradition I outline—such an attractive aspect of color to pursue. Sullivan's "ecology of color," though kindred in many ways to my "nature of color," often seems to lack awareness of this dimension, and to confine itself to new materialist readings that leave no room for historical realities of social and environmental violence and manipulation. Precisely because color is a stage on which attempts to reconceive the relationship between subject and object, culture and nature, play out in a particularly visible way, its harmonious presentation has a tendency to obscure both real and newly-imagined divides and power differences within those relationships. Rather than say, as Sullivan does in the face of conflicting or ambiguous readings, that Goethe's writings on nature articulate neutrally the "co-creation" of the natural and human worlds, I want to explicitly acknowledge, even as I do not discuss in detail, the manifold definite roles, from escape to polemical ideal to willful and harmful blindness, that such a holistic view can and must play, both in relation to the fractured world from which it emerges and for the world it imagines (Sullivan, "Goethe's Colors," 119). Depending on the context in which we each find ourselves, color as our connectedness and co-creative entanglement with our *Umwelt* can take on an array of meanings. But it is never, as we learn from Uexküll and Goethe, without meaning.

spielend das mannigfaltige Leben hervorbringt.”¹² Beginning with a color-environmental comparison of Goethe’s *Farbenlehre* and Uexküll’s *Umweltlehre* as its theoretical frame and proceeding to literary analyses of color Stifter and Scheerbart’s work, my analyses capture unexpected commonalities and continuities that do not necessarily conform to traditional disciplinary boundaries and familiar “stages” of literary history. Instead, I argue that color—across disciplines and throughout the long nineteenth century—acted as a medium for investigating and constructing human-environment relations, relations that I call “natures of color.” These relations challenge the subject-object binary implicit in Newton’s paradigm, revealing instead a tradition of German environmental thinking in which observers and environments are entangled at every point along the Goethean axis, from their innermost thoughts and moods to the outermost reaches of their visual world.

Emerging from what we might call the *Farbenlehre*’s direct line of influence—in optical physiology—elements of Goethean color theory were taken up in psychophysics and psychology, and spurred investigations into the respective physical, physiological, and psychological bases of aesthetics. This is of course a capacious lineage. It engaged both the colors and the structures of Goethean color, and produced findings all along the subjective Goethean axis, from inside the mind of the observer to the outer world with which it interacts. Much of this genealogy has been thoroughly outlined by the important historian of psychology, Edward Boring, who states that “Goethe may...be said to head a phenomenological tradition.”¹³

¹² Goethe, quoted in Werner Heisenberg, “Das Naturbild Goethes und die technisch-naturwissenschaftliche Welt,” *Jahresgabe der Goethe-Gesellschaft Kassel auf das Jahr 1968* (Sandershausen: Gebrüder Zahnwetter), 9.

¹³ Edwin Boring, *Sensation and Perception in the History of Experimental Psychology* (New York: Appleton-Century-Crofts, 1942), 116. Media technologies, as Jonathan Crary explores, were also central players in the nineteenth century’s transformation of vision and reality, and Elisabeth Strowick sums up nicely the “Wechselspiel” among physiology, aesthetics, media technologies that shaped this period (Elisabeth Strowick, *Gespensster des Realismus: Zur literarischen Wahrnehmung von Wirklichkeit* [Paderborn: Wilhelm Fink, 2019], 8; see Jonathan Crary,

In the realm of physiological color, Goethe's influence was almost immediate: "By the 1820s the quantitative study of afterimages was occurring in a wide range of scientific research throughout Europe."¹⁴ Jan Evangelista Purkinje (1787–1869), a young Czech researcher working in Germany, was the first to make what we might call "objective" observations of the phenomena of subjective vision that Goethe had described in the first section of his *Farbenlehre*. In doing so, Purkinje cemented the subject's physiological interior as an integral part of the visual environment. Purkinje's work preceded that of "[t]he most distinguished German physiologist of the early nineteenth century,"¹⁵ Johannes Müller (1801–1858), whose "law of specific nerve energies" articulated the fact that the nature of a sensation depends not on its source but on the organ that perceives it. This principle has profound epistemological implications, without which Jakob von Uexküll's subject-centered biology and phenomenological theory of environment could not have taken shape.¹⁶

At the same time Müller was laying the foundations for empirical, experiment-based research into the mind via the eye, the subjective basis of Goethe's observations, along with the "dynamics"¹⁷ of the Goethean afterimage, created an intellectual environment in which a very different type of psychology could take shape. Just as Purkinje began to quantify the appearance of colors within the eye, Johann Friedrich Herbart (1776–1841), a pioneering psychologist and pedagogue, "undertook one of the earliest attempts to quantify the movement of cognitive

Techniques of the Observer: On Vision and Modernity in the Nineteenth Century [Cambridge, MA: MIT Press, 1990]).

¹⁴ Crary, *Techniques*, 102.

¹⁵ Boring, *Sensation*, 118.

¹⁶ Müller in turn mentored Hermann von Helmholtz (1821–1894), who, among many other research advances in visual perception, invented the ophthalmoscope. Although not the first device of its kind—Purkinje, for one, had already invented a device—Helmholtz's was the first widely accepted means of examining the fundus of the eye.

¹⁷ Crary, *Techniques*, 100.

experience.”¹⁸ Based in experience, “but not, as [Herbart] explicitly insisted, upon experiment,”¹⁹ Herbartian psychology sought to mathematize hitherto subjective processes of perception and cognition, mapping their complex interchanges over time and across thresholds of consciousness. Both Müller’s and Herbart’s work had a formative influence on Wilhelm Wundt (1832–1920), who over the course of his long career moved among the fields of physiology, psychology, and cultural psychology, spanning almost the whole subjective axis of Goethean color, from the physical stimulus to the mind’s interaction with the retinal signal, and back out again into its cultural response. Wundt is often called the father of experimental psychology: he established the first formal psychological laboratory, and taught such later giants as Edmund Husserl, G. Stanley Hall, and Edward Titchener.

Wundt’s psychological and cultural inquiries into color neighbor the ethnographic color work of Hugo Magnus (1842–1907), an ophthalmologist who utilized a vast network of missionaries and military personnel to gather data about variations in color perception across different climate-environments, races, and cultures.²⁰ One of Magnus’s teachers studied with

¹⁸ Crary, *Techniques*, 100.

¹⁹ Boring, *Sensation*, 116.

²⁰ Magnus was not alone in pursuing color and color perception as a means of marking and codifying both cultural and racial difference. This is, needless to say, an important and enormous dimension of physico-cultural color research of late nineteenth- and twentieth-century color theory, and one that I am unable to address properly here. Briefly, however after Wundt’s psychology laboratory in Leipzig established psychophysics as a formal, institutional field in the 1870s, its influence quickly spread into the developing field of physical anthropology. William James, and after him Franz Boas and Hugo Münsterberg, would take his influence to America. Münsterberg, at James’s invitation, joined the newly-established psychological laboratory at Harvard, well-equipped with apparatuses for testing and measuring color perception (many developed through the affinity and close exchange during this period between visual research and visual toy manufacturing; see Crary, *Techniques of the Observer*, and Nicholas Gaskill’s introduction to his *Chromographia* [Minneapolis: University of Minnesota Press, 2018]). Boas, meanwhile, was recruited by G. Stanley Hall to work and teach in the psychological lab at Clark University in Worcester, Massachusetts, where he conducted surveys and experimental research with “large immigrant populations” (Thomas R. Miller, “Seeing Eyes, Reading Bodies: Visuality, Race and Color Perception or a Threshold in the History of Human Sciences,” in *Colors 1800/1900/2000: Signs of Ethnic Difference*, ed. Birgit Tautz [Amsterdam: Rodopi, 2004], 123–141, 133). Interestingly, the first decades of this late nineteenth century explosion in German psychophysics and physical anthropology were “in contemporary terms, quite ‘liberal’ on

both Müller and Purkinje, and in addition to his medical practice Magnus wrote extensively at the intersections of physiology, culture, and aesthetics of color, thereby bridging the quantitative inheritance of Goethe's subject-centered color theory to another sphere of its influence: aesthetics. These intersections of qualitative and quantitative, physiology and aesthetics were

matters of race" (Benoit Massin, "From Virchow to Fischer: Physical Anthropology and 'Modern Race Theories' in Wilhelmine Germany," in *Volksgeist as Method and Ethic: Essays on Boasian Ethnography in the German Anthropological Tradition*, ed. George W. Stocking, Jr. [Madison, WI: The University of Wisconsin Press, 1996], 80). As Benoit Massin outlines, "Among all Western countries, Germany was the one where the first comprehensive statement of the Aryan myth—the famous *Essai sur l'inégalité des races humaines* (1853–55), by the French diplomat, amateur orientalist, and writer Arthur de Gobineau—initially met the most critical reception...on both scientific and moral grounds" (Massin, 80–81). Rudolf Virchow, who taught Boas (as well as Johannes Müller) and who in 1869 founded the first German anthropological society, showed that "every nation contained such a wide array of 'types,' revealing the idea of a unitary national type at the historical roots of the German polity as a pseudoscientific fantasy" (Miller, 130n16).

By the 1890s, however—the same decade as the boom in synthetic dye production—physical anthropology in Germany had become heavily ideological, with "biological anthropologists...among the most zealous scientific supporters of the Nazi regime" (Massin, 82). In 1898, in the Anglophone world, British ethnologist W. H. Rivers brought color apparatuses designed by American game manufacturer Milton Bradley on an expedition to the Torres Strait, where he drew conclusions about "primitive color vision" (Gaskill, 4). Rivers's studies were later lambasted by E. B. Titchener, who wrote: "I do not think that the observations made warrant the inference drawn from them; and I therefore take up the cudgels on behalf of the Papuan..." ("On Ethnological Tests of Sensation and Perception with Special Reference to Tests of Color Vision and Tactile Discrimination Described in the Reports of the Cambridge Anthropological Expedition to Torres Straits," *Proceedings of the American Philosophical Society* 55.3 [1916]: 204–236, 216). In a similar vein, "Robert S. Woodworth, student of William James and colleague of Boas, drew on his own tests of 'more or less primitive peoples' assembled at the Louisiana Purchase Exposition in St. Louis in 1904 to conclude that color terms reflected the needs and activities of a language group rather than its naïve perceptions" (Gaskill, 34). But it was not just the study of color perception that fueled colonial racial taxonomies. The world's fairs at which Woodworth and Boas alike conducted color research (Boas in 1893 at the Chicago World's Columbian Exposition) were themselves "artificial environment[s]" and "colonial dreamscape[s]" that "reinforced racial segregation and imperialist hierarchies" (Miller, 125). These artificial environments are resonant with the "Ökologie" coined by Ernst Haeckel, who also studied under Virchow and Müller, and whose beautifully illustrated books of natural "order" gave aesthetic validity and appeal to his social Darwinist and eugenicist views. Within such environments, the eye was not only racialized in its perceptual capacity, but in its appearance. Rudolf Martin, at the University of Zurich, developed an *Augenfarbentafel* which was marketed in 1903 "with claims of unprecedented scientific accuracy in typologizing eye color" (Miller, 137). Such "racially tinged observation[s] and measurements[s]" had "immediate applications both for medical research and for the eventual social and behavioral control of 'deviant' populations by the interest of the state," and lent scientific validity to century justifications of racial dominance and inferiority based on "the perceived color of human bodies" (Miller, 129–131). In this history—and in this progression from anthropology and ethnology to eugenics—color and color perception travel a much different and much darker arc than the one I trace in the following pages: from a phenomenon by which to investigate human difference, to a means of taxonomizing social hierarchy, and finally, to a means of implementing that social hierarchy. The German firm IG Farben, founded in 1925 as a conglomerate of several other companies, typifies this descent. A manufacturer of synthetic pigments and dyes, as well as other chemicals and pharmaceuticals, turned under Nazi leadership to the production of Zyklon B—the lethal chemical used in many concentration camps.

more famously explored by Gustav Theodor Fechner (1801–1887). Fechner pursued both exacting empirical research—focusing especially on color perception, but also conducting statistical analyses of aesthetic preferences—and, where empiricism was forced to leave off, continued to imagine, speculate, and believe in more mystical and philosophical veins. As a modern scientist, he is considered the father of psychophysics, and along with his research partner Ernst Weber was an important colleague for the young Wundt at the University of Leipzig. “The other Fechner,” however (to use Rudolf Arnheim’s apt coinage), had a greater influence in artistic spheres through his “conviction that matter is universally endowed with mind” and that “the splendor of the visual world” is not just a fleeting, illusory effect of the nerves, but “endures objectively....For Fechner as for Goethe, the ultimate truth resided in direct sensory experience.”²¹ Thus while some later researchers excused Goethe’s Newtonian errors on the basis of “inadequacies of his technical apparatus” or redeemed them on the basis of “differences between Newton’s physical and Goethe’s physiological premises,”²² the inextricably subjective nature of Goethean color—as a phenomenon which visibly manifests the relation between inner and outer, subject and environment—inaugurated a phenomenological foundation for scientific experimentation.

By the time Jakob von Uexküll (1864–1944) first introduced his organism-centered concept of environment (*Umwelt*) in 1909—just ninety-nine years after the publication of the *Farbenlehre*—Goethean color had long since established physiologically-mediated subjective

²¹ Rudolf Arnheim, “The Other Gustav Theodor Fechner,” in *New Essays on the Psychology of Art* (Berkeley: University of California Press, 1986), 39–49, 42.

²² Burwick, *Damnation*, 9–10.

experience as an object of study and a means of understanding the entanglement²³ between our physical and cultural selves and surroundings. Indeed, situating Uexküll's *Umwelt* within the legacy of Goethean color theory reveals how color perception in the Goethean tradition had, across numerous fields of thought and research, become a both a doorway into and a microcosmic paradigm of human-environment relations, in which the environment, far from being separate from its inhabitants, emerges in the relationship between observers and the world around them. What in the appearance of Goethean color I have described as an axis—connecting the “inside” of the eye with the “outer” world of colors—becomes, in Uexküll's thought, the radius of a sphere that wholly encompasses the viewing subject. In the foreword to *Streifzüge durch die Umwelten von Tieren und Menschen*, Uexküll invites his readers on “eine[n] Spaziergang[] in unbekannte Welten.”²⁴ He writes: “Wir beginnen einen solchen Spaziergang am besten an einem sonnigen Tage vor einer blumenreichen Wiese, die von Käfern durchsummt und von Schmetterlingen durchflattert ist, und bauen nun um jedes der Tiere, die die Wiese bevölkern, eine Seifenblase, die ihre Umwelt darstellt.”²⁵ With this fanciful, soap-bubble image, Uexküll transforms the meadow—and nature as we know it. Just as, in Goethe's *Farbenlehre*, there is no such thing as color independent of the beholding eye, here, nearly a hundred years later in Uexküll's *Umweltlehre*, there is no such thing as “the environment” independent of a given creature. Instead, the natural world coheres into multiple *Umwelten*, each constituted by a

²³ In Karen Barad's sense: ““To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence. Existence is not an individual affair. Individuals do not preexist their interactions; rather, individuals emerge through and as part of their entangled intra-relating” (*Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* [Durham, NC: Duke University Press, 2007], ix).

²⁴ Jakob von Uexküll, *Streifzüge durch die Umwelten von Tieren und Menschen: Ein Bilderbuch unsichtbarer Welten* (Hamburg: Rowohlt, 1956), 21.

²⁵ Uexküll, *Streifzüge*, 22.

given animal's capacities for perception and action, and each shaping the possibilities that creature has for investigating, altering, and developing within its surroundings.

The arc of varied scientific inquiry stretching from Goethe's *Farbenlehre* to Uexküll's *Umweltlehre* is not only the historical framework for this project, but the theoretical one. Reflecting on Goethe's *Farbenlehre* from the vantage point of Uexküllian *Umweltlehre* retroactively organizes the long nineteenth century's evolving, multi-disciplinary discourses on color perception into an inquiry into, and a collaborative creation of, a structure of human-environment relations in which color, the visible interaction between an observer and their surrounding world, is a paradigmatic phenomenon. Establishing Goethe and Uexküll at the bounds of this genealogy contributes to two neglected resources for environmental thought. Goethe, though practically unavoidable in German studies generally and prevalent enough within German environmental scholarship,²⁶ remains, as Luke Fischer and Dalia Nassar note, surprisingly "underexplored" within the sphere of Anglophone ecocriticism.²⁷ His focus on the "participatory" and "mutually transformative"²⁸ relation between observer and observed is particularly valuable today, however: as Fischer and Nassar note, it takes root in "the way in which we understand and portray the natural world and our place within it" and therefore speaks

²⁶ On Goethe's legacy in German thought on nature and environment, see Axel Goodbody, "Goethe as Ecophilosophical Inspiration and Literary Model," in *Nature, Technology and Cultural Change in 20th-Century German Literature: The Challenge of Ecocriticism* (Houndmills, Basingstoke: Palgrave MacMillan, 2007), 45–86.

²⁷ Luke Fischer and Dalia Nassar, "Introduction: Goethe and Environmentalism," *Goethe Yearbook*, 22 (2015): 3–22. Of course, Goethe had an important influence on American Romanticism and, with Alexander von Humboldt especially, is a significant touchstone throughout the transatlantic nineteenth century. Amanda Jo Goldstein (in *Sweet Science: Romantic Materialism and the New Logics of Life* [2017]) and Christina Root have analyzed Goethe within broader European and American (primarily Romantic) eco-poetic contexts, and, in English-speaking German studies, Kate Rigby, Axel Goodbody, and Heather I. Sullivan have contributed to a growing foundation of contemporary eco-critical readings of his work.

²⁸ Fischer and Nassar, "Introduction," 10.

directly to the underlying “cultural crisis” that precipitated the climate crisis.²⁹ Uexküll, meanwhile, despite the fact that his work builds on Goethe’s participatory and mutually transformative model, has been largely absent from the ecocritical conversation. His *Institut für Umweltforschung*, founded in 1926 at the University of Hamburg, closed soon after his death in 1944, and though his “influence on the development of various academic fields continued”—from biosemiotics, of which he is considered to be a founder, to “ethology, (German) philosophical anthropology, [and] continental philosophy,” Sara Asu Schroer notes that “no school of thought explicitly carried on his research agenda.”³⁰ Despite launching the word into

²⁹ Fischer and Nassar, “Introduction,” 4. Heather I. Sullivan, in particular, has drawn on Goethe’s *Farbenlehre* in this context. See, for instance, Heather Sullivan, “The Ecology of Colors: Goethe’s Materialist Optics and Ecological Posthumanism,” in *Material Ecocriticism*, ed. Serenella Iovino and Serpil Oppermann (Bloomington: Indiana University Press, 2014), 80–96, and “Goethe’s Colors: Revolutionary Optics and the Anthropocene,” *Eighteenth-Century Studies*, 51.1 (2017): 115–124.

³⁰ Sara Asu Schroer, “Jakob von Uexküll: The Concept of Umwelt and its Potentials for an Anthropology Beyond the Human,” *Ethnos*, 86.1 (2021): 132–152, 136. A significant factor in Uexküll’s non-reception for so many decades may have been his politics, which, while always conservative, intensified into public intellectual support of National Socialism through frequent newspaper articles and, especially, his 1920 “totalitarian organicist account of the state,” titled *Staatsbiologie: (Anatomie — Physiologie — Pathologie des Staates)* (Tim Elmo Feiten, “What do we want from Jakob von Uexküll? Two Reading Recommendations on Open and Closed Umwelten” *Dialectical Systems: A Forum in Biology, Ecology and Cognitive Science*, 15 November 2022, <<https://www.dialecticalsystems.eu/contributions/what-do-we-want-from-jakob-von-uexkull-two-reading-recommendations-on-open-and-closed-umwelten/>>). Francesca Micheli outlines Uexküll’s disenchantment with National Socialism during the first part of the 1930s, as he decried the removal of Jewish scholars from university posts (among them his colleague Ernst Cassirer) and publicly advocated for the freedom of German universities from political ideology (Nazi officials did not allow him to finish this 1934 lecture, and afterwards kept him under surveillance). Indeed, Micheli attributes Uexküll’s conservatism not primarily to his Naziism but to his “aristocratic background”—he was a Baltic German baron in Estonia—and frame him as a “a conservative seeking political stability, an opponent of democracy and crowds, an individualist who is against egalitarianism,” but also “a loud advocate of freedom of thought, of moral ideals of justice and meritocracy, and even of a fierce critic of “heartless” capitalism as well as of its market-driven ethics” (“Introduction: A foray into Uexküll’s heritage,” *Jakob von Uexküll and Philosophy: Life, Environments, Anthropology*, ed. Francesca Micheli and Kristian Köchy [London: Routledge, 2020], 8). Thus, while not excusing Uexküll’s clear—though uncertainly steadfast—Naziism and his close friendships with Ludwig Klages and Houston Stewart Chamberlain, Inga Pollmann is not alone among scholars in contending that, “at the same time, Uexküll’s scientific work betrays an astonishing modernity and aesthetic sensibility” and that “his biological work produced theories, concepts, and images” that can be “dislodged from conservative ideology in order to serve other, more progressive purposes” (“Invisible Worlds, Visible: Uexküll’s Umwelt, Film, and Film Theory,” *Critical Inquiry* 39 [2013]: 777–816, 784).

This view is strongly opposed, however, by Gottfried Schnödl and Florian Sprenger, who in their recent *Uexküll’s Surroundings: Umwelt Theory and Right-Wing Thought* argue that “Uexküll’s Umwelt theory is antidemocratic, totalitarian, and holistic in the worst sense,” that he was “much more deeply involved in Nazism

wider critical circulation with his 1909 publication of the *Umwelt und Innenwelt der Tiere*,³¹ his concept of *Umwelt*, “denot[ing] the subjective world of [an] organism,”³² was “sidelined by a more (apparently) objective, monolithic understanding of *Umwelt* as a surrounding outside environment”³³ that still pervades colloquial understandings of “Umwelt” and “environment” today.

Yet by expanding the microcosmic dynamics of Goethean color theory into a working theory of the environment as a whole, Uexküll focuses Goethe’s optics into a productive and accessible entry-point to the fundamentally relative and fundamentally reciprocal of environment understanding that German studies scholars like Goodbody, Sullivan, Rigby, and others, have begun to unfold. Together, Goethe and Uexküll’s work opens a visually-based paradigm for recognizing and exploring the entangled environments that appear everywhere we look, and of which we are a part. For although biosemiotics has begun to be recognized as a foundation for

than previously thought,” and that it impossible to engage with any aspect of Uexküll’s thought without also smuggling in his “structural conservatism and...identitarian logic” (*Uexküll’s Surroundings* [Lüneburg: meson press, 2021], 12). Schnödl and Sprenger’s goal is evidently to provide an initial means by which “tomorrow’s scholars of ecology can better arm themselves against the ghosts of their own history,” which are once again taking concrete shape in New Right movements and their “conservative ecologies” (20). Certainly, a full and critical awareness of Uexküll’s political involvements, the relation between the development of his politics and the development of his biological theories, and the reception of his work by right-wing thinkers past and present, is extremely important. At the same time, I am provisionally inclined to agree with Tim Elmo Feiten that the “claim that Uexküll’s thought as a whole is a irredeemably totalitarian and that no part of it can be separated from the whole and made use of in a different system of ideas without importing also Uexküll’s reactionary political organicism is neither fully convincing” as an assessment of a lifetime’s worth of thought, nor borne out across many interpretations of and engagements with Uexküll’s work in the environmental humanities (Feiten, “What do we want from Jakob von Uexküll?”). The fact that the right/left divide in engagement with ecological tropes and ideas is not new does not make the current rise of the alt-right and white nationalist terrorists—often citing eco-fascist ideas—any less dismaying. For a history of this line of thought in the German tradition specifically, see, for instance, Janet Biehl and Peter Staudenmaier, *Ecofascism: Lessons from the German Experience* (Porsgrunn: New Compass Press, 2011) and, for a contemporary analysis, see Hilary A. Moore’s *Burning Earth, Changing Europe: How the Racist Right Exploits the Climate Crisis and What We Can Do About It* (Brussels: Rosa Luxemburg Stiftung, 2020).

³¹ See “Umwelt,” in *Interdisziplinäre Begriffsgeschichte*, ZfL Berlin, especially in regard to Giorgio Agamben’s reception of the term in *The Open: Man and Animal*, trans. Kevin Atell (Stanford: Stanford University Press, 2004). <<https://begriffsgeschichte.de/doku.php/begriffe/umwelt>>, accessed 18 December 2022.

³² “Jakob von Uexküll,” *Zoölogia- ja Botaanika Instituut: 1947 – 2004*. <<http://www.zbi.ee/uexkull/cv.htm>>, accessed 18 December 2022.

³³ Schroer, “Jakob von Uexküll,” 136.

these more complex ecologies and as extremely fertile ground for ecopoetics, and although Uexküll's name is not infrequently cited as having first articulated it,³⁴ studies directly addressing his *Umwelt*-theory, especially within ecocriticism, remain relatively few.³⁵ In order to add to these discussions' foundations and establish the frame that structures my literary analyses in the following chapters, my discussion of Goethe and Uexküll picks up Anglo-German ecocriticism's growing attention to Goethe—and its smaller but likewise growing attention to his color theory—and pursues it into the inherently meaningful environments of Uexküll's *Umwelten*.

Indeed, Uexküll's development of the vast "Hüben und Drüben"³⁶ of Goethean nature into a nearly fully-fledged biosemiotics—that is, his expansion of the *Farbenlehre* into a *Bedeutungslehre*—renders color not just a locus of interaction and mutual formation between observers and their environments, but an inherently meaningful phenomenon. The core recognition of biosemiotics, and the core message of Uexküll's work, is that "all life—from the

³⁴ Serenella Iovino notes Uexküll's significance in the intellectual genealogy she discusses, but focuses on contemporary ecocritical work in "Posthumanism in Literature and Ecocriticism," *Relations. Beyond Anthropocentrism* 4.1 (2016): 11–20, 14. Kate Rigby provides valuable intellectual genealogies and reception histories for readings of Uexküll, but does not explicitly address him in either "Art, Nature, and the Poesy of Plants" or "Prometheus Redeemed? From Autoconstruction to Ecopoetics," in *Ecospirit: Religions and Philosophies for Earth*, ed. Laurel Kearns and Catherine Keller (Fordham University Press, 2007), 233–51.

³⁵ Oriented specifically towards ecocriticism, Wheeler analyzes elegantly but briefly the work of both Uexküll and Charles Sanders Peirce in "The Biosemiotic Turn." Frederick Amrine unfolds Uexküllian thought at somewhat more length—but within a more limited thematic frame—in "The Music of the Organism: Uexküll, Merleau-Ponty, Zuckerkandl, and Deleuze as Goethean Ecologists in Search of a New Paradigm," *Goethe Yearbook* 22 (2015): 45–72. Perhaps the foundational study of Uexküll's work generally is Kull's "Jakob von Uexküll: An Introduction." More recently, another sweeping study has been published: *Jakob Von Uexküll and Philosophy: Life, Environments, Anthropology*, ed. Francesca Michelini and Kristian Köchy (Routledge: Milton Park, UK, 2020). Timo Maran has written extensively at the intersection of Uexküllian biosemiotics and numerous avenues within the environmental humanities, from within the Estonian biosemiotic context. See especially his "Biosemiotic criticism: modelling the environment in literature," *Green Letters: Studies in Ecocriticism*, 18.3 (2014): 297–311.

³⁶ In the *Farbenlehre*, Goethe situates color at the core of "Gewicht und Gegenwicht, [...] ein Hüben und Drüben, ein Oben und Unten, ein Zuvor und Hernach, wodurch alle Erscheinungen bedingt werden, die uns im Raum und in der Zeit entgegentreten" (*Zur Farbenlehre*, 10).

cell all the way up to us—is characterized by communication, or semiosis.”³⁷ Accordingly, Uexküll’s commitment to ameliorating biology’s “Bedeutungsblindheit”³⁸ (its blindness to meaning) “places humans back in nature as part of a richly communicative global web teeming with meanings and purposes.”³⁹ Thus, as Kate Rigby puts it in her explanation of the field’s rising popularity in the humanities, biosemiotics “reposition[s] articulate human language on a continuum with the varied semiotic transactions with which all other organisms are also involved.”⁴⁰ Biosemiotics, or as Rigby discusses, “ecosemiotics,” positions color and language along the same spectrum.⁴¹ This positioning is particularly valuable for literary criticism, of course, and the spectrum of literature, color, and environment is the spectrum along which, I show, both Stifter and Scheerbart work.

Although in German Studies the combination of Stifter and Scheerbart is new⁴² and perhaps surprising—Stifter is typically classed as a nineteenth century realist, while Scheerbart,

³⁷ Wendy Wheeler, “The Biosemiotic Turn,” in *Ecocritical Theory: New European Perspectives*, ed. Axel Goodbody and Kate Rigby (Charlottesville: University of Virginia Press, 2012), 270–82, 270.

³⁸ Kalevi Kull, “Jakob von Uexküll: An Introduction,” *Semiotica* 134.1/4 (2001): 1–59, 2.

³⁹ Wheeler, “The Biosemiotic Turn,” 270.

⁴⁰ Kate Rigby, “Art, Nature, and the Poesy of Plants in the Goethezeit: A Biosemiotic Perspective,” *Goethe Yearbook*, 22 (2015): 23–44.

⁴¹ Ernst Cassirer, who was Uexküll’s colleague in Hamburg, critiques Uexküll for painting humans and our language with the same brush as animals and their communications. Humans’ symbolic world, Cassirer writes, is “not merely a broader reality” than that of “organic responses,” but “a new *dimension* of reality” (*An Essay On Man* [Garden City, NY: Doubleday, 1956], 43). Barthes, too—referring briefly to Karl von Frische’s studies on honeybee communication—draws a fundamental distinction between “language” and the bees’ “predictive system of dances” (“The Reality Effect,” 143). Barthes and Cassirer are certainly right, insofar as “language” and “reality” are concerned. But neither “language” nor “reality” are Uexküll’s primary focus in his *Umwelt-* and *Bedeutungslehre*. It is, as his terms suggest, *meaning* and meaningful environments. That humans’ environments encompass a unique “dimension” of symbolic meaning does not render other creatures’ environments un-meaningful by comparison. Meaning, for Uexküll, occurs at and is constituted by points of contact and interchange between and among subjects and environments. It is, he writes, the “Verbindungsglied” that unites “zwei Naturfaktoren miteinander” (*Bedeutungslehre* [Hamburg: Rowohlt, 1956], 144). Humans’ shared symbolic environments, linking ourselves to each other and our social to our material environments, may constitute another *dimension* of meaning, but the fundamental existence and process of that meaning—arising from mutually-relevant encounters and interactions—has not shifted.

⁴² As of writing this in February 2023, no literature addressing both Stifter and Scheerbart appears in the MLA International Bibliography.

over half a century later, is best known for his fantastical science fiction—this project makes the case that their highly descriptive writing and intensive literary engagements with color⁴³ are alike experiments in and contributions to the color-based paradigm of environmental inquiry. Across the many differences of their literary periods, priorities, and styles, color in both Stifter's and Scheerbart's work is more than a "reality effect" or a mere profusion of highly visual prose. Both authors were interested in and inspired by contemporary scientific research of their day. Stifter's interest in geology and meteorology, for instance, is well known,⁴⁴ while Scheerbart, like so many of his contemporaries, was fascinated by "Röntgen Strahlen," or X-rays, as well as ultraviolet light.⁴⁵ Their fascination with color was equally serious, and for them, like for the

⁴³ The overwhelming visuality of both Stifter's and Scheerbart's work has been widely recognized. Christian Begemann stated that Stifter's stories "schließlich nur noch das Wahrnehmbare zur Sprache bringen," and Marianne Schuller and Thomas Gann pose the rhetorical question: "Ist die Eigentümlichkeit der Prosa Stifters nicht entscheidend darin begründet, dass ihre Erscheinungsform als 'Oberfläche' gefasst werden kann?"⁴³ (Christian Begemann, *Die Welt der Zeichen: Stifter-Lektüren* [Stuttgart, 1995], 29; *Fleck, Glanz, Finsternis: Zur Poetik der Oberfläche bei Adalbert Stifter*, ed. Marianne Schuller and Thomas Gann [Leiden, Niederlande: Wilhelm Fink, 2017], 7). Tove Holmes, meanwhile, articulates the scholarly consensus that Stifter's characters engage with their surroundings by looking, and that seeing and describing go hand in hand and are the main action of his texts (Tove Holmes, "'Was ich in diesem Haus geworden bin.' Adalbert Stifter's Visual Curriculum," *Zeitschrift für deutsche Philologie* 129.4 (2010): 559–77, esp. 560). Although Scheerbart remains more on the fringe of German literary scholarship than Stifter, Rosemarie Haag Bletter notes Scheerbart's emphasis on "multiplicit[ies] of reflective surfaces," and Franz Rottensteiner sums it all up when he writes that "Scheerbart's literary cosmos is totally dominated by visual impressions" and "is a veritable orgy of colors" (Rosemarie Haag Bletter, "Fragments of Utopia: Paul Scheerbart and Bruno Taut," 123–129 in *Glass! Love!! Perpetual Motion!!!*, ed. Josiah McElheny and Christine Burgin (Chicago: University of Chicago Press, 2014), 124; Franz Rottensteiner, "Paul Scheerbart, Fantast of 'Otherness,'" *Science Fiction Studies*, 11.2 (1984): 109–121, 113). The most important elements of the Scheerbartian world are "matter[s] of appearance alone—of pure surface, pure visualization"; accordingly, "Cognition for Scheerbart consists in literally perceiving" (Rottensteiner, 113).

⁴⁴ Stifter was friends with Friedrich Simony (1813–1896), a prominent Austrian geologist, undoubtedly an important factor in his well-recognized artistic and literary interest in the "history of landscapes and geological formations" (Tove Holmes, "An Archive of the Earth: Stifter's Geologos," *seminar* 54.3 (2018): 281–307, 281). As a brief overview, see also Timothy Attanucci, "Atmosphärische Stimmungen. Landschaft und Meteorologie bei Carus, Goethe und Stifter," *Zeitschrift für Germanistik* 24.2 (2014): 282–295 and *Stories from Earth Adalbert Stifter and the Poetics of Earth History* (Ph.D. Dissertation, Princeton University, 2012); Kathrin Maurer, "Adalbert Stifter's Poetics of Clouds and Nineteenth-century Meteorology," *Oxford German Studies*, 45 4 (2016): 421–433; and, more broadly, *Figuren der Übertragung: Adalbert Stifter und das Wissen seiner Zeit*, ed. Michael Gamper and Karl Wagner (Zurich: Chronos, 2009).

⁴⁵ The Expressionist poet and painter, and fellow color-enthusiast Max Dauthendey recounts an interaction with Scheerbart in which they discussed the press that Scheerbart was at the time starting, *Der Verlag der Phantasten*;

scientists whose research inspired them, color became a means of reflecting critically on and transforming subject-environment relations—in other words, for interpreting and creating “natures of color.” My analyses of both Stifter and Scheerbart therefore illuminate their literary natures of color through the color-research that inspired and influenced them.

Although working in distinctly different literary periods, Stifter and Scheerbart’s shared engagement with the science and psychology of color put them at the heart of the nineteenth century’s transformation of vision. Their writing thus shared a more fundamental and eminently artistic inheritance, as well: by placing his discussion of physiological colors first in the *Farbenlehre*, Goethe shattered what Roland Barthes famously called the “referential illusion.”⁴⁶ The newly-recognized reality of these colors, previously described as merely “imaginarii,” “accidentelles,” “Scheinfarben,” or, in Newton’s words, “ocular spectra” meant that the “Wirklichkeit” of both actual experience and literary narration was fundamentally changed. The

not liking the word “Phantasten,” since it watered down the important sense of *Phantasie* as a source of poetry and an opposition to naturalism, Dauthendey expressed his doubt about the name to Scheerbart. “‘Sagen Sie mir einen anderen Titel, wenn Ihnen einer einfällt,’ meinte Scheerbart lebendig. Nach kurzem Besinnen entfuhr mir das Wort ‘Ultraviolett.’ Scheerbart sagte: ‘Das versteht nicht jeder.’ Und ich mußte ihm zustimmen, daß für einen Verlag der Name zu unverständlich sein konnte” (quoted in Hubert Bär, *Natur und Gesellschaft bei Scheerbart: Genese und Implikationen einer Kulturutopie* [Heidelberg: Julius Groos, 1977], 23–24). Dauthendey’s poem “Ultraviolett” is perhaps the best explanation for this exchange, and for their shared sense of its entwined offer of new sight and new realities:

Ultra Violett

das Einsame, sprach zu mir:

Noch lebe ich unsichtbar.

Aber ihr könnt mich alle empfinden.

Versucht es mich zu erkennen.

Ich will euch neue Sonnen,

Neue Welten geben. (Max Dauthendey, *Gesammelte Werke in 6 Bänden*, vol. 4: *Lyrik und kleinere Versdichtungen* [München 1925], 9, <<http://www.zeno.org/nid/2000468530X>>).

While x-rays were a recent discovery, (Wilhelm Röntgen, working Würzburg, discovered them in 1895), ultraviolet light had been detected by Johann Wilhelm Ritter in 1801—a thoroughly Romantic development, and one with which Scheerbart undoubtedly felt much kinship.

⁴⁶ Roland Barthes, “The Reality Effect,” in *The Rustle of Language*, trans. Richard Howard, ed. François Wahl (Berkeley: University of California Press, 1989), 148.

passive, camera-obscura model of vision in which the outside world impresses its appearance on the passive retinas of the observer, who is then privileged with “objective” perception, ceased to hold sway. As Elisabeth Strowick so aptly writes, “Wirklichkeit” became “wahrgenommene Wirklichkeit,”⁴⁷ and literary description had then as much to say about the process of seeing as about the objects of observation. With the appearance of “reality” dependent on an observer’s physiology and fleeting circumstances, description could no longer be separate from or opposed to narration, as Lukács famously discussed.⁴⁸ Stifter and Scheerbart wrote in different periods of this Goethean legacy, and the social and ethical stakes at play in their literary colors are, though differently oriented, alike positioned along the color-based entanglement between observer and observed.

In Stifter’s work, description is the narration of perceptual processes. His texts become “Wahrnehmungspoetologische Anordnungen”⁴⁹—perceptual-poetical serieses, collections and arrangements of ever-new and changing observations that the author and reader must alike collect and learn to organize. Writing in the early part of what Deborah Coen has termed “the age of uncertainty”—that is, mid- to late-nineteenth century sociopolitical change in Austria, as well as the intellectual confrontation with uncertainty through probability and the burgeoning field of statistics—Stifter’s penchant for literary lists and collections comes into focus as an aggregation of data and a means of cultivating “personal capacities to confront and manage uncertainty.”⁵⁰ Stifter, a school teacher and administrator by profession, was a key player in the early pedagogical transformations of the post-1848 Austrian Empire. When *Wirklichkeit* is

⁴⁷ Strowick, *Gesperster des Realismus*, 6.

⁴⁸ Georg Lukács, “Narrate or Describe?” (1936), in *Writer and Critic* (London: Merlin Press, [1970]), 110–148.

⁴⁹ Strowick, *Gesperster*, 9.

⁵⁰ Deborah R. Coen, *Vienna in the Age of Uncertainty: Science, Liberalism, and Private Life* (Chicago, IL: University of Chicago Press, 2007), 4.

wahrgenommene Wirklichkeit, perception is also creation, and by transforming the way students and readers learned to see, Stifter's literary-pedagogical goal was to transform the world they lived in.

Though known for his science fiction and fantasy, in the nature of color, Scheerbart, too, wrote realist⁵¹ works: his writings, with their fantastical cosmic creatures, consistently explores the external realities that might exist if only we had different eyes with which to see them, and the internal realities that might exist if only our visual surroundings were different. His matter-of-fact style makes his fantastical, kaleidoscopic accounts of cosmic life read more like reports than fiction, and his narratives, though less entwined in the processes of perception than Stifter's, accord with Karen Barad's definition of a later literary realism, which developed during the dawning age of quantum physics: "Realism, then, is not about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibility of intra-acting within and as part of the world."⁵² In addition to cosmic stories of planets and stars, Scheerbart, who became increasingly interested in architecture and urban design, explored and promoted new visions of urban life, which, in opposition to what he found to be the oppressive and depressive reality of bricks, would be based on the spiritually uplifting power of light and color. In 1914, the same year he published his *Glasarchitektur*, Scheerbart collaborated with Expressionist architect Bruno Taut to design and build a stained-glass pavilion. As tensions

⁵¹ "Realist" and "realism" are of course extremely open and fluid terms, and render spurious any genre argument for bringing Stifter and Scheerbart together. As Roman Jakobson points out, "Classicists, sentimentalists, the romanticists to a certain extent, even the 'realists' of the nineteenth century, the modernists to a large degree, and finally the futurists, expressionists, and their like, have more than once steadfastly proclaimed faithfulness to reality, maximum verisimilitude—in other words, realism—as the guiding motto of their artistic program" ("On Realism in Art," *Language in Literature*, ed. Krystyna Pomorska and Stephen Rudy [Cambridge, MA: Harvard University Press, 1987], 20).

⁵² Barad, *Meeting the Universe Halfway*, 37.

increased in the lead-up to World War I, Scheerbart hoped that “mehr Farbenlicht!”⁵³ would tear down the dark and closed-minded brick-architecture mentalities of Europe and promote peace: “Das bunte Glas,” as one of his couplets engraved around the *Glaspavillion* read, “Zerstört den Haß.”⁵⁴

Just as both authors work with their own ethical orientations of color, both develop their own particular styles of literary visibility. Stifter’s minute descriptions seem to fill up every nook and cranny available in his long sentences, burgeoning outward into first one color, aspect, or view, and then into the next, and the next. Scheerbart’s prose, though far more abrupt—with so many of his sentences starting with the word “and”—often conveys a similar impression of potentially infinite rows of visual descriptions. Both, of course, feature an abundance of color words. This preponderance of chromatic language in such richly visual prose would seem to invite a discussion of the notoriously difficult relationship between color and language. As Rey Conquer wryly observes, “The central, and most obvious, problem that colour poses for literature – whether for those writing it or those reading – is that it is not there.”⁵⁵ Yet neither Stifter nor Scheerbart seems to have suffered from what David Batchelder calls the “embarrassment” of color: “The difficulty we encounter when putting colour experiences into words is a constant reminder of the limits of language and, as such, colour is an awkward presence that can make me inarticulate or render me mute.”⁵⁶ Quite the contrary: while an overly-broad view may render the “meaning of the term *color*,” as James Gibson writes, “one of the worst muddles in the history of science,”⁵⁷ Stifter and Scheerbart’s engagement with color and color language is consistently

⁵³ Paul Scheerbart, *Glasmarchitektur* (Berlin: Verlag der Sturm, 1914), 120.

⁵⁴ Paul Scheerbart, “Glass House Letters,” in *Glass! Love!! Perpetual Motion!!!*, 132–143, 135.

⁵⁵ Rey Conquer, *Reading Colour: George, Rilke, Kandinsky, Lasker-Schüler* (Oxford, UK: Peter Lang, 2019), 1.

⁵⁶ David Batchelder, *The Luminous and the Grey* (London: Reaktion, 2014), 14.

⁵⁷ James Gibson, *The Senses Considered as Perceptual Systems* (Boston, MA: Houghton Mifflin, 1966), 183.

more focused. Throughout both their works, color functions as a locus and a means of investigating the various meetings and mergings of observers and environments. Thus while the language of color is of constant concern and frequent discussion throughout this project, it is not the focus of my argument.

The tension that structures my literary analyses, rather than the one obtaining between language and color's stubborn phenomenality, is an environmental one, inherent in the nature of color. Both Stifter's and Scheerbart's work navigates the Goethean axis I described above, from the interiority of the subject to the exteriority of the visual world in whose appearance that subject participates. The nature of color is at times a surface of appearance spread out at a distance from the viewer, whose constitutive involvement may seem minimal; at other times, the observer is submerged in the colors they behold, barely distinguishable from them, fused together either in a landscape or through physiological and psychological processes. Natures of color appear at and structure subject-environment encounters at all points along the entangled Goethean axis, from cognition to physiology to phenomenon. There is thus an ever-present tension and interchange in Stifter's and Scheerbart's uses of color between surface and depth, separateness and immersion.⁵⁸ My readings therefore frequently range along a similar path to that described by Michel Foucault in "Nietzsche, Marx, Freud": "when one interprets, one can in reality traverse this descending line only to restore the sparkling exteriority that has been covered

⁵⁸ This tension between surface and depth in the nature of color aligns with the art-historical timeline, outlined by Martin Jay, between the philosophy and visual art of Impressionism and Expressionism: "One final tyranny from which color might be understood to escape [in the age of Expressionism], at least for certain of its liberators, is its identification with mere surface appearances, as the impressionists had assumed. Instead, it can be interpreted symbolically as revealing deeper essential truths, either of the world or the psyche" (Martin Jay, "Chromophilia: Der Blaue Reiter, Walter Benjamin, and the Emancipation of Color," *positions: asia critique*, 26.1 (2018): 13–33, 17).

up and buried....The depth is now restored as an absolutely superficial secret...”⁵⁹ The “descending line” is akin to what I have called the Goethean axis, and the “superficial secret” resonates with the “offenes Geheimnis” of Goethe’s phenomenological approach to the study of color. The play and mutual dependence that Foucault outlines between superficiality and depth is likewise integral to Uexküll’s oft-cited image of an *Umwelt* as a soap bubble. On the one hand, the inner surface of the bubble represents the outermost reaches of a creature’s visible *Umwelt*. On the other hand, the bubble surrounds the creature, who cannot escape it, and who is by definition confined (submerged) within its space. This tension between surface and depth is not an overt theoretical emphasis of my readings, and I therefore rarely name it explicitly. Indeed, to do so would be cumbersome and distracting, since what counts as “surface” and what seems to be “depth” at any given moment depends on where along the Goethean axis we are looking from, and often switches multiple times in the course of a single reading. Given the entangled nature I am revealing, this reversibility and fluidity is fitting—and is contained in the phrase “the nature of color,” which refers simultaneously to “what color is like and how it works” and to “the visible natural world that appears in and as color.”

As Uexküll regularly points out, there is, from the subject’s perspective, no such thing as escaping the depth of our environment by stepping outside our *Umwelt*. Instead, we can only deepen it further (which is the same as increasing the surface area of our bubble) and enrich its contents. For Uexküll, all this is best achieved by studying the *Umwelten* of other beings. His description of the result, in which he employs another bubble-like metaphor for *Umwelt*, explicitly casts the environmental interchange of surface and depth as an ever-shifting play of

⁵⁹ Michel Foucault, “Nietzsche, Marx, Freud,” in *Transforming the Hermeneutic Context: From Nietzsche to Nancy*, ed. Gayle L. Ormiston and Alan D. Schrift (Albany: State University of New York Press, 1990), 59–67, 62.

color: “Haben wir nun erst einmal den Anfang gemacht, an wenigen Tieren zu zeigen, welche Erscheinungswelt sie wie ein festes, aber unsichtbares Glashaus umschließt, so werden wir bald die Welt um uns mit zahllosen schillernden Welten bevölkern können, die den Reichtum unserer reichen Welt noch tausendfach erhöht.”⁶⁰ Uexküll likens every visual environment (“Erscheinungswelt”) to a firm but invisible glass house enclosing its subject. Yet other *Umwelten* soon come into view within our own, as “iridescent worlds” whose constantly shifting colors respond to every change of angle or light around them and whose appearance in our environmental understanding “increase[] the riches of our rich world by a thousand fold.” For Uexküll—and, I argue, for all the authors in this study—the beauty and the value of our environment(s) is seen and felt in its colors.⁶¹

As the visual foundation of our environed existences, questions about the natures of color are questions that the sciences and the humanities alike pursue. By setting close readings of literary texts against contemporaneous empirical research, the following pages reveal constellations of colorful kinship—and patterns of ethical and existential explorations—that might otherwise remain hidden. Across fields and literary periods, these kinships and explorations orient and enrich each others’ meanings and implications. My analyses, grounded always in close readings and comparisons, engage both formal and thematic intersections across scientific and literary sources. Attending to color’s appearance in questions of environmental epistemology and ontology, representation and narrative, my goal is to trace where and how, in

⁶⁰ Jakob von Uexküll, *Theoretische Biologie* (Berlin: Gebrüder Paetel, 1920), 58.

⁶¹ At the same time, we can trace a lived historical trajectory between the “iridescence” of Uexküll’s beautiful *Umwelten*, and the iridescence of an oil slick. The fragility and degradation of our environment can also be seen and felt in its colors.

the conversation between science and literature, color emerged as a means of grappling with and re-imagining the entangled existences of subjects and the worlds around them.

The first chapter, “Goethe, Uexküll, and a ‘Symphonienlehre des Schauens,’” which compares Goethe’s *Farbenlehre* with Uexküll’s *Umweltlehre*, argues for an understanding of color as a paradigmatic environmental phenomenon, and serves as the theoretical foundation for my literary analyses in the following chapters. The reciprocal structure of Uexküll’s *Umwelt* aligns with that of Goethean color, and I argue that Goethean color was a kind of microcosmic model for the concept of environment later developed by Uexküll. Indeed, based on Uexküll’s reception of Goethe’s *Farbenlehre* in his environmental thinking, color becomes not just a microcosm of environment, but a key to understanding how it works. As such, color functions as what Donna Haraway has called a “growing point” for environmental thinking: a metaphor that organizes thought and inspires investigation, and in so doing, anchors a paradigm through generations of revisions, edits, and amendments. This paradigm—which I call “the nature of color”—was constructed not only by empirical research, but, as Goethe and Uexküll alike acknowledged and prized, in aesthetic traditions as well. As I show in the chapter, the nature of color avoids the increasing divide between the sciences and the humanities, becoming for both Goethe and Uexküll a binding agent between these “two cultures,”⁶² and a shared entry point for all fields to pursue “die tiefsten Fragen des Lebens.”⁶³

The second chapter, “Complementary by Nature: Adalbert Stifter’s *Erfahrung in den Farben*,” analyzes two distinct modes of environmental encounters in Stifter’s work and makes the case for a Stifterian dynamic of environmental interaction that is based in and visible through

⁶² C. P. Snow, *The Two Cultures* (Cambridge: Cambridge University Press, 1998).

⁶³ Uexküll, *Bedeutungslehre*, 146.

color. My readings focus on two sets of color-based environmental interactions—what I call “experiences in color.” The first takes place in Stifter’s 1858 novel *Der Nachsommer*. The experiences in color of this *Bildungsroman* appear over the course of the main character’s development of perceptual, intellectual, and emotional maturity. They thematize Heinrich’s process of learning to observe, often by describing his attempts to draw or paint (the phrase “Erfahrung in den Farben” is originally Heinrich’s), and prioritize orderliness and mastery as he learns to orient himself in relation to the chaotic surface of color that makes up his visual world. The second series of experiences in color that the chapter analyzes is that of two young children in Stifter’s earlier novella *Bergkristall*⁶⁴ who get lost in a blizzard and find themselves in the overwhelming blue of a glacial ice-cave. Both the blinding white blizzard and the deep blue cave are overwhelming and impossible for Konrad and Sanna to sort, organize, and assimilate into their own mental landscapes. Indeed, rather than mentally or artistically integrating and modulating the colors around them, as Heinrich does, the children are at times engulfed by the landscape, becoming part of its colorful surface. Different as they otherwise are, both these encounters with color—Heinrich’s in *Der Nachsommer* and Konrad and Sanna’s in *Bergkristall*—play out the interchange and mutual integration of depth and surface that I outlined above as inherent to the nature of color. Each reading emerges through comparative analyses of Stifter’s text with writings from the first generation of the *Farbenlehre*’s reception: Herbart’s colorful model of cognition illuminates Heinrich’s measured engagement with color, and Purkinje’s objective observations of subjective color phenomena provides a framework for Konrad and Sanna’s bewildering visual experiences. By situating Stifter’s writing alongside

⁶⁴ Originally written in 1845, but revised for republication in the collection *Bunte Steine* in 1853.

recent work in natural science and psychology, this chapter establishes his work as an aesthetic contribution to a shared and ever-shifting nature of color.

The third and final chapter, “Mehr Farbenlicht!”: Color and Environment in and beyond Paul Scheerbart’s *Glass Architecture*,” develops a framework for analyzing the visual worlds of Scheerbart’s work and then uses that framework to reveal his constructions of, and experimentations with, ecologies of color in his novels *Lesabéndio* (1913) and *Das graue Tuch und zehn Prozent Weiß* (1914). These texts follow an array of characters (humans, aliens, and even asteroids) through whose eyes they unfold an array of colorful environments, both on earth and in space. I bring these colorful environments into focus—and orient their ethical significance—through Scheerbart’s own writings on colored glass environments, the criticism of his younger contemporary Adolf Behne, and the influential empirical research and panpsychist writings of Fechner. As I show, the dynamic of depth and surface becomes, in Scheerbart’s literary environments, a dynamic of surface (from one side) and surface (from the other side). Rather than an exchange between phenomenal appearances and structural processes of color, Scheerbart’s colorful writing present worlds in which both the “exteriority” of environments and the “interiority” of characters are alike surfaces of colorful appearance. As he experiments with the relations between observers and their environments, then, he also experiments with the *distinctions* between them, blurring and at times erasing the boundaries between characters and settings. In order to analyze the interactions in *Lesabéndio* and *Das graue Tuch* between Scheerbart’s color-subjects and their color-environments, I draw on contemporary discourses of *Stimmung* in the complementary spheres of landscape aesthetics (the effects of an aesthetic environment) and physiological basis for moods (the affected observer), arguing ultimately for an understanding of Scheerbart’s colors as chromo-ecologies, experimental utopians in which all

beings and all settings become colors among colors: affected by and affecting each other in turn, each integral to the whole they construct.

Chapter One

Goethe, Uexküll, and a *Symphonienlehre des Schauens*

*[D]ie ganze Natur offenbar[t] sich durch die Farbe dem Sinne des Auges.*⁶⁵

Introduction: Color and Environment

In the introduction of his 1810 *Zur Farbenlehre*, Goethe offers the following poetic reflection on “Jene unmittelbare Verwandtschaft des Lichtes und des Auges”:

Wär’ nicht das Auge Sonnenhaft,
Wie könnten wir das Licht erblicken?⁶⁶

It is from the complementarity and kinship of light and eye that, according to Goethe, the visual world emerges. And that visual world emerges in and as color: the retina, he writes, is the “Organ des sehens überhaupt sowie das Gewährwerdens der Farben.”⁶⁷ The moment we are aware of color, we are seeing. Indeed, “Das Auge sieht keine Gestalten, es sieht nur was sich durch hell und dunkel oder durch Farben unterscheidet.”⁶⁸ In other words, as Joseph Vogl outlines, color in Goethe’s work becomes not so much an object of sight, but its initial and fundamental function: “das Sehen” occurs “*als Farbwahrnehmung*.”⁶⁹ Over one hundred years after Goethe published his couplet on the likeness between sun and eye, Jakob von Uexküll, in a book whose title, *Bedeutungslehre*, signals its intended kinship with Goethe’s work,⁷⁰ composed a reply:

Wär’ nicht die Sonne augenhaft,

⁶⁵ Goethe, *Zur Farbenlehre*, 20.

⁶⁶ Goethe, *Zur Farbenlehre*, 20.

⁶⁷ Goethe, “Das Auge,” in *Sämtliche Werke*, 6.2:814.

⁶⁸ Goethe, “Das Auge,” 814.

⁶⁹ Joseph Vogl, “Der Weg der Farbe (Goethe),” in *Räume der Romantik*, ed. Inka Mülder-Bach and Gerhard Neumann (Würzburg: Verlag Königshausen & Neumann, 2007), 163, emphasis added.

⁷⁰ Frederick Amrine points this out in “The Music of the Organism: Uexküll, Merleau-Ponty, Zuckermandl, and Deleuze as Goethean Ecologists in Search of a New Paradigm,” *Goethe Yearbook* 22 (2015): 45–72.

An keinem Himmel könnte sie erstrahlen.⁷¹

Uexküll frames his couplet not just as complementary to, but as the completion of Goethe's dictum: "wir können jetzt auch Goethes Ausspruch *vollenden* und sagen..."⁷² Taken together, Goethe and Uexküll's verses direct their readers' attention to a visual world that is fundamentally relative and (fundamentally) reciprocal. They construct a nature that appears only in the gaze of its inhabitants, and inhabitants whose multitudinous eyes produce a dizzying array of visual environments. More broadly, they suggest that Uexküll's concept of *Umwelt* is a direct inheritance of Goethean thought. Despite their hundred years' separation, Goethe and Uexküll's work is in close conversation. It is widely recognized that Uexküll was influenced by Goethe—being, as Kalevi Kull specifies, "particularly interested in Goethe's theory of colors."⁷³ Ernst Cassirer, too, marvels at "how exactly the plan and development of Uexküll's biology conformed in every particular" to Goethe's view that the "meaning and value of the development" of all aspects and participants in the natural world "could be comprehended only in the totality of all its forms."⁷⁴ As I mention above, Amrine recognizes Uexküll's *Bedeutungslehre* as a reference to Goethe's *Farbenlehre*, and Tim Elmo Feiten, Kristopher Holland, and Anthony Chemero identify Goethe as "Uexküll's central reference" in that text.⁷⁵

Given the acknowledged importance of Goethean color theory to Uexküll, I argue that it is through color that we will understand *Umwelt*. Attending to the implicit conversation between Goethe's colors and Uexküll's *Umwelt* reveals a neglected genealogy of German environmental

⁷¹ Jakob von Uexküll, *Bedeutungslehre* (Hamburg: Rowohlt, 1956), 145.

⁷² Uexküll, *Bedeutungslehre*, 145.

⁷³ Kalevi Kull, "Jakob von Uexküll: An Introduction," *Semiotica* 134.1/4 (2001): 1–59, 10.

⁷⁴ Ernst Cassirer, *The Problem of Knowledge: Philosophy, Science, and History Since Hegel*, trans. William H. Woglom and Charles W. Hendel (New Haven: Yale University Press, 1950), 203–204.

⁷⁵ Tim Elmo Feiten, Kristopher Holland, and Anthony Chemero, "Worlds Apart?: Reassessing von Uexküll's *Umwelt* in Embodied Cognition with Canguilhem, Merleau-Ponty, and Deleuze," *Journal of French and Francophone Philosophy - Revue de la philosophie française et de langue française*, 28.1 (2020): 1–26, 5.

thought that spans the rich century of scientific research and aesthetic exploration between them. In the holistic and interactive concept of nature that emerges in the dialog between Goethe's and Uexküll's works, color becomes an essentially environmental phenomenon, relating viewer and surrounding world in manifold (physical, moral, cultural) ways. In addition to adhering to the chronology of inheritance, I compare Goethe's and Uexküll's work side by side, as though in conversation, attending not only to color and *Umwelt*'s points of alignment, but also to points of their mutual supplementation and reciprocal elaboration. In the environmental thinking that emerges in the dialog of their work on color, color becomes legible as a productive and organizing point of coherence, spurring and structuring both scientific and aesthetic research and experimentation into subject-environment relations across space and over generations.

To establish color as the paradigmatic phenomenon of an entangled environment, I begin by outlining the holistic structure and subjective appearance of Goethean color. I propose that the entangled origin of Goethean colors—appearing in the retina where the world and the eye (and the “I”) interact—and the shape of his *Farbenkreis* became a microcosmic model of a harmonious natural world that Uexküll then developed into a more rigorous and peculiarly meaningful theory of environment. After outlining the basic structure of Goethean color in the first section, the second section I trace Uexküll's reception of and additions to that structure in his model of *Umwelt*. Uexküll, like Goethe, takes a phenomenological approach to his research that is grounded in temporal, embodied perception, and in which the perceiving organism, interacting with its surroundings, forms a meaningful whole. Building on what he perceived as Goethe's “Grundlagen” for a “Symphonienlehre des Schauens,”⁷⁶ Uexküll develops the overarching “harmony” of Goethean nature—continually demonstrated through the

⁷⁶ Uexküll, *Theoretische Biologie* (Berlin: Gebrüder Paetel, 1920), 30.

complementary totality of the color wheel—into a “symphony” whose “score,” with all its many parts, the biologist must attempt to transcribe. In the third section, I examine Uexküll’s own account of color perception, situating it as an exemplary phenomenon within his theory of biological-environmental meaning and a development of the Goethean “Symphonienlehre des Schauens.” Comparing Uexküll’s *Bedeutungslehre* with Goethe’s “Sinnlich-Sittliche” section of the *Farbenlehre*, I show how color, as it appears from the biological to the aesthetic and cultural levels, became a paradigmatic phenomenon of an inherently meaningful environment.

1.1 Microcosm: Goethe’s Nature of Color

On the heels of Kant’s overarching assertion, in the preface of his *Critique of Pure Reason*, that “our representation of things as they are given to us does not conform to these things as they are in themselves but rather that these objects as appearances conform to our way of representing,”⁷⁷ Goethe’s *Zur Farbenlehre* shifted color away from the external world and onto the retina, replacing “things as they are in themselves” with the same objects “as appearances.” This phenomenological approach to color and perception constituted a major break from Newton’s color theory, which was based in what Jonathan Crary calls the “camera obscura” model of vision: an observer whose passivity, in letting the visual world impress itself upon them, gains the privilege of “objectivity” in relation to a stable and wholly external world.⁷⁸ In Goethe’s phenomenological account, vision involves—and relies upon—the productive

⁷⁷ Immanuel Kant, *Critique of Pure Reason*, trans. and ed. Paul Guyer and Allen W. Wood (Cambridge: Cambridge University Press, 1998), 112.

⁷⁸ Indeed, introducing a later work on “Chromatik,” Goethe leaves little doubt as to his attitude toward the camera obscura model of vision by writing that if someone were to begin an explanation of the phenomenal world with: “‘Man lasse durch ein kleines Loch einen Lichtstrahl u.s.w.’ so lacht man ihn aus, verlasse die dunkle Kammer, erfreue sich am blauen Himmel und am glühenden Rot der untergehenden Sonne nach unserer Anleitung” (*Sämtliche Werke*, 12:562).

activity and reactivity of the retina. Thus rather than focus on what he calls “das Wesen” of light “as it is in itself,” and as Newton had done, Goethe frames his *Farbenlehre* as an exploration of light’s “Taten und Leiden.”⁷⁹ The result of the actions and passions of light—in other words, of its interaction with other elements, including the retina—is color. For Goethe there is no such thing as color “in itself”: it is only visible, which is to say, it only exists, through manifold interactions. As the stuff of the visible world, color’s interactive appearance in the eye therefore provides a microcosmic model for an interactive—that is to say, ecological—conception of nature, which emerges and is formed through the actions and interactions of its elements.

The inherently interactive nature of color has consequences, in Goethean color theory, for both the appearance of the world and its observer. First of all, nothing we see could be called “rein,”⁸⁰ that is, separate from our perception of them. Instead, appearances are always and necessarily shaped by the “Tätigkeit” of the eye in response to external visual conditions.⁸¹ In this way, Goethean color not only replaces a passive, stable model of objective observation with an interactive, unstable one; in doing so, it emphasizes the subject’s constitutive involvement within the romantic concept of the “cosmic organism” of nature. Like color, Goethean nature is an ever-shifting unicity of opposing and interacting forces in which it is impossible to be an observer without also being a participant. Of course, “Newton’s breakdown of white light into all the spectrum of colors is accurate,”⁸² but as Crary notes (although Goethe would emphatically disagree), “The ramifications of Goethe’s color theory...have little to do with the empirical

⁷⁹ Goethe, *Zur Farbenlehre*, 9. On Goethe and Newtonian thought, see D. Sepper, *Goethe contra Newton: Polemics and the Project for a New Science of Color* (Cambridge: Cambridge University Press, 1988).

⁸⁰ Goethe, *Zur Farbenlehre*, 31.

⁸¹ Goethe, *Zur Farbenlehre*, 31.

⁸² Sullivan, “Goethe’s Colors: Revolutionary Optics and the Anthropocene,” *Eighteenth-Century Studies*, 51.1 (2017): 115–124, 116.

‘truth’ of his assertions or the ‘scientific’ character of his experiments.”⁸³ Rather, I support Heather Sullivan’s view that by situating color as the product of manifold interactions between observers and their surroundings, Goethe established color as the entry-point to a fundamentally entangled “world in flux”⁸⁴—what she calls an “ecology of color”⁸⁵—that varies not only from subject to subject and environment to environment, but from moment to moment.

First and foremost, as I have suggested, Goethe’s *Farbenlehre* positioned color not as some incidental covering to form (a question that, in art, had structured debates about the primacy of line versus color).⁸⁶ Instead, his phenomenological approach transforms surface into essence: the central claim of the *Farbenlehre* is that “die ganze Natur offenbar[t] sich durch die Farbe dem Sinne des Auges.”⁸⁷ In other words, insofar as it is visible (as opposed to audible or tactile, for instance), nature is color. Yet color itself, as Goethe’s experiments showed him, is

⁸³ Crary, *Techniques of the Observer*, 69.

⁸⁴ Sullivan, “Goethe’s Colors,” 116.

⁸⁵ Heather I. Sullivan, “The Ecology of Colors: Goethe’s Ecological Optics and Ecological Posthumanism,” in *Material Ecocriticism*, ed. Serenella Iovino and Serpil Oppermann (Bloomington: Indiana University Press, 2014), 80–94. In some respects I pursue a kindred reading to Sullivan’s “ecology of color,” but mine is less granularly “energetic” and new-materialist. Indeed, by bringing her argument beyond the realm of life visible to the naked human eye, Sullivan—though in many respects working in a Goethean spirit—reaches past Goethe’s well known prioritization of the phenomenality of color—its visibility over its theory, and indeed over any aspect of its visibility that we cannot see (like light before it has “acted” or been “acted upon”). On the one hand, she succinctly outlines how, “While Newton remains abstract and posits colors as being an integral part of white light, Goethe—with much relevance for material ecocriticism—studies light through its impact on the world and the emergence of colors” (“Ecology of Colors,” 86). On the other hand, she admits of her own argument that “An ecology of colors based on *light* and *solar energy* may initially seem nonecological or disconcertingly abstract” (81, emphasis added). Although this abstraction—which is to say, invisibility as such, of “light” and “solar energy” of course accords with her own discussion of “dynamic material and informational exchanges” (80), it does not acknowledge the phenomenological gulf separating mere “light” from “color” that is a cornerstone of Goethe’s *Farbenlehre*. Instead, she simply proceeds: “yet these elements are very much a constant part of our physical surroundings, if not the most significantly determining factors” (81). This statement is not wrong—but it is, by the measure of her own summaries of Goethean thought, not Goethean. Interestingly, it is eminently compatible with an Uexküllian—which is to say, biosemiotic—view of color, in which interaction and meaning takes place on all levels of life, from the “energetic” on up.

⁸⁶ For an overview of this debate, see chapter 7, “*Deseigno versus Colore*,” in John Gage’s *Color and Culture* (Berkeley: University of California Press, 1993).

⁸⁷ Goethe, *Zur Farbenlehre*, 20. See *Goethe’s Way of Science: A Phenomenology of Nature*, ed. David Seamon and Arthur Zajonc (Albany: State University of New York Press, 1998).

composed of light and dark, so he concludes: “Und so erbauen wir aus diesen Dreien [light, dark, and color] die sichtbare Welt.”⁸⁸ Together, the two lines I have just quoted outline the inextricably reciprocal structure of color and vision in Goethe’s model: just as all of nature shows itself (“offenbart sich”) in color, and we “build” all of visible nature out of color. Indeed, Goethe writes, color can also be understood as simply “die gesetzmäßige Natur in Bezug auf den Sinn des Auges.”⁸⁹ The appearance of color in the eye—in other words, the visible world itself—is evidence of our participation in that world. It emerges through, on the one hand, “Die Empfindlichkeit des Auges gegen das Licht” and on the other hand “die gesetzliche Gegenwirkung der Retina gegen dasselbe.”⁹⁰ As the reciprocal action and passion of light, dark, and the retina, Goethean color blends the distinction between “inner” and “outer,” rendering these two oft-separated domains “a single surface of affect”⁹¹—a world of appearance in which all parts, observers and observed alike, affects and are affected by all others, and in so doing create a single totality.

The cornerstone of the Goethean nature of color is Goethe’s exploration, in the very first section of the *Farbenlehre*, of subjective vision or “physiological colors.” Here, he brings colors that had hitherto been dismissed and excluded “als außerwesentlich, zufällig, als Täuschung und Gebrechen” onto center stage as “das Fundament der ganzen Lehre.”⁹² These are colors that, as Goethe puts it, “dem gesunden Auge angehören.”⁹³ In other words, they are produced by the eye itself, depending on the state in which the retina finds itself in relation to the outer world. Goethe

⁸⁸ Goethe, *Zur Farbenlehre*, 20.

⁸⁹ Goethe, *Zur Farbenlehre*, 21.

⁹⁰ Goethe, *Zur Farbenlehre*, 207.

⁹¹ Crary, *Techniques of the Observer*, 71.

⁹² Goethe, *Zur Farbenlehre*, 27.

⁹³ Goethe, *Zur Farbenlehre*, 27.

sets the stage for subjective vision's foundational role in "was wir Sehen heißen"⁹⁴ by first outlining the retina's responses to darkness and light, which are the two other elements that, in conjunction with the eye, give rise to color. In bright light, the retina is overwhelmed—"in äußersten Überspannung und Unempfindlichkeit"⁹⁵; in darkness, the opposite—"Das Organ ist sich selbst überlassen, es zieht sich in sich selbst zurück, ihm fehlt jene reizende befriedigende Berührung, durch die es mit der äußern Welt verbunden und zum Ganzen wird."⁹⁶ These two opposed states (receptivity in too little light and insensitivity in too much) illustrate for Goethe the basic means by which the activity of seeing "binds" the retina to the outside world and makes them "into a whole." This happens through the retina's reactions, and it is important to note that, in both bright light and darkness, the retina responds not so much to *counteract* what lies outside but to complete nature's harmony through an internal complement to external conditions. Deprived of a necessary condition of vision, the retina makes itself especially receptive and impressionable; likewise, when overwhelmed by that same condition, it becomes strained and insensitive.⁹⁷ Normally when we observe the world, we see some mixture of lightness and darkness, and so the retina finds itself "zu gleicher Zeit in verschiedenen, ja in entgegengesetzten Zuständen"⁹⁸ as it complements the varying degrees of light and dark in its field of vision. For Goethe, this contrarian activity of the retina is essential because it exhibits the same "lebendiges Wechselwirken"⁹⁹ that structures nature as a whole.

⁹⁴ Goethe, *Zur Farbenlehre*, 29.

⁹⁵ Goethe, *Zur Farbenlehre*, 28.

⁹⁶ Goethe, *Zur Farbenlehre*, 28.

⁹⁷ Goethe, *Zur Farbenlehre*, 28.

⁹⁸ Goethe, *Zur Farbenlehre*, 29.

⁹⁹ Goethe, *Zur Farbenlehre*, 27.

The “Wechselwirken” of vision and the way it enacts nature’s drive to complete itself and to function at all times as a harmonious whole becomes clearer when Goethe’s discussion advances from the eye’s reaction to darkness and light to its response to specific colors. Though rarely noticeable in the course of daily life, in the right conditions these responses appear as afterimages. Each time we see an afterimage, according to the Goethean “Wechselwirken,” what we actually experience is the overarching harmony of the color wheel—and, through it, of nature as a whole. His most famous discussion of an afterimage blends the retina’s pleasure in perceiving colors and producing their opposites (“durch die es mit der äußern Welt verbunden und zum Ganzen wird”¹⁰⁰) with his own pleasure in observing an attractive barmaid:

Als ich gegen Abend in ein Wirtshaus eintrat und ein wohgewachsenes Mädchen mit blendendweißem Gesicht, schwarzen Haaren und einem scharlachroten Mieder zu mir ins Zimmer trat, blickte ich sie, die in einiger Entfernung vor mir stand, in der Halbdämmerung scharf an. Indem sie sich nun darauf hinwegbewegte, sah ich auf der mir entgegenden weißen Wand ein schwarzes Gesicht, mit einem hellen Schein umgeben, und die übrige Bekleidung der völligen deutlichen Figur erschien von einem schönen Meergrün.¹⁰¹

At dusk, when Goethe tells us that the retina is at its most relaxed—neither seeking out nor overwhelmed by light—the image of the girl’s pale face, dark hair, and scarlet bodice impresses itself upon Goethe’s receptive eye. The next moment, however, shows not only the passivity of the retina’s perception, but its (re-)activity. Turning his gaze to a white wall after the woman recedes from view, it becomes clear that his eyes, in response to these external impressions, have complemented each of the girl’s colors with their opposites: where the retina saw light, it countered with dark; where it perceived dark, it produced light; and where there was red, it made green. Dark face, bright hair, and sea-green dress, what Goethe sees, against the blank wall, is

¹⁰⁰ Goethe, *Zur Farbenlehre*, 28.

¹⁰¹ Goethe, *Zur Farbenlehre*, 41.

the girl's "after image." And with the green of her dress, the retina's counter-reactions to light and dark become fully legible not as a mere opposition, but as a complement and completion. For, just as with light and dark, each of the six colors on Goethe's color wheel "demands" its opposite: "So fordert Gelb das Violette, Orange das Blaue, Purpur das Grüne, und umgekehrt."¹⁰² After images, Goethe explains, "sind von der größten Wichtigkeit" because "Das Auge verlangt dabei ganz eigentlich Totalität und *schließt in sich selbst den Farbenkreis ab*."¹⁰³ Driven by nature's demand for wholeness, Goethe's eye produced the complement of what it perceived. In doing so, it united the internal (the retina) and the external (the object of observation) into the single whole of the color wheel. Color—as the appearance of nature—and nature—which reveals itself in color—alike make a totality that is, thanks to its constitutive oppositions, ultimately harmonious.

1.2 The Colors of Time

Afterimages eventually fade, however, and Goethe is as attentive to their disappearance as he is to their appearance. In the outside world, of course, certain colors do change over time. The fabric of the barmaid's dress could fade, for instance, and Goethe acknowledges such external mutability in sections in the *Farbenlehre* on "chemical" and "physical" colors, which follow his discussion of "physiological" ones. But physiological colors are important not only for showing the active involvement of the eye in co-creating its visual environment, but also for illustrating the evolving, inherently temporal nature of that environment. Everywhere the eye looks, as Goethe's discussion of the retina's complementary disposition showed, it strives "nach

¹⁰² Goethe, *Zur Farbenlehre*, 40.

¹⁰³ Goethe, *Zur Farbenlehre*, 45, emphasis added.

einem Ganzen”—yet it does so not only “in der Gleichzeitigkeit,” as his example of the barmaid’s after image demonstrates, but over time, “in der Sukzession.”¹⁰⁴ Goethe, as Peter Matussek sums up, is “einer der wichtigsten Zeugen und zugleich konstruktiver Kritiker der Verzeitlichung der Natur,”¹⁰⁵ and Goethe’s nature of color is, accordingly, constantly and necessarily changing. Indeed, it is not in spite of that constant change that nature and color establish their wholeness and build their harmony, but through it.

Goethe begins his treatment of vision’s temporal nature, like his opening discussion of nature’s drive to wholeness through complementarity, with a “farblores Bild.”¹⁰⁶ As we know from the principle of complementarity, if a white piece of paper is brightly illuminated within an otherwise dimmed room, it will create “einen starken dauernden Eindruck” from which extreme the eye will attempt to regain equilibrium.¹⁰⁷ As Goethe observed, however, this process—“das Abklingen” of the first impression—“ist von einer Farbenerscheinung begleitet.”¹⁰⁸ Looking first at the bright paper and then into a portion of the darkened room,

so wird man eine runde Erscheinung vor sich schweben sehen. Die Mitte des Kreises wird man hell, farblos, einigermaßen gelb sehen, der Rand aber wird sogleich purpurfarbe erscheinen.

Es dauert eine Zeit lang, bis diese Purpurfarbe von außen herein den ganzen Kreis zudeckt, und endlich den hellen Mittelpunkt völlig vertreibt. Kaum erscheint aber das ganze Rund purpurfarben, so fängt der Rand an blau zu werden, das Blaue verdrängt nach und nach hereinwärts den Purpur...¹⁰⁹

¹⁰⁴ Goethe, *Zur Farbenlehre*, 35.

¹⁰⁵ Peter Matussek, “Transformationen der Naturgeschichte: Thema und Kompositionsprinzip,” in *Goethe und die Verzeitlichung der Natur*, ed. Peter Matussek (München: C. H. Beck, 1998), 7–14. <http://peter-matussek.de/Pub/A_21.pdf>, accessed 1 November 2022.

¹⁰⁶ Goethe, *Zur Farbenlehre*, 36.

¹⁰⁷ Goethe, *Zur Farbenlehre*, 36.

¹⁰⁸ Goethe, *Zur Farbenlehre*, 36.

¹⁰⁹ Goethe, *Zur Farbenlehre*, 37.

and so on, until the eye stops color the paper's afterimage but only projects it, colorlessly, before eventually ceasing to produce an image of the paper at all. Goethe noted that the colors that the retina produces also obey the rules of complementarity we saw above: viewing the paper's after image against a darker background, as described above, it appears with a bright light-yellow center with an encroaching edge of red, followed by blue; but against a lighter background, the retina produces a dark center that is ringed first by green—red's opposite—and then by a “dirty yellow”—the opposite of blue—before, as in the first example, becoming colorless and eventually disappearing.

In addition to noting the colors, however, Goethe recorded how many seconds each successive stage of the retina's response lasted: “Auf das blendende Bild hatte ich fünf Sekunden gesehen...nach dreizehn Sekunden erschien es ganz purpurfarben. Nun verging wieder neun und zwanzig Sekunden, bis das Ganze blau erschien, und acht und vierzig, bis es mir farblos vorschwebte.”¹¹⁰ Time becomes “an inescapable component of observation”¹¹¹ and an integral medium of natural harmony. Indeed, it is in *time*, rather than hue, complementarity, or perception, that Goethe locates and describes certain “pathological” colors. Although perceptual problems exist as well— as with those who experience “Lichtfunken und Kugeln im Augen”¹¹² during the pain of an earache—Goethe locates numerous aberrations from the visual norm not in the appearance of certain colors, but in their failure to disappear. Those with weak eyes, for instance, find that afterimages last longer “und man kann die Wirkung als eine Art von Paralyse ansehen.”¹¹³ Unable to bring itself back into harmony with external conditions, the weak retina

¹¹⁰ Goethe, *Zur Farbenlehre*, 37.

¹¹¹ Crary, *Techniques of the Observer*, 98. See also Goethe und die Verzeitlichung der Natur.

¹¹² Goethe, *Zur Farbenlehre*, 59.

¹¹³ Goethe, *Zur Farbenlehre*, 60.

maintains its reactions for “eine lange Zeit.”¹¹⁴ In Goethe’s observations, then, color is as color becomes—and vision, too, becomes morphological. Just like the growth of a plant in nature, color’s appearance in the eye relies on “einer mitvollziehenden Anschauung,”¹¹⁵ and it is time in which the mutually constitutive interactions across “inner” and “outer” realms of visibility take place. His words from *Die Metamorphose der Pflanzen* would be equally at home in the *Farbenlehre*: “Werdend betrachte sie nun,” “Wende nun [...] den Blick,” and “Immer staunst du aufs neue.”¹¹⁶ Rather than beginning incomplete and requiring a stretch of otherwise empty time to reach wholeness, Goethe’s nature of color—that is to say, color and all the interacting elements that give rise to it, including the observing subject—exists only insofar as its processes of action and reaction are constantly unfolding.

Just as color “becomes” in the course of its temporal perception, so—in Goethe’s thought—does the perceiver transform with their observations. As he articulated in a later essay, “Der Mensch kennt nur sich selbst, insofern er die Welt kennt, die er nur in sich und sich nur in ihr gewahr wird. Jeder neue Gegenstand, wohl beschaut, schließt ein neues Organ in uns auf.”¹¹⁷ Every new object, well-perceived, opens—at least metaphorically—a new organ of perception in the observer. In this way, the “inner” and “outer” realms that Goethean color theory intertwines (or collapses) expands beyond what I have already discussed regarding the “single surface of affect” created by the retina and the light or dark of the world.¹¹⁸ Here, Goethe includes not just light and dark but whole objects, incorporating both “die Welt” and “der Mensch” into the

¹¹⁴ Goethe, *Zur Farbenlehre*, 61.

¹¹⁵ Matussek, “Formen der Verzeitlichung: Der Wandel des Faustschen Naturbildes und seine historischen Hintergründe,” in *Goethe und die Verzeitlichung der Natur*, 202–233; PDF p. 35. <http://peter-matussek.de/Pub/A_22.pdf>, accessed 1 November 2022.

¹¹⁶ Goethe, quoted in Matussek, “Formen der Verzeitlichung,” PDF p. 35.

¹¹⁷ Johann Wolfgang von Goethe, “Bedeutende Fördernis durch ein einziges geistreiches Wort” [1823], *Sämtliche Werke*, 12:306–309, 306.

¹¹⁸ Crary, *Techniques of the Observer*, 71.

“single surface” of entangled, ever-appearing color. As Goethe articulated in his 1827

“Epirrhema”:

Nichts ist drinnen, nichts ist draußen:
Denn was innen das ist außen.
So ergreift ohne Säumnis
Heilig öffentlich Geheimnis.

Freuet euch des wahren Scheins.¹¹⁹

Not only does Goethe confound what in the Newtonian worldview were stable realms of “inner” perception and “outer” appearance, he elevates the plainly visible world over any invisible essence. In this entangled, phenomenal world, observer merges with observed as part of the *Farbenkreis*, together giving rise to what is seen, which is also what is true: “Freuet euch des wahren Scheins.”¹²⁰

2 Macrocosm: Coloring Uexküll’s *Umwelt*

The fundamental veracity and scientific primacy of temporal, embodied, and entangled perception that Goethe unfolded over the *Farbenlehre*’s many sections is what Jakob von Uexküll would expand, a hundred years later, into a rigorous theory of environment. Uexküll noted that “seit Goethe...wissen wir, daß die Farben ihren eigenen Gesetzen folgen, die durchaus anders sind als die physikalischen Gesetze der Ätherwellen...Im Gegensatz zur linear gebauten Ätherwellenskala bildet das Farbenband [that is, the band of light perceived by human eyes] einen in sich geschlossenen Kreis.”¹²¹ Uexküll’s *Umwelten* follow similarly subjective rules, and

¹¹⁹ Quoted in Walter Heitler, “Goethean Science,” in *Goethe’s Way of Science*, 55–69, 58.

¹²⁰ Indeed, visibility altogether—which for Goethe, is first and foremost the appearance of *color*—is a delight in and of itself: “Die Menschen empfanden im Allgemeinen eine große Freude an der Farbe” (*Zur Farbenlehre*, 229).

¹²¹ Uexküll, *Bedeutungslehre*, 124.

his diagrams take on a similarly “in sich geschlossenen” forms to Goethe’s *Farbenkreis*. Every Uexküllian “soap bubble”—that is, every *Umwelt*—reveals a whole world of “wahrer Schein,” for, real though the world beyond its little sphere may be, only what it encompasses has any meaning, and therefore any presence, for the *Umwelt*’s resident-creator. Uexküll’s meadow of bubbles, with its myriad overlaps and differences, is a dizzying view of nature. Goethe’s color theory encompassed only human observers, but in Uexküll’s meadow, there are numerous organisms, and therefore numerous interlocking environments, all, as I outline in this section, structurally modeled on Goethean color.

Just as Goethe’s *Farbenlehre* transforms “Wirklichkeit” into “wahrgenommene Wirklichkeit,”¹²² Uexküll’s notion of *Umwelt* is founded on subjective perception. He writes: “Wer die Existenz subjektiven Wirklichkeiten leugnet, hat die Grundlagen seiner eigenen Umwelt nicht erkannt.”¹²³ Rather than a single, stable, and uniform external world, Uexküll’s “nature” comprises innumerable individual *Umwelten*.¹²⁴ An *Umwelt*—literally “around-world”—is simply the world as it is constituted by a particular subject’s capacities for perception and action. *Umwelt* has become the vernacular German word for what we in English call “the environment,” with a similar sense of encircling in the word’s root. But even in Uexküll’s lifetime, he was forced to resign himself to a general disregard of that root meaning, and see *Umwelt* become another general word for nature. For Uexküll, however, there can be no universal environment since “Einen von den Subjekten unabhängigen Raum gibt es gar nicht.”¹²⁵ Instead, an *Umwelt* is the total “system of distinctions by which [a given] species orients itself

¹²² Strowick, *Gespenster des Realismus*, 8.

¹²³ Uexküll, *Streifzüge*, 93

¹²⁴ Uexküll, *Bedeutungslehre*, 122.

¹²⁵ Uexküll, *Streifzüge*, 46.

functionally in *its* world.”¹²⁶ Each subject within a species constructs its *Umwelt* through what Uexküll, echoing Goethe’s *Farbenkreis*, a “Funktionskreis”: a circuit of perception and action (*Merken und Wirken*) through which external stimuli are perceived, and in relation or response to which the subject acts. Thus the *Funktionskreis* connects the realm encompassed by an organism’s perceptual capacities—its *Merkwelt*—with the realm accessible to its actions—its *Wirkungswelt*. Together, the *Merkwelt* and the *Wirkungswelt* make up the organism’s *Außenwelt*, which is in turn complemented by the organism’s *Innenwelt* (fig. 1).

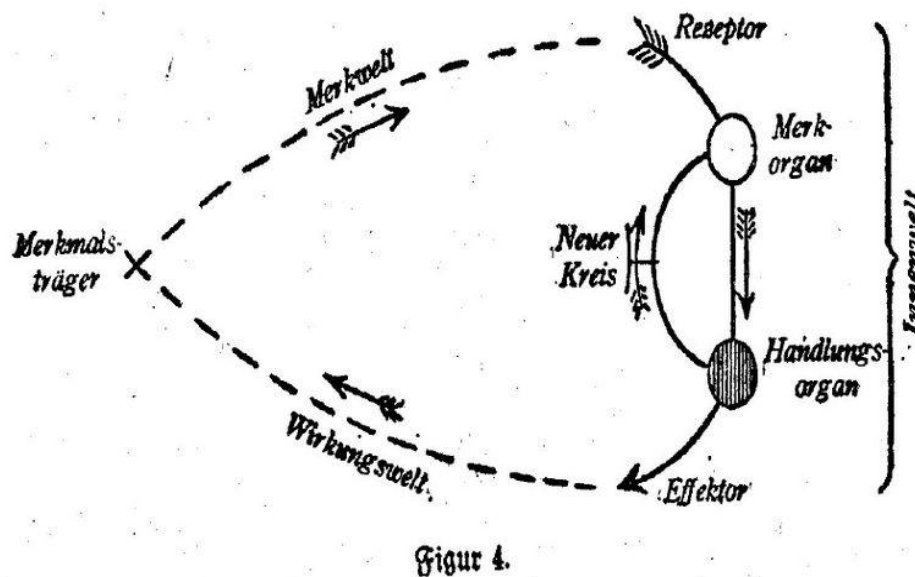


Figure 1. The Funktionskreis¹²⁷

Each Uexküllian *Umwelt* makes a harmonious whole, and it does so through a similar logic of complementarity as Goethe’s *Farbenkreis*. “Jede Umwelt bildet eine in sich geschlossene Einheit”¹²⁸ in which stimuli from the *Umwelt* are perceived because they find their

¹²⁶ Joseph D. O’Neil, “Translator’s Introduction,” Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans*, trans. Joseph D. O’Neil (Minneapolis: University of Minnesota Press, 2010), 36.

¹²⁷ Uexküll, *Theoretische Biologie*, 117.

¹²⁸ Uexküll, *Bedeutungslehre*, 109.

“Komplement” in the *Innenwelt*. Thus we can understand the *-haft* in Uexküll’s Goethean couplet (*Wär’ nicht die Sonne augenhaft / An keinem Himmel könnte sie erstrahlen*) anew: while Goethe’s exploration of subjective colors led him to posit an “inner light” within the eye, corresponding to the outer light of the sun, Uexküll, modifies the similarity slightly, making the sun eye-like insofar as it finds its “complement” in the organ that senses it; and, in sensing it, that organ makes the sun what it is—to that particular perceiving subject. A creature lacking eyes does not live in an *Umwelt* in which it matters that the sun shines in the sky (although it may still sense light, as in, for instance, Uexküll’s famous discussion of the tick¹²⁹); for that organism, neither “sun” nor “sky” need exist, and so they simply don’t. Figure 1, from Uexküll’s *Theoretische Biologie*, shows the structure of the *Umwelt* in relation to a single object of perception, or *Merkmalsträger*. Through its complementarity with the *Merk-* and *Handlungsorganen* of the organism, this *Merkmalsträger* helps generate that organism’s *Merk-* and *Wirkwelten*. Complementary to the outer *Umwelt* is the organism’s *Innenwelt*, which obtains in the biological matter and nervous activity that connects the organs of perception to those of action—we can understand our own, human *Innenwelten* simply as the brain and nervous system. Similar to how the appearance of color, for Goethe, completes the color wheel, thanks to retina’s generation of complementary colors, the components of Uexküllian perception create a unified *Umwelt* through the manifold complements between *Merken* and *Wirken*, *Innenwelt* and *Außenwelt*. Uexküll emphasizes that the object of our attention ought to be not individual elements (or “notes”) of an environment but rather the *relations* between or among those elements. His diagram below (fig. 2) provides a slightly expanded view from the single

¹²⁹ See the opening pages of Uexküll’s *Streifzüge*; also chapters 10 and 11 in Giorgio Agamben, *The Open: Man and Animal*, trans. Kevin Atell (Stanford: Stanford University Press, 2004).

Merkmalsträger shown above. It maps multiple perceptions (A and B) reaching the organism through its *Merkorgan* (M), along with multiple actions (E and E₁) emerging from its *Handlungsorgan* (H). These are then “stored” in the organism’s *Steuerorgan* (St), that is, its *Innenwelt*. Even with just two objects of action and perception, a system of interchange is established among *Merken*, *Handeln*, and *Steuern*, and the “soap bubble” *Umwelt* takes shape around the organism.

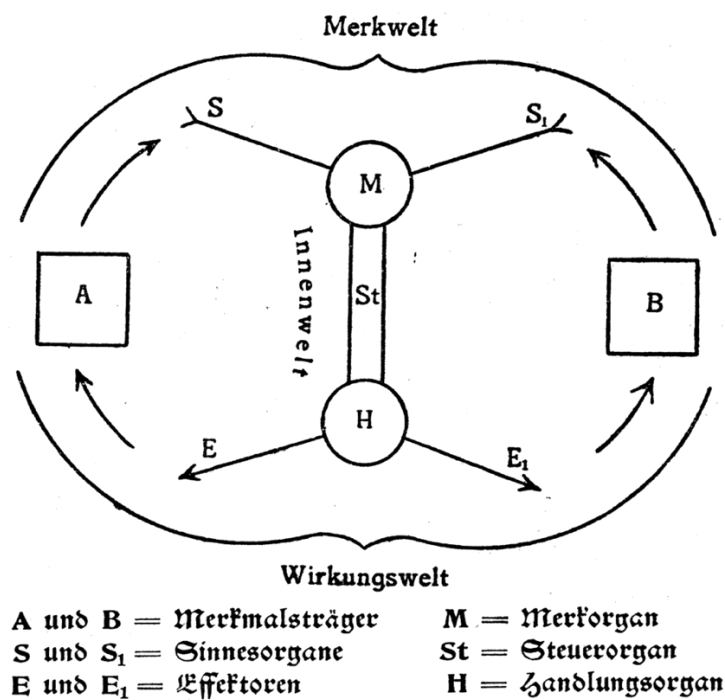


Abbildung 4.

Figure 2. The soap bubble¹³⁰

Like the shifting colors of Goethean afterimages, individual *Umwelten*, according to Uexküll, are formed and reformed across space and time through the interactions of the *Merkwelt*, the *Wirkwelt*, and the *Innenwelt*. Accordingly, the identity or significance of a single

¹³⁰ Jakob von Uexküll, *Biologische Briefe an eine Dame* (Berlin: Paetel, 1920), 58. Image from Katja Kynast, *Bilder der Umwelttheorie. Fotografien, Zeichnungen und Schemata bei Jakob von Uexküll* (Humboldt-Universität zu Berlin, 2021), 226.

object may vary across *Merkwelten*. Uexküll calls these *Merkmalsträger*, which change relative to the identity of their perceiving subjects and even relative to the subject's momentary moods or needs, "Töne." In the "rational" *Umwelt* of a forester, for instance, we might say that an oak tree registers with a "use-tone" as "einige Klawter Holz"; in the "magischen Umwelt eines kleinen Mädchens, dessen Wald noch von Gnomen und Kobolden bevölkert ist," the tree's swirling bark resembles a frightening face, and registers a "danger-tone"; for the fox, on the other hand, whose hole is nestled among its sturdy roots, it has a "Schutzton"; for the owl, the tree likewise has a *Schutzton*, but its canopy is significant, not its roots; for the squirrel "gewinnt die Eiche mit ihren reichen Verzweigungen, die bequeme Sprungbretter darbieten, einen Kletterton"; for a bird, its branches—which support nests—have a "Tragton"; and so on.¹³¹ Even for a single creature, the same object can take on different "tones" over time. Echoing Goethe, who emphasized how much a given perception depends not just on "Licht, Luft, Witterung, Körpern, Behandlung," and so on, but also the "Stimmung des Organs," (ie, the "mood" of the eye) and the "Geistesstimmung" (the mood) of the observer,¹³² Uexküll writes that the *Ton* of an object may change, "je nach der Stimmung" in which an organism finds itself.¹³³ For the bark beetle, for instance, who shelters in and eats the oak bark, the tree might take on "bald einen Schutzton,

¹³¹ Uexküll, *Streifzüge*, 94–99.

¹³² Johann Wolfgang von Goethe, "Erfahrung und Wissenschaft" in *Goethes Werke* (München: C. H. Beck, 1981) 13:24, emphasis added. I am aware that this remark could be seen as out of date by the time the *Farbenlehre* emerges. Of course, Goethe's writings on color evolve over the 40-odd years of between his *Beiträge zur Optik* (1791) his late writings under the heading "Chromatik" (itself a significant shift in terminology). But, by his own account, his anti-Newtonian, anti-mechanistic view of nature remained stable precisely insofar as it evolved. In a later (though undated) text he writes: "Mir aber [as opposed to Newton] können sie nichts zerstören, denn ich habe nicht gebaut; aber gesäet habe ich und so weit in die Welt hinaus, daß sie die Saat nicht verderben können und wenn sie noch so viel Unkraut zwischen den Weizen säen" (*Sämtliche Werke*, 12:560). The metaphor of sowing both naturalizes his scientific research ("rooting" his ideas) and renders it flexible, capable of the same morphological growth (and cyclical decline and re-emergence) as the seedlings and plants to come, and, indeed, as Haraway attributes to paradigmatic "growing points."

¹³³ Uexküll, *Streifzüge*, 66.

bald einen Wohnungston, bald einen Nahrungston” depending on its needs or disposition of the moment.¹³⁴ The variation of *Umwelt*-tones contributes to the variation of *Umwelt*-harmonies, which contribute to the overall—and longer term—“counterpoint” of the inner and outer worlds that unfolds as the organism progresses through life.

For Uexküll, it makes little sense to talk about a nature independent from *Umwelten*. Goethe, similarly, held that there is no color independent of its perception *Farbenlehre*, and, as I am arguing, Goethe provided an important model for Uexküll. However, in this regard, Uexküll’s natural world is more sophisticated than Goethe’s. Though achieving harmony through innumerable relations both within and beyond the realm of color, Goethe’s nature is nevertheless a single, overrarching whole, and can be aligned with what Uexküll would call an “*Umgebung*”—the total surroundings of a subject, including what lies beyond the purview of their *Umwelt*—or, more broadly still, “*Welt*.” As Georges Canguilhem glosses Uexküll’s vocabulary, “*Umwelt* designates the behavioral milieu that is proper to a given organism; *Umgebung* is the simple geographical environment; and *Welt* is the scientific universe.”¹³⁵ Though *Umgebung* is more local than *Welt*, both words refer to the broader sense of “environment” that we typically understand today as a nature neither bound to nor created by a singular subject—which, in Uexküll’s framework, is impossible for any subject to experience, although the biologist, for instance, does his best to expand his human *Umwelt* to encompass as faithfully as possible the *Umwelten* of other organisms. For all its complexity, Goethe’s is a human nature, centered around a human eye. *Umgebung* and *Welt*, like the Goethean nature of color, are not, therefore, to be confused with the multitude of highly specific and individualized

¹³⁴ Uexküll, *Streifzüge*, 87.

¹³⁵ Georges Canguilhem, “The Living and Its Milieu,” trans. John Savage, *Grey Room* no. 3 (2001): 6–31, 19.

Umwelten, which, already in Uexküll's lifetime, he found to be often misused. In a 1912 essay he concedes:

Es ist ganz vergebliches Bemühen, sich gegen den Sprachgebrauch zu sträuben, auch entsprach das Wort Umwelt nicht genau genug den ihm unterlegten Begriff. Ich will daher an seiner Stelle das Wort 'Merkwelt' setzen und damit andeuten, dass es *für jedes Tier eine besondere Welt gibt*, die sich aus den von ihm aufgenommenen Merkmalen der Aussenwelt zusammensetzt.¹³⁶

While the specific, harmonious, and individually constitutive nature of Goethe's color survives in the structure of Uexküll's *Umwelt*, it is decentered: no longer the universal norm, Goethe's embodied, generative eye (fig. 3) gives rise to just *one* Uexküllian *Merkwelt* among many.



Figure 3. *The Goethean eye*¹³⁷

¹³⁶ Jakob von Uexküll, "Die Merkwelten der Tiere," *Deutsche Revue* (Stuttgart) 37: 349–355, 352. Anne Harrington notes further difficulties of the term: "Before Uexküll, the word *Umwelt* had referred to the milieu or environment and was used primarily in sociological analyses. Uexküll's decision to appropriate a familiar term for a distinctly different biological and epistemological cause would later lead to frequent misunderstandings—especially by the Nazis, who regarded all theories with an environmentalist orientation as Marxist-tainted ideologies" (*Reenchanted Science*, 41).

¹³⁷ Image from Miles W. Jackson, "A Spectrum of Belief: Goethe's 'Republic' versus Newtonian 'Despotism,'" *Social Studies of Science* 24.4 (1994): 673–701, 688.

Just as the harmony of Goethe's color wheel can be observed not just in the almost instantaneous interactions of inner and outer, but also in after images' changes over time, so Uexküllian *Umwelten* emerge as the result of developmental sequences that defy a mechanistic, uni-directional logic and temporality of causation. Indeed, for Uexküll, like for Goethe, time—and the appearances it articulates—is highly important to his fundamentally phenomenological argument. Uexküll frames his vitalistic conception of organism development, from its earliest stages to its most complex and interactive functioning, through the musical metaphor of melody: “Die Tiere und Pflanzen entstehen nach Art einer Melodie,” he writes (crediting Karl Ernst von Bär for the thought); “sie bilden nicht bloß *Einheiten im Raum* wie die Maschinen, sie sind auch *Einheiten in der Zeit*.”¹³⁸ Thus while Uexküll admitted freely that the biological “*Funktionieren*” of an organism is “durchaus mechanisch begreiflich,” he was unusual, in a largely mechanistic intellectual landscape, for his insistence that organisms’ “*entstehen bleibt ein ungelöstes*”—and “übermechanisches”—“Problem”¹³⁹ that demanded likewise “übermechanische” models of explanation. It is worth quoting his discussion at length:

Für unseren Verstand gibt es in der Zeit nur eine Wirkung vom Vorhergehenden auf das Folgende und nicht umgekehrt. Wenn etwas Derartiges eintrete, daß nämlich das Folgende auf das Vorhergehende wirkte, so würden wir ohne weiteres von einem Wunder reden. Und doch findet derartiges im Protoplasma statt. Nicht eine vorhandene, sondern eine kommende Struktur bestimmt die Leistungen des Protoplasmas in jedem einzennnen Falle der Strukturbildung. Die entstandene Struktur hemmt nur die strukturbildende Tätigkeit des Protoplasms, die noch nicht vorhandene Struktur dagegen leitet die Strukturbildung. In einer Melodie findet eine gegenseitige Beeinflussung zwischen dem ersten und dem letz[t]en Tone statt, und wir dürfen deshalb sagen, der letzte Ton ist zwar nur durch den ersten Ton möglich, aber ebenso ist der erste nur durch den letzten Ton möglich. Ebenso verhält es sich mit der Strukturbildung bei den Tieren und Pflanzen. Das fertige Hühnchen steht zwar in direkter Abhängigkeit von den ersten

¹³⁸ Uexküll, *Umwelt und Innenwelt der Tiere* (Berlin: Julius Springer, 1909), 28.

¹³⁹ Uexküll, *Umwelt und Innenwelt*, 23.

Furchungsvorgängen des Keimes, aber ebenso sind die ersten Keimesfurchen abhängig von der Gestalt des ausgebildeten Hühnchens.

Diese Tatsache ist ein Wunder, nicht im Sinne einer Gesetzlosigkeit, sondern einer unbegreiflichen Gesetzlichkeit¹⁴⁰

By comparing the developmental course of an organism to a melody—rather than framing it in the logic of causation—Uexküll, like Goethe, transforms time into an active, meaningfully-shaping force, rather than a mere empty medium in which the main events unfold. But Uexküll’s time—which encompasses “eine Wirkung vom Vorhergehenden auf das Folgende” but *also* “das Folgende auf das Vorhergehende”—gains a wholeness and potential for completion that, he observes, in “unsere[m] Verstand,” is usually lacking. And it is due to this lack that we perceive the melodic development of an organism as a miracle. In this sense, just as the complementary and harmonious logic of Goethe’s color wheel asserts itself through time, through afterimages, Uexküll bends the normally unidirectional, linear of time course into the same “in sich geschlossene” feedback loop that his diagrams of *Umwelt* show. What he describes here as the “Vorhergehende” and “Folgende” of biological development—legible only as such when we are acquainted with the whole of the “melodic” sequence—is like the mutually determining exchange between “Innenwelt” and “Außenwelt,” except that it happens not in space, but in time.

Although Uexküll everywhere saw this miraculous, ungraspable “melodic” lawfulness governing organism and *Umwelt*-development, a particularly significant and observable “unbegreifliche Gesetzlichkeit” was Hans Driesch’s embryological experiments in the 1880s. Working under Ernst Haeckel, Driesch predicted that the cells of a sea urchin embryo, when separated after the first cell division, would each develop into half a sea urchin. He was surprised

¹⁴⁰ Uexküll, *Umwelt und Innenwelt*, 28.

to find that each separated cell developed into a full sea urchin. As Uexküll summarized later, “Alles Körperliche läßt sich mit dem Messer zerschneiden—eine Melodie aber nicht.”¹⁴¹ Of course, Uexküll expanded Driesch’s holism beyond the organism and into its environment. As Anne Harrington (quoting Heidegger) points out, while Driesch brought the holism of the organism into view, Uexküll was responsible for “the integration of the animal within its environment. This second insight had led in turn to an even more radical understanding of holism ‘whereby [the organism’s] wholeness is not exhausted through the bodily wholeness of the animal, but rather the bodily wholeness is first itself understood on the basis of an original wholeness’” with its environment.¹⁴²

Uexküll’s identification of organismic development as more-than-mechanical miracle, beyond the linear temporal flow of causality, is based in the same commitment to the facts of observation—“*und doch* findet derartiges im Protoplasma statt”—that I have argued he shares with Goethe. Likewise, just as Uexküll’s phenomenally based *Umwelt* shares key elements of its holistic structure and temporality with Goethean color, it also contains and communicates the same sense of wonder, or “Erstaunen,”¹⁴³ that Goethe so prized in the face of what he called an “elementary phenomenon” or *Urphänomen*. For Goethe, once an *Urphänomen* is in view, the general chaos of everyday observations begins “sich...unter allgemeine empirische Rubriken

¹⁴¹ Uexküll, *Bedeutungslehre*, 149. Elsewhere, he writes that: “Cutting the embryo of the sea urchin in half reduced the number of cells to half but did not change the building tune. This was continued by the other half. *This applies to all orchestras. When half the musicians leave, the other half of the orchestra goes on playing the same tune*” (“The new concept of Umwelt: A link between science and the humanities,” trans. Gösta Brunow, *Semiotica* 134.1/4 [2001]: 111–123, 121).

¹⁴² Harrington, *Reenchanted Science*, 53n81.

¹⁴³ Johann Peter Eckermann, *Gespräche mit Goethe in den letzten Jahren seines Lebens*, in Johann Wolfgang von Goethe, *Sämtliche Werke nach Epochen seines Schaffens*, Münchner Ausgabe, ed. Karl Richter (München: Carl Hanser Verlag), 19:288.

bringen [zu] lassen,”¹⁴⁴ and the “highest” and most appropriate response is wonder.¹⁴⁵ The *Urphänomen*, in its “unbegreiflichen Gesetzmäßigkeit,” manifests or exhibits its own theory, and Uexküll’s definition of “Lehre” (as in: *Bedeutungslehre*) aligns his approach with Goethe’s prioritization of these wondrous phenomena: “Unter Lehre ist daher nur eine Verallgemeinerung der Regeln zu verstehen, die wir beim Studium der Komposition der Natur zu entdecken meinen. Daher ist es angezeigt, von einzelnen Beispielen auszugehen und ihre Regeln aufzustellen, um auf diese Weise zu einer Kompositionslehre der Natur zu gelangen.”¹⁴⁶

3 Color and “die tiefsten Fragen des Lebens”

Taking up Uexküll’s (Goethean) emphasis on “einzelnen Beispielen,” I now return my attention to color in particular, this time as it appears as a phenomenon within, rather than at the basis of, Uexküll’s *Umwelt*. Even within an Uexküllian *Umwelt*, color is a significant phenomenon—one of those “individual examples” from which one might, as he suggested, move towards a *Lehre*. Uexküll, as I mentioned above, considered Goethe to have provided the basis for a “Symphonienlehre des Schauens.”¹⁴⁷ I propose, then, that color, as it appears *within* his *Umwelten*, contains the development of this Goethean basis in Uexküll’s work. Despite what he

¹⁴⁴ Goethe, *Zur Farbenlehre*, 74.

¹⁴⁵ Eckermann, *Gespräche mit Goethe*, 288. Eckermann recalls a conversation with Goethe about the *Urphänomen* of color:

Wir sprachen über die Farbenlehre, unter andern über Trinkgläser, deren trübe Figuren gegen das Licht gelb und gegen das dunkle blau erscheinen, und die also die Betrachtung eines Urphänomens gewähren.

Das Höchste, wozu der Mensch gelangen kann, sagte Goethe bei dieser Gelegenheit, ist das Erstaunen; und wenn ihn das Urphänomen in Erstaunen setzt, so sei er zufrieden; ein Höheres kann es ihm nicht gewähren, und ein Weiteres soll er nicht dahinter suchen; hier ist die Grenze. Aber den Menschen ist der Anblick eines Urphänomens gewöhnlich noch nicht genug, sie denken es müsse noch weiter gehen, und sie sind den Kindern ähnlich, die, wenn sie in einen Spiegel geguckt, ihn sogleich umwenden, um zu sehen was auf der anderen Seite ist” (288).

¹⁴⁶ Uexküll, *Bedeutungslehre*, 131, emphasis added.

¹⁴⁷ Uexküll, *Theoretische Biologie*, 30.

considered to be the enormity Goethe's contribution, Uexküll notes that "Goethe gilt bei den Physikern als Dilettant, und deshalb ist seine Lehre auch den meisten Physiologen verdächtig."¹⁴⁸ The neglect of Goethe's color theory as a basis for an environmental understanding of perception is, according to Uexküll, because "Die vielgepriesene menschliche Technik"—mechanistic, Darwinian schools of thought—"hat jeden Sinn für die Natur verloren, ja sie erdreistet sich, die tiefsten Fragen des Lebens wie das Verhältnis vom Mensch zur Gottnatur mit ihrer völlig unzureichenden Mathematik lösen zu wollen."¹⁴⁹ These "deepest questions of life," for Uexküll, are questions not of cause and effect, but of meaning. Indeed, the aim of his work was to free the field of biology from what he saw as the cardinal sin of modern, mechanistic biology: *Bedeutungsblindheit*.¹⁵⁰ "*Der Frage nach der Bedeutung gebührt [...] bei allen Lebewesen der erste Rang,*" he stresses.¹⁵¹ Just as Goethe made color an inherent function of the process of seeing, so Uexküll's goal was "to make biology [...] attached to the process of living itself."¹⁵² In what follows, I situate color as an inherently meaningful phenomenon within

¹⁴⁸ Uexküll, *Theoretische Biologie*, 30.

¹⁴⁹ Uexküll, *Bedeutungslehre*, 146. Uexküll fleshes out his sense of "Gottnatur" in a later essay. Rehearsing the "disenchantment" narrative, he outlines how, between Kepler and Newton (that old enemy) the study of nature shifted from "the perceptual side" to "the functional side," and with this revolution, "God, who until recently had been enthroned in Heaven, [became] invisible" (Uexküll, "The new concept of Umwelt," 114). The consequence of this—and the consequence that Uexküll's *Umweltlehre* and *Bedeutungslehre* work to remedy, is "that scientists began to deal with the world in the way a deaf person deals with a street organ. The turning of the roller, the vibration of the tongues and the aerial waves, these things he can establish—but the tune stays hidden from him" (114). Needless to say, "Gottnatur" is the tune.

Although the mechanists were many, Uexküll is likely referring here to his popular scientific contemporary Ernst Haeckel, whose enthusiasm for Darwinian evolutionary theory extended into a monist conception of the cosmos which he popularized in the late nineteenth and early twentieth centuries. Haeckel published *Gott-Natur (Theophysis): Studien über monistische Religion* in 1914. Uexküll disapproved of what he saw as anthropocentrism and anthropomorphization in Haeckel's work—a disregard, in other words, for the multiplicity of and differences among *Umwelten*. For more on Uexküll's and Haeckel's intellectual and paradigmatic differences, see Malte Herwig, "The unwitting muse: Jakob von Uexküll's theory of Umwelt and twentieth-century literature," *Semiotica* 134.1/4 (2001): 553–592, 569–70. Anne Harrington, on the other side, notes that Haeckel was "less of a consistent reductionist and materialist than his critics would later paint him" (*Reenchanted Science*, 10).

¹⁵⁰ Kull, "Jakob von Uexküll," 2.

¹⁵¹ Uexküll, *Bedeutungslehre*, 115.

¹⁵² Kull, "Jakob von Uexküll," 4.

Uexküllian *Umwelten*—and, accordingly, as a means of accessing those “tiefsten Fragen des Lebens.”

In his *Biologische Briefe an eine Dame*, Uexküll devotes one of the book’s twelve that sections to an explanation of color perception. He provides a diagram to explain the chain of “Verbindungen,” which is to say that give rise to our experience of a colorful visual world (fig. 4). The stages illustrated in the diagram can be broken into two stages. The first is physical: here, “Aether”-waves, that is, the physical “Reiz,” move through the air. The second stage is physiological: the physical waves have a “Wirkung” on the nerves of the eye (in the diagram, the “Transformator”), and so this is the stage of nervous “Erregung.”¹⁵³ The nerves activated at this stage, according to Uexküll, are capable of distinguishing among six “Grundfarben”: black, or the absence of light; red, yellow, green, and blue, like the physical ether-waves; and white, which emerges from the equal combination of any two complementary colors. Clearly, if these were the only two stages of color perception—if color were dependent on physiology alone—we would be incapable of seeing more than these six colors, whereas in fact “wir außerordentlich viele Farben wahrnehmen. Wie löst sich dieser Widerspruch?”¹⁵⁴ For Uexküll, these two phases of color perception make up only half of “Die Beziehungen zwischen Objekt und Subjekt” during color perception.¹⁵⁵

¹⁵³ Uexküll, *Biologische Briefe*, 122.

¹⁵⁴ Uexküll, *Biologische Briefe*, 18.

¹⁵⁵ Uexküll, *Biologische Briefe*, 9.

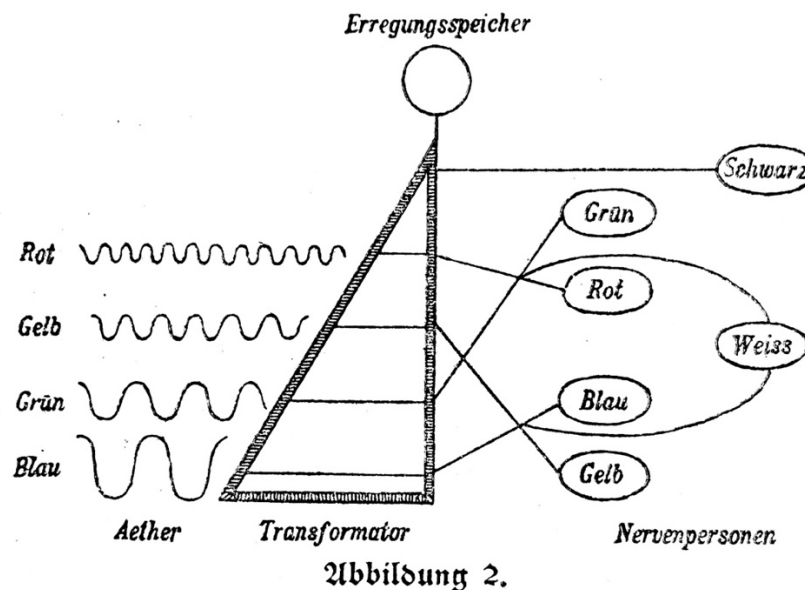


Figure 4. The physical (“Reiz”) and physiological (“Erregung”) stages of color’s appearance¹⁵⁶

The second half of this relationship takes place in the *Innenwelt* of the perceiving subject, that is, in the realm of “Erfahrung,” or psychology.¹⁵⁷ In Uexküll’s consideration, psychology is beyond the reach of materialistic explanations of *Ursache* and *Wirkung*, and he does not attempt to diagram these stages of color’s appearance. Once any of the six retinal “Nervenpersonen” in his diagram have been stimulated, we reach stage three, in which the mind interprets, i.e., renders meaningful, these stimuli as color. Indeed, before that, Uexküll denies that the physical and physiological stimuli even count as colors at all: “physikalische Bewegungen und physiologische Nervenprozesse” they certainly are—“aber keine Farben.”¹⁵⁸ Whereas Goethe locates the appearance of color in physiological interactions, for Uexküll, all colors (besides, perhaps, those whose single *Aetherwelle* is complemented by a single *Nervenperson*) appear first and foremost

¹⁵⁶ Uexküll, *Biologische Briefe*, 17.

¹⁵⁷ Uexküll, *Biologische Briefe*, 122.

¹⁵⁸ Uexküll, *Biologische Briefe*, 21.

in the mind.¹⁵⁹ In Uexküll's definition, "Farben sind [...] die Ichtöne dieser Zellen [unseres Großhirnes] selbst."¹⁶⁰ Perhaps these "soundings" of braincells could be considered as blindly physiological reactions as well, but Uexküll specifies that "Es handelt sich...bei den Farben nicht um körperliche Wirkungen der lebenden Großhirnzellen aufeinander, sondern um *Empfindungsbeziehungen* ihrer Ichtöne."¹⁶¹ The nature of color that any given organism perceives is, according to Uexküll, ultimately a kind of personal concert in the mind, and, according to his emphasis on *Empfindungsbeziehungen*, is not a matter of causation but of sensation, sensibility, and even sense.

Uexküll's cellular concert of *Ichtöne* does a great deal to illuminate our *Innenwelt* as its own totality—intimately related to and reliant on the *Außenwelt*, but just as full and complex, and just as active in forming the outer world as it is in being formed by it. Interestingly, the point in Uexküll's outline of color perception at which he locates its appearance as such—in the symphonic *Empfindungsbeziehungen* of braincells' *Ichtöne*—is also the very point at which color itself becomes most abstract. Although it is often possible to retrace, intellectually, which external colors combined to produce the particular shade of a color before us (to write the score of "Dreiklänge" and "Zweiklänge" of *Aetherwellen*), it is difficult to "see" the *Glockenspiel* of our brain cells' *Ichtöne* as such, or for the idea of brain-cell *Glockenspiel* to "clarify" or "articulate" what is before us. While color can certainly be *understood* as a cellular concert, "das

¹⁵⁹ These colors are, however, highly abstract: Although it is often possible to retrace which external colors combined to produce the particular shade before (to write the score of "Dreiklänge" and "Zweiklänge" of *Aetherwellen*), it is difficult to "see" the *Glockenspiel* of our brain cells' *Ichtöne* as such, or for the idea of brain-cell *Glockenspiel* to "clarify" or "articulate" what is before us (*Biologische Briefe*, 18). While color can certainly be *understood* as a cellular concert, "das Werk unserer Gemütsorganisation," what is before us is still "just" a color (18).

¹⁶⁰ Uexküll, *Bedeutungslehre*, 124.

¹⁶¹ Uexküll, *Bedeutungslehre*, 125.

Werk unserer Gemütsorganisation,”¹⁶² colors themselves—the actual appearances of “sap green,” “gallstone yellow,” or “olive brown”¹⁶³—escape at this moment the careful logic of their own emergence.¹⁶⁴ It not until the fourth stage of color perception that the colors themselves, in what Larry Harding has so aptly called their “brute factuality,”¹⁶⁵ reappear.

Whereas the first two stages of color perception followed only “jedem mechanischen Vorgang, der die Wirkung von Objekt zu Objekt darstellt”¹⁶⁶ as they transferred an external stimulus from the *Außenwelt* progressively further into the organism’s *Innenwelt*, the fourth and final stage of color perception, after the concert of brain-cellular *Ichtöne*, reverses direction. This

¹⁶² Uexküll, *Biologische Briefe*, 18.

¹⁶³ Patrick Syme, *Werner’s Nomenclature of Colours* (Edinburgh: William Blackwood, 1821, reprinted by The Trustees of the National History Museum, London, 2018), 37, 41, 50.

¹⁶⁴ This breakdown is also evident in the strain which Uexküll’s metaphor of music here evinces. Although a cellular concert of *Empfindungsbeziehungen* among cellular *Ichtöne* is in some abstract sense accessible to the imagination, it is not out of place to wonder why, in such instances of mixed colors—which is to say, *most* colors—Uexküll remained so committed to musical language. Already in 1857, Helmholtz had explicitly noted the gulf between visual and aural perception. Unlike the ear,

das Auge kann zusammengesetzte Lichtwellensysteme, d. h. zusammengesetzte Farben nicht von einander scheiden; es empfindet sie in einer nicht aufzulösenden, einfachen Empfindung, der einer Mischfarbe. Es ist ihm deshalb gleichgültig, ob in der Mischfarbe Grundfarben von einfachen oder nicht einfachen Schwingungsverhältnissen vereinigt sind. Es hat keine Harmonie in dem Sinne wie das Ohr; es hat keine Musik...” (Hermann von Helmholtz, “Ueber die physiologischen Ursachen der musikalischen Harmonie” (1857 lecture in Bonn), *Project Gutenberg*, n.p. <<https://www.projekt-gutenberg.org/helmholtz/musik/musik.html>>, accessed 18 March 2023).

Uexküll was certainly acquainted with Helmholtz’s work, often citing him as “informative to his own observations.” Perhaps a reason for his divergence from Helmholtz in this instance is his general disagreement with Helmholtz regarding scientific method and scope. While Uexküll “repudiates the notion that we will ever get to a reality outside of subjective perceptions...Helmholtz believed this reality behind appearances to be ‘the physical laws of the universe,’” which Uexküll was convinced could only be “tenable as an article of faith, not of science” (Brett Buchanan, *Onto-Ethologies: The Animal Environments of Uexküll, Heidegger, Merleau-Ponty, and Deleuze* [Albany: State University of New York Press, 2008], 13–14). A further reason for Uexküll’s commitment to the musical metaphor may be traced through Uexküll’s friendship with the Wagner family. Richard Wagner’s daughter Eva was the wife of Uexküll’s close friend Houston Stewart Chamberlain, the philosopher whose ethnonationalism, antisemitism, and support of so-called “scientific racism” was so foundational to Nazi ideology. Wagner’s hugely influential idea of the *Gesamtkunstwerk*—legible as a kind of stage ecology—makes music a highly convenient and socially recognizable metaphor. For connections between Wagner’s thought and ecology, see Kirsten Sarah Paige’s *Richard Wagner’s Political Ecology*, Ph.D. Diss., University of California, Berkeley, 2018.

¹⁶⁵ Larry Harding, *Color for Philosophers: Unweaving the Rainbow* (Indianapolis: Hackett, 1988), xl.

¹⁶⁶ Uexküll, *Bedeutungslehre*, 130.

last stage, indeed, “steht in direkten Widerspruch”¹⁶⁷ to the first two: here, the mind projects that cellular concert, *as color*, back onto the object from which the *Aetherwellen* originated. Uexküll writes: “Das Subjekt empfängt Reize, die es mit Farbenempfindungen beantwortet. Die Farbenempfindungen verlegt es ohne weiteres nach außen.”¹⁶⁸ As the physical world speaks to the subject, so the subject “answers,” and this conversation is what the visual world is made of. “Eine jede Empfindung hat [...] den Charakter eines Befehls. ‘Du sollst blau sein,’ sagen wir zum Gegenstand der Außenwelt, sobald die entsprechenden, von ihm ausgehenden Ätherwellen unser Auge erreicht, und die von diesem erzeugte Erregung unsere Nervenperson getroffen hat.”¹⁶⁹ As necessarily as one color in the Goethean *Farbenkreis* calls forth its opposite, the Uexküllian subject “answers” the physical *Aetherwellen* of her environment with her “sense of color.” In this conversation, we can imagine all stimuli reaching out to a subject and asking them “what am I? Where, when, why am I?” And those stimuli for which there are “complements” in the eye subject receive an answer and become colorful.

Uexküll’s discussion—from physical *Aetherwellen* and physiological stimuli to the concerts of *Ichtöne* the psychological realm and finally out again as subject’s “sense” of color around them—provides a detailed account of color as the visual “Verbindungsglied” that unites observers and environments.¹⁷⁰ As a point of environmental “harmony,” color’s appearance becomes, for Uexküll, intrinsically and fundamentally meaningful. “An Stelle der Harmonie in der musikalischen Partitur,” he explains in his *Bedeutungslehre*, “tritt die Bedeutung in der Naturpartitur, die als Verbindungsglied dient, um zwei Naturfaktoren miteinander zu

¹⁶⁷ Uexküll, *Bedeutungslehre*, 130.

¹⁶⁸ Uexküll, *Biologische Briefe*, 21.

¹⁶⁹ Uexküll, *Biologische Briefe*, 123.

¹⁷⁰ Uexküll, *Bedeutungslehre*, 131.

vereinigen.”¹⁷¹ The interaction between complementary elements, which Uexküll so often refers to as “harmony” in order to denote their ultimately forming a unified whole, is here defined as “meaning.” What for Goethe were complementary colors in the *Farbenkreis* are for Uexküll *Innenwelten* and *Umwelten*, and all become alike meaningful. Even the development of individual organisms, which I discussed above through Uexküll’s metaphor of “melody,” become legible as meaning: “Man kann von einer Wachstums*melodie* oder einem Wachstums*befehl* sprechen, der die Ichtöne der Keimzellen beherrscht.”¹⁷² The two sea urchin embryo cells of Driesch’s experiment, regardless whether they are divided or not, obey a melody or a “command” that pulls them on in accordance with their *Bauplan*, and melody (a metaphor of meaning) becomes teleology (a goal of meaning). Thus an organism develops in accordance with its ultimate purpose, which is to say, with the goal of having a certain set of meaning-receptors and meaning-creators rather than others—flat teeth, for a vegetarian animal, or sharp incisors, for a carnivorous one, for instance. Just as an organism develops through and as meaning, so it causes its *Umwelt* to emerge through and as meaning: when a subject perceives anything in their *Umwelt*, it is because they already know how to turn it into something they can respond to. A bark beetle sees the oak tree, and what we before called *Töne*—a shelter-tone, a food-tone—we can now understand as meanings, or *Befehle*—“be shelter,” “be food.” By re-situating the meaning of “meaning” as complementary biological interaction, Uexküll glides from metaphors of tones, harmonies, and symphonies to a mutually responsive and intertwined biological world that is not metaphorically, but actually and inherently meaningful.

¹⁷¹ Uexküll, *Bedeutungslehre*, 131.

¹⁷² Uexküll, *Bedeutungslehre*, 115, emphasis added.

Uexküll hoped that, by positioning meaning as a function of biological life, his *Bedeutungslehre* would serve as “Ein Bindeglied zwischen Natur und Kulturwissenschaften.”¹⁷³ Importantly, Uexküll does not argue that this *Bindeglied* of *Bedeutung* ultimately means that “semiotic and symbolic processes and forms are reducible to something biological, as do some sociobiological theories that say society is ultimately nothing but biology. Rather, it is the other way round: biology and vital processes are shown to be semioses.”¹⁷⁴ In striving to overcome biology’s *Bedeutungsblindheit*, Uexküll aims to establish a science of life that addresses “die tiefsten Fragen des Lebens”—those regarding “das Verhältnis vom Mensch zur Gottnatur.” Even if this science cannot and ought not treat these questions in every field in which they arise, it should be capacious enough to accommodate them, and rigorous enough to ground them. Although he calls the “Innenwelt”—as that which organizes the perceived *Umwelt*—“die unverfälschte Frucht objektiver Forschung,” he also warns that it “soll nicht durch psychologische Spekulationen getrübt werden” and that “diese Innenwelt mit seelischen Qualitäten auszumalen und aufzuputzen...ist keine Beschäftigung ernster Forscher.”¹⁷⁵ On the one hand, Uexküll’s disdain for populating the *Innenwelt* with “soul-like qualities” is a warning against anthropocentrism. On the other hand, however, when the *Naturwissenschaften* and the *Geistes-* and *Kulturwissenschaften* lie along the same continuum of meaningful life, some of those “tiefsten Fragen des Lebens” will inevitably touch on “seelische Qualitäten,” if not of other creatures then at least our own. To pursue the relation between humans and nature—that “deepest question of life”—we can thus follow color’s meaning beyond Uexküll’s biological

¹⁷³ Uexküll, “Die neue Umweltlehre: Ein Bindeglied zwischen Natur- und Kulturwissenschaften,” *Die Erziehung* 13.5, 185–99 (otherwise cited here in Gösta Brunow’s translation as “The new concept of Umwelt”).

¹⁷⁴ Eero Tarasti, *Sein und Schein: Explorations in Existential Semiotics* (Berlin: Walter de Gruyter, 2015), 15.

¹⁷⁵ Uexküll, *Umwelt und Innenwelt*, 6.

purview and into more vernacular senses of *Bedeutung*; from the relations among cellular *Ichtöne* to the relation between humans and nature; and from the *Naturwissenschaften* to the *Geisteswissenschaften* and to art.

At this juncture, Uexküll's *Bedeutungslehre* forms, retroactively, the microcosmic foundation for Goethe's discussion of the "Sinnlich-Sittliche Wirkung der Farbe." In this section of his *Farbenlehre*, as well as in his illustrations of the *Farbenkreis* (fig. 5), Goethe expands the reach of his color theory beyond the physiological, chemical, and physical into the social and moral realms. His intention in that section is to make the color theory useful to art, where his own interest in color began. Far from a treatise on pigment mixing, however, this section is built around the direct connection that Goethe introduces between the eyes and the "Gemüt" (a difficult to translate word that encompasses the English "mind," "disposition," "temperament," and even "soul"). He writes:

Da die Farbe in der Reihe der uranfänglichen Naturerscheinungen einen so hohen Platz behauptet, indem sie den ihr angewiesenen einfachen Kreis mit entschiedener Mannigfaltigkeit ausfüllt; so werden wir uns nicht wundern, wenn wir erfahren, daß sie auf den Sinn des Auges, dem sie vorzüglich zugeeignet ist, und durch dessen Vermittelung, auf das Gemüt [...] eine entschiedene und bedeutende Wirkung hervorbringe, die sich unmittelbar an das Sittliche anschließt."¹⁷⁶

Though color is primarily suited for the eye, the eye, according to Goethe, communicates with the *Gemüt*, which in turn is "directly" connected to the moral. With this passage, Goethe establishes that "Farbe, als ein Element der Kunst betrachtet, zu den höchsten ästhetischen Zwecken mitwirkend genutzt werden kann."¹⁷⁷ In doing so, he expands the totality of nature, as Uexküll would later do, from the physical and the physiological to the psychological, the social,

¹⁷⁶ Goethe, *Zur Farbenlehre*, 229.

¹⁷⁷ Goethe, *Zur Farbenlehre*, 229.

and the moral. Goethe, like Uexküll, situates the *Gemüt* as instrumental in the appearance of color. As I have noted, he includes not just “Licht, Luft, Witterung, Körpern, Behandlung und tausend andern Umständen” as shaping color’s appearance, but also the “Stimmung des Organs,” and the observer’s “Geistesstimmung.” While the retina (along with light/dark) *effects* the appearance of color, the Goethean *Gemüt* nevertheless *affects* it—and is affected by it (“durch dessen Vermittelung [of the eye], auf das Gemüt eine [...] Wirkung hervorbringe”). Indeed, just as, for Goethe, individual color impressions inspire specific and individual reaction in the retina, “Eben auch so in dem Gemüt.”¹⁷⁸ Accordingly, through the connection between eyes and mind, “die einzelnen Farben besondere Gemütsstimmungen geben.”¹⁷⁹ In other words: in Goethe’s schema, the *Gemüt* not only colors color, as it does also for Uexküll, but is colored by color, as well. Unlike Uexküll’s fine-tuned and abstract cerebral *Empfindungsbeziehungen*, in Goethe’s framework, the *Gemüt*, just as much as any physiological or chemical color, joins nature’s vast totality as a color among colors.

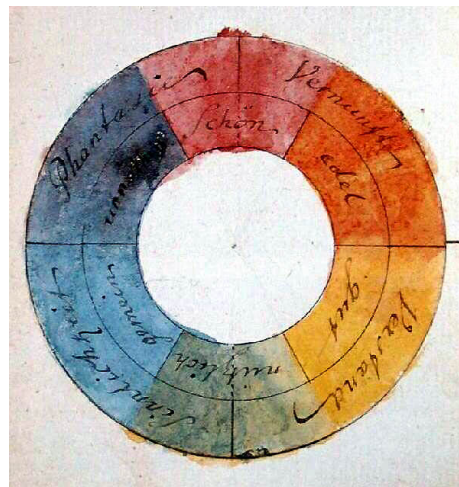


Figure 5. Goethe’s color wheel, with various values and qualities associated with each color (“gut” and “Verstand” accorded to yellow, “Sinnlichkeit” and “gemein” to blue, etc.).¹⁸⁰

¹⁷⁸ Goethe, *Zur Farbenlehre*, 230.

¹⁷⁹ Goethe, *Zur Farbenlehre*, 230.

¹⁸⁰ Johann Wolfgang von Goethe, “Farbbogen zu Band 10,” in *Zur Farbenlehre*, n.p..

Explaining how the link between mind and color functions, Goethe writes: “Diese einzelnen bedeutenden Wirkungen vollkommen zu empfinden, muß man das Auge ganz mit einer Farbe umgeben, z.B. in einem einfarbigen Zimmer sich befinden, durch ein farbiges Glas sehen. Man identifiziert sich alsdann mit der Farbe; sie stimmt Auge und Geist mit sich unisono.”¹⁸¹ According to this passage, we human observers “identify” with the color that surrounds us, and the color tunes (“stimmt”) the mind with itself “unisono.” The word “unisono” refers to two or more musical notes that are either the same pitch or separated by octaves—a middle C with a higher C, for instance. This *unisono* color theory of the *Gemüt* conflicts with the complementary color theory of the eye that he outlines in the first section of the *Farbenlehre*. Rather than opposing the external color, as the retina does, the mind, Goethe tells us, matches it. Thus yellow inspires cheer—“besitzt eine heitere, muntere, sanft reizende Eigenschaft”¹⁸²—while blue prompts longing—“Wie wir einen angenehmen Gegenstand, der von uns flieht, gern verfolgen, so sehen wir das Blaue gern an”¹⁸³—and so on according to the various *sittliche* effects of color that he outlines. Thus color combinations, as well as individual colors, have specific characters: “Gelb und Grün hat immer etwas Gemein-heiteres,” he writes, while “Blau und Grün aber immer etwas Gemein-widerliches.”¹⁸⁴ Likewise, changes to the lightness or darkness of a shade will also affect its character: “Purpur und Grün mit Schwarz sieht dunkel und düster, mit Weiß hingegen erfreulich aus.”¹⁸⁵ Just as endless variations of colors and color combinations are possible, so, too, is it possible to evoke a limitless array of “sinnlich-sittliche Wirkungen.”

¹⁸¹ Goethe, *Zur Farbenlehre*, 230.

¹⁸² Goethe, *Zur Farbenlehre*, 231.

¹⁸³ Goethe, *Zur Farbenlehre*, 234.

¹⁸⁴ Goethe, *Zur Farbenlehre*, 244.

¹⁸⁵ Goethe, *Zur Farbenlehre*, 244.

Not only our physiological inside and physical outside merge, in color, into a single spectrum of perception and appearance; with the *Gemüt*'s "unisono" attunement to the appearance of color, the social and moral world becomes colorful, too. Thus, he mentions, just as afterimages can remain for a long time in the retina, so also "das Vorschweben leidenschaftlich geliebter oder verhaßter Gegenstände aus dem Sinnlichen ins Geistige deutet."¹⁸⁶ But in addition to the mind's passivity—it's 'being-tuned' to a color or a combination of colors, Goethe of course addresses its *activity*. Like the eye, which, upon apprehending a color, is "gleich in Tätigkeit gesetzt,"¹⁸⁷ the mind is more than just a resonating string; it is a productive medium in its own right. In addition to suggesting that colors *inspire* feelings, Goethe proposes that feelings are themselves mental colors:

Lieben und Hassen, Hoffen und Fürchten sind auch nur differente Zustände unseres trüben Innern, durch welches der Geist entweder nach der Licht- oder nach der Schattenseit hinsieht. Blicken wir durch diese trübe organische Umgebung nach dem Lichte hin, so lieben und hoffen wir, blicken wir nach dem Finstern, so hassen und fürchten wir. Beyde Seiten haben ihr anziehendes und reizendes, für manche Menschen sogar die traurige mehr als die heitere. Man könnte diese Vergleichung auf eine anmuthige Weise noch viel weiter fortsetzen...¹⁸⁸

Just as Goethe explores turbidity as the essential condition for the alternating appearance of blue and yellow—the *Urphänomen* of his color research, and of the visible world itself—so he posits here a subjective turbidity, the semi-transparent medium of the mental, by virtue of which our particular passions and attitudes emerge in the social world. In other words, not only, in Goethe's discussion of the link between colors and culture, is a viewing subject's mind attuned to the phenomena before her, her mind also becomes a kind of coloring medium, for, as it were, the

¹⁸⁶ Goethe, *Zur Farbenlehre*, 33.

¹⁸⁷ Goethe, *Zur Farbenlehre*, 238.

¹⁸⁸ Goethe, *Sämtliche Werke*, 6:673.

colors of the mind: feelings. Uexküll warned against psychological clouding—and this is it. As a *trübe* medium, the Goethean mind becomes as active in the creation of colors as Uexküll's *Gemüt*, and, in addition to its capacity for attunement (“[die Farbe] stimmt Auge und Geist mit sich unisono”), capable of generating its own mental colors. An editor of Goethe's diaries called a similar comparison between Goethe's famous *trübe* medium and the human *Geist* “scherzhaft”¹⁸⁹—and certainly, it is not a thought he works out in detail at this juncture—but the comparison is significant. These two turbidities—inner and outer atmospheres, so to speak—converge to create Goethe's “Erscheinungswelt”¹⁹⁰: a colorful and coloring nature that encompasses the *Gemüt* as well as the eyes in its totality, and a continuum—a fundamental likeness and connection, just as Uexküll indicated—between the phenomenal and the spiritual, the material and the social.

Goethe closes the “Sinnlich-Sittliche” section with remarks on spiritual uses of color, and with the suggestion that one could use the interactions of colors themselves “gleichsam als einer Sprache...wenn man Urverhältnisse ausdrücken will...”¹⁹¹ Across several spheres, from the biological, the physiological, the psychological, and the cultural, this chapter has painted an understanding of color as an expression of “primordial relationships” between subject-observers and environments. By this last suggestion of Goethe's, however, color becomes not just a *function* of seeing, of constructing a visual environment, and of meaning, as it has variously been so far. It becomes not just an expression of all the meaningful and mutually constitutive

¹⁸⁹ *Aus Goethes Tagebüchern* (1908), ed. Hans Gerhard Gräf (Nikosia, Cyprus: TP Verone, 2017), 222.

¹⁹⁰ Bernd Hamacher, “Grau und Braun – ‘Vorgefühl der Gegensätze des Kalten und Warmen’: Zur Rehabilitierung der ‘farbenlosen’, ‘schmutzigen’ Farben bei Goethe” in *Die Farben der Romantik: Physik und Physiologie, Kunst und Literatur*, ed. Walter Pape (Berlin: De Gruyter, 2014), 79.

¹⁹¹ Goethe, *Zur Farbenlehre*, 263.

interactions that give rise to it. It becomes eloquent itself, and renders the nature(s) that appear in it eloquent likewise.

Chapter Two

Complementary by Nature: Adalbert Stifter's *Erfahrungen in den Farben*

*Im Menschen brechen sich göttliche Strahlen. Sie zerlegen sich, und ihre Farben sind das harmonische Spiel seiner Gedanken.*¹⁹²

*Sind diese Gesetze sein glänzendes Kleid, das ihn bedeckt, und muß er es lüften, daß wir ihn selber schauen?*¹⁹³

Introduction: Nature's Morality

*Mein Gott, ich gäbe gerne mein Blut her, wenn ich die Menschheit mit einem Ruke auf die Stufe sittlicher Schönheit heben könnte, auf der ich sie wünschte.*¹⁹⁴

In December 1848, Adalbert Stifter, a known and respected educator among the Viennese elite as well as a successful author, returned to the capital from Linz, where he had been remaining at a distance from the revolution. March 13th of that year had marked the first revolutionary outbreak,¹⁹⁵ and by March 23rd an *Unterrichtsministerium* (Ministry of Education) had been established. Stifter was being summoned by Franz Exner, the ministry's *Ministerialrat* (chief deputy), to contribute to discussions aimed at redesigning the empire's *Volksschulen*.¹⁹⁶ The work turned out to be both brief and frustrating—in a letter, Stifter complained of a “Nest

¹⁹² Johann Wilhelm Ritter, *Key Texts of Johann Wilhelm Ritter (1776–1810) on the Science and Art of Nature*, ed. Jocelyn Holland (Leiden: Brill, 2010), 256.

¹⁹³ Adalbert Stifter, “Die Sonnenfinsternis am 8. Juli 1842,” in Adalbert Stifter, *Gesammelte Werke* (Leipzig: Insel Verlag, [1959]), 6:584–595, 594.

¹⁹⁴ Adalbert Stifter to Gustav Heckenast, 6 March 1849, quoted in Otto Jungmair, “Adalbert Stifter und die Schulreform in Oberösterreich nach 1848,” in *Historisches Jahrbuch der Stadt Linz*, 1957 (Linz: Stadt Linz / Stadtarchiv, 1957), 241–320, 245.

¹⁹⁵ For an overview of that day and of the evolution of Stifter's stance regarding the revolution, see Eric A. Blackall, *Adalbert Stifter: A Critical Study* (Cambridge: Cambridge University Press, 1948), 242ff.

¹⁹⁶ Attempts to reform Austria's dogmatic and religious educational system, and to re-form the *Gymnasien*, had been underway under Exner's leadership for several years prior to the outbreak of the revolution. For a brief overview of this period, with a particular focus on Franz Exner's longstanding involvement, see Deborah R. Coen, *Vienna in the Age of Uncertainty: Science, Liberalism, and Private Life* (Chicago, IL: University of Chicago Press, 2007), 53–57.

der Intrigen" beyond the "natürlichen Hindernissen"¹⁹⁷ of bureaucratic work. Much to his disappointment, his stint in Vienna also failed to materialize into a viable and steady position as *Schulrat* there. After further confusion and upheaval that extended into 1849, Stifter ultimately settled permanently in Linz, where, though his circle of influence was smaller, he had more time for his literary pursuits.¹⁹⁸ During this time, however, Stifter wrote to his friend and publisher Gustav Heckenast that he had "einen ganzen Plan über Volksschulen (Unterricht—Fachschule, und Erziehung—Humanitarschule) ins Detail ausgearbeitet."¹⁹⁹ Though ultimately frustrated during his bureaucratic career, Stifter held these ideas dear, and the same pedagogical and societal concerns that occupied him in the revolution can be seen structuring his literary work. For, alongside the *Unterrichtsministerium's* larger aims for state control of schools, better pay and training for teachers, and an extended syllabus, Stifter harbored his own, deeper hopes for the educational reform, namely, that all students be "geprägt" with certain "general principles of behaviour and morality"²⁰⁰ whose absence had so appalled him "amongst the most vociferous apostles of freedom"²⁰¹ in the revolution. For Stifter the *Erzieher* as well as for Stifter the author, then, the fundamental question was: how do people learn (and teach others) to be properly—i.e., *morally*—in tune with our world?

As a pedagogue, a bureaucrat, and a political thinker, Stifter was convinced that this process of moral development could and must be shaped through education. On March 6th, 1849, writing to Heckenast of the "fürchterliches Jahr" of revolutionary extremes, Stifter laments: "Das

¹⁹⁷ Adalbert Stifter to Amalie Stifter, 31 December 1848, quoted in Jungmair, "Adalbert Stifter und die Schulreform," 244.

¹⁹⁸ Jungmair, "Adalbert Stifter und die Schulreform," 246.

¹⁹⁹ Quoted in Blackall, *Adalbert Stifter*, 280. For more on Stifter's publications in the *Wiener Bote*, see Blackall, 279–280. Although this plan "has not been preserved," Blackall suggests that it "may well be the foundation of the articles" he published over the during 1848–49 in the paper *Der Wiener Bote* (Blackall, 280).

²⁰⁰ Adalbert Stifter, quoted in Blackall, *Adalbert Stifter*, 281.

²⁰¹ Blackall, *Adalbert Stifter*, 249.

Ideal der Freiheit ist auf lange Zeit vernichtet, wer sittlich frei ist, kann es staatlich sein, ja ist es immer; den andern können alle Mächte der Erde nicht dazu machen. *Es gibt nur eine Macht die es kann: Bildung.*"²⁰² At the basis of societal morality, for Stifter, is not the empty institution of legal freedoms, but rather the more relative and nuanced freedom—i.e., moral and rational development—of *character*, which would then, ideally but only secondarily, be granted the legal freedom in which to exercise its goodness. "Was uns durch das ganze deutsche Land noth thut, ist Karakter," he wrote in June 1848, going on: "ich glaube, daß *felsenfeste* Ehrenhaftigkeit [...] und *felsenfeste* Gründlichkeit jetzt mehr und nachhaltiger wirken würden als Gelehrsamkeit und Kenntnisse."²⁰³ Stifter's reference to "rock-solid" honor and thoroughness strikes a convenient resonance between his goals as educator and the natural worlds he created and described as a painter and writer.²⁰⁴ The moral *Bildung* of his literary worlds takes place not in a classroom, but in narrated processes of observing the visible world, both man-made things (*Dinge*) and nature—mountains, forests, lakes, and, of course, rocks (*Felsen*).

In his early and still rather programmatic novel *Der Hochwald*, the landscape itself gains moral content through the characters' careful observation. This conflation, or "mystical interplay"²⁰⁵ that *Der Hochwald* stages between subject and object, human observer and natural landscape structures the narrative's description of both humans and landscapes, each of which seems to take on the features of the other. A forest lake gains facial features, while a person—the father of the young human protagonists—is sketched in terms of a weathered boulder. "Oft

²⁰² Stifter to Heckenast, 6 March 1849, quoted in Jungmair, "Adalbert Stifter und die Schulreform," 242, emphasis in original.

²⁰³ Adalbert Stifter to Joseph Türck, 28 June 1848, quoted in Blackall, *Adalbert Stifter*, 249, emphasis added.

²⁰⁴ For more on the relationship among these areas of Stifter's activity, see: *Adalbert Stifter: Dichter und Maler, Denkmalfleger und Schulmann: Neue Zugänge zu seinem Werk*, ed. Hartmut Laufhütte and Karl Möseneder (Walter de Gruyter, 1996).

²⁰⁵ Blackall, *Adalbert Stifter*, 119.

entstieg mir ein und derselbe Gedanke wenn ich an diesen Gestaden saß,” says the old hunter who is familiar with the forest’s language: “als sei es ein unheimlich Naturauge, das mich hier ansehe—tiefschwarz—überragt von der Stirne und Braue der Felsen, gesäumt von der Wimper dunkler Tannen—drin das Wasser regungslos, wie eine versteinerte Träne.”²⁰⁶ The lake becomes an eye, lined with fir-tree lashes and sheltered beneath a bouldery brow, and the man standing on its shores, caught in its gaze, becomes not the observer but the observed. Indeed, as Blackall notes, the “main actor”²⁰⁷ in *Der Hochwald* is the forest itself—yet that natural subjectivity could not unfold without the narrative’s human observers, who, in their turn, become strikingly nature-like. The father-figure of the story has, we are told, “ein Auge, stark gewölbt und sprechend, unter einer felsigen, gefurchten Stirne,” and a body that is “eine Ruine gewaltiger Männerkraft und Männergröße, eine Ruine, jetzt nur noch beschienen von der milden Abendsonne der Güte, wie ein stummer Nachsommer nach schweren, lärmenden Gewittern—wie der müde Vollmond auf den Garben des Erntefeldes— —die stille, milde, tiefe Güte.”²⁰⁸ There is, in these descriptions, very little to distinguish the “Antlitze der Natur”²⁰⁹ from the features of a good man. Both, in their ways, are observing subjects, and both, in their ways, have the ability to reflect—or reflect on—the world around them.

The most meaningful difference between humans and the landscape here is that people, though themselves a part of nature, often refuse to hear its wisdom. Whether or not they attend to it, however, everywhere in the forest of *Der Hochwald* “ist Sinn und Empfindung”²¹⁰; “alles spricht,” the hunter says, “alles erzählt, und nur der Mensch erschauert, wenn ihm einmal ein

²⁰⁶ Adalbert Stifter, *Der Hochwald: Erzählungen* (Berlin: Aufbau-Verlag, 1982), 7.

²⁰⁷ Blackall, *Adalbert Stifter*, 117.

²⁰⁸ Stifter, *Der Hochwald*, 17.

²⁰⁹ Stifter, *Der Hochwald*, 31.

²¹⁰ Stifter, *Der Hochwald*, 33.

Wort vernehmlich wird. — Aber er soll nur warten, und da *wird er sehen*, wie es doch nur lauter liebe, gute Worte sind.”²¹¹ Colloquial though the expression may be on its own, in Stifter's work, the hunter's framing of “da wird er sehen” should not be ignored: it suggests that nature's conversation is visual. Above, I formulated Stifter's driving question in both his pedagogy and his art as “how do we learn to be properly—morally—in tune with our environment?” In his writing, as the hunter in *Der Hochwald* suggests, that question becomes more specific: “how do we learn to be properly in tune with our environment *through our observation of its surface*?” Only when we learn to observe properly, Stifter implies, will we be able to see these “gute W[ö]rte” of the natural world: “denn,” his narration continues, “es liegt ein Anstand, ich möchte sagen ein Ausdruck von Tugend in dem von Menschenhänden noch nicht berührten Antlitze der Natur, dem sich die Seele beugen muß, als etwas Keuschem und Göttlichem.”²¹² This passage, as Blackall notes, expresses “the quintessential expression of Stifter's attitude to Nature. It is an attitude of humble, quiet reverence for qualities [that is, *appearances*] which, expressed in the terms of human feelings and human thoughts, are equivalent to moral ideals.”²¹³ Hannah Arendt called Stifter “the greatest landscape-painter in literature [...]: someone who possesses the magic wand to transform all visible things into words and all visible movements [...] into sentences.”²¹⁴ Nature's “Sprechen” and “Erzählen” in *Der Hochwald*, however, suggests that there is nothing to “paint” and nothing that needs “transform[ing ...] into words”: if nature is already talking, then Stifter's job is merely to listen and transcribe. Indeed, in a letter to Louise von Eichendorff, Stifter wrote: “Ich habe wirklich kein Verdienst an meinen Arbeiten, ich habe nichts gemacht,

²¹¹ Stifter, *Der Hochwald*, 33, emphasis added.

²¹² Stifter, *Der Hochwald*, 31.

²¹³ Blackall, *Adalbert Stifter*, 119.

²¹⁴ Hannah Arendt, “Great Friend of Reality: Adalbert Stifter,” in *Hannah Arendt, Reflections on Literature and Culture*, ed. Susannah Young-ah Gottlieb (Stanford, CA: Stanford University Press, 2007), 110–120, 111.

ich habe nur das Vorhandene ausgeplaudert."²¹⁵ In other words, if we take him at his word, however aspirational or falsely modest it may be, Stifter's famously detailed landscapes are not descriptions of nature's appearance, but transcriptions of its visible language. Likewise, his literary lessons in observation become, at the same time, lessons in morality.

Stifter's conflation of the verbal and the visual, such that he can supposedly just "babble out what's around" (*das Vorhandene ausplaudern*), frames literary description, following nature, as a conversation among the visible elements named in the text. This conversation of the visual world, which I examine more closely in section 1.2, should be situated within much broader changes within accepted models of appearance and perception that occurred during the late eighteenth and early nineteenth centuries. As Jonathan Crary has shown, Goethe's transformation of vision—from the passive reception of stable, external sensory input to the mutual action and reaction of the retina with the light and dark of the outside world—fundamentally transformed the scope and status of "reality." And, as Strowick highlights, this upheaval of vision necessitates an upheaval of language, too. No longer operating in relation to a visual world outside the observing subject, language loses any simple assumption of reference: the task of description is intimately involved in the uncertainty of what must be described. Fundamentally relative, it is determined not only by the mutual interaction of "external" elements in the scene, but also by the interaction of those elements with all the particularities of the subject who observes them. Observation and description, like the appearance of nature and its "gute Worte," are thrown back on the interactivity and creativity of the Goethean retina, and the visual environment comes into view as the result of all those interactions.

²¹⁵ Quoted in Begemann, *Die Welt der Zeichen*, 369–70, emphasis added.

Stifter's ideologically-charged attention to the natural world is well-known, as is his literary emphasis on visuality.²¹⁶ However, following Strowick's overarching argument that *wahrgenommene Wirklichkeit* is the predominant "reality" of German realism, as well as Marianne Thalmann's point that "Die Anfänge der Naturdarstellung" in Stifter's work are very often "auf *Farbigkeit* gebaut,"²¹⁷ this chapter focuses specifically on the intersection of nature and color in Stifter's prose. To a certain extent, my attention to color can be understood simply as an acceptance of Thomas Gann and Marianne Schuller's fitting invitation to consider "die Eigentümlichkeit der Prosa Stifters" as "entscheidend darin begründet, dass ihre Erscheinungsform als 'Oberfläche' gefasst werden kann."²¹⁸ Noting that Stifter was a painter as well as an author, and that paintings and painters figure so prominently in so many of his literary works, Gann and Schuller propose that:

Es stellt sich daher nicht nur die Frage nach dem Status des Bildes in Stifters Prosa...sondern die weiter reichende, inwiefern der visuelle Raum der bildenden Kunst—ihre ästhetischen Diskurse, Bildgattungen, Kompositions- und Formgesetze, ihre bildimmanenten Thematisierungen von Sehprozessen—in Stifters Texten formbildende und textgenerierende Potentiale entfaltet hat.²¹⁹

²¹⁶ On the importance of seeing in Stifter's work, see Tove Holmes, "'Was ich in diesem Haus geworden bin'"; Andrew B. B. Hamilton, "Stifter's Granit and the Art of Seeing," *Monatshefte*, 109.3 (2017): 391–403; and, of course, Elisabeth Strowick, "'Wirkliche Wirklichkeit.' Stifters Wahrnehmungsstudien," in *Gespenster des Realismus*, 59–157. Stifter was, of course, a painter as well as a writer. On his visual art, the canonical source is Fritz Novotny, *Adalbert Stifter als Maler* (Vienna: Anton Schroll & Co., 1941). A fourth and expanded edition appeared in 1979. See also D. C. Riechel, "Adalbert Stifter as Landscape Painter: A View from Cézanne's Mont Sainte-Victoire," *Modern Austrian Literature* 20.1 (1987): 1–21; Lothar Schultes, "Adalbert Stifter als Zeichner und Maler," *Jahrbuch des Oberösterreichischen Musealvereines* 152 (Linz: 2007): 237–300; Stefan Schmitt, "Adalbert Stifter als Zeichner," in *Adalbert Stifter: Dichter Und Maler, Denkmalfleger Und Schulmann*, 261–308. On the political dimensions of his attention to nature, see, as an excellent starting point, Eric Downing, "Common Ground: Conditions of Realism in Stifter's 'Vorrede,'" *Colloquia Germanica* 28.1 (1995): 35–53.

²¹⁷ Marianne Thalmann, "Adalbert Stifters Raumerlebnis," *Monatshefte* 38.2 (1946): 103–111, 104.

²¹⁸ Thomas Gann and Marianne Schuller, "Vorwort," in *Fleck, Glanz, Finsternis: Zur Poetik der Oberfläche bei Adalbert Stifter* (Leiden: Wilhelm Fink, 2017), 7.

²¹⁹ Gann and Schuller, "Vorwort," 7.

Color is an integral element of painting, needless to say, and in what follows I examine two results of its “formbildende und textgenerierende Potentiale” in Stifter’s visual-textual worlds. As a part of and a contribution to what I call the nature of color, however, Stifter’s attention to color extends beyond the painterly dimensions of his work. Set not only against art but also the entangled *wahrgenommene Wirklichkeit* of Goethean color theory and its reception in psychology and physiology, color in Stifter’s work becomes an entrypoint to the ethical-environmental question I located in his work a moment ago: “how do we learn to be properly in tune with our environment *through our observation of its surface?*”

This chapter accordingly examines how Stifter’s literary writing engages color to guide his characters (and his readers) through processes of learning to see and ethically situate themselves in their environments. The chapter’s two sections unfold two very different—but interlocking—natures of color structuring his texts. These natures of color are, in the Goethean sense of mutually completing opposition, “complementary,” and align with the epigraphs of this chapter. Section 1 unfolds a reading of the mutually-attuned and increasingly organized colors observed by Stifter’s protagonist Heinrich in *Der Nachsommer*. To bring this reading to light, I trace Heinrich’s observational development against the reception of Goethean color theory by Johann Friedrich Herbart, whose pioneering psychological and pedagogical theories had an immense influence throughout Europe, including on Stifter.²²⁰ The structure that Herbart outlines

²²⁰ It is likely that Stifter encountered Herbart’s work through his pedagogical collaboration with Franz Exner, if not earlier. Exner, who had begun engaging with Herbart’s work earlier in his career while teaching in Prussia, was, according to Herbert Cyzarz, “am mächtigsten” in bringing Herbartianismus to Austria (“Deutsche Philosophie im Prager Raum seit Bernardo Bolzano,” *Bohemia: Zeitschrift für Geschichte und Kultur der böhmischen Länder* 9.1 [1968]: 229–264, 244). Walter Seifert also notes Stifter’s reception of Herbartian ideas through his professional activities: see his section “Amtliche Schriften,” in *Stifter-Handbuch*, ed. Christian Begemann and Davide Giuriato (Stuttgart: J.B. Metzler, 2017), 189–194. And, although it is not the focus of her discussion, Coen notes the “similar[ity]” between Herbart’s and Stifter’s “model[s] of character development” in *Vienna in the Age of Uncertainty* (70). (Coen returns to Herbart’s influence and ideas several times over the course of this book; see

for the processes of learning and thinking developed, as Jonathan Crary noted, many structural elements of the appearance and mutual influence of subjective colors in Goethe's

Farbenlehre.²²¹ Accordingly, I examine how Stifter engages color not primarily as a visual phenomenon (although color observation is frequently the theme), but as a temporal process of nature in which human perception participates, and which human cognition assimilates. I argue that, refracted through Herbart's "prismatic" model of the mind, Heinrich's "*Erfahrung in den Farben*,"²²² as he calls it, obtains first and foremost, as my epigraph from Johann Wilhelm Ritter reads, in "*das harmonische Spiel seiner Gedanken*." As the cognitive internalization and regulation of external stimuli, Heinrich's *Erfahrung in den Farben* constitutes, in Stifter's work, an exploration and manipulation of human-environment relations that, though thoroughly "colorful," is only partially visible.

The Herbartian model does not, of course, address all engagements with color in Stifter's literary environments, and it is the work of Jan Evangelista Purkinje, a younger contemporary of Herbart, that provides the foundation for my readings in the chapter's second section. In his 1819 *Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht*, Purkinje brought Goethe's subjective colors not into cognition, but into the realm of empirical scientific examination. His experiments, descriptions, and drawings of subjective visual phenomena fully integrated these fantastic and abstract visions into the *wahrgenommene Wirklichkeit* of human visual experience.²²³ Against Purkinje's empirical observations and aesthetic musings, section 2 analyzes appearances of color

especially 39–42). For an overview of Herbart's work and influence, see Harold B. Dunkel, *Herbart and Herbartianism: An Educational Ghost Story* (Chicago: University of Chicago Press, 1970).

²²¹ See Crary, *Techniques of the Observer*, 100–101.

²²² Adalbert Stifter, *Der Nachsommer* (München: Deutscher Taschenbuch Verlag, 2005), 559.

²²³ See Jutta Müller-Tamm, "Farben, Sonne, Finsternis: Von Goethe zu Adalbert Stifter," *Goethe Jahrbuch* (Göttingen: Wallstein, 2008): 165–173, 171.

in Stifter's work whose overwhelming phenomenality resists the processual assimilation of Herbart's theory. As my epigraph suggests, Stifter frames nature's everyday, lawful appearance as God's "glänzendes Kleid, das ihn bedeckt," but casts the colors of extraordinary events—which I frame through his essay on the 1842 solar eclipse—as the appearance of God himself: "und muß er es lüften, daß wir ihn selber schauen?" Rather than being subsumed into the cognitive processes of their observers, these colors remain stubbornly "outside," integrating their observers into a larger, and more explicitly divine, and decidedly abstract nature of color. After my introductory reading of Stifter's "Die Sonnenfinsternis," the majority of section 2 is devoted to dual analyses of the color experiences of Konrad and Sanna, the two young protagonists of Stifter's *Bergkristall*. Whereas Heinrich's increasingly ordered perception and cognition enabled him, in section 1, to produce his own realist artistic works, I show how Konrad and Sanna's experiences in color, like the drawings that Purkinje made of subjective visual phenomena, become increasingly abstract, constituting, in Stifter's work, the integration of observers into a divine (and therefore moral) environment, and revealing, more broadly, the compatibility and continuity in the nature of color between reality and abstraction.

Taken together, the Stifterian natures of color that I outline in this chapter—the first emerging in my reading of Heinrich, the second in *Bergkristall*—develop both processual and phenomenal "sides" of the nature of color. Each side, albeit differently, integrates subject and environment, and each provides a set of historically rooted (yet, in an age of anthropogenic climate change, highly relatable) moral stakes for actively engaging with the nature of color.

1.1 Coloring Cognition

As I discussed in Chapter One, section 3, Goethe's *Farbenlehre* established an "immediate [unmittelbar]" connection between color and "the moral [das Sittliche]" by integrating the *Gemüt* into the visible totality of nature.²²⁴ In doing so, he opened the processes of color appearance and perception as models for a modern, historical concept of cognition.²²⁵ This concept was differently and probably most significantly opened by Kant's framing of the mind's capacities—e.g., for morality—not as "finished knowledge" but as "activities" and "processes which develop" through ongoing "interaction" with an ever-changing world.²²⁶ Kant's student and successor in Königsberg, Johann Friedrich Herbart (1776–1841), brought that new theory of mind into the fields of psychology and pedagogy through his projects of mathematicizing cognition and developing of a morally-directed pedagogy. In addition to Herbart's engagement with Kantian thought,²²⁷ Crary has revealed the influence of Goethean color theory in Herbart's temporal conceptions of cognition. Attending to this line of inheritance reveals a nature of color that appears not in the superficial colors of the external world, but in the depths of cognition. Herbart's work shaped much of nineteenth-century European thought on learning and education, including Stifter's, and through his vast influence, color became internalized not only as a function of sight, but as a function of the mind.

Herbart, as Crary outlines, "specifically discusses color perception" to elucidate certain "mental mechanisms" by which "[i]deas of things and events in the world" are integrated into the

²²⁴ Goethe, *Zur Farbenlehre*, 229.

²²⁵ In the growing world of empirical psychology, this concept was undoubtedly supported by the first measurement of "the rate of transmission of the nervous impulse," performed by Helmholtz in 1850. See Edwin Boring, *A History Of Experimental Psychology* (New York: The Century Co., 1929), 42ff.

²²⁶ Katherine Arens, *Structures of Knowing: Psychologies of the Nineteenth Century* (Dordrecht: Kluwer Academic, 1989), 60.

²²⁷ See Gary Hatfield, "Spatial Realism and Idealism: Kant Read, Revised, and Rebuffed" in *The Natural and the Normative: Theories of Spatial Perception from Kant to Helmholtz* (Cambridge, MA: The MIT Press, 2003).

totality of the Ego.²²⁸ Indeed, rather than “integrate,” Herbart’s theory suggests that these “ideas of things in the world” *constitute* the ever-evolving totality that is the ego. This is because, for Herbart, an individual’s consciousness is not a fixed entity, but rather the more or less organized locus of a multitude of “Strahlen des Erscheinens” which “sich von allen Seiten her vereinigen und kreuzen.”²²⁹ Like Goethe’s conception of color, Herbart’s theory of mind holds that cognition and ego-formation emerge in and are constituted by an “interaction between mind and world.”²³⁰ And, like the appearance and perception of color, this ego-forming interaction between mind and world is ongoing, meaning that the Herbartian the ego is “in steter Fortbildung”²³¹ through time. It is through this understanding of shared process—of how Herbartian cognition internalizes color’s temporal and partially subjective appearance—that I propose we understand Stifter’s statement, in the form of Heinrich’s natural and geological reflection, that “Wenn eine Geschichte des Nachdenkens und Forschens wert ist, so ist es die Geschichte der Erde [...], eine Geschichte, in welcher die der Menschen nur ein Einschiebsel ist.”²³² I argue that it is not only as a thing among earthly things that we should understand “den Mensch” as “nur ein Einschiebsel” of the physical world, or as a brief chapter in a history of geological “deep time,”²³³ but as a process among earthly—and colorful—processes. By

²²⁸ Crary, *Techniques of the Observer*, 100–101.

²²⁹ Johann Friedrich Herbart, *Psychologie als Wissenschaft*, in *Sämtliche Werke*, ed. Karl Kerbach and Otto Flügel, vol. 5 (Langensalza: Hermann Beyer & Söhne, 1890), 425.

²³⁰ Arens, *Structures of Knowing*, 99.

²³¹ Herbart, *Psychologie als Wissenschaft*, 425.

²³² Stifter, *Der Nachsommer*, 343.

²³³ Timothy Attanucci discusses deep time throughout his *Stories from the Earth: Adalbert Stifter and the Poetics of Earth History*, Ph.D. Diss., Princeton University, 2012. For more on Stifter’s engagement with geology, see also Peter Schnyder, “Die Dynamisierung des Statischen: Geologisches Wissen bei Goethe and Stifter,” *Zeitschrift für Germanistik*, 19.3 (2009): 540–555 and Tove Holmes, “An Archive of the Earth: Stifter’s Geologos,” *Seminar: A Journal of Germanic Studies*, 54.3 (2018): 281–307. For examinations of Stifter’s work in connection to the anthropocene, see Sean Ireton, “Adalbert Stifter and the Gentle Anthropocene,” in *Readings in the Anthropocene: The Environmental Humanities, German Studies, and Beyond*, ed. Sabine Wilke and Japhet Johnstone (New York:

outlining aspects of Herbart's Goethean reception, in this section I bring to light how Stifter's writing of color explores the mutual formation of perception and cognition.

The temporality of retinal activity and the appearance of Goethean color—though simpler than human cognition as a whole—is, in Herbart's work, a model for the mind's activity. "All the processes of blending and opposition that Goethe described phenomenally in terms of the afterimage are for Herbart statable in differential equations and theorems."²³⁴ (And the complexity of this system of interactions is why, according to Herbart, "Psychology has need of the differential and integral calculus."²³⁵) In his section in the *Farbenlehre* on physiological colors, Goethe describes how the colors of an after image evolve over time, and it is illuminating to compare this with a passage in which Herbart lays out a series of cognitive processes. If, as I discussed earlier in regard to complementarity, one stares at a spot of white paper that is illuminated by a ray of sunshine in an otherwise darkened room, and then looks away into that darkness, "so wird man eine runde Erscheinung vor sich schweben sehen..."²³⁶ Goethe's description of this phenomenon of subjective vision continues, and outlines not only how the eye strives towards balance by producing complementary colors, but how this process unfolds over time, through a sequence of colorful *Erscheinungen*:

Es dauert eine Zeit lang, bis diese Purpurfarbe von außen herein den ganzen Kreis zudeckt, und endlich den hellen Mittelpunkt völlig vertreibt. Kaum erscheint aber das ganze Rund purpurfarben, so fängt der Rand an blau zu werden, das Blaue verdrängt nach und nach hereinwärts den Purpur. Ist die Erscheinung vollkommen blau, so wird der

Bloomsbury Academic, 2017) 195–221 and Alexander Philips, "Adalbert Stifter's Alternative Anthropocene: Reimagining Social Nature in *Brigitta* and *Abdias*," in *German Ecocriticism in the Anthropocene*, ed. Caroline Schaumann and Heather I. Sullivan (New York: Palgrave MacMillan, 2017), 65–86.

²³⁴ Crary, *Techniques of the Observer*, 101.

²³⁵ Johann Friedrich Herbart, *A Textbook in Psychology: An Attempt to Found the Science of Psychology on Experience, Metaphysics, and Mathematics*, trans. Margaret K. Smith (New York: D. Appleton, 1891), 145.

²³⁶ Goethe, *Zur Farbenlehre*, 37.

Rand dunkel und unfärbig. Es währet lange, bis der unfarbige Rand völlig das Blaue vertreibt und der ganze Raum unfärbig wird [...] Hier sehen wir abermals, wie sich die Netzhaut durch eine Sukzession von Schwingungen, gegen den gewaltsamen äußern Eindruck nach und nach wieder herstellt.²³⁷

Goethe narrativizes the activity of the retina, emphasizing first the occurrence of that “successive” activity of the retina, and then describing the movement and changes of color that unfold as each new color “verdrängt” and “vertreibt” what appeared before it.²³⁸ Similarly, for Herbart, the formation of the ego occurs as the subject’s observations and experiences interact with each other, in the mind, over time. Herbart organizes these interactions into types, such that ideas in the mind fuse, fade, blend with, and inhibit each other, depending on their relative order and strength:

Eine Reihe a, b, c, d, ... sey in der Wahrnehmung gegeben worden, so ist durch andere, im Bewusstseyn vorhandene, Vorstellungen schon a, von dem ersten Augenblicke der Wahrnehmung an, und währen deren Dauer, einer Hemmung ausgesetzt gewesen. In dessen nun a, schon zum Theil im Bewusstseyn gesunken, mehr und mehr gehemmt wurde, kam b dazu. Diess, anfangs ungehemmt, verschmolz mit dem sinkenden a. Es folgte c, und verband sich, selbst ungehemmt, mit dem sich verdunkelnden b und dem mehr verdunkelten a. Desgleichen folgte d, um sich in verschiedenen Abstufungen mit a, b, c, zu verknüpfen.—Hieraus entspringt *für jede* von diesen Vorstellungen ein Gesetz...²³⁹

Like psychological colors, different mental elements, be they thoughts or perceptions, follow upon one another, blending with and opposing each other in accordance with their mutual compatibility and strength. Like the ultimate harmony of Goethe’s color wheel, these mental

²³⁷ Goethe, *Zur Farbenlehre*, 37.

²³⁸ While Goethe described these gradual transformations in “the lived time of the body,” Jan Evangelista Purkinje—inspired by Goethe’s color theory—conducted empirical research on afterimages, measuring their duration and development in “‘objective’ time” (Crary, *Techniques of the Observer*, 102–104).

²³⁹ Johann Friedrich Herbart, *Lehrbuch zur Psychologie* (Königsberg: August Wilhelm Unzer, 1816), 115, emphasis in original.

elements combine, ideally, within in the “dynamic equilibrium”²⁴⁰ of the ego. Of course, for Herbart, cognition consists of more than just the “Eine Reihe a, b, c,” of individual *Vorstellungen*, and more than just one “complex” of already blended ones. There are, in fact, “Tausende oder Millionen von Vorstellungen, die auf einmal im Bewusstseyn sind, und, sich gegenseitig hemmend, ins Gleichgewicht treten!”²⁴¹ Given this multitude of interacting elements, the ability to sort, organize, and group thoughts, experiences, and feelings is a fundamental component of Herbartian education. At the basis of this organizational capacity is “The construction of a series,” which, he writes, “pedagogically considered, is of the greatest importance, as upon it depends clear thinking, as well as construction of every kind.”²⁴² Indeed, Herbart writes elsewhere, “Weit besser als lange Reihen [von Vorstellungen] sind *Reihen von Reihen*, oder auch *Reihen aus Reihen*.”²⁴³

Just as Goethean color provided a microcosmic model for Herbart's ideas about cognition, so Stifter's reception of Herbart led him to suggest suggest a similar structure of thought and learning. In an article on “Die Schule des Lebens” published during his 1849 editorship of the *Wiener Bote*, he writes: “Sobald [der Mensch] geboren ist, beginnt das Lernen [...] er betrachtet die Dinge, ob sie ihn nützen oder schaden, und wozu er sie gebrauchen kann. *Seine Vorstellungen über die Wesenheit der Welt vermehren sich, sie verbinden sich unter einander* und werden Kenntnisse.”²⁴⁴ Learning, for Stifter like for Herbart, means increasing one's number of individual *Vorstellungen*, which in turn increases their complexity as an overall

²⁴⁰ Arens, *Structures of Knowing*, 94. The Herbartian mind, as Arens describes, functions like a microcosm of the Goethean view of nature's complementary totality, wherein “all input and all functions of the mind exert influence or pressure on each other” (94).

²⁴¹ Herbart, *Psychologie als Wissenschaft*, 409.

²⁴² Herbart, *A Textbook in Psychology*, 147.

²⁴³ Herbart, *Psychologie als Wissenschaft*, 414–415.

²⁴⁴ Adalbert Stifter, “Die Schule des Lebens,” *Der Wiener Bote* no. 144, 3 August 1849, emphasis added.

system (“sie verbinden sich untereinander”). As the number of *Vorstellungen* increases, they coalesce into groups, which form “Kenntnisse”—knowledge, or understanding. Moreover—Herbart returns to color as a touchstone for cognition—“beym geordneten Denken,” these “*Reihen von Riehen*” of *Vorstellungen* emerge “in sehr bunten Zusammensetzung.”²⁴⁵ In other words, thought is not only modeled on color, it is itself colorful, each “hue” interacting with the others and changing the balance of the whole.

An instance—or, I should say, a progression—of the gradual blending of concepts, as well as of their increasing differentiation, can be observed in Stifter's *Der Nachsommer*. This novel was published relatively late in his career, and in both style and content can be taken as a mature expression of Stifter's central literary concerns of perception, the small events and objects of everyday life, and right relations with the natural world. A *Bildungsroman*, the plot follows the development of its young protagonist Heinrich from the mathematical enthusiasm of his late teenage years to the observational maturity in the science, art, travels, and eventual marriage of his young adulthood. This gradual process of learning to see—individual objects to be studied scientifically, aesthetic wholes to be admired and reproduced artistically, and his own self and position relative to others in the world—is both described and enacted in Stifter's narration. The reader is thus not only instructed in how to see through Heinrich's descriptions of his own learning, but, as the novel goes on, allowed to practice that seeing through the text's increasingly complex descriptions. As Heinrich's eyes and mind become more patient and more thorough, the time of Stifter's narrative descriptions also slows. In the first fifty pages of the novel, Heinrich seems to make several summer trips to the country; soon, however, the text is so full of what his increasingly sophisticated perceptions that the narrative—and time itself—seem

²⁴⁵ Herbart, *Psychologie als Wissenschaft*, 414–415.

to slow. In Herbart's framework, what we can understand this "slowing" narrative as Heinrich's progress from the undifferentiated "entire surroundings" of a child's observation to the increasing individuation and systemic complexity of "successive representations."²⁴⁶ For Herbart, as we gain both observational experience and understanding, "the number of concepts is constantly increased and their inner contents augmented,"²⁴⁷ such that what "in the beginning was seen or in some way perceived as a whole"²⁴⁸ can now be organized into multiple "Reihen"—even, as I quote above, "*Reihen von Reihen, oder auch Reihen aus Reihen.*"

This progression to more thorough observation on Heinrich's part—and more artful description on Stifter's—is especially marked in the first parts of the novel. Of his first summer travels, Heinrich tells us simply: "Ich war nur im Allgemeinen in das Gebirge gegangen, um es zu sehen."²⁴⁹ Likewise, the content of that seeing is presented concisely, but rather distantly. Looking from afar at the mountains, Heinrich recalls: "Die Wolken, ihre Bildung, ihr Anhängen an die Bergwände, ihr Suchen der Bergspitzen so wie die Verhältnisse des Nebels und seine Neigung zu den Bergen waren mir wunderbare Erscheinungen."²⁵⁰ His first observations are general—clouds and fog, and the sense that their formation over time seems to relate to the mountains below or above them. But he quickly becomes more sophisticated (and more confident) in organizing his perceptions: "so ging ich jetzt schon mehr in das Einzelne, ich war meiner schon mehr Herr und richtete die Betrachtung auf besondere Dinge."²⁵¹ As Tove Holmes

²⁴⁶ Herbart, *A Textbook in Psychology*, 150.

²⁴⁷ Herbart, *A Textbook in Psychology*, 151.

²⁴⁸ Herbart, *A Textbook in Psychology*, 151.

²⁴⁹ Stifter, *Der Nachsommer*, 31.

²⁵⁰ Stifter, *Der Nachsommer*, 31.

²⁵¹ Stifter, *Der Nachsommer*, 31.

has also noted, though preparing his readers to see with Heinrich through these new descriptions, Stifter offers something of a template, a schema of learning to see.²⁵² Heinrich explains:

Da stellten sich nun dem geübteren Auge die bildsamen Gestalten der Erde in viel eindringlicheren Merkmalen dar und faßten sich übersichtlicher in großen Teilen zusammen. Da öffnete sich dem Gemüte und der Seele der Reiz des Entstehens dieser Gebilde, ihrer Falten und ihrer Erhebungen, ihres Dahinstreichens und Abweichens von einer Richtung, ihres Zusammenstrebens gegen einen Hauptpunkt und ihrer Zerstreuungen in die Fläche.²⁵³

This description is remarkably empty of visual content—no landscape and no natural features are actually described. Rather, it is a meta-description, outlining that, as Heinrich (and we, the readers) learn to see, (a) specific features of the landscape will become more vivid and more cohesive, and (b) that observing these parts and wholes will involve not just the eyes, but the mind and soul, because (c) what we observe are not only the things, but their *histories* of movements and relations.

Heinrich's newfound observational skills result from his beginning to draw, and from this point on, Stifter's descriptions become longer and more careful, their rhythms and repetitions seeming to mirror Heinrich's growing appreciation and understanding of the landscape before him, how various parts of it fit together, and how they came to be. So, summers later, he stands by a lake and gazes at its mirror surface, and up at the mountains above:

Kömmt es aus Zufall, haben die abstürzenden dem See zueilenden Wässer die Berge so schön gefurcht gehöhlt geschnitten geklüftet, oder entspringt unsere Empfindung von dem Gegensatze des Wassers und der Berge, wie nämlich das erste eine weiche glatte feine Fläche bildet, die durch die rauhen absteigenden Riffe Rinnen und Streifen geschnitten wird, während unterhalb nichts zu sehen ist, und so das Rätsel vermehrt wird?²⁵⁴

²⁵² See Holmes, "'Was ich in diesem Haus geworden bin.'"

²⁵³ Stifter, *Der Nachsommer*, 35.

²⁵⁴ Stifter, *Der Nachsommer*, 338–39.

This is no naive or cursory glance, as he gave to the clouds and mountains during his first summer in the country. Rather, it is a probing look that is at once perception of and meditation on the temporal relationship—the interactions over millennia—between the water and the rock, such that, though so apparently different in their substance and their pace, each forms the movement of the other. The precision of his observation is such that, contrasting the smooth, soft water with the hard, craggy rock, one or two words will not suffice, and the reader makes their way through a sentence that contains adjective-rich description (of water: “weiche glatte feine Fläche”) and verb-rich narration (by water: “gefurcht gehöhlt geschnitten geklüftet”) and sometimes both at once (“die abstürzenden dem See zueilenden Wässer”; “durch die rauhen absteigenden Riffe Rinnen und Streifen geschnitten”). Like the natural elements before him, Heinrich's own observation has taken time to conduct. Had he been sketching it, presumably this thoughtful view would have taken many minutes, if not many hours. In its narration, that time remains tangible as well, as the reader is guided to create her own mental image from Stifter's words.²⁵⁵

In Herbart's framework, the water and the rock in Heinrich's perception—their existence as his “Vorstellungen”—might be viewed as a “complex,” containing “many associated characteristics” which can be “designated by words.”²⁵⁶ This articulable “complex” stands, in Herbart's thought, in contradistinction to what he calls an “amalgamation”: amalgamations “do not enjoy the degree of clearness and distinctness which complexes have” since “their contents

²⁵⁵ The time and repetition that language involves a reader may—I speculate—have something to do with Stifter's shifting focus from visual art to literature in the 1830s and '40s. Though he painted and drew for the rest of his life (his drawing *Tagebücher* record the hours, days, months that he spent on individual pieces), and though he also revised his writing intensively, I suspect that stories and novels were more adept at disseminating and inculcating his pedagogical vision of correct looking—i.e., slow, careful, contextualizing observation of a world in which even the smallest occurrences follow the “gentle law” of nature and God's creation.

²⁵⁶ Arens, *Structures of Knowing*, 90.

are often unanalyzed, and are stored in the mind together, awaiting future resolutions.”²⁵⁷

Heinrich's developing observation, drawn (and drawn out) by Stifter's unfolding description, can be viewed as the development or working out of his *Vorstellungen* from amalgamations to complexes; from his general and relatively undifferentiated views (as in the beginning when he went to see “das Gebirge” “im Allgemeinen”) to his more focused and detailed speculations on, for instance, “wie nämlich das erste eine weiche glatte feine Fläche bildet, die durch die rauhen absteigenden Riffe Rinnen und Streifen geschnitten wird.” This repetition makes up much of the novel's plot, as Heinrich goes back and forth from the estate of his *Gastfreund* the Freiherr von Risach and the mountains (for a period of, in Herbart's language, “Vertiefung” in his observations) to his parents' house (for a period in the learning process that Herbart calls “Besinnung”²⁵⁸). In this way, each summer's observations have time to become integrated and processed in relation to those of the previous year, both repeating and extending past observations and experiences in science and art and extending the “Reihen” of elements that Heinrich integrates into his memory and refining the complexes of his understanding.

As the style and structure of Stifter's narration shows, however, this repetition of “Vertiefung” and “Besinnung” also structures the course of each individual summer with their accumulations of Heinrich's individual perceptions. One passage in particular illustrates how an increasingly fractalized structure of Stifter's prose serves to unfold Heinrich's process of breaking down amalgamations and articulating them into groups of related complexes.²⁵⁹ Fully

²⁵⁷ Arens, *Structures of Knowing*, 90.

²⁵⁸ Coen summarizes these phases of learning in mid-nineteenth century Austria as follows: “learning proceeded from one-sidedness to many-sidedness. *Vertiefung* (absorbed contemplation) in the object of knowledge gave way to *Besinnung* (self-conscious reflection), through which the pupil related the newly acquired knowledge to other ideas and experiences” (Coen, *Vienna in the Age of Uncertainty*, 23). See also Herbart, *Sämtliche Werke*, 2:38ff.

²⁵⁹ The idea of fractalized description is not new, and, though I mention it here to suggest how Stifter achieves order in his description of an indescribably vast reality which is both increasingly grand and increasingly minute,

ensconced in his geological research, Heinrich describes how, even when his observations did not strictly require it, he sought out each mountain's highest peak, just to look. The passage is worth quoting in full:

Ich stand auf dem Felsen, der das Eis und den Schnee überragte, an dessen Fuß sich der Firnschlund befand, den man hatte überspringen müssen, oder zu dessen Überwindung wir nicht selten Leitern verfertigten, und über das Eis trugen, **ich stand** auf der zuweilen ganz kleinen Fläche des letzten Steines, oberhalb dessen keiner mehr war, **und sah** auf das Gewimmel der Berge um mich und unter mir, die entweder noch höher mit den weißen Hörnern in den Himmel ragten, und mich besieigten, oder die meinen Stand in anderen Luftebenen fortsetzten, oder die einschrumpften, und hinab sanken, und kleine Zeichnungen zeigten, **ich sah** die Täler wie rauchige Falten durch die Gebilde ziehen und manchen See wie ein kleines Täfelchen unten stehen, **ich sah** die Länder wie eine schwache Mappe vor mir liegen, **ich sah** in die Gegend, **wo** gleichsam wie in einen staubigen Nebel getaucht die Stadt sein mußte, in der alle lebten die mir teuer waren, Vater Mutter und Schwester, **ich sah** nach den Höhen, die von hier aus wie blauliche Lämmerwolken erschienen, auf denen das Asperhaus sein mußte und der Sternenhof, **wo** mein lieber Gastfreund hauste, **wo** die gute klare Mathilde wohnte, **wo** Eustach war, **wo** der fröhliche feurige Gustav sich befand, und **wo** Nataliens Augen blickten.²⁶⁰

Here, more than ever, Stifter showcases his ability to unfold a description just as a landscape might unfold before a viewer's eyes. The sentence seems not so much to lengthen as to fractalize, burgeoning out into the multiple structurally similar collections of detail in which Heinrich's repeated acts of standing and looking situate him. On the one hand, this repetition of observation brings the reader to look anew, in each direction, at each element of Heinrich's view, effectively slowing the process of looking into many smaller, contiguous parts. At the same time, it also engenders a new movement—into thought and feeling, into Heinrich's sense of *himself*—along the same pattern. Here, we see how, just as Goethean colors are “die Taten des Lichts,

the nature of a fractal at the same time suggests the inevitably overwhelming or even threatening incompleteness of such a description.

²⁶⁰ Stifter, *Der Nachsommer*, 501, emphasis added. A precursor to Herbart's rhythm of learning and observation can also be found in Goethe's *Farbenlehre*, where he writes: “Jedes Ansehen geht über in ein Betrachten, jedes Betrachten in ein Sinnen, jedes Sinnen in ein Verknüpfen...” (11).

Taten und Leiden”²⁶¹ in consort with the retina, the Herbartian ego emerges through its interactions with the environment. In between each complex or “row” of views, Stifter’s narration returns to Heinrich himself as the seeing and understanding subject: “ich stand [...] ich sah.” Each new complex in which Heinrich “sich vertieft” is punctuated by a moment of “Besinnung,” in which his position as the observer is recuperated and resituated in relation to his surroundings. Thus as the landscape and its description unfold, Heinrich, too, comes into an enlarged perception of his social and emotional surroundings. In other words, his increasingly detailed and articulated observation of his physical situation among features of the landscape (“Ich stand [...], ich stand [...], und sah [...], ich sah [...], ich sah [...], ich sah [...]”) goes hand and hand with his increasingly conscious awareness of his social situation among those people he holds most dear (“wo [...], wo [...], wo [...], wo [...], wo [...]”). Insofar as he recognizes himself, in Herbart’s words, as “der Mittelpunkt, in welchem die Strahlen des Erscheinens sich von allen Seiten her vereinigen und kreuzen,”²⁶² Stifter’s text both narrates and describes Heinrich’s conscious emergence as a participating subject in his physical-geographical and his social surroundings.

With the process of color’s appearance integrated into the unfolding of Herbartian cognition, the *story* of Heinrich’s *Bildung* (the story of an individual character and his social and intellectual development) becomes impossible to disentangle from the *content* of his *Bildung* (the slow, interactive development of all the earth’s elements). With color’s processual appearance assimilated into the invisible unfolding of thought, the story of Heinrich’s “Nachdenken[.]” nevertheless remains a recognizable part of the visible “Geschichte der Erde.”²⁶³ In addition to

²⁶¹ Goethe, *Zur Farbenlehre*, 9.

²⁶² Herbart, *Psychologie als Wissenschaft*, 425.

²⁶³ Stifter, *Der Nachsommer*, 343.

simply playing them out, *Der Nachsommer* also emphasizes the affinity—and the reciprocal influence—between color and cognition through the narration of Heinrich's explicit observation of color. It is to one such scene that I now turn.

1.2 Coloring the World: an *Erfahrung in den Farben*

Whereas Baudelaire, articulating modernity in 1863, suggested that to become a “kaleidoscope gifted with consciousness” was the goal of “the lover of universal life,”²⁶⁴ Herbart, in 1824, seems to imagine the ideal consciousness as a kind of seeing prism. Wherever we find a “Mittelpunkt, in welchem die Strahlen des Erscheinens sich von allen Seiten her vereinigen und kreuzen,” there, he writes, we find “den Grund des Ich.”²⁶⁵ In the midst of the world's “Strahlen,” Herbart describes the mature ego as not only capable of taking *in* the “Strahlen” of external world, but also of projecting them outward. The ego, in Herbart's words, is something “welches zu seiner Ausbildung noch der innern Welt bedarf, die in der Mitte der Aussenwelt oder des Nicht-Ich sich umherbewegend, nicht bloss Reihen in sich aufnimmt und endigt, sondern auch andre Reihen theils von sich aussendet, theils auszusenden im Begriff ist, durch welche sie den einströmenden beget.”²⁶⁶ In addition to the kaleidoscope, Baudelaire suggested “a mirror as vast as the crowd itself”²⁶⁷; but Herbart's notion of the ego does not just

²⁶⁴ Charles Baudelaire, *The Painter of Modern Life and Other Essays*, trans. and ed. Jonathan Mayne (New York: Da Capo, 1964), 9.

²⁶⁵ Herbart, *Psychologie als Wissenschaft*, 425. Herbart's use, in this passage, of “Strahlen” recalls Ritter's writings, not a generation earlier, which imagined man as a “refracting medium” of the universe's divine rays, and suggests life itself as the ensuing “play of color”: “Alles Einzelne in der Natur ist Brechungsmedium für alle Strahlen des Universums. Im Menschen brechen sich göttliche Strahlen. Sie zerlegen sich, und ihre Farben sind das harmonische Spiel seiner Gedanken [...] Das Leben ist das Farbenspiel, was dadurch im brechenden Medium entsteht.—Der Mensch soll keine Farbe einzeln nehmen; alle in der Vereinigung nur geben das vollendete Bild Gottes in ihm” (Ritter, *Key Texts of Johann Wilhelm Ritter*, 256).

²⁶⁶ Herbart, *Psychologie als Wissenschaft*, 425.

²⁶⁷ Baudelaire, *The Painter of Modern Life*, 9.

take in and reflect “Reihen,” it *organizes* them “in sehr bunten Zusammensetzung” within itself and then projects that organization outward to better navigate the external world. Like Goethe’s conception of the appearance of color, it is impossible to say whether Herbart’s conception of the thinking ego is “mehr activ oder passiv [...], indem fast stets beydes zugleich und nahe in gleichem Maasse [sic] Statt findet.”²⁶⁸ The same, as I suggested earlier in my sketch of *Der Hochwald*, is true of many of Stifter’s characters—Holmes, for instance, clearly articulates the “reciprocal relationship between observer and objects observed [...] which leads the viewer to shape his environment and allow it to form him in turn.”²⁶⁹

The reciprocal formation of the Herbartian ego and environment anticipates, in psychology, the “Innenwelt” and “Umwelt” of Uexküllian biology, and Stifterian-Herbartian education is inherently environmental or “Umwelt-ian.” Its task is to train and organize a subject’s “innere Welt” such that they are able to organize the appearances of the outer world—in other words, to form and interact with that outer world—in a manner most appropriate to their role in life. (“Die innere Welt,” Herbart writes, “oder die Welt der innern Wahrnehmung [...] erscheint anders dem Dichter, anders dem Philosophen, und beyden anders als dem schulbewussten Sünder, oder als dem Tugendhaften, der sich in fromme Selbstbetrachtung versenkt.”²⁷⁰) Heinrich, whose father “pflegte zu sagen, ich müßte einmal ein Beschreiber der Dinge werden,”²⁷¹ accordingly spends his time learning to see things not for the sake of doing something else with them, but for the sake of describing them as much ‘in and of themselves’ as

²⁶⁸ Herbart, *Psychologie als Wissenschaft*, 425.

²⁶⁹ Holmes, “‘Was ich in diesem Haus geworden bin,’” 571. Herbart’s discussion of how a subject’s “innere Welt” structures her “Aussenwelt” anticipates Uexküll’s formulation of the mutually forming “Umwelt” and “Innenwelt” of humans and animals. It is not surprising that Holmes excludes Uexküll from her discussion, but what is curious is that in an article on “Adalbert Stifter’s Visual Curriculum,” she makes no reference to Stifter and Exner’s pedagogical theorist, Herbart.

²⁷⁰ Herbart, *Psychologie als Wissenschaft*, 425.

²⁷¹ Stifter, *Der Nachsommer*, 21.

he can. Yet, as Herbart notes, due to “die Beweglichkeit des Menschen in seiner Umgebung,” we come to learn that “die Anschauungen der Dinge” are *not*—in contrast to what Gustav Fechner will formulate a generation later, and which I explore in section Chapter Three, section 1.2—“die Dinge selbst.”²⁷² As Kant articulated and Uexküll would later echo, “How things may be in themselves, apart from the representations through which they affect us, is entirely outside our sphere of knowledge.”²⁷³ The idea of substance, then, for Herbart—from that of “snow” to that of “self”—becomes “merely an alleged habitation and name for aggregations of perceptions, feelings, and the like.”²⁷⁴ Thus all we can “actually know about such ‘things’” is what comes to us “through the senses”: “lists of qualities” and “characteristics.”²⁷⁵ As a “describer of *things*,” then, Heinrich must essentially become a “describer of his own observations of things.” The longer and more organized his internal list of *Vorstellungen* becomes, the more robust his knowledge—and the more “realistic” his descriptions—become. Thus, as his Herbartian “mental prism” becomes more developed, so, too, does his ability to see, organize, and even represent color in the outside world. I turn first to a small example of organized color perception before turning to a scene in which the mutual environmental shaping of Stifterian-Herbartian observation and judgment is more fully developed.

In a relatively early visit to his mentor's country house—the so-called *Rosenhaus*—we already see Heinrich exercising the kind of organized observation, with its lists and sublists, that is so essential in Herbart's framework. After weeks of auspicious weather, the peak of rose-blossom season has arrived: “Unter dem klarsten, schönsten und tiefsten Blau des Himmels

²⁷² Herbart, *Psychologie als Wissenschaft*, 425.

²⁷³ Quoted in Keith Anderton, “The Limits of Science: A Social, Political, and Moral Agenda for Epistemology in Nineteenth-Century Germany,” Ph.D. Diss., Harvard University, 1993, 59–60.

²⁷⁴ Dunkel, *Herbart and Herbartianism*, 104.

²⁷⁵ Dunkel, *Herbart and Herbartianism*, 104.

standen nun eines Tages Tausende von den Blumen offen. [...] In ihrer Farbe von dem reinsten Weiß in gelbliches Weiß, in Gelb, in blasses Rot, in feuriges Rosenrot, in Purpur, in Veilchenrot, in Schwarzrot zogen sie an der Fläche dahin.”²⁷⁶ Stifter's writing, so famous for its tendency to list and collect, also shows its drive to organize: eight colors are named (though graduations and blendings among those colors are suggested by the repetition of “in”) and are presented not in the mixed-up tumult in which they most likely blossomed, but in order from lightest (“reinsten Weiß”) to darkest (“Schwarzrot”).

But why “in order,” why *this* “bunte Zusammensetzung,” to recall Herbart's phrase, rather than the one in which they “really” appear? In Herbart's framework, the answer lies in a kind of inherent organizational capacity of the ego, which, with education's help, blossoms into judgment. For Herbart, as I will outline, all judgment is inherently aesthetic, and morality—itsself a matter of judgment—is therefore also a fundamentally aesthetic issue. For now, however, I will remain with the rose colors. Just as I suggested above that Stifter provides a template of observation in the form of a landscape description void of visual content, here we can read Herbart's outline of how “lists” (or *Reihen*) become “judgments” as a template for Heinrich's orderly description of roses. Herbart writes:

A multitude of such judgments as *A* is *a*, *A* is *b*, *A* is *c*, *A* is *d*, etc., by which not one and the same *A* is to be taken, but several, with the opposed *a*, *b*, *c*, *d*, of themselves form a series; since the *a*, *b*, *c*, *d*, blend in different degrees according to their lesser or greater contrasts (e.g., the three judgments—this fruit is green, that yellow, a third yellowish green—blend in such a way as to bring with them the colors *in their orders*—green, yellowish green, and yellow; for between yellow and green the opposition is the strongest, consequently the blending the least). From this arises the relation between the genus *A* and its species (*A* which is *a*, *A* which is *b*, etc.).²⁷⁷

²⁷⁶ Stifter, *Der Nachsommer*, 273.

²⁷⁷ Herbart, *A Textbook in Psychology*, 147, emphasis added.

Returning to Heinrich's description of the *Rosenhaus*, we might fill in Herbart's description with the following content: "A multitude of such judgments as 'this rose is pure white, this rose is yellow-white, etc., by which not one and the same rose is to be taken, but several, with the opposed white, yellow-white, (etc.), of themselves form a series; since the white, yellow-white, yellow, pale red, blend in different degrees according to their lesser or greater contrasts."

Judgment, as this passage illustrates, is mind's recognition of similarity and contrast—or, in Herbart's language, the natural upshot of the processes of blending and opposition. By their very nature, in other words, cognitive processes are inclined to organize the world's appearances from most to least blendable, applying to everything the same "laws" of relation that regulate "the gamut in music and the spectrum in color."²⁷⁸

For Herbart, the ultimate aim of learning to see is not to finally see the "things in themselves," but rather to diversify as much as possible "the representations through which they affect us" as a basis for judgment. Likewise, Stifter, as Katherine Arens has articulated, "is attempting to teach the judgments appropriate to appearances, not ontological truth."²⁷⁹ The plural of "representations" and "appearances" in these sentences is key, since for Herbart there can be no judgment where there is no relation between or among multiple elements.²⁸⁰ Indeed, the perceived relation alone amounts to a judgment: "Soweit man die einfachen ästhetischen *Verhältnisse* kennt, hat man denn auch einfache *Urtheile* über dieselben. Diese stehn an der Spitze der Künste, mit völlig selbständiger Autorität."²⁸¹ The primary example that Herbart

²⁷⁸ Herbart, *A Textbook in Psychology*, 147.

²⁷⁹ Katherine Arens, "An Alternate Stifter: Psychologist," in Katherine Arens, *Austria and Other Margins: Reading Culture* (Columbia, SC: Camden House, 1996), 111–131, 119.

²⁸⁰ As Herbart articulates it: "alle einfachen ästhetischen Elemente [müssen] selbst Verhältnisse seyn [...], nämlich Verhältnisse, deren einzelne Glieder, für sich allein genommen, keinen ästhetischen Werth haben" ("Über meinen Streit mit der Modephilosophie dieser Zeit," in *Sämtliche Werke*, 3:317–52, 331).

²⁸¹ Johann Friedrich Herbart, "Ueber die ästhetische Darstellung der Welt, als das Hauptgeschäft der Erziehung," in *Sämtliche Werke*, 1:259–274, 264, emphasis in original.

draws on for this innate, independent, and “authoritative” conception of judgment is music.

“Unter den Künsten ragt in dieser Rücksicht die Musik hervor. Sie kann ihre harmonischen Verhältnisse sämtlich bestimmt aufzählen, und deren richtigen Gebrauch eben so bestimmt nachweisen. Würde aber der Lehrer des Generalbasses nach Beweisen gefragt, so könnte er nur lachen; oder das stumpre Ohr bedauern, das nicht schon *vernommen* hätte!”²⁸² On the basis of the innate agreeability or disagreeability of two-note musical chords, Herbart positions simple aesthetic judgments as self-explanatory. Pedagogically speaking, then, the development of morality—“die *eine* und ganze Aufgabe der Erziehung”²⁸³—rests on the development of the ability to make more and more complex aesthetic judgments.

As the mind becomes more practiced in making aesthetic judgments, it develops what Herbart would call an aesthetic “conscience.” “In musical practice, for example, one makes myriad judgments regarding the tempo, articulation, or dynamics” that, repeated over time, “fuse” into a “musical ‘conscience.’”²⁸⁴ Herbart, as I quoted above, likens “the gamut in music” with “the spectrum in color”; so, just as musical practice would form a musical conscience, so one could also develop a “color conscience” from repeated uses and observations of color. Such aesthetic consciousnesses, though not moral in and of themselves—since morality, for Herbart, has to do with the human will—would nevertheless operate on the same principles as morality and would thus constitute a kind of moral “practice.” It is just such a conscience—occurring in the realm of color but legible through the metaphor of music—that Heinrich develops over the course of his learning to draw.

²⁸² Herbart, “Ueber die ästhetische Darstellung der Welt,” 264, emphasis in original.

²⁸³ Herbart, “Ueber die ästhetische Darstellung der Welt,” 259.

²⁸⁴ Alan Kim, “Johann Friedrich Herbart,” *The Stanford Encyclopedia of Philosophy* (Winter 2015 edition), ed. Edward N. Zalta, <<https://plato.stanford.edu/archives/win2015/entries/johann-herbart/>>, accessed 10 June 2022.

Having returned to his parents' home in Vienna from another summer in the mountains, he determines to paint some antique wooden wainscoting (*Pfeilverkleidung*) which he found during his travels, gave as a gift to his father, and now wishes to show, fully installed, to his mentor in the countryside. By this point in the novel, Heinrich is well on his way to maturity and in the midst of a transition from scientific to artistic observation and depiction—from attentiveness to particular objects to a sense of aesthetic wholeness emerging among those objects. Heinrich's narrative voice recounts:

Ich wollte zuerst Zeichnungen von den Verkleidungen entwerfen und nach ihnen Bilder in Ölfarben ausführen. Ich machte die Zeichnungen auf lichtbraunes Papier, tiefte die Schatten in Schwarz ab, erhöhte die Lichter in einem helleren Braun und setzte die höchsten Glanzstellen mit Weiß auf. Als ich die Zeichnungen in dieser Art fertig hatte und durch vielfache Vergleichen und Abmessungen überzeugt war, daß sie in allen Verhältnissen richtig seien, setzte ich noch den Maßstab hinzu, nach dem sie ausgeführt waren.²⁸⁵

Comparing and measuring the various colors and shades in his study, Heinrich “measures” them against one another, exercising his judgment to establish correct relationships among these external colors just as, in the Herbartian process of education and mental development, we establish correct relationships among internal ideas and concepts. Compare Heinrich's process of measuring color—his attempt to find their correct balance on the page—to Herbart's description of “the nature of thinking”:

concepts, when they constantly follow the tendency toward equilibrium, thereby change from one movement into another, they become more firmly and more variously interwoven, so that each excitation of a single one among them is communicated more and more to the remaining ones, thus assuring their reaction. In other words, the play of the imagination partakes more and more of the nature of thinking, and man becomes more and more intelligent. For intelligence has its seat in this general connection among concepts, but not in notions and judgments taken individually.²⁸⁶

²⁸⁵ Stifter, *Der Nachsommer*, 559.

²⁸⁶ Herbart, *A Textbook in Psychology*, 166.

Concepts in the mind, like colors in a scene or on a canvas, tend to blend into a whole, such that each one is increasingly bound to the others. Heinrich's process of tuning the color-
 "Verhältnisse" of his drawings can thus be seen, in Herbart's framework, as an externalization of thought itself and a manifestation of the inextricable mutual formation, for both Herbart and Stifter, of observer and environment. In another example of cognition that Herbart constructs with color, "the three judgments—this fruit is green, that yellow, a third yellowish green—blend in such a way as to bring with them the colors in their orders—green, yellowish green, and yellow; for between yellow and green the opposition is the strongest, consequently the blending the least,"²⁸⁷ three colors are perceived and then organized by the observing subject. As Herbart noted, however, there are "Tausende oder Millionen von Vorstellungen, die auf einmal im Bewusstseyn sind"²⁸⁸; and there are, unsurprisingly, many more relations of color that Heinrich must attend to in his experience of drawing.

To depict the wainscoting faithfully, Heinrich must be attentive to multiple dimensions of color's mutual relations at once. The first is internal to the painting and operates among the colors on the page: since each color on the canvas affects the appearance of the colors around it, they have to be tuned in relation to each other.²⁸⁹ The second dimension of color's interrelation extends beyond the page, however, because the local colors that Heinrich draws should accord with those in the room, which likewise affect each other's appearance. Thus Heinrich's task is

²⁸⁷ Herbart, *A Textbook in Psychology*, 147.

²⁸⁸ Herbart, *Psychologie als Wissenschaft*, 409.

²⁸⁹ This interaction of colors on the canvas is, as Nicholas Gaskill notes, the nineteenth century meaning of the term "local color": "These literal hues referred not to places in the world but to the local arrangements of pigments on a canvas that were required to achieve a convincing illusion of real-world objects. They named a technique for adjusting pigments to perception and so foregrounded the question of how art stands in relation to the reality it depicts [...] eighteenth- and nineteenth-century art critics called local colors, *local* because their place within the painting determined their appearance and thus their ability to depict an object" (*Chromographia: American Literature and the Modernization of Color* [Minneapolis: University of Minnesota Press, 2018], 43).

more than a one-to-one exercise in color-matching: his ability to observe and represent relies on his ability to harmonize, as it were, these layers of colorful relationships—to bring many sections of an orchestra in tune with each other. Morning after morning, Heinrich engages in a process of judgment that, following Herbart's investment in music as the model of aesthetic and ethical judgment, we might call *Stimmung*. Through its shared root with the word for "voice" (*Stimme*), the term carries a sense of "attunement." But Heinrich's process of color-attunement here departs from the sense of *Stimmung* that was typical since C. C. L. Hirschfeld's *Theorie der Gartenkunst*, which appeared in five volumes between 1779–1785—the sense of a total affective quality or "Charakter" belonging to a landscape. (I discuss Hirschfeld again in section 2.3 of this chapter). Nor is Heinrich's painting intended, in a Schillerian sense, to produce *Stimmung* (mood) in a viewer.²⁹⁰ Rather, Heinrich relies on *Stimmung* as a means of objective observation, correct judgment, and realistic depiction—a practicing ground, in the Herbartian framework, for positioning oneself rightly within, and acting in moral attunement with, social situations.²⁹¹

Accordingly, while this first passage presents the balancing of color as a foundation of objective observation and depiction, the next disrupts and challenges that foundation by acknowledging a larger and still more complex attunement among colors. The wainscoting's varnished wooden surface is so shiny, Heinrich realizes, that at the same time he is attuning the colors of his sketch to each other and to the colors of the wainscoting, the colors of the wainscoting are busy attuning themselves to the other colors in the room:

²⁹⁰ Although Herbart, influenced by Schiller's *Briefe über die ästhetische Erziehung des Menschen*, saw Schiller's notion of "play," as essential to the learning process.

²⁹¹ For Stifter, proper social positioning—not to mention love—is particularly intertwined with proper observation. Heinrich and Natalie's love for each other develops over the course of the novel primarily through looking, either (increasingly) at each other, or together at things and landscapes. Risach collapses any distance between seeing and loving when he tells Heinrich: "Natalie *sah* euch und *liebte* euch, so wie ihr sie," (*Der Nachsommer*, 820, emphasis added).

Auf die mit schwachem Firnis überzogenen Holzschnitzwerke nahmen die umgebenden Gegenstände einen solchen Einfluß, daß sich Schwerter, Morgensterne, dunkelrotes Faltenwerk, die Führung der Wände, des Fußbodens, die Fenstervorhänge und die Zimmerdecke in unbestimmten Ausdehnungen und unklaren Umrissen in ihnen spiegelten.²⁹²

Heinrich realizes that “wenn alle diese Dinge in die Farbe der Abbildungen aufgenommen werden sollten,” his painting would gain in “Reichtum und Reiz,” but lose in “Verständlichkeit.”²⁹³ In other words, the color relationships throughout the whole room are so complex that they undermine the clarity and legibility of the wainscoting by itself, rendering it “unbestimmt”—hence, in contemporaneous philosophical terms, “indeterminate.” These conflicting layers of color’s *Stimmung*—the one confined to the artwork, and the other in the room at large—impede, or in Herbart’s language, “inhibit” each other, forcing Heinrich to make a choice between representing the clarity of the particular thing, on the one hand, and unity of the aesthetic-sensuous whole, on the other.

Since Heinrich’s priority is the wainscoting, he ends up hauling many objects out of the room—manipulating reality for the sake of realism.²⁹⁴ In doing so, he avoids confusing the

²⁹² Stifter, *Der Nachsommer*, 559.

²⁹³ Stifter, *Der Nachsommer*, 559.

²⁹⁴ In doing so, Heinrich minimizes the distance between realism and reality, representation and existence. His physical manipulation of the external world reflects, on a small scale, the violent control of nature by culture that Claudia Öhlschläger summarizes as the “Bruchstelle” in Stifter’s work: “Denn die Kultur, die naturnah sein soll, ist immer Kultur gegen vorgefundene Natur, sie tendiert dazu, diese zu ersetzen, wenn nicht sogar auszulöschen” (“Weiße Räume: Transgressionserfahrung bei Adalbert Stifter,” *Jahrbuch des Adalbert Stifter Instituts* 9.10 [2002-2003]: 55–68, 56). Similarly, Heinrich’s manipulation of the physical room evinces a further dimension of what Franziska Schweiger has discussed as his attempt, through description and depiction, to establish a “pseudo-integrity of scientific ownership between the describing subject and the described object” in a world where “the individual and her environment no longer constitute an organic totality” (“Networking Matters: Literary Representations of Materiality in Stifter’s ‘Nachsommer,’” *Material Worlds - Novelistic Matters of the Nineteenth Century*, special issue, *Colloquia Germanica* 47.3 [2014]: 201–216, 209). At the same time, however, Heinrich’s increasing attention to color’s attunement, especially as part of artistic rather than scientific representation, shows how, thanks to Risach’s influence, he comes to value ways of looking at and engaging with the world as, in Schweiger’s Latourian reading, “a more flexible network” (210). In Schweiger’s reading of nature and culture as “network” or even “assemblage,” she highlights the dynamic nature of their relationship and the latitude—

surface of the wood with so many reflections that, in the small scope of his painting, he would be unable to “explain” by visual reference to their sources. Even though Heinrich is painting, his use of the word “Begründung” implies that all realism, either visual or verbal builds a narrative. Holmes, indeed, discusses how the “organization of material” inherently “leads to the creation of [...] meaning.”²⁹⁵ More so, however, Heinrich’s remark implies that *real* reality (the oft-cited “wirkliche Wirklichkeit” of Stifter’s *Nachkommenschaften*²⁹⁶) requires no explanation: because the real wainscoting is already surrounded by the sources of its reflections, we might imagine that it already presents its narrative in full.²⁹⁷ That is to say, by arranging and organizing their own colors, the objects in the room are making their own meaning. Heinrich, though unable to include all those objects, makes sure to paint the reflections of those that remain, a choice for which he gives two significant reasons:

um einerseits wahr zu sein und um andererseits, wenn ich jede Einwirkung der Umgebung weg ließe, nicht etwas geradezu Unmögliches an ihre Stelle zu setzen und den Gegenstand seines Lebens zu berauben, weil er dadurch aus jeder Umgebung gerückt würde, keinen Platz seines Daseins und also überhaupt kein Dasein hätte.²⁹⁸

The first reason—“um wahr zu sein”—is at home with Heinrich’s painting experience so far: although color’s autonomous blending hinders clarity on one level (blurred reflections obscure the wainscoting’s “own” colors and contours), it is also necessary for realistic representation

unacknowledged in the readings that focus solely on culture’s domination and suppression of nature—for shifting and newly meaningful connections between them.

²⁹⁵ Holmes, “‘Was ich in diesem Haus geworden bin,’” 570.

²⁹⁶ Adalbert Stifter, *Nachkommenschaften*, in *Adalbert Stifter: Werke und Briefe. Historisch-Kritische Gesamtausgabe*, ed. Alfred Doppler und Hartmut Laufhütte [Stuttgart: Kohlhammer, 2005], 3.2:23–94, 65.

²⁹⁷ The sense that the visual *is* verbal connects Stifter’s poetics of observation to the “world as book” tradition (famously explored by Hans Blumenberg in *Die Lesbarkeit der Welt*). Eric Downing discusses this idea of “natural” or material narrative in regards to the magic and divinatory practices he observes structuring realist narrative, in *The Chain of Things: Divinatory Magic and the Practice of Reading in German Literature and Thought, 1850–1940* (Ithaca, NY: Cornell University Press, 2018). Stifter’s own prose would offer the other side of Heinrich’s coin here—a narrative that paints, instead of a painting that narrates.

²⁹⁸ Stifter, *Der Nachsommer*, 559–60.

(measured relations among colors on the canvas). This “truthful” representation in color recalls Stifter’s praise, in an art review he wrote for the *Oberösterreichischen Kunstverein*, of a painting in which “*Die Farbe ist so wahr, daß sie die Täuschung der Wirklichkeit hervorbringt.*”²⁹⁹ But the second reason is strange. Leaving the realm of aesthetic “truth” behind, Heinrich notes that to leave out *all* surrounding influences on the appearance of the wainscoting would be “den Gegenstand *seines Lebens* zu berauben” and set “etwas geradezu Unmögliches” in its place.

What does this mean? It is a cardinal moment, because Heinrich shifts from a register of representation to the lexicon of existence—from realism to reality. This last and puzzling element of Heinrich’s *Erfahrung in den Farben*, as he calls it, suggests what I propose is an immanent theory emerging from this scene. Namely, that the interactions of color governing Heinrich’s realism are also vital to the reality he represents. In his expansive reading of the concept of *Stimmung*, Eric Downing situates it in the classical tradition of a sympathetic cosmos, rendering it legible as “a way of reading the correspondences, the likenesses and connections, between the human, natural, and divine realms that sees all three in the one order of visible things.”³⁰⁰ In Downing’s analysis, that “order of visible things” consists of the various “texts” of sympathetic readings—entrails, feathers, and later literary writing—and points to “another hidden world beyond the apparent one.”³⁰¹ In my analysis, however, the “order of visible things” consists of the very stuff of visibility—color—and points to the same logic of relative, mutual entanglement through which that visible order appears in the first place. Heinrich’s *Erfahrung in*

²⁹⁹ Adalbert Stifter, quoted in Begemann, *Die Welt der Zeichen*, 369, emphasis added. Begemann discusses Stifter’s commitment to realism in which “die Täuschung der Wirklichkeit” of artwork is so successful “daß es sich quasi selbst aufhebt, sich verleugnet und pure Realität zu sein vorgibt” (368).

³⁰⁰ Downing, *The Chain of Things*, 29.

³⁰¹ Downing, *The Chain of Things*, 4.

den Farben, therefore, becomes legible as an experience in and of this “attuned” visual reality of color.

In stressing the importance of painting the wainscoting along with the remaining colors reflected in its surface, Heinrich suggests that, *if* it were forced to exist all by itself, there would be “nearly” no such thing as the wainscoting. This “nearly” is a curious qualification, implying that an object’s existence is not entirely—or indeed mostly not—its own. Instead, the passage suggests that the place of an object’s being is what gives it life. Its relation to other objects, its place within a narrative “explanation,” i.e., that larger *Stimmung* of color, is what anchors its existence. Immediately following his explanation of the object’s communal life and existence, Heinrich concludes: “Was die wirkliche *Ortsfarbe* der Schnitzereien sei, würde sich aus dem Ganzen schon ergeben und müßte aus ihm erkannt worden.”³⁰² Just as Stifter located the *truth* of a painting in its color, Heinrich does not differentiate the wainscoting’s *existence* (among its fellow objects) from its color (local to the room, and local to the canvas). And, just as color only attains “reality” among other colors, the wainscoting only “lives” among other objects. A principle of aesthetic representation—the measuring and mutual attunement of local color—has become a principle of existence itself, and one whose fundamental principle of interdependence makes it “ecological” *avant la lettre*.

2 Coloring the Divine: Heavenly Abstraction

*Farben, die nie ein Auge gesehen, schweiften durch den Himmel.*³⁰³

³⁰² Stifter, *Der Nachsommer*, 560, emphasis added.

³⁰³ Stifter, “Die Sonnenfinsternis,” 590.

In the first part of this chapter I compared Stifter's narration with Herbart's influential model of cognition in order to situate Heinrich's *Erfrahrung in den Farben* as internalizations (or deep appearances) of Goethean processes of color appearance, and, therefore, as integral, if less superficially obvious, parts of the nature of color. I now turn to more visible instances of color in Stifter's work—ones which reverse or spill beyond the Herbartian framework. Herbart outlines the gradual development of an aesthetic conscience in terms that recall Heinrich's questioning observation, which I examined in the first part of section 1, of the water and the stone. That passage, recall, read:

Kömmt es aus Zufall, haben die abstürzenden dem See zueilenden Wässer die Berge so schön gefurcht gehöhlt geschnitten geklüftet, oder entspringt unsere Empfindung von dem Gegensatze des Wassers und der Berge, wie nämlich das erste eine weiche glatte feine Fläche bildet, die durch die rauhen absteigenden Riffe Rinnen und Streifen geschnitten wird, während unterhalb nichts zu sehen ist, und so das Rätsel vermehrt wird?³⁰⁴

The development of Herbartian conscience, as he describes it, can be likewise visualized in terms of the gradual effect of water bursting across stone:

Es kommt noch hinzu, dass, in dem aus der Mitte des Gemüths ein Geschmacksurtheil hervorbricht, es gar oft durch die Art wie es entsteht, als eine Gewalt gefühlt wird, die eigentlich in dem was es spricht, nicht liegt. Glücklich wenn ein solcher Ungestüm gleich anfangs siegt; — er vergeht mit der Zeit; aber das Urtheil bleibt; es ist sein langsamer Druck, den der Mensch sein *Gewissen* nennt.³⁰⁵

In this description, the development over time (“er vergeht mit der Zeit”) of features that eventually appear permanent (“aber das Urtheil bleibt”) map onto the water, which, in Heinrich's observation, “die Berge so schön gefurcht gehöhlt geschnitten geklüftet [haben],” leaving it in “rauen absteigenden Riffe Rinnen und Streifen geschnitten.” But while it is that “langsamer

³⁰⁴ Stifter, *Der Nachsommer*, 338–39.

³⁰⁵ Herbart, “Ueber die ästhetische Darstellung der Welt,” 265, emphasis in original.

Druck” that is important for Herbart as “conscience” what of the initial aesthetic judgment that he describes as an “Ungestüm” which “hervorbricht,” “siegt,” and is experienced as “eine Gewalt”?

In this section, I turn to three *Erfahrungen in den Farben* in Stifter's work that, unlike Heinrich's measured and controlled practice with color attunement, are overwhelming and even inherently *disorderly*. As such, these experiences exceed the Herbartian focus on repetitive, organizational aesthetic-moral judgments, as well as the realist conventions of Stifterian observation and depiction. In doing so, they reveal color as a central agent in collapsing “common oppos[itions]” between the category of “realism” and those of “abstraction” or “expressionism.”³⁰⁶ Stifter's attention to color, as I show through these readings, reveals a further spectrum of continuity and interaction between color and the *Gemüt*—an interaction based less in cognition than in emotion, less in the mind than the heart. I analyze these overwhelming *Erfahrungen* through the work of Herbart's contemporary, Jan Evangelista Purkinje, whose 1819 *Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht* brought Goethe's subjective colors—as colors, rather than cognitive processes—into the realm of objective, i.e., empirical, study.³⁰⁷ These colorful interactions, I argue, constitute a second Stifterian paradigm of learning to see—one in which the subject's observation leads not to their mental assimilation of their visual environment, but the other way around: their visual environment's assimilation of them.

³⁰⁶ Marsha Meskimmon, *We Weren't Modern Enough: Women Artists and the Limits of German Modernism* (Berkeley: University of California Press, 1999), 2.

³⁰⁷ See Jutta Müller-Tamm, “Farben, Sonne, Finsternis,” 171.

2.1 Music of the Eye: “Die Sonnenfinsternis”

The first “Erfahrung” that I discuss is described in a brief article published more than ten years prior to *Der Nachsommer*, on the occasion of a total solar eclipse. The essay is called simply “Die Sonnenfinsternis am 8. Juli 1842.” Stifter’s early paragraphs oscillate between the eclipse’s theoretical simplicity (“ich [kann] die Sache recht schön auf dem Papiere durch eine Zeichnung und Rechnung darstellen”) and the “unbegreiflichen Wunder” of experiencing it, enacting the tension between feeling that the mind *ought* to be able to grasp the phenomenon (as, in Herbartian judgment, it does) and the utterly overwhelming experience of the phenomenon itself.³⁰⁸

Es war ein so einfach Ding. Ein Körper leuchtet einen andern an, und dieser wirft seinen Schatten auf einen dritten: aber die Körper stehen in solchen Abständen, daß wir in unserer Vorstellung kein Maß mehr dafür haben, sie sind so riesengroß, daß sie über alles, was wir groß heißen, hinausschwellen—ein solcher Komplex von Erscheinungen ist mit diesem einfachen Dinge verbunden, eine solche moralische Gewalt ist in diesen physischen Hergang gelegt, daß er sich unserem Herzen zum unbegreiflichen Wunder auftürmt.³⁰⁹

Stifter’s narration—deliberately, performatively—attempts to regain control of this “Wunder” by explaining the mechanics of the eclipse. But these mechanical explanations do not belong to the “langsamer Druck” that occurs in the aftermath of Herbartian aesthetic or moral judgment, since, as Stifter tells us, they arose before the “Gewalt” of the phenomenon itself: “dies alles wußte ich voraus.”³¹⁰ Instead, Stifter’s text takes recourse to explaining exactly why his failure to assimilate the experience is occurring. It is, he writes, because “unsere[] Vorstellung kein Maß mehr dafür [hat].” For Herbart, aesthetic judgments, though immediately felt as “pleasure” or

³⁰⁸ Stifter, “Die Sonnenfinsternis,” 584–85.

³⁰⁹ Stifter, “Die Sonnenfinsternis,” 585.

³¹⁰ Stifter, “Die Sonnenfinsternis,” 584.

“displeasure,” can be understood (and then brought to bear on new experiences) in terms of musical harmony—in other words, in terms of *measurable* relations among elements. For the eclipse, however, no human measurement is possible. What Stifter, using a very Herbartian phrase, calls the eclipse’s “Komplex von Erscheinungen” exceeds “alles, was wir groß heißen”: it is too great in relation to the simplicity of its mechanics to be integrated by the observing subject. Here, then, is a degree of aesthetic-moral “data”³¹¹ that “als eine Gewalt gefühlt wird” (Herbart) and “unsere Seele überwältigt” (Stifter) but whose inner relations cannot be grasped (“ja sie ist *trotz* der Rechnungen da”).³¹² Thus Stifter, in the same breath as he expresses his utter amazement—“Nie und nie in meinem ganzen Leben war ich so erschüttert, von Schauer und Erhabenheit so erschüttert, wie in diesen zwei Minuten”—provides a different frame for interpreting this moment of overwhelming aesthetic intensity that Herbart’s theory, though allowing for, does not, strictly speaking, encompass. Stifter writes: “es war nicht anders, als hätte Gott auf einmal ein deutliches Wort gesprochen und ich hätte es verstanden.”³¹³ The colors of the eclipse overwhelm the mind and, Stifter suggests, speak directly to the heart: the colors’ moral power appears to the heart as an “unbegreifliche[s] Wunder.”

On the one hand, Stifter frames the eclipse in very Herbartian terms: it is sudden and overpowering, experienced as something that “in dem was es spricht [the heart], nicht liegt.” Likewise, even as “das Werk des Tages ging fort,” he muses on the eclipse’s “langsamer Druck” in the hearts of its witnesses: “Wie lange aber das Herz des Menschen fortwogte, bis es auch wieder in sein Tagewerk kam, wer kann es sagen? Gebe Gott, daß der Eindruck recht lange

³¹¹ I take this word from Arens, “An Alternate Stifter,” 115ff. For more on the emergence of statistics in Stifter’s work and society, see Coen, *Vienna in the Age of Uncertainty* and David Martyn, “The Picturesque as Art of the Average: Stifter’s Statistical Poetics of Observation,” *Monatshefte* 105.3 (2013): 426–442.

³¹² Stifter, “Die Sonnenfinsternis,” 588, first emphasis added.

³¹³ Stifter, “Die Sonnenfinsternis,” 585.

nachhalte..."³¹⁴ On the other hand, other aspects of the eclipse experience subtly reverse the structure of Herbartian cognition. In Herbart's work, as I discussed, cognition itself becomes *bunt* insofar as it, like the Goethean appearance of color, unfolds over time through a series of actions and reactions. In Stifter's description of the eclipse, however, time and color overwhelm, rather than structure, human cognition. Stifter describes how

Die Luft wurde kalt, empfindlich kalt, es fiel Tau, daß Kleider und Instrumente feucht waren—die Tiere entsetzten sich;—was ist das schrecklichste Gewitter, es ist ein lärmender Trödel gegen diese todesstille Majestät [...]—aber auch eine solche Erhabenheit, ich möchte sagen *Gottesnähe*, war in der Erscheinung dieser zwei Minuten, daß dem Herzen nicht anders war, als müsse er irgendwo stehen.³¹⁵

Rather than constituting time through their own inner judgments and understanding, Stifter and his fellow observers witness these "zwei Minuten" through their "Erscheinung." That is, what they feel in their hearts as "Gottesnähe" is seen by their eyes as color. As the moon begins overshadowing the sun, Stifter's narrative unfolds the changing lights and colors of the landscape before him. The eclipse advances as follows:

draußen an dem Kahlengebirge und jenseits des Schlosses Belvedere war es schon, als schliche eine Finsternis oder vielmehr ein bleigraues Licht
[...]
der Fluß schimmerte nicht mehr, sondern war ein taftgraues Band
[...]
über die Auen starrte ein unbeschreiblich seltsames, aber bleischweres Licht
[...]
die Gesichter wurden aschgrau
[...]
gegen Südost lag eine fremde, gelbrote Finsternis
[...]
die Horizontwolken [...] halfen das Phänomen erst recht bauen, sie standen nun wie Riesen auf, von ihrem Scheitel rann ein fürchterliches Rot, und in tiefem, kaltem, schwerem Blau wölbten sie sich unter und drückten den Horizont - Nebelbänke, die

³¹⁴ Stifter, "Die Sonnenfinsternis," 594.

³¹⁵ Stifter, "Die Sonnenfinsternis," 591, emphasis in original.

schon lange am äußersten Erdsäume gequollen und bloß mißfärbig gewesen waren, machten sich nun geltend und schauerten in einem zarten, furchtbaren Glanze, der sie überlief—Farben, die nie ein Auge gesehen, schweiften durch den Himmel

[...]

rings um [den Mond war] kein Sonnenrand, sondern ein wundervoller, schöner Kreis von Schimmer, bläulich, rötlich, in Strahlen auseinanderbrechend, nicht anders, als gösse die obenstehende Sonne ihre Lichtflut auf die Mondeskugel nieder, daß es rings auseinanderspritzte—das Holdeste, was ich je an Lichtwirkung sah!

[...]

Draußen weit über das Marchfeld hin lag schief eine lange, spitze Lichtpyramide gräßlich gelb, in Schwefelfarbe flammend und unnatürlich blau gesäumt; es war die jenseits des Schattens beleuchtete Atmosphäre, aber nie schien ein Licht so wenig irdisch und so furchtbar...³¹⁶

Unlike the colors of Heinrich's wainscoting—unruly and interrelated though they were—the colors of the eclipse are utterly uncontained by any objects. They exist entirely on their own, and in doing so, cease, by the last passage here, to belong either to nature ("unnatürlich") or to this world at all ("so wenig irdisch"). Whereas Heinrich strove to anchor the wainscoting to its "Dasein" by indicating, through the "Einwirkung der Umgebung," its integration within its surroundings, the colors of the eclipse, independent of any "Gegenständen," seem to be an instantiation of Heinrich's realist-representational fear: "etwas Geradezu unmögliches."³¹⁷

More difficult to describe than "das Geschehene," Stifter writes, and even more than "das Gefühlte,"—i.e., the felt presence of God—is this "*namenlos* tragische Musik von Farben und Lichtern, die durch den ganzen Himmel liegt."³¹⁸ "Das Geschehene" and "das Gefühlte" are

³¹⁶ Stifter, "Die Sonnenfinsternis," 598–591. As though anticipating Fechner's literary experimentation in two-dimensional shadows, which, as I argue in Chapter Three, was formative for Scheerbart's imagination of a utopian ecology of color, Stifter goes on: "Hatte uns früher Eintönigkeit verödet, so waren wir jetzt erdrückt von Kraft und Glanz und Massen—unsere eigenen Gestalten hafteten darinnen wie schwarze, hohle Gespenster, die keine Tiefe haben; das Phantom der Stephanskirche hing in der Luft, die andere Stadt war ein Schatten" (591).

³¹⁷ Stifter, *Der Nachsommer*, 559–60.

³¹⁸ Stifter, "Die Sonnenfinsternis," 592, emphasis added. The full quote reads: "Sie [accounts of eclipses] können nur das Gesehene malen, aber schlecht, das Gefühlte noch schlechter, aber gar nicht die namenlos tragische Musik von Farben und Lichtern, die durch den ganzen Himmel liegt." The impossibility ("aber gar nicht") of this project is,

both, Stifter's framing implies, "irdisch," and therefore possible to integrate into our colorful cognitive processes, to organize, and, of course, to name. "Das Geschehene," as he shows in "Die Sonnenfinsternis," can be calculated and diagrammed. "Das Gefühlte," likewise—even "das Gefühlte" of God's presence—is located in humans' feelings, not in what inspires those feelings, and can, when the otherworldliness of the scene comes on, be expressed only through "ein einstimmiges 'Ah'" from the crowd, and, when it begins to recede, be understood as "Wie herrlich, wie furchtbar!"³¹⁹ Before that moment, however, I propose that the onlookers' *Erfahrung in den Farben* is the inverse of Heinrich's. Throughout his *Bildung*, as I suggested above, Heinrich became increasingly adept as the Herbartian "Mittelpunkt, in welchem die Strahlen des Erscheinens sich von allen Seiten her vereinigen und kreuzen."³²⁰ But, replete in his own powers of perception, Heinrich forgets his own visuality. Just as, in the eye, the optic nerve causes a blindspot in our field of vision, so when Heinrich lists the floor to ceiling panoply of objects whose reflected colors blur across the wainscoting's surface—"Schwerter, Morgensterne, dunkelrotes Faltenwerk, die Führung der Wände, des Fußbodens, die Fenstervorhänge und die Zimmerdecke"—he neglects to include himself.³²¹ In the midst of the eclipse, however, the overawed hearts of Stifter's fellow onlookers become almost grotesquely concentrated in their external appearances:

Auch wurde die Wirkung auf alle Menschenherzen sichtbar. Nach dem ersten Verstummen des Schrecks geschahen unartikulierte Laute der Bewunderung und des Staunens: der eine hob die Hände empor, der andere rang sie leise vor Bewegung, andere ergriffen sich bei denselben und drückten sich—eine Frau begann heftig zu weinen, eine

perhaps, a rhetorical device to emphasize how far his account still falls from communicating what his essay, in describing it, frames as indescribable.

³¹⁹ Stifter, "Die Sonnenfinsternis," 590, 592.

³²⁰ Herbart, *Psychologie als Wissenschaft*, 425.

³²¹ Jochen Berendes points out Heinrich's absence from Heinrich's visual account of the wainscoting's reflections in his *Ironie – Komik – Skepsis: Student zum Werk Adalbert Stifters* (Tübingen: Max Niemeyer, 2009), 344.

andere in dem Hause neben uns fiel in Ohnmacht, und ein Mann, ein ernster, fester Mann, hat mir später gesagt: daß ihm die Tränen herabgeronnen.³²²

Overwhelmed with the scene before them, the eclipse's observers do not, however, remain separate from it, as is typical in encounters with the sublime. Instead, they become integrated into nature's totality—or, we might say, ecology—of appearances.³²³ Seen through Stifter's nature of color, Stifter's fellow observers cross the same threshold (but in the opposite direction) as I outlined as the immanent theory of Heinrich's wainscoting: they move from the existential rules of reality to those of realism, their existence anchored by their colorful integration into a visual scene. Unable to comprehend the sights before them, they cease momentarily to exist as observing "Mittelpunkte," and become instead visible features of the eclipse's "Jenseitswelt,"³²⁴ as strange as the "Farben, die nie ein Auge gesehen."³²⁵

To close his essay, Stifter tentatively frames this unearthly world of color as the divine itself: the "lüften" of God's "glänzendes Kleid" (that is, the everyday visible world), "daß wir

³²² Stifter, "Die Sonnenfinsternis," 592.

³²³ Stifter's description of the eclipse is a classic example of the sublime in almost every detail—and, for all his emphasis on "das sanfte Gesetz" in the preface to his *Bunte Steine*, sublimity is equally important in structuring his work. See Elisabeth Häge, *Dimensionen des Erhabenen bei Adalbert Stifter* (Berlin: Walter de Gruyter, 2018). On the difficulties and potential of the sublime in ecological thinking, see Christopher Hitt, "Toward an Ecological Sublime," *New Literary History* 30.3 (1999): 603–623 and Emily Brady, "The Environmental Sublime," in *The Sublime from Antiquity to the Present*, ed. Timothy Costelloe (Cambridge: Cambridge University Press, 2012), 171–182. Through its aesthetic integration of observers into their visual environment, Stifter's "Sonnenfinsternis" can be read as a preliminary exploration of Hitt's suggestion that "the concept of the sublime offers a unique opportunity for the realization of a new, more responsible perspective on our relationship with the natural environment" ("Toward an Ecological Sublime," 605). Rather than locating Hitt's potential in "the wild otherness of nature" (620), however, my reading obtains in what Enis Yucekoralp identifies as the second stage of the sublime: "a boundless enveloping experience which explodes the self into a vast, interrelated matrix with nature" ("The Eco-Politics the Sublime: Nature, Environmentalism, and Covid-Ecology," in *New Socialist*, 16 October 2021 <<https://newsocialist.org.uk/eco-politics-sublime-nature-environmentalism-and-covid-ecology/>>, accessed 22 March 2023). This "vast, interrelated matrix" is explored in the modern-day chemical realm by Nicholas Shapiro (see his "Attuning to the Chemosphere: Domestic Formaldehyde, Bodily Reasoning, and the Chemical Sublime," *Cultural Anthropology* 30.3 [2015]: 368–393) and in American literature by Lee Rozelle in his *Ecosublime: Environmental Awe and Terror from New World to Oddworld* (Tuscaloosa: University of Alabama Press, 2006).

³²⁴ Stifter, "Die Sonnenfinsternis," 592.

³²⁵ Stifter, "Die Sonnenfinsternis," 590.

ihn selber schauen.”³²⁶ Immediately following this proposal, however, Stifter makes a second one which recasts this divine appearance as the appearance of abstraction:

Könnte man nicht auch durch Gleichzeitigkeit und Aufeinanderfolge von Lichtern und Farben eben so gut eine Musik für das Auge wie durch Töne für das Ohr ersinnen? Bisher waren Licht und Farbe nicht selbstständig verwendet, sondern nur an Zeichnung haftend; denn Feuerwerke, Transparente, Beleuchtungen sind doch nur zu rohe Anfänge jener Lichtmusik, als dass man sie erwähnen könnte. Sollte nicht durch ein Ganzes von Lichtakkorden und Melodien eben so ein Gewaltiges, Erschütterndes angeregt werden können, wie durch Töne? Wenigstens könnte ich keine Symphonie, Oratorium oder dergleichen nennen, das eine so hehre Musik war, als jene, die während der zwei Minuten mit Licht und Farbe an dem Himmel war, und hat sie auch nicht den Eindruck ganz allein gemacht, so war sie doch ein Teil davon.³²⁷

Jutta Müller-Tamm has convincingly suggested that Stifter drew inspiration for this

“Lichtmusik” from the work of Jan Evangelista Purkinje, whose 1819 *Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht* brought Goethe's subjective colors into the realm of objective, i.e., empirical, study.³²⁸ Purkinje, discussing the movements of the eye and the phenomena of subjective vision, introduces the concept of “Augenmusik”:

Es wäre der Mühe werth diese Art Augenmusik die uns allenthalben aus der Natur und Kunstwelt entgegenwinkt als einen eigenen Kunstgegenstand zu bearbeiten. Gewiss würde hier für das schaffende Genie eine neue Bahn gebrochen wenn die Ausführungen hinlänglich ins Grosse getrieben würden. Bis itzt scheint noch nicht für diese Kunst die Zeit gekommen zu seyn, sie muss als Sklavin zu Verzierungen von Kleidern, Gebäuden, Gärten etc. dienen. Nur im Feuerwerke, im Tanze so wie in gymnatischen Vorstellungen, Altären, Ziergärten, transparenten Kreisen mit Centralbewegungen und neuerlichst im Kaleidoscope hat sie bisher ein selbständiges Leben begonnen, wird aber noch immer, weil sie zum Theil mit Gauklern durch die Welt zieht vom vornehmen Geschmace verkannt und übersehen.³²⁹

³²⁶ Stifter, “Die Sonnenfinsternis,” 594.

³²⁷ Stifter, “Die Sonnenfinsternis,” 594–95.

³²⁸ See Müller-Tamm, “Farben, Sonne, Finsternis,” 171.

³²⁹ Purkinje, *Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht* (Prag: 1819), 162–63.

Goethe, in bringing the *Gemüt* into nature's totality, also opened—but then quickly shut—the possibility of color as “einen eigenen Kunstgegenstand.” After elevating it as part of “der Reihe der uranfänglichen Naturerscheinungen” whose effect on the *Gemüt* takes place “*ohne Bezug auf Beschaffenheit oder Form eines Materials*,” he again constrains it as secondary to “material,” a mere “Element der Kunst.”³³⁰ Purkinje, on the other hand, sees “diese Art Augenmusik” as an artistic opportunity for “das schaffende Genie,” and one best pursued “ins Grosse.” This idea would indeed, as Purkinje's prescient note proposes, be enthusiastically taken up by Expressionism. In this context, however, Stifter's description of the 1842 eclipse can be read as a precursor to Expressionism's liberation of color, and an early exploration of Purkinje's idea³³¹: trite though such questions may be, who, after all, is more of a “schaffende Genie” than God, and what larger canvas than the sky? Not only, then, does Stifter integrate the “bunten Zusammensetzung” of Herbart's “geordneten Denken” in his work, using it—as I explored in my readings from *Der Nachsommer*—to organize both the process and, reciprocally, the content of observation; as early as the “Sonnenfinsternis” essay, we can observe what Sabine Schneider calls the “abgewandte Rückseite von Stifters Ordnungsprojekt.”³³² In the “Umschlag” of describing a divinely-constituted reality,³³³ Stifter's engagement with color leads him beyond

³³⁰ Goethe, *Zur Farbenlehre*, 229, emphasis added.

³³¹ An exploration on par with the paintings of William Turner (1775–1851), who was also inspired by Goethe. Charles Lock Eastlake's 1840 translation of Goethe's *Farbenlehre* opened this text to an English speaking audience. See Linda M. Shires, “Color Theory—Charles Lock Eastlake's 1840 Translation of Johann Wolfgang von Goethe's *Zur Farbenlehre* (Theory of Colours),” *BRANCH: Britain, Representation and Nineteenth-Century History*, ed. Dino Franco Felluga. Extension of *Romanticism and Victorianism on the Net* <https://branchcollective.org/?ps_articles=linda-m-shires-color-theory-charles-lock-eastlakes-1840-translation-of-johann-wolfgang-von-goethes-zur-farbenlehre-theory-of-colours>, published June 2013, accessed 17 June 2022.

³³² Sabine Schneider, “Bildlöschung: Stifters Schneelandschaften und die Aporien realistischen Erzählens,” in *Variations* no. 16 (2008): 175–188, 178.

³³³ As Geulen writes, “The only concept of nature that could sustain” Stifter's literary project—that of “gathering up” the world's things for the sake of finding “direct access to the essential in the banal”—“is the early Enlightenment notion of physicotheology, the belief in natural history as the ordered unfolding of the universe.

that Herbartian orderliness into a “gray zone” (or rather, a *bunt* zone) between “objektivistischer Dingversicherung und Abstraktion.”³³⁴

2.2 An Alternate Paradigm of Color: *Bergkristall*

The next *Erfahrung in den Farben* that I turn to is that of a young brother and sister, Konrad and Sanna, in Stifter's short story *Bergkristall*. First published in 1845 but revised and republished in *Bunte Steine* in 1853, the story follows two children who, returning to their village from a visit to their grandmother in a neighboring valley, get lost on a mountain during a blizzard on Christmas Eve. Stifter's treatment of color in the story is, as I will discuss, most striking as an exploration of abstraction, and as an environmental integration of observing subjects. However, he initially draws on color's orientational quality, as well. In Heinrich's sketching scene, color functioned to draw the objects of the room together; in Konrad and Sanna's village, it does so on a much larger scale, connecting the people with their environment through both constancy and change. Indeed, under normal circumstances, the villagers of the story take much of their orientation from color, which locates and tethers them in both time and space: in the village itself, little changes—each time a house needs paint, it is given a coat of its old color; red is the color of the church tower, which stands out against the blue of the sky and green of the fruit trees; red, too, is the memorial post along the path to the children's grandparents' house, which they use as a way-marker; and red is the color of the flag flown by the children's eventual rescue

While Stifter's contemporaries wrestled with the fact that older religious faith in nature as God's open book had become incompatible with modern scientific views, Stifter maintained that nature spoke for itself and would eventually reveal its laws—if only one looked properly” (“Tales of a Collector,” in *A New History of German Literature*, ed. David E. Wellbery, Judith Ryan, et. al., [Cambridge, MA: Harvard University Press, 2004], 587–592).

³³⁴ Schneider, “Bildlöschung,” 177. This “Kippfigur” between objectivity and abstraction, as Schneider notes, rendered his late work “für seine Zeitgenossen praktisch unrezipierbar [...] Ratlos stand etwa Gottfried Keller vor den Stifterschen Namenskatalogen, die jeder sinnlichen Anschaulichkeit entbehren, und konstatierte eine mangelnde epische Integration der Beschreibungsexzesse in den Handlungsfortgang” (176).

party. Meanwhile, safely at a distance, the mountain with its two peaks or “horns” marks the seasons by changing its colors from white to gray to black, milk-blue, and even green. All these are the colors of culture—or at least, the colors seen through culture—and so resemble the colors that Heinrich attunes when sketching the wainscoting.

But *Bergkristall* shows how orientation and connection can be lost as well as maintained in color. Caught on the mountain in between their grandparents' and their parents' villages, Konrad and Sanna's experience in color quickly loses any similarity to Heinrich's scene of objective observation. As Claudia Öhlschläger puts it: “Indem die beiden Kinder in die ihnen gänzlich fremde Eisregion des Berges hinein geraten, treten sie aus der Zivilisation in die eigengesetzliche Ordnung der Natur über.”³³⁵ As the snow begins to fall, the colors of the narrative shift: the sun turns from red to gray, the sky and forest alike become gray, and the ground—like the red of the fallen and temporarily useless memorial post—turns white.³³⁶ These uncanny colors are, as Purkinje put it, “ins Grosse getrieben”: not the colors of objective attunement, but those of an uncontrollable atmosphere gearing up for a storm.

As the snow thickens, its engulfing whiteness quickly obscures their footsteps behind them, threatens to hide the children even from each other, and subsumes their other senses as well: everything becomes “unermeßlich still.”³³⁷ For Heinrich, color was not just measurable, it was his means of measuring—both the means and the material of objectivity; Konrad and Sanna, meanwhile, are engulfed by a swirling monotony of white that is not only immeasurable, but the reason for immeasurability. Surrounded on all sides by the monotonous gray and the blinding

³³⁵ Claudia Öhlschläger, “Weiße Räume. Transgressionserfahrungen bei Adalbert Stifter,” *Jahrbuch des Adalbert-Stifter-Instituts des Landes Oberösterreich* 9/10 (2002/2003): 55–68, 60.

³³⁶ Adalbert Stifter, *Bergkristall* (Munich: Deutscher Taschenbuch Verlag, 2009), 45–49.

³³⁷ Stifter, *Bergkristall*, 58.

white of the blizzard, they can discern nothing of their environment and measure no portion of their progress; they have no means of judging time or space, and no way of knowing how to get home. It is a crisis of both perception and knowledge. In the midst of “nichts als das blendende Weiß, überall das Weiß,”³³⁸ the impossibility of knowing is underscored by the homophony between *Weiß*—white—and *weiß*—the first-person conjugation of “to know.” Thus “Mit den Grenzen der Gestalten verlieren sich auch die Grenzen des Subjekts, das sich nicht mehr in ein geordnetes Verhältnis zu den Dingen setzen kann.”³³⁹ “Wo sind wir denn, Konrad?” asks Sanna, and her brother replies: “Ich *weiß* es nicht.”³⁴⁰ All that remains of the landscape and of the children collapses into colorless homophony.

For what feels like a long time, the narration seems to shrink to just a few words: white, gray, and going onward. As Öhlschläger points out, the further the children go into the white, the more Stifter's style becomes “repetitiv, wiederholend und parataktisch”—a style that, at its most intense, is “eine purifizierte, von jeder subjektiven Färbung befreite, objektiverte Sprache.”³⁴¹ This appearance of “objectivized language”—language that has itself become a thing—at the same moment of complete subjective disorientation presents a foil to Heinrich's colorful objectivity. The measured, varied language in which Heinrich describes the wainscoting's color functions in the same way as the color of his drawing: obscuring its own materiality through its successful mediation of reality. Unlike Heinrich, orienting himself in the *Stimmung* of a room full of visible colors and invisible language, Konrad and Sanna are blinded by an atmosphere whose color obscures all attunement and whose language, far from being free of “Färbung,” is

³³⁸ Stifter, *Bergkristall*, 55.

³³⁹ Schneider, “Bildlöschung,” 186.

³⁴⁰ Stifter, *Bergkristall*, 54, emphasis added.

³⁴¹ Öhlschläger, “Weiße Räume,” 61–62.

made up of color words themselves. During the blizzard, the words “white” and “gray”—like the snow flakes—simply pile up: layer upon layer of “immer gleichmäßig grau,” “ringsum herrschende Grau,” and “blendende[s] Weiß, überall das Weiß” create the visual spectrum of what Strowick has identified as the linguistic “Trübheit” or “Aggregat” of Stifterian atmosphere.³⁴²

At this moment in Stifter's prose, atmosphere appears—and therefore exists—in the “Sichtbarwerden der Farbe.”³⁴³ Yet it is a highly ambivalent existence, because even as the words “white” and “gray” describe the atmosphere's emergence as the object of visual attention, the colors white and gray mark the disappearance of visibility altogether. In fact, two atmospheres, or two experiences in color, emerge: one white and the other “white”³⁴⁴—one, within the frame of the story, disappearing in a haze of dense bright flakes, the other, on the level of the text, appearing in the snowy cloud of Stifter's “objectivierte Sprache.” Stifter emphasizes this language when he writes that the snow becomes, “wenn man so sagen darf, [...] eine einzige weiße Finsternis.”³⁴⁵ And, in a move only language can make, he brings these apparent opposites—“Weiß” and “Finsternis”—together. With this seeming oxymoron, the space between the story and the text collapses, leaving instead one paradoxical and therefore all-encompassing impossibility-of-seeing. Thus when, at the height of the snowfall, Konrad leads Sanna “in dem

³⁴² Stifter, *Bergkristall*, 50, 54, 55; Elisabeth Strowick, “‘Dumpfe Dauer’: Langeweile und Atmosphärisches bei Fontane und Stifter,” *The Germanic Review: Literature, Culture, Theory* 90:3 (2015): 187–203, 194. See also, on *Trübe* in Goethean color, Beate Allert, “‘Trübe’ as the Source of New Color Formation in Goethe's Late Works *Entoptische Farben* (1817–20) and *Chromatik* (1822),” *Goethe Yearbook*, 19 (2012): 29–47.

³⁴³ Strowick, “Dumpfe Dauer,” 196, emphasis modified.

³⁴⁴ The color (or non-color) white reveals a split of its own: as Ullrich summarizes, over the course of western color theory—though the debate is also neatly located between Goethe and Newton—“Man definierte das Weiß als Negation der Farbigkeit oder als Summe aller Farben, zählte es also entweder gar nicht zu den Farben oder sah darin eine Überfarbe” (*Weiß*, 10).

³⁴⁵ Stifter, *Bergkristall*, 57, my emphasis.

weißen lichten regsamen *undurchsichtigen* Raume fort,”³⁴⁶ the vanishing world appears only insofar as it disappears, which is to say, not in *Weiß* or even in “Weiß,” but in “weiß nicht.”³⁴⁷

In the absence of any “unterbrechendes Dunkel,”³⁴⁸ *Bergkristall*'s “white” atmosphere blocks the kind of *Stimmung* that Heinrich relied on, obliterating the logic of local color in which the wainscoting's “life” appeared. Instead of anchoring the visible world's existence, this “white” atmosphere renders that world “etwas geradezu Unmögliches.” Indeed, as Schneider writes, “der objektivistische Anspruch der Selbstpräsenz der Dinge”—in this case, the *absence* of the visible world—“[führt] zu einer Sprachpurifizierung und einer zunehmenden Reduktion erzählerischer Mittel, die paradoxerweise zu einem Verlust der dichterischen Gegenstände führt.”³⁴⁹ In other words, Stifter's description of things' disappearance renders them not just inaccessible to his visual narration, but non-existent in the frame of the text altogether. Of course, Konrad and Sanna wander into a landscape that is unfamiliar to them and for whose “normal” appearance they have no reference. But color's power in Stifter's work to either undergird or undermine the existence of other things appears in a different *Bunte Steine* story, as well, in which, following an ice storm, the characters venture out “auf den grauen Rasen hinaus. *Aber es war kein grauer Rasen mehr*”; likewise, “Als sie zu dem Bächlein gekommen waren, *war kein Bächlein da*.”³⁵⁰ What Konrad and Sanna encounter is not a world reduced to color—that, after all, is already what they saw when they observed the mountain's changing face from

³⁴⁶ Stifter, *Bergkristall*, 56, my emphasis.

³⁴⁷ On the tension between the blinding white of a blizzard and the white (and black) of a (written) sheet of paper, see Juliane Vogel, “Mehlströme/Mahlströme” in *Weiß: ein Grundkurs*, ed. Wolfgang Ullrich and Juliane Vogel (Frankfurt am Main: Fischer, 2003), 167–192.

³⁴⁸ Stifter, *Bergkristall*, 56.

³⁴⁹ Schneider, “Bildlöschung,” 176.

³⁵⁰ Adalbert Stifter, “Katzensilber” in *Bunte Steine* (München: Goldmann, 1971), 202.

their garden at home³⁵¹—but a world devoid of external color, and therefore devoid of external existence, altogether.

Goethe stipulated that color emerges from the encounter of three elements: light and dark from the outside world, and a seeing eye. Deprived of the necessary dark, Konrad and Sanna's eyes are thus unable to execute, Purkinje put it, their "eigenthümlichen Reaction gegen die Aussenwelt."³⁵² Instead, in terms of Purkinje's Goethean color observations, the children's eyes would be thrown back upon their "Eigenleben"³⁵³—abandoned to the independent activity of their retinas. Interestingly, following Purkinje's research, this "Eigenleben" of the eye mimics the activity of the blizzard itself. In the section of Purkinje's *Beiträge zur Kenntniss des Sehens in subjectiver Hinsicht* entitled "Aufspringende Lichtpünktchen beim Anschauen einer hellen Fläche: Von selbst entstehende Lichtflecke im Gesichtsfelde," he describes how

Wenn ich auf eine gross etwas blendende Fläche starr hinsehe (z.B. auf den gleichmässig mit Wolken überzogenen Himmel, oder nahe in eine Kerzenflamme), *so springen in einigen Secunden wiederholt in der Mitte des Gesichtsfeldes lichte Punkte auf*, die ohne ihre Stelle geändert zu haben schnell wieder verschwinden [...]. Wende ich während die Lichtpunkte hervorspringen das Auge gegen eine stark verdunkelte Stelle, oder schliesse es, so setzt sich die Erscheinung auf gleiche Weise fort.³⁵⁴

Blinded by a mass of tiny white specks without, the children's eyes would, according to Purkinje, multiply the appearance of those flecks within. And, just as the appearance of these inner *Lichtpunkte* "setzt[e] sich [...] fort," so, too, the children "gingen fort [...] und gingen fort."³⁵⁵ Under somewhat different conditions—but also before a "lichten Fläche"—Purkinje

³⁵¹ In summer the mountain appears "schwarz in de[m] Himmel" with "schöne weiße Äderchen und Sprenkeln auf ihrem Rücken" which "in der Tat aber [...] zart fernblau [sind]"; in winter, meanwhile, its two peaks or "Hörner" appear "schneeweiß," "blendend in der finstern Bläue der Luft" and surrounded by the equally white glacial fields (Stifter, *Bergkristall*, 13–14).

³⁵² Purkinje, *Beiträge*, 7.

³⁵³ Purkinje, *Beiträge*, 7.

³⁵⁴ Purkinje, *Beiträge*, 67–68, emphasis added.

³⁵⁵ Stifter, *Bergkristall*, 50.

describes how the eye produces “theils parallele schräge, theils convergirende halbdurchsichtige graue Streifen”³⁵⁶; likewise the children, gazing up through “trüben Raum,” see nothing but “finsteren fransenartigen Streifen.”³⁵⁷

The further Konrad and Sanna advance through the blizzard, the more their experience seems to emerge somewhere in the middle of the spectrum of “Phantasie und Wirklichkeit” laid out in the opening of Purkinje's thesis:

Wenn anfangs dem sich zum Selbstbewusstseyn entfaltenden Menschen die gesamte Objectenwelt blos in seinem Innern wie ein Traum zu schweben scheint, Phantasie und Wirklichkeit wunderbar durcheinanderlaufen; so stellt er alles nach und nach ausser sich und sich allem entgegen und orientirt sich in dem Kreise seines Daseyns. Aber noch manches bleibt am Sinne haften.³⁵⁸

Reading Stifter's text alongside Purkinje's observations, it becomes unclear to what extent the dots and stripes of white and gray that appear in Konrad and Sanna's field of vision belong “ausser sich,” and to what extent they remain “am Sinne haften.” This uncertainty is exacerbated by the fact that Konrad and Sanna are children: they are, as Purkinje describes, “Menschen” at the beginning of learning “sich zum Selbstbewusstseyn [zu] entfalten.” Thus while Stifter himself describes suffering from ongoing after-images of a blizzard—“Ich sah buchstäblich das Lackerhäuserschneeflirren durch zehn bis vierzehn Tage vor mir. Und wenn ich die Augen schloß, sah ich es erst recht [...] Ich kann die Grenze seines Aufhörens nicht angeben, weil es, wenn es auch nicht mehr da war, doch wieder erschien...”—he was, as an adult already well-trained in seeing, able to navigate that unnerving, flickering disappearance of all appearances: “durch geduldiges Fügen in das Ding und durch ruhiges Anschauen desselben als eines, das

³⁵⁶ Purkinje, *Beiträge*, 32–33.

³⁵⁷ Stifter, *Bergkristall*, 52.

³⁵⁸ Purkinje, *Beiträge*, 1.

einmal da ist, ward es erträglicher, und erblaßte allmählich.”³⁵⁹ Uncomfortable as it was, Stifter embraced “das Ding”—in other words, the appearance of the “Schneeflirren”—as belonging to his eyes alone. Konrad and Sanna, both barely of school age, have both yet to learn how to organize the appearances of the external world, or even to distinguish those external appearances from the *Eigenleben* of their eyes. Perhaps it is precisely this inexperience at seeing that helps them remain calm: unlike Stifter, who was disturbed at the intrusion of the flurrying colors of Purkinjean “Phantasie” into his normally well-ordered “Wirklichkeit,” it does not occur to Konrad and Sanna to separate that which appears outside themselves and that which belongs to their sense of sight alone. Apparently unafraid, they simply “go onward” through the flickering white. Narrated through the eyes of children, what unfolds for the reader in *Bergkristall*'s blizzard is, of course, not the world of recognizable, extant objects to which Stifter's writing is so famously committed.³⁶⁰ Instead, the snowflakes—or rather, the snowy *Erscheinungen* in the children's vision—lead the text into a logic of learning to see that is oriented not along the lines of Herbartian “geordneten Denken,” but along the colorful Purkinjean spectrum of “Wirklichkeit” and “Phantasie”³⁶¹: of the interactions of outer and inner appearances.

Indeed, in addition to proposing an “Augenmusik” based around the autonomous creativity of the eye, Purkinje also hints at a similarly-grounded pedagogy of sight: “Es wäre ein wichtiger Gegenstand der pädagogischen Methodik,” he suggests in the *Beiträge*, “die

³⁵⁹ Adalbert Stifter, *Aus dem bairischen Walde: Erzählung von Adalbert Stifter*, ed. Otto Wirthensohn, Jr. (Passau: Lippman Verlag, 1975), 37.

³⁶⁰ On snow in Stifter's work see: Schneider, “Bildlöschung”; Öhlschläger, “Weiße Räume”; Vogel, “Mehlströme/Mahlströme”; and Sabine Frost, “Gespenstische Schneeflirren: Adalbert Stifter, ‘Aus dem bairischen Walde’ (1867),” in Sabine Frost, *Whiteout: Schneefälle und Weißerbrüche in der Literatur ab 1800* (Bielefeld: transcript, 2011), 291–310.

³⁶¹ For a genealogy of optical- and color-“Phantasie” extending from Goethe into the early twentieth century, see Jutta Müller-Tamm, *Abstraktion als Einfühlung: Zur Denkfigur der Projektion in Psychophysiologie, Kulturtheorie, Ästhetik und Literatur der frühen Moderne* (Freiburg im Briesgau: Rombach, 2005), 29–52.

Auffassungsthätigkeit des Auges in feste naturnothwendige Regeln zu bringen wodurch einzig und allein folgerechte Uibungen [sic] begonnen und bis zur Virtuosität *dem höchsten Ziele aller Erziehung*, gesteigert werden können.”³⁶² Purkinje does not elaborate on this idea—it is, like the “Augenmusik,” a thought that he seems unable to resist mentioning, but equally unable, at least within his dissertation, to elaborate upon. How can we imagine such a pedagogy?

It would doubtless be just as orderly (“folgerecht”) as Herbartian pedagogy: Purkinje’s drawings and temporal measurements of afterimages, after all, revealed “the paradoxical objectivity of the phenomena of subjective vision” (fig. 6).³⁶³ But it would be the training not of an inherently colorful *cognition* vis à vis its mutually-formative encounter with the outside world, but of the inherently colorful “intelligence of the eye” (“Auffassugsthätigkeit des Auges”) in regards to its own creative production.

Certainly, as Strowick has importantly shown, Stifterian realism is not the realism of a naive view of external reality, but of a *wahrgenommene Wirklichkeit*, which is constituted by the temporality and subjectivity of the viewing eye. Yet Strowick’s focus on repetition, serialization, and aggregates in Stifter’s writing implicitly situates her analysis within a Herbartian model of cognition and literary production—with a color, in other words, whose colorfulness has been integrated into a larger process. Instead, what I suggest that Purkinje’s pedagogy opens for analysis—perhaps, indeed, for Stifter’s very creation—are those appearances of color whose overwhelming visuality, like the eclipse or the blinding, flickering white of the blizzard, resist being subsumed within cognition and remain, whether in “Wirklichkeit” or “Phantasie,” defiantly phenomenal. In the frame such a pedagogy, we might imagine, the flickering “Weiß” of

³⁶² Purkinje, *Beiträge*, 165–66.

³⁶³ Crary, *Techniques of the Observer*, 104.

the blizzard would not amount to the disappearance of the visual world, but to our immersion in the inherent visuality of the eye. Rather than being one ingredient short of actual color (as the light, dark, and retina triad of the Goethean framework would have it), *Bergkristall*'s white would be a full color in its own right: replete, rather than lacking, in its "flirren."



Figure 6. Purkinje's depictions of after images³⁶⁴

2.3 "blau, so blau, wie gar nichts in der Welt ist": God and *Gegenstandstreue*

Schneider has suggested, and rightly so, that as a "Malerdichter unter den Realisten," Stifter explores modern concerns with abstraction *avant la lettre* and "im Umschlag von der

³⁶⁴ Image from David Brewster, "Jan Evangelista Purkinje: Contributions of a Physiology of Vision," in *Brewster and Wheatstone on Vision*, ed. Nicholas J. Wade (London: Academic Press, 1983), 248–262, 253.

Gegenstandstreue.”³⁶⁵ With reference to Purkinje's work, as I explored in the previous section, the *Gegenstände* at hand become legible as those inherently abstract colors that are unbound by form and exceed the mechanism of Herbartian cognition.³⁶⁶ The last experience in color that I turn to—again seen through Konrad and Sanna's eyes—can thus be located in what I have suggested as Purkinje's alternate pedagogy of vision: a vision of abstraction. For Stifter, these overwhelming and disorderly colors, though elsewhere framed as primarily of interest to “den Naturforscher,”³⁶⁷ obtain most significance, as “Die Sonnenfinsternis” establishes, when recognized as the visible form—in nature—of God's presence. Thus, the last experience in color that I examine in this chapter is the experience of immersion in a divine environment, which, in Stifter's narrative, becomes visible as an environment of color beyond form.

Eventually, having walked for an unknown time through an immeasurable world of white, the children reach a new landscape, full, once again, of “Dinge”: instead of “Weiß,” they find themselves surrounded by “Eis—lauter Eis.”³⁶⁸ But now, although they are closely surrounded by this ice, Stifter's narrative retains the visual resources it used to describe a far-off landscape, in which “Dinge” only exist as the colors as which they appear:

“Wir sind jetzt bis zu dem Eis gekommen,” sagte der Knabe, “wir sind auf dem Berge, Sanna, weißt du, *den man von unserm Garten aus im Sonnenscheine so weiß sieht*. [...] Erinnerst du dich noch, wie wir oft nachmittags in dem Garten saßen, wie es recht schön war, wie die Bienen um uns summten, die Linden dufteten, und die Sonne von dem Himmel schien?”

³⁶⁵ Schneider, “Bildlöschung,” 188.

³⁶⁶ As well as, Stifter suggests, difficult to access with language. In *Aus dem bairischen Walde* he describes how only when the appearance of flurrying snow finally “verlor es sich” was he able “daran [zu] denken und davon [zu] erzählen” (37). Likewise, in “Die Sonnenfinsternis,” “Gerade da die Menschen anfangen, ihren Empfindungen Worte zu geben, also da sie nachzulassen begannen, da man eben ausrief: ‘Wie herrlich, wie furchtbar’—gerade in diesem Momente hörte es auf: mit eins war die Jenseitswelt verschwunden und die hiesige wieder da” (592, emphasis added). Only when the colors or optical appearances begin to recede do they become possible into integrate into narrative, and thereby cognitive, organization.

³⁶⁷ “Eines war aber da,” he writes in *Aus dem bairischen Walde*, “merkwürdig für den Naturforscher” (37).

³⁶⁸ Stifter, *Bergkristall*, 58.

“Ja, Konrad, ich erinnere mich.”

“Da sahen wir auch den Berg. *Wir sahen wie er so blau war, so blau, wie das sanfte Firmament*, wir sahen den Schnee, der oben ist, wenn auch bei uns Sommer war, eine Hitze herrschte, und die Getreide reif wurde.”

“Ja, Konrad.”

“Und unten wo der Schnee aufhört, *da sieht man allerlei Farben, wenn man genau schaut, grün, blau, weißlich—das ist das Eis*, das unten nur so klein aussieht, weil man sehr weit entfernt ist, und das, wie der Vater sagte, nicht weg geht, bis an das Ende der Welt. Und da habe ich oft gesehn, *daß unterhalb des Eises die blaue Farbe noch fort geht*, das werden Steine sein, dachte ich, oder es wird Erde und Weidegrund sein, und dann fangen die Wälder an, die gehen herab und immer weiter herab, man sieht auch allerlei Felsen in ihnen, dann folgen die Wiesen, die schon grün sind, und dann die grünen Laubwälder, und dann kommen unsere Wiesen und Felder, die in dem Tale von Gschaid sind.”³⁶⁹

Konrad explains their position in the landscape in the form of a narrative (“Erinnerst du dich...”), and within that narrative builds, as Stifter's own writing so often does, a landscape of color: from their sunny garden, the mountain appears white and blue; beneath its snow-capped peak are “allerlei Farben,” which Konrad has understood to be ice; and below the ice, he presumes, where “die blaue Farbe noch fort geht,” are the stones that they had, a little while earlier, wandered through and then lost again. Finding himself immersed in what had always been a distant landscape of color, Konrad does not change his language. He tells Sanna: “weil wir jetzt bei dem Eise sind, *so werden wir über die blaue Farbe hinab gehen*.”³⁷⁰ For, rather than solidifying as “ice,” or even, more abstractly, as one of the famous Stifterian *Dinge*, what had been the colors of a distant landscape are now, in Konrad's narration, the colors of a proximate environment that, near though it is, remains impossible to organize into form (“ohne Bezug,” as Goethe wrote, “auf Beschaffenheit oder Form eines Materials”). Having made their way through one environment of color, the children must now make their way through another.

³⁶⁹ Stifter, *Bergkristall*, 60–61.

³⁷⁰ Stifter, *Bergkristall*, 61.

And so they venture into the blue, hoping to find their way “hinab.” Soon enough, they happen upon a long channel in the ground, like a dried riverbed, freshly decked in snow, that leads into a vaulted cave of ice. “Wie sie so unter die Überhänge hinein sahen,” they experienced a “Trieb” to go inside:

Die Kinder gingen in dem Graben fort, und gingen in das Gewölbe hinein, und immer tiefer hinein. Es war ganz trocken, und unter ihren Füßen hatten sie glattes Eis. In der ganzen Höhlung aber war es blau, so blau, wie gar nichts in der Welt ist, viel tiefer und viel schöner blau, als das Firmament, gleichsam wie himmelblau gefärbtes Glas, durch welches lichter Schein hinein sinkt. Es waren dickere [sic] und dünnere Bogen, es hingen Zacken Spitzen und Troddeln herab, der Gang wäre noch tiefer zurückgegangen, sie wußten nicht wie tief, aber sie gingen nicht mehr weiter. Es wäre auch sehr gut in der Höhle gewesen, es war warm, es fiel kein Schnee, aber es war so schreckhaft blau, die Kinder fürchteten sich, und gingen wieder hinaus.³⁷¹

Repeated four times in one sentence, the blue of the cave appears just as immeasurable as the white of the snow. Here, too, the children are unable to gauge the space of their surroundings (“sie wußten nicht wie tief”). The blue seems to extend beyond its form—or rather, its undiscernible form means that color is all it has, or all it is. What the children see is less the cave than its color: having entered the colors of a distant landscape, they find themselves, as though examining a painting with a magnifying glass, in an environment of abstraction. Like the blizzard's flickering whiteness, the blue of the cave, seen through children's eyes, can be placed along the Purkinjean spectrum of “Wirklichkeit” and “Phantasie.” And, like that white, this blue is both too isolated from other colors to partake in the life-giving *Stimmung* of Heinrich's wainscoting, and too vast to be parsed by the organizational *Stimmung* of his drawing. Yet, unlike the whites and grays of the blizzard, whose narration remains free from any affective or emotional language and within which the children simply “gehen fort,” the blue of the cave

³⁷¹ Stifter, *Bergkristall*, 61–62.

inspired an irresistible “Trieb” to go inside. That they were drawn to enter the cave can, in terms of Goethean color theory, be explained by the fact that blue “pulls us in” (“uns nach sich zieht”).³⁷² Once within, however, they find the space “schreckhaft” and “fürchteten sich.”

The blue of the cave engages a different kind of *Stimmung* than Heinrich's wainscoting: not measured relations, but mood. Especially as a painter, Stifter was well aware of this tradition in landscape aesthetics. Hirschfeld, positioning the “Gartenkünstler” as the rival of the landscape-painter,³⁷³ outlines “den verschiedenen Charakteren der Landschaft und ihren Wirkungen [...] auf die Seele.”³⁷⁴ The influence of Hirschfeld's *Landschaftscharaktere* is, as Karl Mösender has discussed, visible in Stifter's work, especially in the titles he gave his paintings, which include “Sehnsucht,” “Einsamkeit,” and “Schwermut.”³⁷⁵ On the one hand, Hirschfeld hearkens back to the musical origins of landscape *Stimmung* by breaking down its *Wirkung* into a score of variously harmonizing elements. (And, indeed, Stifter's reviews of art exhibits reveal precisely this view of color, in which its mixture and balance in a painting have the power to obscure, represent, and even extend reality, as I explored in the scene of Heinrich's color-tuning.³⁷⁶ On the other, however, Hirschfeld defines a landscape as “den unermesslichen

³⁷² Goethe, *Zur Farbenlehre*, 234.

³⁷³ Hirschfeld, *Theorie der Gartenkunst* (Leipzig: M. G. Weidmanns, 1779) 1:169.

³⁷⁴ Hirschfeld, *Theorie der Gartenkunst*, 1:186.

³⁷⁵ Karl Möseneder, “Stimmung und Erdleben: Adalbert Stifters Ikonologie der Landschaftsmalerei,” in *Adalbert Stifter: Dichter und Maler, Denkmalfleger und Schulmann*, 18–57, 22. Hirschfeld organized landscapes along four categories of mood: “angenehm-heiter,” “romantisch,” “feierlich,” and “sanft-melancholisch” (Mösender, “Stimmung und Erdleben,” 22).

³⁷⁶ Stifter criticizes the “starke Färbung” of one piece for obscuring its subject matter, writing that “wenn wir mehr die Natur der Gegenstände als die Farben sähen, dieses dem Bilde sehr zu statten kommen müßte” (*Werke und Briefe*, 8.4:159). In this case, color overpowers the identity of individual objects, detracting from the realism of the painting. A third work gets it right, however, and Stifter praises it for having “Eine Klarheit der Farbe,” such that “die Figuren rein und scharf in die Luft stehen” (*Werke und Briefe*, 8.4:58). Making no mention of the picture or our viewing experience, his praise refers simply to “die Figuren” and “die Luft.” In the real world, of course, atmospheric conditions fundamentally mediates the appearance of color. But in painting, as Stifter suggests, it is the other way around: color establishes atmosphere. This review ultimately suggests that when used effectively, color has the power to create a reality (in that painting, an “air”) within the picture that has, so to speak, its own life, which might well be continuous with our own.

Flächen des Erdbodens [...] die für sich ein Ganzes ausmachen können.”³⁷⁷ Although he is focused on “sorgfältige[] Mischung[en] der Farben” that together create “eine neue Verbindung” and “ein neues Ganzes,”³⁷⁸ at the basis of these elements, proportions, and *Wirkungen* are what he calls the “unermesslichen Flächen” of reality. In Stifter’s prose—where space is “durch Farbwerte erschaffen”³⁷⁹—these immeasurable surfaces are colors. Thus the blue on the mountain is legible as “das Eis” when it is part of the aesthetic “whole” of a distant mountain view; from a far-off vantage point, that blue would certainly contribute to the mood of the landscape (*grandeur*, perhaps). But here, up close in the cave, where it loses its relation to other elements of the whole and must be taken on its own, its affective power is intensified, and the “Furcht” that the children feel in their blue environment is the same “Furcht” that God-“fearing” people have before the Lord, their “Schreck” the same as Stifter and his fellow observers felt in response to the eclipse’s divine colors.

In addition to reading this scene through *Stimmung*, it is also illustrative to position the religious nature of the story within the nature of color’s dynamic of depth and surface. In this dynamic, too, the blue of the cave—“viel tiefer und viel schöner blau, als das Firmament”—is a visual manifestation of “Gottesnähe,” frightening because it gives the children a sense of being immersed in what ought to remain as a distant surface (“das Firmament”), and what, when it *is* at a distance, is “sanft.”³⁸⁰ According to Goethe, blue is inherently the color of distance. It was well-known that an object, seen from afar, appears bluer due to atmospheric *Trübe*, and Goethe associates the color with a “receding” quality: “eine blaue Fläche,” he writes, will always seem

³⁷⁷ Hirschfeld, *Theorie der Gartenkunst*, 1:188.

³⁷⁸ Hirschfeld, *Theorie der Gartenkunst*, 1:188–89, 170.

³⁷⁹ Thalmann, “Adalbert Stifters Raumerlebnis,” 104.

³⁸⁰ Stifter, *Bergkristall*, 60.

“vor uns zurückzuweichen.”³⁸¹ Thus, even when surrounded by blue on all sides, we can imagine that the blue would recede, giving the children the feeling of being enclosed by immeasurable distance itself. “[I]n ihrer höchsten Reinheit,” writes Goethe, blue is “gleichsam ein reizendes Nichts.”³⁸² Kandinsky would later intensify this Goethean thought, diagramming blue’s “konzentrische” movement away from the viewer and associating blue with “eine Vertiefung [...], wo es kein Ende gibt und keines geben kann.”³⁸³ No wonder Konrad and Sanna do not stay. The immeasurable vastness and distance of this “blaue Fläche,” in which the children shrink to “winzigkleine wandelnde Punkte,”³⁸⁴ recalls the gulf in “Die Sonnenfinsternis” between Stifter’s theoretical understanding of eclipses and the overwhelming nature of his experience. As “Punkte,” Konrad and Sanna are described just as they might appear from God’s own (purely visual) perspective in and as blue’s perpetual *zurückweichende* distance.³⁸⁵ Immersed in a world of color, be it “ausser sich” or “am Sinne haften,” the children—like the adults in Stifter’s “Sonnenfinsternis,” join the landscape around them as colors among colors, spots in a divine landscape.

³⁸¹ Goethe, *Zur Farbenlehre*, 234.

³⁸² Goethe, *Zur Farbenlehre*, 234.

³⁸³ Wassily Kandinsky, *Über das geistige in der Kunst* (München: R. Piper, 1912), “Tabelle 1” between pages 72–73, 78.

³⁸⁴ Stifter, *Bergkristall*, 61.

³⁸⁵ Stifter was criticized by literary historian Julian Schmidt for forgetting, with his fractalizing descriptions and apparently senseless degree of detail, “daß Gott nicht das Publicum des Dichters bildet” (*Geschichte der deutschen Literatur seit Lessing’s Tod*, vol. 3 [Leipzig: Friedrich Ludwig Herbig, 1858], 377). For Stifter, of course, this stems from his desire to write from beyond our self-centric, human “Maßstab” for what is important: “Viele Menschen,” as Heinrich’s mentor in *Der Nachsommer* says, “welche gewohnt sind, sich und ihre Bestrebungen als den Mittelpunkt der Welt zu betrachten, halten diese Dinge für klein; aber bei Gott ist es nicht so.”³⁸⁵ But Schmidt, though he quotes it, seems less interested in the rest of Stifter’s passage: “das ist nicht groß, an dem wir vielmals unsern Maßstab umlegen können, und das ist nicht klein, wofür wir keinen Maßstab mehr haben. Das sehen wir daraus, weil er alles mit gleicher Sorgfalt behandelt” (*Der Nachsommer*, 121). If we, following Schmidt, take this quote from *Der Nachsommer* as our basis, then, in handling “alles mit gleicher Sorgfalt,” Stifter does not write *for* God, but *as* God.

It is as though, by entering this *unermessliche Fläche* of blue, the children have entered one of the colors of the eclipse. Similar to those “so wenig irdisch” colors, the cave is “blau, so blau wie *gar nichts in der Welt ist*.” And, just as the eclipse’s colors enveloped its viewers in a “Jenseitswelt,” Konrad and Sanna, in their attempt to leave the icy blue landscape, find that “es gab kein jenseits.”³⁸⁶ Rather than standing “auf ihrer Erde,”³⁸⁷ they find themselves navigating a world of pure color: Konrad tells Sanna they need only go “über die blaue Farbe hinab” to find their way, but, as though echoing Goethe’s description of the *Urphänomen*—that “ein Weiteres soll er nicht dahinter suchen; hier ist die Grenze”³⁸⁸—Konrad and Sanna discover that “da können wir nicht weiter gehen.”³⁸⁹ Furthermore, like the eclipse’s “namenlos tragische Musik von Farben und Lichtern,” the blue of the cave presents a challenge to language: it is “blau, so blau” that one “blau” is not enough to contain it, and even “heavenly” is too weak an adjective (“*viel tiefer und viel schöner blau, als das Firmament*”). Goethe describes blue in terms of negation: it is, he writes, “auf der negativen Seite” and exerts “eine sonderbare und *fast unaussprechliche* Wirkung.”³⁹⁰ Whereas the adults in “Die Sonnenfinsternis” begin regaining organizational control of the eclipse by crying “Wie herrlich, wie furchtbar,” Konrad and Sanna make no attempt to verbalize their experience. They simply leave the cave, find shelter elsewhere, and wait out the night, attempting to stay warm and awake by taking sips of the coffee their grandmother sent and watching the northern lights during this extraordinary “heilige Abend” between Christmas eve and Christmas day. On the symbolic level, too, the color blue—as Stifter, a Catholic, would certainly have known—has a long history of divine meaning. John

³⁸⁶ Stifter, *Bergkristall*, 64.

³⁸⁷ Stifter, *Bergkristall*, 66.

³⁸⁸ Eckermann, *Gespräche mit Goethe*, 256.

³⁸⁹ Stifter, *Bergkristall*, 64.

³⁹⁰ Goethe, *Zur Farbenlehre*, 234, emphasis added.

Gage has traced an origin of its heavenly association to purple amethyst, which, over the course of the Middle Ages, “passed [...] increasingly to blue,” especially in the form of lapis lazuli. Accordingly, the color itself, separate from any precious stones (though perhaps in the form of the “himmelblau gefärbtes Glas,” that Stifter’s narration mentions) “came increasingly to be seen as emblematic of Heavenly light.”³⁹¹ If the far-off unearthly colors of the eclipse were the appearance of God, then this color, which retains its distant character and continues “zurückzuweichen” even when the children are surrounded by it—this color is the distant proximity of “Gottesnähe,” the immeasurably far-off nearness of Heaven itself, which Konrad and Sanna, in their journey through unusual environments of color, have somehow reached, and, briefly, joined.

Conclusion: Complementary Natures of Color

In this chapter I have shown two complementary natures of color in Stifter’s work, and how, in different ways, they bring human observers and environments into relation. These natures of color are complementary insofar as one appears, along the Goethean axis I outlined in Chapter One, primarily on the “inside”—the *Gemüt*—while the other emerges largely on the “outside”—the environment. Heinrich, who demonstrates the development of what I have called the Herbartian “prismatic mind,” unfolds one avenue of observation towards God and morality. He approaches, and becomes part of, nature’s gentle regularity by integrating the temporal nature of color’s appearance into his cognitive, observational, and (realist) representative practices. In this nature of color, observed colors become organized by minds that are themselves colorful.

³⁹¹ John Gage, *Colour and Culture: Practice and Meaning from Antiquity to Abstraction* (Boston: Little, Brown, & Co., 1993), 76. For a color-symbolic analysis of Stifter’s work, see Paul Redquat, *Das Sinnbild der Rosen in Stifters Dichtung: Zur Deutung seiner Farbensymbolik* (Mainz: Akademie der Wissenschaften der Literatur, 1952).

But here it is primarily the process, not the phenomenon, of color's appearance and perception that is most significant. For Stifter, like for Herbart, "character," or morality, develops through repeated and well-balanced observations and judgments of the world, which shape and are in turn shaped by an individual's cognitive-observational patterns. Following Goethe's integration of the observer's *Gemüt* into the overarching harmony of color, this dimension of Stifter's writing shows a reciprocal, processual entanglement between humans and environment.

Konrad and Sanna, on the other hand, whose experiences in color I framed through Stifter's "Sonnenfinsternis" essay, play out a dimension of color in Stifter's work that overwhelms or reverses many elements of the Herbartian paradigm, verging away from the organization demanded by realism and entering the realm of abstraction. While my readings of Heinrich pursued the temporal-historical nature of Goethean subjective colors into Herbart's theories of temporal-historical cognition, my analysis of color in *Bergkristall* followed a different Goethean reception—that of Purkinje's objective-empirical research on subjective colors. It is in the frame of Purkinje's objectivity—an empirical realism that, through its "Gegenstandstreue," becomes abstract—that I examined the overwhelming colors that Stifter used to show, and convey the feeling of, divine presence (the "Lüften" of God's robe). These colors resist being transformed, in Stifter's texts, from appearance into cognition; instead, they integrate their viewers—not as viewers but as appearances among appearances, colors among colors—into their own larger landscapes.

Between these two complementary natures of color—the processual and the phenomenal—this chapter offers a basis for situating Stifter's engagement with color within the tradition of color-based environmental thought that stretches from Goethe's revolutionary subjectivization of color to twentieth century abstraction. Although it might easily be supposed

that Stifter's aesthetic priorities of collecting and organizing would stand apart from those of the twentieth century's renewed interest in Goethe, my complementary readings of organization and abstraction in the colors of his work situate both of those Stifterian natures of color as experiments in bringing human observers and environments into relation. While Heinrich's tuned and balanced observation is thus, for Stifter, the ideal means and model of morality, Konrad and Sanna's abstract and emotionally overpowering colors emerge precisely where, in Stifter's work, such observation encounters its primary motivation: the appearance of the divine. Curiously, by bringing observers and environments into moral attunement, each of Stifter's natures of color renders observers and environments fundamentally alike—and Stifter himself has made each nature of color fundamentally different. Heinrich encounters a geological world that is all process and flux, just like his own observation and cognition; Konrad and Sanna find themselves in visually impenetrable and unalterable surroundings, and, as unable to reach home as they are to dispel the blizzard or melt the glacier, they become temporary features of these landscapes. The moral foundation of each of these Stifterian natures of color is therefore built not only on the balanced interaction of observers and environments, but on their interaction as elements of an ultimately unified and self-similar totality. These natures of color, complementary as they are, do not touch, and in that regard perpetuate a divide between the phenomenal and the ideal. There is no time, in Konrad and Sanna's phenomenal nature of color, for Heinrich's *Reihen* upon *Reihen* of observation and understanding, just as there is no place, in Heinrich's processual one, for the absolute fixedness of geological features that are “immer” there, “weil es so eingerichtet ist.”³⁹²

³⁹² Stifter, *Bergkristall*, 60. The exchange reads in full: “‘Da muß recht viel Wasser gewesen sein, weil so viel Eis ist,’ sagte Sanna. ‘Nein, das ist von keinem Wasser,’ antwortete der Bruder, ‘das ist das Eis des Berges, das immer oben ist, weil es so eingerichtet ist.’ ‘Ja Konrad,’ sagte Sanna” (60).

Chapter Three

“Mehr Farbenlicht!”: Color and Environment in and beyond Paul Scheerbart’s

Glass Architecture

*Alles, was lebt steckt in den bunten Strahlen [...] Es ist alles nur ein bunter Schein.*³⁹³

Introduction: the *Glaspavillion*

In 1914, modernist architect Bruno Taut exhibited his Glass Pavilion at the Deutscher Werkbund exhibition in Cologne, Germany.³⁹⁴ The Pavilion, a round building with a pointed prismatic dome, was a sumptuous display of color:

The main room of the house—the large glass domed hall—is 10 meters wide and more than 7 meters high. Opaque colored glass covers the surface of the walls in the ornament hall, which is on the lower level [...]. The middle of the hall contains a waterfall, which is illuminated by a moving kaleidoscope. The kaleidoscope employs glass in a magnificent and rich variety of colors.³⁹⁵

Taut offers a more detailed description of the house’s flow of colors and their “impression on the nerves”:

Immer ein gleich verteilter Lichtschein, dessen Farben unten tiefblau begannen, von Moosgrün nach oben in Goldgelb übergangen und in der Spitze des Raumes in strahlendem Weißgelb ausklangen. Der belebende Eindruck auf die Nerven wurde allgemein bestätigt, und ebenso der Konzentrierende, sammelnde im untern Kaskadenraum, wo die Decken und Wände alle Farbentönungen, von Rot, Gold- und Silbermalten über bunte Kachelbekleidungen zu dem immer neu sich entfaltenden

³⁹³ Paul Scheerbart, *Liwûna und Kaidôh. Ein Seelenroman* [1901], in *Liwûna und Kaidôh und Kometentanz* (Frankfurt am Main: Suhrkamp 1990), 5–91, 51.

³⁹⁴ Founded in 1907, the *Werkbund* was an association of German artists, architects, craftsmen, and manufacturers aimed at improving German industrial design through by connecting art and industry, and at fostering “a German identity through design and architecture” (“Deutscher Werkbund,” *A Dictionary of Modern Architecture*, 16 Nov. 2015 at voices.uchicago.edu <<https://voices.uchicago.edu/201504arth15709-01a2/2015/11/16/deutscher-werkbund/>>, accessed 24 January 2022).

³⁹⁵ *Glass! Love!! Perpetual Motion!!!*, ed. Josiah McElheny and Christine Burgin (Chicago, IL: University of Chicago Press), 97.

Kaleidoskop in der tiefvioletten Niche leiteten, gesammelt und gebunden durch die hellgelb leuchtende, wie Goldwasser perlende Kaskade.³⁹⁶

The structure, which was gradually dismantled during World War I³⁹⁷ and survives now only in black and white photographs, was dedicated to the man whom Taut and his circle referred to as their *Glaspapa*: Paul Scheerbart. Born in 1863 in Danzig, Scheerbart lived most of his life in Berlin, a fixture in literary and cafe circuits, often on the brink of starvation,³⁹⁸ obsessed with color and perpetual motion, and publishing his utopian and fantastical fiction in Berlin’s extensive network of literary and cultural journals.³⁹⁹ In 1913 Scheerbart contacted the Heinersdorff glass company saying that he wanted to found a “Gesellschaft für Glasarchitektur” and was looking for a “Glasarchitekt” to help him.⁴⁰⁰ Heinersdorff’s reply—“Der Zufall will, daß

³⁹⁶ Bruno Taut, “Beobachtungen über Farbenwirkungen aus meiner Praxis,” *Die Bauwelt* 10.38 (1919): 12–13, 12. Kai Konstanty Gutschow speculates that Taut “modeled the actual spectrum of yellows, blues, and greens created by the luxfer prisms on the interior, after Delaunay’s painting ‘A Window’ (1911/12) which was exhibited in the Sturm gallery” (Kai Konstanty Gutschow, *The Culture of Criticism: Adolf Behne and the Development of Modern Architecture in Germany, 1910–1914*, Ph.D. Diss. (Columbia University, 2005). Taut’s incorporation of the water “cascade” recalls Goethe’s early color research, which he conducted while accompanying campaigns in the Napoleonic wars, and during which—unable to conduct more controlled experiments—he recorded his observations of color in nature: “besonders die prismatischen Effekte eines wassergefüllten Erdtrichters haben es ihm angetan und werden als ‘wunderliches Schauspiel’ ausführlich beschrieben und kommentiert” (Johann Wolfgang von Goethe, quoted in Alexander Honold, “Goethes Farbenkrieg,” *KulturPoetik* 2.1 [2002]: 24–43, 30). For Taut and Scheerbart—in other words, in the age of Expressionism and Lebensphilosophie—not only would the “prismatische[] Effekte” of water have been important, but also its constant movement in the cascade.

³⁹⁷ “Soon after the war started, most of the glass was removed for use elsewhere, and the concrete structural core was removed in 1916 to make way for troop exercises” (Gutschow, *The Culture of Criticism*, 260n167). For more on the *Glashaus*’s chronology, see *Kristallisationen, Splitterungen: Bruno Tauts Glashaus* (Basel: Birkhäuser, 1993), 168–172.

³⁹⁸ He died in 1915, shortly after the outbreak of World War I and the closure of the Werkbund exhibition. He is said to have starved himself to death—in pacifist protest—on a liquid diet of beer (see *Glass! Love!! Perpetual Motion!!!*, 264).

³⁹⁹ For biographical sketches of Scheerbart, see for instance Christopher Turner, “The Crystal Vision of Paul Scheerbart: A Brief Biography,” in *Glass! Love!! Perpetual Motion!!!*, 11–17, and, for a more in depth look including sketches and remarks on Scheerbart by his friends, his place in the “Berliner Bohème,” and contemporary reception of his work, see Bär, *Natur und Gesellschaft bei Scheerbart*, 10–32 and John Stuart, introduction to *The Gray Cloth*, trans. John Stuart (Cambridge, MA: The MIT Press, 2001), xiv–xlix.

⁴⁰⁰ Paul Scheerbart, *70 Trillionen Weltgrüsse: eine Biographie in Briefen 1889–1915*, ed. Mechtild Rausch (Berlin: Argon, [1991?]), 455–56. For more on Taut and Scheerbart’s relationship and work together, see Ralph Musielski, *Bau-Gespräche: Architekturvisionen von Paul Scheerbart, Bruno Taut und der “Gläsernen Kette,”* (Berlin: Dietrich Reimer, 2003). Gottfried Heinersdorff, with his *Kunstanstalt für Glasmalerei, Bleiverglasungen und Glasmosaik*,

ein junger, sehr befähigter Architekt sich gerade mit dem Gedanken, ein Glashaus in Ihrem Sinn zu bauen trägt. Es handelt sich um eine Gebäude, das im nächsten Jahre auf der Cölner Ausstellung entstehen soll”⁴⁰¹—connected Scheerbart with Taut and initiated what quickly became a relationship of mutual admiration, inspiration, and collaboration. Scheerbart’s book *Glasarchitektur* (which appeared in May 1914, two months before the Glass Pavilion opened) was dedicated to Taut, and engraved in the concrete around the base of the Pavilion’s dome were couplets and aphorisms about glass, composed specifically for it by Scheerbart.⁴⁰²

Although Scheerbart now holds only a peripheral status in Germany literary history,⁴⁰³ he was a one-man-melting-pot of contemporary thought and cultural inclinations, and his ideas have

was a founding member of the Deutscher Werkbund, and linked Expressionist artists and designers with Germany’s increasingly dominant industry. In 1914, Heinersdorff would merge with Germany’s largest producer of stained glass and mosaics, Puhl & Wagner. Founded in 1889, Puhl & Wagner rode a wave of revived interest across northwestern Europe (in other words, with the rise of industrialization) in late antique and medieval mosaics and stained glass. Puhl & Wagner became the largest producer of glass mosaics and stained glass in Germany, and the official supplier—replacing Italian sources—to Wilhelm II. Fueled by aesthetic nostalgia for “simpler” times, decorative glass production was advancing outside of Germany, too: William Morris founded Morris, Marshall, Faulkner, & Co. in 1861, which produced stained glass until 1930, and Tiffany Studios was founded in New York in 1878. Industrially, Joseph Paxton’s Crystal Palace, built for the 1851 London World’s Fair, is widely recognized as the first landmark of modern glass and steel architecture. Not until 1905, however, was a method for industrial sheet glass manufacture invented, by Émile Foucault in Belgium. Scheerbart’s enthusiasm for industrially produced glass architecture that would positively transform culture—rather than drain it—was very much of the moment, and united glass’s sometimes-opposing potential in and against industrialization and modern society.

⁴⁰¹ Gottfried Heinersdorff to Paul Scheerbart, 24 July 1913, quoted in *Paul Scheerbart und Bruno Taut: zur Geschichte einer Bekanntschaft*, ed. Leo Ikelaar (Paderborn: Igel, 1996), 50. On this correspondence and Scheerbart’s acquaintance with Heinersdorff, see Gutschow, *The Culture of Criticism*, 228. Scheerbart’s side of the Heinersdorff correspondence can be found in *70 Trillionen Weltgrüße*, 457–475.

⁴⁰² Scheerbart drafted his glass aphorisms in letters to Taut in early 1914. The letters and a finalized list of the aphorisms were later reprinted as “Glashausbriefe” in *Frühlicht*, Bruno Taut’s edited supplement of *Stadtbaukunst Alter und Neuer Zeit* 3 (1920): 45–48. These pages, along with English translations, are reproduced in *Glass! Love!! Perpetual Motion!!!* 130–143. Scheerbart and Taut’s *Glashaus*, pioneering though it was, was not of course totally unheard of: the crystal palace tradition appears in multiple fairy tales and myths, and Grimm’s tales especially, form “a significant starting point to try and emphasize the ideology which the glass-house conveyed in the second half of the nineteenth century” (Laurence Talairach-Vielmas, quoted in Susana Oliveira, “Paul Scheerbart’s Kaleidoscopic Fantasies,” *Brumal: Research Journal on the Fantastic* 5.2 [2017]: 11–26, 17).

⁴⁰³ In spite of his friend’s assurance that Scheerbart “nach 50 Jahren ein deutscher Klassiker sein wird” (Bruno Taut’s brief introductory lines to “Glashausbriefe,” repr. in *Glass! Love!! Perpetual Motion!!!*, 131), Dennis Sharp admits in his 1972 introduction to Scheerbart’s *Glass Architecture* that Scherbart remains “a figure of minor importance” (Dennis Sharp, “Paul Scheerbart’s Glass World,” in *Glass Architecture by Paul Scheerbart and Alpine*

lived on through the (in many respects more rigorous) architectural legacies of Bruno Taut and Walter Gropius,⁴⁰⁴ as well as through the theoretical reflections of Walter Benjamin, who found in Scheerbart’s kaleidoscopic, utopian cityscapes an opportunity to imagine and construct new “configuration[s] of experience,”⁴⁰⁵ and in his prose a transparent language,⁴⁰⁶ free of irony and self-conscious reflection. A sympathetic contemporary reviewer described Scheerbart’s prose as “epic simplicity” with a “profusion” of plot, “intimated by the continuous use of the conjunction ‘and.’”⁴⁰⁷ As a literary stylist, Franz Rottensteiner describes Scheerbart as “deliberately simple, almost child-like.”⁴⁰⁸ Of the kaleidoscopic colors and continual transformations of form that structure Scheerbart’s work, however, Rottensteiner cautions that, “multitudinous though they are, [they] have no ultimate purpose.”⁴⁰⁹ Indeed, he goes on: “There is no depth to his world; any search for underlying laws [Scheerbart] dubs a primitive anthropomorphism.”⁴¹⁰ This “matter-of-fact”⁴¹¹ style makes Scheerbart’s work difficult to analyze. But, I argue, it is precisely the superficiality of his writing that is important—not because it signifies something beyond itself,

Architecture by Bruno Taut, trans. James Palmes and Shirley Palmer [New York: Praeger, 1972], 16). The steady trickle of Scheerbart translations and publications after the turn of the millennium suggests that his legacy may be regaining some ground.

⁴⁰⁴ Scheerbart’s and Taut’s was not the only significant meeting in 1914—Gropius met the critic Adolf Behne, whom I discuss momentarily, in 1914 as well (Magdalena Bushart, “‘Versuch einer kosmischen Kunstbetrachtung’: Adolf Behne am Bauhaus,” in *Bauhausvorträge : Gastredner am Weimarer Bauhaus 1919-1925*, ed. Peter Bernhard (Berlin: Neue Bauhausbücher, 2017), 121–129.

⁴⁰⁵ Howard Caygill, *The Colour of Experience* (London: Routledge, 1998), 32.

⁴⁰⁶ “eine[] Sprache, die so klar und farblos ist wie Glas” (Walter Benjamin, quoted in Karl-Heinz Ebnet, introduction to Paul Scheerbart, *Lesabéndio: ein Asteroidenroman* [Kehl: SWAN, 1994], 14).

⁴⁰⁷ August Heinrich Kober, review of “*Das graue Tuch und zehn Prozent Weiß. Ein Damenroman*. Von Paul Scheerbart” in *Das literarische Echo* 19.4 (1916/17): 247–48, quoted in John A. Stuart, “Unweaving Narrative Fabric: Bruno Taut, Walter Benjamin, and Paul Scheerbart’s The Gray Cloth,” *Journal of Architectural Education* 53.2 (1999): 61–73, 65.

⁴⁰⁸ Franz Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” *Science Fiction Studies*, 11.2 (1984): 109–121, 109.

⁴⁰⁹ Franz Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 113.

⁴¹⁰ Franz Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 115.

⁴¹¹ Janet Janzen, *Media, Modernity and Dynamic Plants in Early 20th Century German Culture* (Leiden: Brill, 2016), 92.

beneath itself, above itself, but because it is exactly what it is. Taut’s introduction to the Glass Pavilion frames the building in a similar way: “Das Glashaus hat keinen anderen Zweck als den, schön zu sein.”⁴¹² After the war, he recalled: “Das Publikum, das am Anfang immer fragte: was hat dies haus für einen Zweck?—dieses Publikum fand sich dann allmählich zu der Erkenntnis, daß Architektur keinen Zweck hat, außer den: selbst zu sein, Schönheit zu sein.”⁴¹³ So, how are we to read Scheerbart’s fantastical, kaleidoscopically colorful architecture and glass-like prose, whose sole purpose is to be itself?

The first part of this chapter outlines a set of stakes and goals for the *Glashaus*—and, through it, Scheerbart’s superficial, color-filled writing. Situating the *Glashaus* in relation to Expressionist thought and ethics, I situate its importance within what I call an “ethics of appearance”—a worldview grounded in the realm of the visible and in which humans’ and environments’ interconnectivity become visible as a colorful whole wherein each hue affects the appearance of the other, and each shade is a matter of concern to the rest. I ground this ethics of appearance in the thought of Gustav Theodor Fechner, whose panpsychism was an important influence on Scheerbart and his circle. Fechner’s “day view” of empirical science, heavily inflected by Romanticism, centered visible “Erscheinungen” over invisible “Substanz.” Thus I suggest that the spiritual “function” of Taut and Scheerbart’s colorful architectural collaboration, as well as the world of bright lights and colored glass that Scheerbart lays out in *Glasarchitektur*,

⁴¹² Bruno Taut’s pamphlet guide to the *Glashaus*, quoted in Adolf Behne, “Gedanken über Kunst und Zweck dem Glashause gewidmet,” *Kunstgewerbeblatt*, 27.1 (1915): 1–4, 4. An English translation of Taut’s text appears in *Glass! Love!! Perpetual Motion!!!*, 101–104.

⁴¹³ Bruno Taut, “Beobachtungen über Farbenwirkungen aus meiner Praxis,” 13. In framing the “purpose” of the *Glashaus* as simply “to be beautiful,” Taut recalls the Kantian formula for beauty as “purposiveness without purpose.” Yet, in locating that beauty solely in color, Taut rejects Kant’s stipulation that beauty is always ultimately a matter of form, not color.

become legible in their very appearance, and that their ethical “goal,” far from absent (as Rottensteiner claims), is enacted by its superficial display of colors.

Having constructed a theoretical framework for engaging with Scheerbart’s colorful “superficiality,” in the second part of the chapter, I turn to the question of how that colorful ethics might communicate itself—that is, how environments and their inhabitants together construct what Scheerbart, in *Glasarchitektur*, briefly alludes to as a “Glaskultur.” To do so, I examine subject-environment relationships in two of Scheerbart’s later novels, *Das graue Tuch und zehn Prozent Weiß: ein Damenroman* (1914) and *Lesabéndio: ein Asteroidenroman* (1913). In both texts, the setting can be difficult to distinguish from the plot, and my readings examine how, in different ways, Scheerbart uses color to mediate interactions and experiment with attunements (*Stimmungen*) between observers and environments. Each of these literary analyses is oriented by the multivalent concept of *Stimmung*, whose origins in musical “attunement” render it an inherently relational concept. During Scheerbart’s life, the concept of *Stimmung* played a prominent role in two discourses relevant to a *Glaskultur*: physiological and psychological research on the nervous mediation of color and its emotional effects on the mind and mood of the observer; and aesthetic discussions about landscape, in which *Stimmung* characterized both the peculiar aesthetic unity of a landscape (as opposed to just a collection of natural features), and the affective relationship between a landscape and its observer. It is along and between these two axes of *Stimmung*—landscape aesthetics and the nervous moods that shaped modernity’s subjectivity—that I propose much of Scheerbart’s superficial world of color operates. My reading of *Das graue Tuch*, drawing primarily on *Stimmung*’s “nervous” discourse, reveals the social and mooded dynamics at play in a built environment of color, and what it means to join in or remain separate from a deliberately-constructed *Glaskultur*. My reading of

Lesabéndio draws on the landscape-aesthetic dimension of *Stimmung*, showing how Scheerbart blurs the boundaries between subjectivity and environmentality as the story’s protagonist becomes one with the asteroid upon whose surface he used to live. Arguably, neither novel concludes with a successful attunement of its characters and its environment: Clara, the protagonist of *Das graue Tuch*, finds her way to a harmonious existence within her husband’s colorful architectural creations, but, through her choice to abstain from colorful clothing, maintains a “shade” of separation (so to speak) between herself and her surroundings; by contrast, Lesabéndio becomes *so* unified with his environment that he turns into it—merging, through a series of colorful and perceptual upheavals, with his asteroid home. Successful or not, however, both these Scheerbartian worlds experiment with the construction of utopian *Glaskulturen*—colorful appearances of the “Liebe zur unendlichen Welt,” as Behne called it—that the superficial ethics of the *Glashaus* was meant to bring into being.

1 Ethics of Appearance

*To live was then in itself a delight, because living implied seeing.*⁴¹⁴

On the one hand, Taut’s insistence on the Pavilion’s purposelessness should be read, as Ufuk Ersoy outlines, as “his and Scheerbart’s endeavor to exempt this building from the overriding pragmatic and material concerns of the modern industrial world.”⁴¹⁵ On the other hand, the determined and even celebratory superficiality of Scheerbart’s and Taut’s work with glass recalls Goethe’s dictum, a hundred years earlier, about his concept of *Urphänomene*—an association that makes its superficial nature highly significant. Discussing the urphenomenon of

⁴¹⁴ Edwin A. Abbott, *Flatland: A Romance of Many Dimensions, With Illustrations by the Author, A Square* (Oxford: Oxford University Press, 2006), 48.

⁴¹⁵ Ufuk Ersoy, “To See Daydreams: The Glass Utopia of Paul Scheerbart and Bruno Taut,” *Publications* 5 (2011): 1–28, 4. <https://tigerprints.clemson.edu/archetecture_pubs/5>, accessed 17 February 2022.

color, in which the alternately blue or yellow hue of misted glass depends on viewing conditions, Goethe remarked of urphenomena that “nichts in der Erscheinung über ihnen liegt” and, therefore, that “ein Höheres kann es [man] nicht gewähren, und ein Weiteres soll [man] nicht dahinter suchen.”⁴¹⁶ Nothing “lies behind” it because it is the cornerstone of a fundamentally phenomenological approach to the physical and experiential world, that is, an approach according to which nature and life are not governed by a substrate of invisible essences, processes, or concepts. Instead, what is important plays out in the realm of the visible, if only we can recognize how—if only we are willing to pay attention. This “cosmos of the visible” did not conceal, but rather manifested the laws that governed it; and instead of leading down to a level of imperceptible concepts that one might access through the understanding, Goethe said that “Das Höchste, wozu der Mensch gelangen kann [...] bei dieser Gelegenheit, ist das Erstaunen.”⁴¹⁷

It is the Glass Pavilion’s importance within this cosmos of the visible that a friend of Scheerbart and Taut recognized and articulated. In 1915, Adolf Behne—the rising architectural critic and early champion of Expressionism who had recently completed a dissertation analyzing medieval mosaics⁴¹⁸—published a piece called “Gedanken über Kunst und Zweck dem Glashause gewidmet,” in which he identifies an important horizon of meaning for Scheerbart’s and Taut’s commitment to colored glass. Taut’s Pavilion, Behne writes, is “Ein Exempel der ‘höheren Baulust,’ zwecklos, frei, keinen Anspruch der Praxis befriedigend”—so far we are

⁴¹⁶ Eckermann, *Gespräche mit Goethe*, 288.

⁴¹⁷ Eckermann, *Gespräche mit Goethe*, 288.

⁴¹⁸ Adolf Behne, “Der Inkrustationsstil in Toscana,” Ph.D. Diss. (Friedrich-Wilhelm Universität, 1913). Behne also published several articles on the subject: “Inkrustation und Mosaik,” *Monatshefte für Kunstwissenschaft* 7.2 (1914): 55–60; “Ausstellung altchristlicher Mosaiken,” *Vorwärts* 36.104 (Feb. 26, 1919); “Ausstellung von Mosaiken,” *Der Cicerone* 11.5/6 (March 13/27, 1919): 141–142.

aligned with Taut’s statement—“—und doch ein Zweckbau, seelische, geistige Ansprüche weckend—ein *ethischer Zweckbau*.”⁴¹⁹ Even as it is “zwecklos” (and, after all, it is only a model building), Behne designates the *Glashaus* as “functional architecture.” Its primary function is not practical, however (“kein Anspruch der Praxis befriedigend,” in the sense of, for instance, protecting people from the rain). Rather, simply in existing, in appearing, its function is something apparently still more important, because it is ethical. Behne does not specify what that ethics means, here, but he would have had little need to: “ethics” was a frequent player in aesthetic conversations of the day, and a touchstone for “the reform movement that sought ‘truth’ and honesty in art”⁴²⁰ as opposed to the (supposedly) stiff, conventional representations of the previous generation’s naturalism. I suggest that, in line with prevailing Expressionist notions, the *Glashaus* represents a particular strain of spiritual and social potential—what I call “ethics of appearance.”

A narrow basis of interpretation for this ethics of appearance can be found in the “ethics” of another Expressionist thinker, Ludwig Rubiner. For Rubiner, “signification”—or what Rottensteiner discussed as “depth,” “underlying laws,” or “ultimate purpose”—“indicated an alienation [...] from [...] immanent ‘meaning,’ a diminution of intensity and thus loss of ethical value.”⁴²¹ In other words, signification (in art, representation) alienated a signifier (a medium) from itself, and representational art—using color to depict anything but color itself—was out. Only in and as itself could a signifier or medium regain its truth. Accordingly, the *Glashaus*’s

⁴¹⁹ Behne, “Gedanken,” 4, my emphasis.

⁴²⁰ This “truth” and “honesty” was in rebellion to the artistic mores of positivism, impressionism, and naturalism, which, as slaves to objectivity—or to the passive “impressions” of light, passed over the truth of subjectivity with all its emotions, moods, and ideas, and stifled the honesty of artistic media, with the innate meaningfulness of color, line, and composition.

⁴²¹ Barbara Drygulski Wright, “Sublime Ambition: Art, Politics and Ethical Idealism in the Cultural Journals of German Expressionism,” in *Passion and Rebellion: The Expressionist Heritage*, ed. Stephen Eric Bronner and Douglas Kellner (New York: Universe Books, 1983), 82–112, 90.

ethics must lie in its sheer “zwecklos” and “frei” existence: its non-representationality and its emphasis on its own materials. For Rubiner, all this would be called “intensity,” and as such would assume “absolute ethical primacy.” Intensity, in his thought, “stood as an unqualified good which admitted of no discussion or closer examination but rather was apodictically ‘evident’ to the individual of proper spiritual disposition and knowledge.”⁴²² The *Glashaus*—with the unfettered, unformed, and constantly moving colors of its kaleidoscoped waterfall—was as close to “pure” color as any art in the physical world could be. In light of Rubiner’s “intensity,” its deliberate superficiality becomes, not significant of something else, but ethically meaningful in and of itself.

Yet the movement of Behne’s thought, punctuated by long dashes (“keinen Anspruch der Praxis befriedigend—und doch ein Zweckbau”), situates the *Glashaus*’s ethics of appearance in the excited tension of apparent contradictions: the *Glashaus* is both ideal *and* functional, purposeless *and* spiritually activating. In other words, it is more than just “intensity,” and its inherent “meaning” does, in a manner of speaking, reach beyond itself. The world of the *Glashaus* does not exclude “depth” and “purpose” exactly—it just flattens them into a single plane (or, in the case of the Pavilion, a single “pane”).⁴²³ This tension between underlying depth

⁴²² Wright, “Sublime Ambition,” 90.

⁴²³ Originary echoes of this two-dimensionality can be found in the thought of Gustav Theodor Fechner, whom I discuss in section 1.2. In addition to experimental physiological research, Fechner wrote several influential mystical-scientific texts and many fanciful, exploratory, or satirical essays under the pseudonym Dr. Mises. One such piece, published in 1846 and entitled “Der Schatten ist lebendig” explores the life and consciousness of a shadow. In doing so, Fechner not only imagines an ensouled world—as he most famously explores in the non-pseudonymous book *Nanna, oder, Über das Seelenleben der Pflanzen*—but one that extends beyond our three-dimensional experience. Hans G. Gellner and William F. Lindgren point out that “Philosophical speculations about space and spatial perception were a prominent theme during Fechner’s life” (Hans G. Gellner and William F. Lindgren, “Gustav Theodor Fechner: Pioneer of the Fourth Dimension,” *The Mathematical Intelligencer* 33.3 [2011]: 126–137, 128). Michael Heidelberger highlights that “Der Schatten ist lebendig” may be “the first time in history that anyone has suggested, in a thought experiment, the idea of a two-dimensional being on a flat surface” (*Nature from Within: Gustav Theodor Fechner and His Psychophysical Worldview*, trans. Cynthia Klohr [Pittsburgh:

and pure, two-dimensional self-evidence belongs to an understanding of ethics that extends beyond Rubiner’s exactly empty signifier “intensity.” The “ethical function” that Behne sees in the *Glashaus* is characteristic of the wider “web of relationships,” posited by Expressionist thought, among the overlapping—and often contradictory—realms of philosophy, politics, and art, as well as between “the artist-intellectual community and society at large.”⁴²⁴ Rejecting the Marxist notion that a societal and cultural transformation could be brought about from a material basis, Expressionist thought (heavily influenced by neo-Kantianism) sought that change in the *ideal* realm instead—in other words, through an aggregate of individual spiritual revolutions.⁴²⁵ Behne writes: “Wenn Bruno Taut [...] sagte: ‘Das Glashaus hat keinen anderen Zweck als den, schön zu sein,’ so wollte er gewiß damit nur müßigen Fragen banaler Gemüter vorbeugen. In Wahrheit hatte das Glashaus ganz bestimmt einen Zweck—freilich einen so hoch gefaßten, daß man ihn besser als ‘Ziel,’ als ‘Idee’ bezeichnete.”⁴²⁶ The *Glashaus*’s “function” becomes more abstract: a “goal” or “idea.” In describing the *Glashaus* as an “ethischer Zweckbau,” Behne thus establishes a middle ground between the Pavilion’s pure intensity of color—with nothing behind it and no purpose beyond being itself—and the “depth” of a highly abstract, but

University of Pittsburgh Press, 2004], 51). And, “in an era of dissatisfaction with materialism and positivism, ‘the fourth dimension’ gave rise to entire idealist and even mystical philosophical systems” (Linda Dalrymple Henderson, *The Fourth Dimension and Non-Euclidian Geometry in Modern Art* [Cambridge, MA: The MIT Press, 2013], 97). The figure of the shadow became an important dimensional analogy for imagining the nature of four-dimensional space: after all, if two-dimensional shadows are cast by three-dimensional objects, then our three-dimensional existence can be imagined as the shadow of a four-dimensional world. One of the most famous literary explorations of multiple dimensionalities is Edwin A. Abbott’s *Flatland*, first published anonymously in 1884. For more on the fourth dimension and its relation to art and aesthetics, primarily in the twentieth century, see Henderson, *The Fourth Dimension*.

⁴²⁴ Wright, “Sublime Ambition,” 83.

⁴²⁵ As Ernst Bloch later discussed, however, this rejection of material conditions did not constitute an escape from them. See Bloch, “Building in Empty Spaces,” in *The Utopian Function of Art and Literature: Selected Essays*, trans. Jack Zipes and Frank Mecklenburg (Cambridge, MA: The MIT Press, 1988), 186–199. For a brief discussion of Bloch’s criticism, and a partial argument against it, see Ersoy, “To See Daydreams,” 22–25. For a discussion on the different schools of neo-Kantianism and their influence on Expressionism, see Wright, “Sublime Ambition.”

⁴²⁶ Behne, “Gedanken,” 4.

still socially-oriented, ethics. That ethical “idea,” in Barbara Drygulski Wright’s words, was the mutual creation of “the ethical individual in harmony with the just society.”⁴²⁷

In a period of German history when the “organic bonds of communal spirit”⁴²⁸ were deeply missed, Behne implicitly situates the *Glashaus*’s ethics of appearance as a starting point for a spiritually unified German nation. In so doing so, he offers a multifaceted rebuff to the widespread lamentation that Germany lacked “die Kraft, eine neue große Kunst hervorzubringen” because, as one embittered critic chafed, art had been overwhelmed by “das Prokrustesbett der Doktrinen, Definitionen, Moralanwendungen.”⁴²⁹ For Taut, the true ethical and artistic potential of colored glass is immediately apparent. Because so flexible, so continually transforming, so in tune with the Expressionist demands both of pure spirit and real societal change, the “purposes,” “goals,” or “ideas,” of the *Glashaus* also had the capacity to take on various shades. Far from being a *bridge* to the realm of spirit—a “signifier” in Rubiner’s sense, a means of *reaching* “de[n] Mysterium, de[n] Göttlichen, den seelischen Hintergründen”⁴³⁰—colored glass *manifested* it. It was spirit embodied in appearance, spirit rendered visible *as* appearance: “die Sichtbarmachen des Unsichtbaren,”⁴³¹ “beseelt, voller Geist und lebendig!”⁴³² Behne elaborates on the “ideal” nature of glass:

⁴²⁷ Wright, “Sublime Ambition,” 85. Partly inspired by Scheerbart’s generation of pre-war glass enthusiasm, a more materialist view of glass architecture’s social good—as facilitating “social hygiene”—took hold after World War I, based around the “‘influence of natural and artificially produced climatic conditions,’ i.e. of air, water, temperature, and especially sunlight, on the population” (*Handbuch der sozialen Hygiene und Gesundheitsfürsorge*, vol. 5: *Soziale Physiologie und Pathologie*, ed. A[dolf] Gottstein, A[rthur] Schlossmann, and L[udwig] Teleky, [Berlin: Springer, 1927], 146, 125, quoted in Kijan Espahangiz, “Vitaglass: A Modern Boundary Technology between Laboratory Research, Architecture, Public Health, and Environmentality in the 1920s and 1930s,” in Laurent Stalder, Moritz Gleich, *Architecture/machine: programs, processes, and performances* [Zurich, Switzerland: gta Verlag], 98–109, 103).

⁴²⁸ Frederic J. Schwartz, “Form Follows Fetish: Adolf Behne and the Problem of ‘Sachlichkeit,’” *Oxford Art Journal*, 21.2 (1998): 45–77, 52.

⁴²⁹ Josef August Lux, “Kunst und Ethik,” *Der Sturm: Monatsschrift für Kultur und die Künste* 2 (1910): 5–6, 6.

⁴³⁰ Lux, “Kunst und Ethik,” 6.

⁴³¹ Lux, “Kunst und Ethik,” 6.

⁴³² Behne, “Gedanken,” 4.

Kein Material überwindet so sehr die Materie wie das Glas. Das Glas ist ein völlig neues, reines Material, in welchem die Materie ein- und umgeschmolzen ist. Von allen Stoffen, die wir haben, wirkt es am elementarsten. Es spiegelt den Himmel und die Sonne, es ist wie lichtiges Wasser und es hat einen Reichtum der Möglichkeiten an Farbe, Form, Charakter, der wirklich nicht zu erschöpfen ist und der keinen Menschen gleichgültig lassen kann. Alle anderen Stoffe wirken neben dem Glase abgeleitet und wie Reste, wirklich wie Menschenprodukte. Das Glas wirkt außermenschlich, als mehr denn menschlich.⁴³³

Retaining its artistic self-containment and two-dimensional intensity of color, the Glass Pavilion at the same time gained the “depth” of implicit religiosity (“mehr denn menschlich”). Behne’s religious framing of glass architecture can be contextualized as part of twentieth century Germany’s nostalgia for the colorful stained glass of the Gothic period, associated with what were imagined to be simpler, pre-industrial times permeated by a sense of divine awe and held together by a sense of spiritual community,⁴³⁴ in stark contrast to the emotionally empty “technisch[e], wirtschaftlich[e], intellektuell[e],”⁴³⁵ and national ties of modernity. As Rosemarie Haag Bletter sums up: “This is not the clear glass associated with rationalist modernism but glass that incorporates mysterious, dislocating qualities.”⁴³⁶ Thus, to its enthusiasts, the Glass Pavilion’s ethics of appearance represented the almost divine possibility of awakening “das Edle in der Menschenbrust”⁴³⁷—the opportunity “aus dem Europäer einen Menschen zu machen.”⁴³⁸ And, therefore, it embodied the hope of a much broader societal transformation: “Die Glasarchitektur bringt die europäische Geistesrevolution.”⁴³⁹

⁴³³ Adolf Behne, *Die Wiederkehr der Kunst* (Leipzig: Kurt Wolff Verlag, 1919), 67.

⁴³⁴ See Adolf Behne, *Die Wiederkehr der Kunst* (Leipzig: Kurt Wolff Verlag, 1919), 83.

⁴³⁵ Lux, “Kunst und Ethik,” 5.

⁴³⁶ Haag Bletter, “Fragments of Utopia,” 124.

⁴³⁷ Lux, “Kunst und Ethik,” 6.

⁴³⁸ Behne, *Die Wiederkehr der Kunst*, 65.

⁴³⁹ Behne, *Die Wiederkehr der Kunst*, 66.

Behne imagined that the culture resulting from colored glass would mirror the simultaneous depth and superficiality of the ethics of appearance: a morality that cancels itself out *as* morality, “denn wir brauchen vielleicht keine Moral, weil es selbstverständlich sein wird, daß sich die Menschen helfen.”⁴⁴⁰ In other words, the result of colored glass’s “self-evidence” would be an equally self-evident ethics, fed from the natural wellsprings of “Lebensfreude,” “Schönheitsverlangen,” and “Liebe.”⁴⁴¹ Behne goes on: “Das Schönheitsverlangen wird keinen Schmerz, keine Qual an irgendeiner Stelle dulden, weil es ein Flecken wäre auf dem lichten, reinen Glanze des Lebens. Die Liebe wird weniger eine Liebe sein von Mensch zu Mensch, als eine Liebe zur unendlichen Welt, von der jedes Wesen ein Teilchen ist.”⁴⁴² Color, in other words, would so beautify the world that “ethics” would be intrinsically motivated by aesthetics. By unifying the human, spiritual, and material realms into one beautiful totality, color would inspire and ensure the mutual recognition and care of all elements of that totality.

1.1 Glass versus Color

But why put the weight of this ethics of appearance on color, as I propose, rather than on glass, as the work of Haag Bletter, Ersoy, and Haraway suggest? Glass, after all, has a long history of kinship with crystal, a material that has, for centuries, occupied a position of mystical and ethical potential. In the twentieth century specifically, crystalline structures gained significance as the basis of both organic and inorganic material: of teeth and bones growing within of our bodies, and sugar or mineral crystals forming beyond us.⁴⁴³ As such, crystal and

⁴⁴⁰ Behne, *Die Wiederkehr der Kunst*, 69.

⁴⁴¹ Behne, *Die Wiederkehr der Kunst*, 69.

⁴⁴² Behne, *Die Wiederkehr der Kunst*, 69.

⁴⁴³ Jackie Swift, “Crystals, Shells, and Bones—in Our Bodies,” *Cornell Research*, <<https://research.cornell.edu/news-features/crystals-shells-and-bones-our-bodies#highlight-1544725696708>>, accessed 14 February 2022. In modern

glass became “popular metaphor[s] for the unity of material nature and the immaterial spirit in Symbolism as well as Expressionism.”⁴⁴⁴ This is because, as Ersoy explains, “crystallization” “describ[es] the process of creation in which the formative forces of the world animated inert matter and moved it to a spiritual level.”⁴⁴⁵ One of Taut’s fellow architects articulated that “Die vielen möglichkeiten, die es in technischer Hinsicht gibt, berechtigt uns jedenfalls schon heute, vom ‘Bauen’ als von einem *Kristalisieren* zu reden, einem Aneinandersetzen von ‘*gesetzmäßig ausgerichteten Molekülen*’ *verschiedenster Materien zu einem einheitlichen Gebilde*.”⁴⁴⁶

Likewise, according to Ersoy, Behne, Taut, and Scheerbart envisioned a visit to the Glashaus resulting in an “aesthetic experience [...] which would result in a self-crystallization.”⁴⁴⁷ This may have been so, especially for Taut and Behne, both of whom were much more traditionally rigorous thinkers than Scheerbart.

In Scheerbart’s case, however, I agree with Rottensteiner, who, though perhaps missing the spiritual significance of crystal, states that “Scheerbart has no interest in [crystals and glittering jewels] per se; it is their aesthetic properties that matter to him.”⁴⁴⁸ Scheerbart’s

science, research into “the process by which living organisms produce minerals and control their growth to create teeth, bones, shells, external spines, and other materials” is known as “biomineralization” (Swift, “Crystals”).

⁴⁴⁴ Timothy Benson, *Expressionist Utopias: Paradise, Metropolis, Architectural Fantasy* (Los Angeles: Los Angeles County Museum of Art, 1993), 37.

⁴⁴⁵ Ufuk Ersoy, “Seeing through glass: The fictive role of glass in shaping architecture from Joseph Paxton’s ‘Crystal Palace’ to Bruno Taut’s ‘Glashaus,’” Ph.D. Diss. (University of Pennsylvania, 2008), 197.

⁴⁴⁶ Wenzel Hablik, “Die Freitragenden Kuppel und ihre Variabilität, unter Berücksichtigung verschiedener Materialien und Verwendungsmöglichkeiten,” *Frühlicht: eine Folge für die Verwirklichung des neuen Baugedankens* 3 (1922): 94–98, 96, emphasis in original. Hablik was part of Herwarth Walden’s circle and involved in Taut’s “Gläserne Kette,” the circle of architects who wrote the ‘crystal chain’ letters. His childhood encounter with a crystal apparently informed much of his later utopian creativity, including the philosophy of his crystal geometry, which he called “Cyklus Architektur” (see Sharp, “Paul Scheerbart’s Glass World,” 26). The same year that Scheerbart’s *Glasharchitektur* and Taut’s Glashaus came into the world, Hablik painted a piece called “Crystal Castle in the Sea” (now held at the National Gallery of Prague). This painting resembles much of Taut’s (and others’) vision of what was also called “Apline Architecture.”

⁴⁴⁷ Ersoy, “Seeing through glass,” 230.

⁴⁴⁸ Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 113.

imaginative worlds are “a matter of appearance alone—of pure surface, pure visualization.”⁴⁴⁹

Regardless which scientific paradigm it may have been serving, crystal is a metaphor first and foremost of structure, not appearance. As Donna Haraway summarizes:

If one sees the world in atomistic terms (metaphysically and methodologically), the crystal is a smaller, simpler version of the organism in a nearly literal sense. If one sees the world in terms of hierarchically organized levels (the organism becomes the primary metaphor), the crystal becomes an intermediate state of organization. There is no longer a continuum of forms all based on a corpuscular foundation but rather a discontinuous series of ‘organisms.’ The crystal is [...] a fruitful metaphor used very seriously in exploring *structure*.⁴⁵⁰

The crystalline imagination of early twentieth century artistic and cultural movements, with all their imaginative spirituality, followed suit.⁴⁵¹ It is not hard to imagine how, if crystals structure not just inorganic matter but also living material, they might be looked to as the structure of a continuous or fundamentally “like” spirituality, as well. In this light, and given that crystal came to be associated in this material-spiritual link with the brain itself,⁴⁵² Behne’s description of the *Glashauss*’s dome as “eine funkelnde Gehirnschale [a sparkling skull]” can be seen as evidence that Taut’s Scheerbartian ethics, based on the collapse of spirit and matter, was based first and foremost on glass (i.e., crystal), rather than color. But if Rottensteiner is correct in asserting—as I believe he is—that “Beyond the glittering surface of things [...] there is for Scheerbart no system” and that “Cognition for Scheerbart” therefore “consists in literally perceiving,”⁴⁵³ then it

⁴⁴⁹ Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 113.

⁴⁵⁰ Donna Haraway, *Crystals, Fabrics, and Fields: Metaphors of Organicism in Twentieth-Century Developmental Biology* [New Haven: Yale University Press, 1976], 11, emphasis added.

⁴⁵¹ For instance, in his “Zur Kristallographie,” Ernst Jünger wrote: “Die durchsichtige Bildung ist die, an der unserem Blick Tiefe und Oberfläche zugleich einleuchten. Sie ist am Kristall zu studieren, den man als ein Wesen bezeichnen könnte, das sowohl innere Oberfläche zu bilden als seine Tiefe nach außen zu kehren vermag. Ich möchte die Frage stellen, ob nicht die Welt im großen und kleinen überhaupt nach dem Muster der Kristalle gebildet sei” (quoted in *Ernst Jünger-Handbuch: Leben – Werk – Wirkung*, ed. Matthias Schöning [Stuttgart: J. BN. Metzler, 2014], 131).

⁴⁵² See Rosemarie Haag Bletter, “The Interpretation of the Glass Dream-Expressionist Architecture and the History of the Crystal Metaphor,” *Journal of the Society of Architectural Historians* 40.1 (1981): 20–43, esp. 30–31.

⁴⁵³ Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 113.

seems doubtful that the crystalline metaphor structured Scheerbart’s thought in any significant way.⁴⁵⁴ Though shades or whiffs of this crystalline power likely did filter into his imagination, there is compelling reason to believe that, for Scheerbart, the ethical potential that Behne identifies in the *Glashauss* resides primarily in its appearance, and specifically, its color. That reason, I propose, is the influence on Scheerbart’s thought of Gustav Theodor Fechner (1801–1887). “Scheerbart hat ihn geliebt,” Behne notes, opening a discussion of scientific figures whose names rarely appear in cultural papers but whose writing possess “die Gabe des strengen und klaren Denkens” and provide invaluable means of seeing “alle Dinge neu und ursprünglich.”⁴⁵⁵ Besides fitting with the colored-glass nostalgia of the day—which, of course, he helped to establish critically—Behne’s religious framing of colored glass architecture echoes Gustav Theodor Fechner’s classification of the visible world as “die äußere Seite des göttlichen Daseins.”⁴⁵⁶ Such divine characterizations of nature were, of course, not new; in Fechner’s recent past, one prominent such likening came from Alexander von Humboldt, who wrote in his *Kosmos* that nature is “der lebendige Ausdruck der Allgegenwart Gottes in den Werken der Sinnenwelt.”⁴⁵⁷ But Fechner’s expression of this view, anchored by the word “äußere”—in contrast to “innere”—is significant, and the empirical-philosophical worldview⁴⁵⁸ into which

⁴⁵⁴ This sounds as though it directly opposes Ersoy’s conclusion that “in advocating glass [Scheerbart] was not so much promoting a new industrial building component as extolling the precious stone-like qualities of the material – more akin to crystal” (“To See Daydreams,” 12). But Ersoy also implies that the “the precious stone-like qualities of the material” are most important in terms not of their preciousness or their crystalline structure, but in terms of their color, whose effect is to transform “the dull urban landscape of nineteenth-century cities” (“To See Daydreams,” 12).

⁴⁵⁵ Adolf Behne, *Die Wiederkehr der Kunst* [Leipzig: Kurt Wolff Verlag, 1919], 57.

⁴⁵⁶ Gustav Theodor Fechner, *Zend-Avesta, oder, über die Dinge des Himmels und des Jenseits* (Hamburg: Leopold Voß, 1901), 201.

⁴⁵⁷ Alexander von Humboldt, *Kosmos: Entwurf einer physischen Weltbeschreibung* (Stuttgart: J. G. Cotta, 1847), 2:45.

⁴⁵⁸ Inspired by and aligned with Romantic *Naturphilosophie* though Fechner in many respects was, his strict empiricism kept him from what he considered unnecessary and unproductive mysticism. Fechner locates one such

these words fit provides a framework for the flattened spirituality, the two-dimensional depth, of a Scheerbartian ethics of appearance based not in glass but in color.

1.2 Appearance is Everything

*Die wahre Deutung erfäßt die äußerste Oberfläche der Dinge.*⁴⁵⁹

A pioneer of experimental psychology and regarded as the father of psychophysics and experimental aesthetics,⁴⁶⁰ Fechner was active a generation before Scheerbart and two generations before Behne and Taut. His “day view” of science, grounded both in experimental materialism and in the idealism of Romantic *Naturphilosophie*, occupied the “Spannungsfeld von

mysticism in the work of a fellow University of Leipzig author who proposed “dass alle in der Natur gegebenen Dinge, die eine bestimmte Farbe mit einander gemein haben, auch sonst durch irgend ein andres diesem als dem äusserlichen formellen gleichartig entsprechendes innerlich wesenhaftes Merkmal zu einer Einheit oder eine Klasse verbunden sein werden. Es könne nicht Zufall, sondern nur innere Notwendigkeit sein, dass in der Natur bestimmte Dinge nur bestimmte Farben, nicht aber andre an sich tragen” (Conrad Hermann, *Grundriss einer allgemeinen Aesthetik* [Leipzig: Friedrich Fleischer, 1857], 68, quoted in Gustav Theodor Fechner, *Vorschule der Aesthetik* [Leipzig: Breitkopf und Härtel, 1876], 2:223–24). To this, Fechner cautions: “Unstreitig nun, da schliesslich nichts in der Natur zufällig ist, wird es auch die Farbe der Naturgegenstände nicht sein; ich möchte aber sagen, dass für die unserer Erkenntniss bis jetzt gesteckten Grenzen in der That nichts zufälliger *erscheint*, als die Farbe derselben;—man denke nur an die mannichfachen Blumenvarietäten;—und schwer möchte es sein, mit Entwicklung der Hermannschen Ansicht über einen Naturphilosophischen Mysticismus hinauzukommen” (*Vorschule der Aesthetik*, 2:224, emphasis in original). While perhaps not the soundest base for a natural mysticism, this idea certainly made for a pleasing book, as evidenced by the book of yet another University of Leipzig man, geologist Abraham Gottlob Werner’s *Von den äusserlichen Kennzeichen der Fossilien* (1774), and its expansion—with color swatches—by Scottish painter Patrick Syme into *Werner’s Nomenclature of Colours, adapted to Zoology, Botany, Chemistry, Mineralogy, Anatomy, and the Arts*. This book is famous as “The Book That Colored Charles Darwin’s World” (Michelle Nijhuis, *The New Yorker*, 27 January 2018 <<https://www.newyorker.com/tech/annals-of-technology/the-book-that-colored-charles-darwins-world>>, accessed 6 May 2022. Its organization certainly facilitates a mysticism such as Conrad’s: row by row, each color swatch is numbered and named, its pigment composition is described (“12. Pearl Grey, is ash grey mixed with a little crimson red and blue, or bluish grey with a little red”), and then its appearance is located in the animal, vegetable, and mineral worlds (“Backs of black headed and Kittiwake Gulls”; “Back of Petals of Purple Hepatica”; and “Porcelain Jasper”) (Patrick Syme, *Werner’s Nomenclature of Colours* [Edinburgh: William Blackwood, 1821], 29).

⁴⁵⁹ Walter Benjamin, “Lesabéndio,” in *Gesammelte Schriften*, 2:618–620, 618.

⁴⁶⁰ Albert R. Chandler and Edward N. Barnhart’s *Bibliography of Psychological and Experimental Aesthetics* (Berkeley: University of California Press, 1938) starts “in 1865, when Fechner first published on the golden section...” (*Bibliography*, 1).

Wissenschaft, Dichtung und Religion.”⁴⁶¹ Scheerbar’s interest in him is often linked to his panpsychism—the idea that all aspects of the cosmos are possessed of a soul—which Fechner explored most prominently in his 1851 *Zend-Avesta oder Über die Dinge des Himmels und des Jenseits vom Standpunkt der Naturbetrachtung*. Scheerbar was perhaps among a minority of readers delighted by this eccentric text, which initially sold so few copies that Fechner pitied his publisher: “Poor Voss! He printed 1000 copies of the *Zend-Avesta*, but sold only 200!”⁴⁶²

Although Kai Konstanty Gutschow identifies Fechner as one of the many thinkers whose influence is “impossible to identify definitively”⁴⁶³ in Behne’s work, Janet Janzen, in accord with Behne’s assessment and echoing that of Cornelius Partsch, calls Fechner “one of the greatest influences on Scheerbar.”⁴⁶⁴ Likewise, while Scheerbar notes that his discovery of Fechner

⁴⁶¹ Ralph Musielski, *Bau-Gespräche*, 29. As one scholar wrote not many years after Fechner’s death, Fechner was a “master[] in the use of exact methods, yet at the same time with [his] whole soul[] devoted to the highest questions” (Richard Falkenberg, *History Of Modern Philosophy: From Nicolas of Cusa to the Present Time*, trans. A. C. Armstrong, Jr. [1893], n.p., <<https://www.gutenberg.org/cache/epub/11100/pg11100.html>>, accessed 16 February 2022). Between 1838 and 1840, Fechner conducted experimental research on subjective color. This work was cut short after Fechner, “studying afterimages by staring at the sun through colored filters,” permanently damaged his eyesight (Renzo Shamey and Mark Fairchild, “Fechner, Gustav Theodor 1801–1887,” *Pioneers of Color Science* [Springer, Cham <https://doi.org/10.1007/978-3-319-30811-1_37>, accessed 14 February 2022]. Prior to his work on afterimages, however, Fechner also conducted research on subjective color perception with various colored disks (versions of these would eventually become children’s toys in Britain; see Romana Karla Schuler, “Gustav Theodor Fechner’s Subjective Colors” in *Seeing Motion: A History of Visual Perception in Art and Science* [Berlin: De Gruyter, 2016], 45–46).

In Scheerbar’s own generation, Fechner inspired and influenced Ernst Mach, whose optical research and theories of vision were, most notably through Behne’s critical mediation, extremely influential to Expressionism. In the history of philosophy and natural science, Michael Heidelberger situates Fechner as a crucial “link in the historical line beginning with Schelling’s philosophy of nature, proceeding to [...] twentieth-century logical empiricism” (*Nature from Within*, 5). For more Fechner’s reception by Scheerbar and his circle, see Ralph Musielski, *Bau-Gespräche: Architekturvisionen von Paul Scheerbar, Bruno Taut und der “Gläsernen Kette”* (Berlin: Dietrich Reimer, 2003), 29–34 and Matthias Schirren, “Allbeseelung, Phantastik und Anthropomorphisierung: Die Lehre Gustav Fechners,” in *Kristalisationen, Splitterungen* 76–78.

⁴⁶² Gustav Theodor Fechner, *Professor Schleiden und der Mond* (Leipzig: Adolf Gumprecht, 1856), 25, quoted in Heidelberger, *Nature from Within*, 57.

⁴⁶³ Gutschow, *The Culture of Criticism*, 185.

⁴⁶⁴ Janzen, *Media, Modernity and Dynamic Plants*, 75. According to Partsch, “Fechner’s panpsychist theory exercised a profound influence on Scheerbar and other writers of [science fiction] at the turn of the century” (Cornelius Partsch, “Paul Scheerbar and the Art of Science Fiction,” *Science Fiction Studies* 29.2 (2002): 202–220, 213).

occurred “als mir die Sterne als wirkkl. lebende Wesen schon ganz geläufig waren,”⁴⁶⁵ he also credits Fechner with having developed the foundations of this idea—“die Grundprinzipien der Kosmopsychologie” as well as a “neue, höchst ‘phantastische’ [in the sense of “Phantasie,” rather than of “fantastical”] Wissenschaft.”⁴⁶⁶ Most scholars identify *Lesabéndio*, with its ensouled celestial bodies, as the clearest instance of Scheerbart’s reception of Fechner, but Müzeyyen Ege states more broadly that Fechner’s “höchst ‘phantastische’” science “bedeutet für [Scheerbart] in erster Linie ein Ausweitung des Wirklichkeitsbegriffs, in der das Phantastische mit der Realität eng verbunden ist und keine Opposition darstellt.”⁴⁶⁷ This is correct, and highly significant. In this section, I locate the means by which this “Ausweitung” of reality occurs in Fechner’s emphasis on appearance over substance—indeed, appearance *as* or *instead of* substance. In doing so, I lay the foundation for a new Fechnerian reading of Scheerbart’s work—one that extends beyond the thematic issue of ensouled planets and stars, and into a world of appearance, which, in Scheerbart’s work, frequently means a world of colored glass. Fechner’s prioritization of appearance provides a shared foundation upon which “real” and “fantastical” reality alike come into being. In Scheerbart’s work, I argue, this means that whatever appears, exists, and that existence, rather than being subject to invisible principles, is governed by the laws of the visual and the visible. My focus in this visual and visible realm is, of course, color, but it is worthwhile to note that, for Scheerbart, effects like sparkling, shining, and glowing are

⁴⁶⁵ Paul Scheerbart to Alfred Kubin, 23 Sept. 1906, in *70 Trillionen Weltgrüße: eine Biographie in Briefen 1889–1915*, ed. Mechthild Rausch (Berlin: Argon, [1991?]), 324. It seems likely that Scheerbart and his circle would have been introduced to Fechner by Bruno Wille or Wilhelm Bölsche, who were active in Berlin around the turn of the century. See *70 Trillionen Weltgrüße*, 544.

⁴⁶⁶ Scheerbart, “Das Ende des Individualismus. Eine kosmopsychologische Betrachtung” (1895), quoted in Janzen, *Media, Modernity and Dynamic Plants*, 75–76.

⁴⁶⁷ Müzeyyen Ege, *Das Phantastische im Spannungsfeld von Literatur und Naturwissenschaft im 20. Jahrhundert: die Pluralität der Welten bei Paul Scheerbart, Carlos Castaneda und Robert Anton Wilson*, quoted in Janzen, *Media, Modernity and Dynamic Plants*, 75n109.

also central; my analyses therefore inevitably encounter these effects, and considers them as part of the same visual-existential foundation that Scheerbarth’s work explores.

“Very much the empiricist,”⁴⁶⁸ Fechner was irritated by philosophy’s reliance on the existence of underlying essences or “things-in-themselves” that exist beyond our actual perception of the world.⁴⁶⁹ Thus in Fechner’s description of nature as the “äußere Seite des göttlichen Daseins,” the term “outer”—with its partner-term “inner”—does not map onto such conceptual pairs as “phenomenon” and “noumenon.”⁴⁷⁰ Rather, echoing Goethe’s denial of anything “behind” an *Urphänomen*, Fechner writes: “Every noumenon sought behind the phenomenon is nothing, it is an absurdity, an essence lacking essence.”⁴⁷¹ For Fechner, “The world”—and that includes both its material and ideal aspects, i.e., nature, bodies, and souls—“does not consist in the appearance of a thing-in-itself but is nothing more than appearances.”⁴⁷² Rather than “depth” and “surface,” therefore, there is merely surface. The words “inner” and “outer” refer simply to two sides of the same coin, as it were, viewed from different perspectives. A circle, which from the inside looks concave, from the outside is convex; and yet it is the same circle.⁴⁷³ In this “dual aspect” theory, “the body and the soul” are “merely two different manners in which *one and the same being* appears, one way is as perceived from the inside, the other from

⁴⁶⁸ Rudolf Arnheim, “The Other Gustav Theodor Fechner,” *New Essays on the Psychology of Art* (Berkeley: University of California Press, 1986), 39–49, 40.

⁴⁶⁹ Heidelberger sums up Fechner’s understanding of metaphysics as “beliefs about the state of the world that cannot be derived empirically” (*Nature from Within*, 74); that is not to say, however, that Fechner had no use for such beliefs. On the contrary. The difference, however, is that he discussed them as “beliefs.”

⁴⁷⁰ As Heidelberger glosses: Fechner “uses the term ‘noumenon’ not only in Kant’s sense, but also subsumes thereunder the concept of substance (e.g., in Spinoza’s sense), the concept of the absolute as found in Schelling’s and Hegel’s philosophies and the concept of the ‘real being’ (i.e. the monads, the ‘reals’) used by Johann Friedrich Herbart” (*Nature from Within*, 92).

⁴⁷¹ Gustav Theodor Fechner, *Ueber die physikalische und philosophische Atomlehre* (Leipzig: Hermann Mendelssohn, 1855), 98, quoted in Heidelberger, *Nature from Within*, 92.

⁴⁷² Frederick C. Beiser, “Gustav Theodor Fechner,” *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (2020), <<https://plato.stanford.edu/entries/fechner/>>, accessed 1 February 2022.

⁴⁷³ This circle example is taken from Erik C. Banks, *Ernst Mach’s World Elements: A Study in Natural Philosophy* (Dordrecht: Kluwer Academic, 2003), 96.

the outside, and the essence underlying both ways of appearing is nothing but their inseparable mutual interdependence.”⁴⁷⁴ Thus, Fechner writes that “nature in general is merely a world of external material appearance. [...] This is all there is and there is nothing behind it. We would have no way of talking about a world that did not appear to itself and others.”⁴⁷⁵ This supremacy of “Erscheinungen” over “Substanz” in Fechner’s thought provides a highly useful metaphysical framework for Scheerbart, Behne, and Taut’s ethics of appearance. Or, rather, it provides a useful *non*-metaphysical framework, since it establishes the visible not just as the only plane of importance, but the only plane of existence at all.⁴⁷⁶

For Behne, Taut, and Scheerbart, the *Glashaus*’s ethical function—as well as the obstacles to its revolutionary potential—are dependent on its manifold colors. I suggest that glass, though for many reasons an important material in its own right, gained especial value in Scheerbart’s eyes as the material most able to become pure color. Fechner’s non-metaphysics becomes even more suited to an ethics of appearance insofar as it can be mapped onto the innate relativity and particularity of color’s appearance, a concept in painting referred to as “local color.” Originally, this phrase referred not to “places in the world” but to “literal hues”—“the local arrangements of pigments on a canvas [...] local because their place within the painting determined their appearance.”⁴⁷⁷ For color, just as for Fechner’s worldview, “There is no *essence*

⁴⁷⁴ Gustav Theodor Fechner, *Ueber die Seelenfrage: Ein Gang durch die sichtbare Welt, um die unsichtbare zu finden* (Leipzig: C. F. Amelang, 1861), 210, quoted in Heidelberger, *Nature from Within*, 97, emphasis in original.

⁴⁷⁵ Fechner, *Atomenlehre*, 113, 94, quoted in Heidelberger, *Nature from Within*, 150.

⁴⁷⁶ This non-metaphysics of appearances begs some questions about language: “if the essence of things is not something ‘behind’ their appearances, why is it that we speak of things at all, instead of restricting all our discourse to talk about appearances?” (Heidelberger, *Nature from Within*, 93). Heidelberger addresses this question in *Nature from Within*, 93–94.

⁴⁷⁷ Nicholas Gaskill, *Chromographia: American Literature and the Modernization of Color* (Minneapolis: University of Minnesota Press, 2018), 43. Half a century later, Johannes Itten in *Kunst der Farbe* would discuss how colors and words alike acquired their meaning (or their hue) in context, in relation their fellows. Josef Albers is famous for his pedagogical exercises around the fundamentally relative nature of color’s appearance—which he referred to as its capacity to “deceive[] continually”—in *Interaction of Color* (New Haven: Yale University Press, 2013), 1.

of things other than [... the] conditions”⁴⁷⁸ of their appearance. Those conditions, moreover, are constantly shifting in relation to each other—and thereby dictate the shifting appearance, which is to say, the ongoing life, of a thing: “Das, was allein durch sich existirt, ist nicht etwas ausser all diesem Schein, ist vielmehr das Ganze, was all diesen Schein selbst einschliesst und eben nur in dem Zusammenhänge der Erscheinungen seine Existenz führt und beweist.”⁴⁷⁹ Thus, “the mind and body are nothing but their appearances. The mind is nothing but its (actual and possible) appearances to itself; and the body is nothing but its (actual and possible) appearances to others. There is no mind in itself beyond how it appears to itself; and there is no body in itself, apart from and prior to how it appears to others.”⁴⁸⁰

Fechner himself had a significant experience with color, which illustrates more closely the connection between his dual aspect theory and the ethical function that Behne articulated in Taut and Scheerbart’s colored glass. Having ruined his eyesight and his health after a period of intense physiological experimentation between 1838 and 1840, Fechner spent some three years unable to see (and unable to talk, walk, and, for a time, eat). During his recovery, he recalls stepping out into his garden and seeing a wondrous landscape of glowing, soul-filled flowers. It is worth quoting at length:

Gar wohl erinnere ich mich noch, welchen Eindruck es auf mich machte, als ich nach mehrjähriger Augenkrankheit zum erstenmale weider aus dem dunklen Zimmer ohne Binde vor den Augen in den blühenden Garten trat. Das schien mir ein Anblick schön über das Menschliche hinaus, jede Blume leuchtete mir entgegen in eigentümlicher Klarheit, als wenn sie in’s äußre Licht etwas von eigenem Lichte wärfe. Der ganze Garten schien mir selber wie verklärt, als wenn nicht ich, sondern die Natur neu

⁴⁷⁸ Gustav Theodor Fechner, *Die drei Motive und Gründe des Glaubens* (Leipzig: Bretikopf und Härtel, 1863), 207, cited according to the reprint, ed. Wilhelm Platz, (Stuttgart: Strecker und Schröder, 1923), quoted Heidelberg, *Nature from Within*, 93, emphasis in original.

⁴⁷⁹ Gustav Theodor Fechner, *Ueber die physikalische und philosophische Atomenlehre*, 2nd ed. (Leipzig: Hermann Mendelssohn, 1864), 112.

⁴⁸⁰ Beiser, “Gustav Theodor Fechner,” n.p..

erstanden wäre; und ich dachte, so gilt es also nur, die Augen frisch zu öffnen, um die altgewordene Natur wieder jung werden zu lassen. Ja man glaubt es nicht, wie neu und lebendig die Natur dementgegentritt, der ihr selbst mit neuem Aug’ entgegentritt.

Das Bild des Gartens begleitete mich in’s dämmrige Zimmer zurück; aber es ward im Dämmerlicht nur heller und schöner, und ich glaubte auf einmal ein inneres Licht als Quell der äußern Klarheit an den Blumen zu sehen, und Farben darin sich geistig auswirken zu sehen, die nur durchschienen in das Aeußere. Damals zweifelte ich nicht, daß ich das eigene Seelenleuchten der Blumen sähe, und dachte in wunderbarlich verückter Stimmung: so sieht es in dem Garten aus, der hinter den Brettern dieser Welt liegt, und alle Erde und aller Leib der Erde ist nur der abschließende Zaun um diesen Garten für die noch Draußenstehenden.⁴⁸¹

Fechner describes a nature “transfigured,” flowers “glowing” as though from an inner lightsource that is at the same time the “source of their outer clarity.” Flowers had, since Goethe’s *Morphologie* and its broad reception by German Romanticism, become a symbol of transformed consciousness and a new tenor of existence in the world that extends beyond a view of nature and humans as “a series of discrete and classifiable objects”: “The plant captures the entanglement between the person and the environment in the close relationship between two life forces working on the plant, the open-ended growth from within and the nourishment from the environment.”⁴⁸² Fechner’s reception by his scientific contemporaries was troubled in large part by his allegiance to *Naturphilosophie*. And his experience of the flowers’ shining colors—communicating the radiance of their souls and thereby rendering their effect “spiritual”—can certainly be read in the tradition of Novalis’s blue flower. Fechner, his eyes over-sensitive after many years of sickness, may have experienced a phenomenon similar to that which Goethe had described in his *Farbenlehre* as “das Scheinbild der Blume” in its complementary color:

Man erzählt, daß gewisse Blumen im Sommer bei Abendzeit gleichsam blitzen, phosphoreszieren oder ein augenblickliches Licht ausströmen.... Am 19. Jun. 1799, als ich zu später Abendzeit, bei der in eine klare Nacht übergehenden Dämmerung, mit

⁴⁸¹ Gustav Fechner, *Nanna, oder, Über das Seelenleben der Pflanzen* (Leipzig: Leopold Voß, 1848), 391–92.

⁴⁸² Janzen, *Media, Modernity and Dynamic Plants*, 9.

einem Freunde im Garten auf- und abging, bemerkten wir sehr deutlich an den Blumen des orientalischen Mohns, die vor allen andern eine sehr mächtig rote Farbe haben, flammenähnliches, das sich in ihrer Nähe zeigte. Wir...sahen aufmerksam darauf, konnten aber nichts weiter bemerken, bis uns endlich, bei abermaligem Hin- und Wiedergehen, gelang, indem wir seitwärts darauf blickten, die Erscheinung so oft zu wiederholen, als uns beliebte. Es zeigte sich, daß es ein physiologisches Farbenphänomen, und der scheinbare Blitz eigentlich das Scheinbild der Blume, in der geforderten blaugrünen Farbe sei.⁴⁸³

Although Fechner does not specify the time of day he entered his garden—and indeed its contrast with the “dämmrige Zimmer” suggests it was daylight outside—his impression that the flowers “in’s äußere Licht etwas von eigenem Lichte wärfe” echoes Goethe’s account of flowers’ “emitting light” of their own. For Fechner, however, this experience of glowing flowers provided an experiential foundation for his “dual aspect theory”: a glimpse of what it would be to perceive both the “inside” and the “outside”—the concave and the convex, the spiritual and the material—of the garden at once. Feeling that he is witnessing the colorful, glowing souls of the flowers, his “mood” is one of “wondrous rapture.”

Fechner’s account, which he published in 1848 in *Nanna, oder, Über das Seelenleben der Pflanzen*, was significant for Scheerbart, whose work also canvasses colorful, glowing flowers,⁴⁸⁴ and who likewise felt a decided kinship with Romanticism.⁴⁸⁵ It is easy, therefore, to read Fechner’s experience in color as a description of Taut and Scheerbart’s intended effects for the *Glashaus*. In Scheerbart’s 1914 novel *Das graue Tuch und zehn Prozent Weiß*, the glass-architect protagonist at one point specifies: “Wie Riesenblumenblätter sollen die Wände

⁴⁸³ Goethe, *Zur Farbenlehre*, 43.

⁴⁸⁴ Janzen discusses some of the many links to Fechner—especially through flowers—in her chapter “Animating Glass: Representing the Elusive Plant Soul in Paul Scheerbart’s ‘Flora Mohr: eine Glasblumen-Novelle’ (1909),” in *Media, Modernity and Dynamic Plants*, 56–92.

⁴⁸⁵ According to an autobiographical piece, Scheerbart considered himself closer to 18th century writers like Clemens Brentano than to writers of his own time. See Stuart, “Unweaving Narrative Fabric,” 65n49.

wirken.”⁴⁸⁶ In *Glasarchitektur*, likewise, Scheerbart alludes to similar spiritual moods when he envisions entire colored-glass cities with Cathedral-like effects: “Die Glasarchitektur macht die menschlichen Wohnstätten zu Kathedralen und muß wirken wie diese.”⁴⁸⁷ His piece about Taut’s *Glashaus* spells out the same point: “Glass architecture strives for a cathedral-like effect, which in my opinion can also lead to positive moral effects.”⁴⁸⁸ Even more strikingly, Scheerbart adds with uncharacteristic suggestivity that, among its other technical advantages, “The lighting elements” of the *Glashaus* “are housed in the space between the two walls. This achieves wonderful effects of light both from *outside* and *inside* the house. . . .”⁴⁸⁹ It is impossible to know whether Scheerbart’s ellipsis here would, if we could follow it, lead us back to Fechner. But, in keeping with his playful engagement with philosophy, we might, with a nod to Fechner’s garden experience, refer to the double-sided colorful glow of Scheerbart’s architecture as “dual aspect lighting.”⁴⁹⁰ By centering the visible, Fechner’s thought provides a framework for the ethics of

⁴⁸⁶ Paul Scheerbart, *Das graue Tuch und zehn Prozent Weiß: Ein Damenroman in Der Kaiser von Utopia und Das graue Tuch und zehn Prozent Weiß: Zwei utopische Romane* (Frankfurt am Main: Suhrkamp, 1988), 107–206, 177.

⁴⁸⁷ Paul Scheerbart, *Glasarchitektur* (Berlin: Verlag der Sturm, 1914), 118. Scheerbart’s inspiration extends beyond the Gothic period, however: “he explicitly places his use of coloured glass and light within a spiritual tradition from the ancient Babylonian temples and mythical Alhambra palace,” as well (Janzen, *Media, Modernity and Dynamic Plants*, 79). Scheerbart also states, recalling Fechner’s experience of a completely “new nature,” “daß auch die Farben im Glase sehr glühend wirken können; vielleicht strömen sie eine ‘neue’ Wärme aus” (*Glasarchitektur*, 24, emphasis added). Moving architecture, an integral part of Scheerbart’s vision of an ensouled cityscape as well, would join together with a panoply of colorful and color-changing lights to render the need for travel moot. Walter Benjamin might as well have been outlining Scheerbart’s motivation behind these brightly colored, mobile cities that enable residents to ‘travel in place’ when he wrote: “Denn ist Reisen nicht Überwindung, Reinigung von eingesessenen Leidenschaften, die der gewohnten Umwelt verhaftet sind und damit eine Chance, neue zu entfalten, was doch gewiß eine Art von Verwandlung ist” (Walter Benjamin, “Reise Notizen,” *Gesammelte Schriften*, ed. Rolf Tiedemann and Hermann Schweppenhäuser [Frankfurt am Main: Suhrkamp, 1985], 6:456).

⁴⁸⁸ Paul Scheerbart, “Glass Houses: Bruno Taut’s Glass Palace at the Cologne Werkbund Exhibition,” trans. Anne Posten, in *Glass! Love!! Perpetual Motion!!!*, 92–97, 97.

⁴⁸⁹ Scheerbart, “Glass Houses,” *Glass! Love!! Perpetual Motion!!!*, 97, ellipsis in original, emphasis added.

⁴⁹⁰ Double walls—as well as glazing—were integral to Scheerbart’s vision of glass architecture. In his letter to Heinersdorf he writes: “Die Glasbauten im Botanischen Garten [the new “Grosses Palmenhaus” in the botanic gardens in Dahlem, which he discusses in *Glasarchitektur*] haben noch nicht ein Mal doppelte Wände” and that “ich möchte doppelte Wände mit farbigem Glas—also die Wände der Architektur umwandeln” (*70 Trillionen Weltgrüsse*, 455). This was no doubt for technical reasons, as Scheerbart discusses in terms of illumination and insulation—but its parallel to Fechner’s “dual aspect theory” is pleasantly auspicious for my argument.

appearance within the superficiality of color (rather than the structure of crystal); in this dual aspect framework, color’s appearance remains superficial, but becomes accessible from two sides, as it were—a material “outside” and a spiritual “inside.”

Beyond the brief allusions to glass architecture’s spirituality that he makes with his cathedral references, Scheerbart rarely discusses the ethical potential of colored glass. Certainly, he does not elaborate on *how* its utopian power will actually communicate itself to people enveloped by the colored light. Instead, he outlines glass architecture’s many technical and design advantages, and details how its rise will spur development in the glass and steel industries, in interior design and applied arts, in enamel work, and even—with the efficient production of “glass hair”—fireproof “filling material for mattresses and pillows.”⁴⁹¹ The explicit “agenda” that he names in his article on the *Glashaus* is likewise apparently devoid of “ethical” content: Taut’s Pavilion is “meant to herald a new era of architecture in which glass will be on par with iron and ferroconcrete as a building material.”⁴⁹² And although in *Glasarchitektur* Scheerbart writes that “Wir wissen alle, was die Farbe bedeutet,” he does not then address its “meaning” in the sense of spiritual or psychological effects. Rather, he mentions the spectrum of light visible to the human eye; gestures to the realms of the spectrum visible to other creatures (“sie [die Farbe] bildet nur einen kleinen Teil des Spektrums. Aber den wollen wir *haben*. Infrarot und Ultraviolett ist von unsern Augen nicht wahrnehmbar—wohl aber ist das Ultraviolett von den Sinnesorganen der Ameisen wahrnehmbar”⁴⁹³) and paints a kaleidoscopically colorful picture of a world of glass architecture. Indeed, far from being a

⁴⁹¹ Scheerbart, “Glass Houses,” *Glass! Love!! Perpetual Motion!!!*, 96.

⁴⁹² Scheerbart, “Glass Houses,” *Glass! Love!! Perpetual Motion!!!*, 95.

⁴⁹³ Scheerbart, *Glasarchitektur*, 115.

theoretical text, Scheerbart’s *Glasarchitektur* has been described by scholars as “programmatic.”⁴⁹⁴ Certainly, it is among the most apparently practical of his writings, and it is therefore not surprising that its manner of engaging with Scheerbart’s real-world surroundings is more earnest than many of his other texts. Many of the book’s 111 short sections address such comparatively mundane topics as “Die doppelten Glaswände, Licht, Heizung und Kühlung” (§IV), “Das Mobiliar in der Mitte des Zimmers” (§VIII), and “Die Verkleidung des Baumaterials und ihre Berechtigung” (§XIV). Ralph Musielski frames these short sections—which afford the reader “ein variierbares, nicht-lineares Lesen” and which often combine “sachlichen Bericht mit pathetischen Passagen, Ironie mit programmatischen Forderungen”—as a kaleidoscopic literature that is defined by “Variabilität und Dynamik.”⁴⁹⁵ The text’s dynamic variability mirrors that of the architectural transformations it proposes, and offers a more complete picture of Scheerbart’s glass-architectural vision than could the single model *Glashaus* he designed with Taut—without, however, addressing the meaning of color or what might constitute the origin or the mediation of its ethical potential.

Taut is equally reserved on the manner in which colored glass will communicate its beneficial moral effects. After stating in his own brochure for *Glashaus* that it “has no purpose other than to be beautiful,” he discusses the technical challenges and achievements of the house in depth in order to explicate the “comprehensive variety of ways that glass can be used as a material for walls, ceilings, and floors, along with several decorative effects and some unique

⁴⁹⁴ Dennis Sharp, “Paul Scheerbart’s Glass World,” introduction to *Glass Architecture by Paul Scheerbart and Alpine Architecture by Bruno Taut* (New York: Praeger Publishers, 1972), 8; Ersoy, “To See Daydreams,” 3; Musielski, *Bau-Gespräche*, 83.

⁴⁹⁵ Musielski, *Bau-Gespräche*, 86.

manufactured glass items.”⁴⁹⁶ It is as though Scheerbart and Taut, in their detailed technical descriptions of the *Glashaus*, were writing for a public that had already undergone the transformation they saw immanent in colored glass.⁴⁹⁷ “Flat” or spiritually superficial though their writings may now seem on this subject, to a colored-glass readership, perhaps, such practicalities as concrete ribs, double painted glass construction and double-glazed glass sheets, frosted glass, glass tiles, and glass pebbles,⁴⁹⁸ would be simply the “outside” to colored glass’s spiritual “inside,” requiring no further explanation.

Scholars likewise restrain from delving into the question of *how* the ethical power of colored glass architecture communicates itself. Haag Bletter outlines the power, but without mentioning its manner of taking hold; instead, she situates Scheerbart and Taut’s imaginings of colorful glass architecture within a long tradition of glass- and crystal-“symbolism,” writing that by the time Scheerbart published *Glasarchitektur*, architecture had come, for him, to “*stand for* the metamorphosis of the whole society, [...] which through its exposure to this new architecture” will be “lifted from dull awareness to a higher mode of sensory experience and from political dependence to liberation from all institutions.”⁴⁹⁹ Ersoy, in this same vein and as I have already touched upon, suggests that the process by which glass architecture exerts its utopian power is crystalline, which is to say, structural. In Ersoy’s reading, the “two dimensions” that the *Glashaus* unites are, far from a Fechnerian “inside” and “outside,” “the macrocosm and

⁴⁹⁶ Bruno Taut, “Glass House Cologne Werkbund Exhibition 1914 [Glashaus Werkbund-Ausstellung Cöln 1914],” trans. Anne Posten, in *Glass! Love!! Perpetual Motion!!!*, 98–104, 101.

⁴⁹⁷ What Ersoy, quoting Alfred Schutz, describes as a “mood of ‘reality as if’” (“To See Daydreams,” 13).

⁴⁹⁸ This is an incomplete list: Behne enumerates the many technical and design features of the *Glashaus*—the work of some eighteen different manufacturing firms—in “Glass House Cologne Werkbund Exhibition 1914” (*Glass! Love!! Perpetual Motion!!!*, 105).

⁴⁹⁹ Haag Bletter, “The Interpretation of the Glass Dream,” 32, emphasis added.

the microcosm.”⁵⁰⁰ As the “creative microcosmic reproduction”⁵⁰¹ of the macrocosm, the *Glashauss*, in Ersoy’s reading, was intended to “remind people of the correspondence between architecture and universe”⁵⁰² and thereby (somehow) result in the aforementioned “self-crystallization.”

Another, more deliberately obscure interpretation is offered by Roland Innerhofer, who categorizes the “utopian” spiritual properties inherent to color as “indescribable.”⁵⁰³ He backs up his silence by saying that Scheerbart had recognized and adhered to “die Grenze zwischen dem, was gesagt, und dem, was nicht gesagt werden kann.”⁵⁰⁴ In this line of thinking, Scheerbart’s colorful worlds are merely language play, designed to “overwhelm[] ordinary vision,” to “loosen the link between words and world,”⁵⁰⁵ and thereby to open a space of utopian fantasy that “could not be mapped out or analyzed in terms of objective knowledge.”⁵⁰⁶ The upshot of this interpretive trajectory is what we might call a kind of “dual aspect” theory of language, in which excessive superficial verbosity—in Scheerbart’s case, the overwhelming use of color words—becomes the “outside” of what Rottensteiner identified as “mystical silence, and awe and wonder in the face of [the] unfathomable grandeur” of the cosmos’s many-faceted appearances.⁵⁰⁷ In

⁵⁰⁰ Ufuk Ersoy, “Seeing Through Glass,” 230.

⁵⁰¹ Ufuk Ersoy, “Seeing Through Glass,” 230.

⁵⁰² Ufuk Ersoy, “To See Daydreams,” 19.

⁵⁰³ Roland Innerhofer, “Psychophysik der Strahlen: Gustav Theodor Fechner, Paul Scheerbart,” in *Strahlen Sehen: Zu einer Ästhetik des Emanativen*, ed. Roland Innerhofer and Rebecca Schönsee (Vienna: New Academic Press, 2014), 88–103, 103.

⁵⁰⁴ Innerhofer, “Psychophysik der Strahlen,” 103.

⁵⁰⁵ Ersoy, “To See Daydreams,” 14.

⁵⁰⁶ Ersoy, “To See Daydreams,” 14. Certainly, this reading is in line with Rudolf Steiner’s experience of Scheerbart: “Steiner remembered him [...] producing poems which possessed at first reading seemingly ‘arbitrary’ combinations of words, that on closer examination revealed ‘unobserved meanings’ which strove ‘to bring to expression a spiritual content derived from a fantasy of soul’” (Dennis Sharp, “Paul Scheerbart’s Glass World,” introduction to *Glass Architecture by Paul Scheerbart and Alpine Architecture by Bruno Taut* (New York: Praeger Publishers, 1972), 16.

⁵⁰⁷ Franz Rottensteiner, “Paul Scheerbart, Fantast of ‘Otherness,’” 113. Certainly, color words in particular pose a particular challenge to language. As Rey Conquer outlines, “by referring to an absent kind of material, colour words

such a reading, the colorlessness of spoken language (and, to a large extent, text) can have nothing to do with—and, what comes to the same thing, nothing to *add* to—that grandeur. Human language as we now know it is just a substitute—a “Notbehelf”⁵⁰⁸—for the “immateriellen Sprachutopien”⁵⁰⁹ that Scheerbart explores across his oeuvre, and that invariably consist of shining, sparkling, or twinkling varieties of colored light.⁵¹⁰ Such languages, as actively augmenting the colorful surface of the environment, would be more suited to communicate its ethics. Like Taut’s *Glashaus*, they would, having no purpose beyond being themselves and being beautiful, only need to communicate themselves. But the question of how such communication would take place still stands, and it is to this colorful environment-subject communication or “attunement” that I turn for the rest of this chapter.

2 *Glaskulturen*: The Colorful Lives and Environments of a Woman and an Asteroid

*Alles in der farbigen Natur begrüßt sich gegenseitig.*⁵¹¹

In a section of *Glasarchitektur* called “Die Umwandlung der Erdoberfläche,” Scheerbart suggests a parity, and a mutual influence, between our lives and our environments, when he writes that glass architecture will transform “unser ganzes Leben—das Milieu, in dem wir leben.”⁵¹² The long dash between “our whole life” and “the milieu in which we live” positions

point to the idea of materiality, the idea that visual art is corporeal, sensual. Even in cases where colour words in poetry seem most innocuous, and simply descriptive, the fact that they are intended to evoke a visual experience gestures back to the material condition of literature as a particularly abstracted form of visual experience, forming an unspoken lament for the unfortunate rift between the page and the world. It is for this reason that all colour words (and not just certain individual hues, as has sometimes been claimed) can be seen as ‘poetological’; reflecting, that is, on the art of making that is poetry” (Conquer, *Reading Colour*, 2).

⁵⁰⁸ Paul Scheerbart, *Die große Revolution*, quoted in Musielski, *Bau-Gespräche*, 54.

⁵⁰⁹ Innerhofer, “Psychophysik der Strahlen,” 93.

⁵¹⁰ See Musielski, *Bau-Gespräche*, 54–55.

⁵¹¹ Karl Scheffler, “Das Erlebnis der Farbe,” *Das Werk : Architektur und Kunst* 32.2 (1945), 55–60, 58.

⁵¹² Scheerbart, *Glasarchitektur*, 116.

culture and environment as equivalents, each influencing and expressing the influence of the other.⁵¹³ Scheerbart thus introduces agency and reciprocity into inhabitants’ relationships with their environment. Scheerbart refers elsewhere to the nature of that relationship—which he

⁵¹³ Milieu is, of course, an extremely important concept in its own right, and one which, at the time Scheerbart used it in *Glasarchitektur*, did not encompass the reciprocity he introduces between inhabitants and environments. Although today it typically refers to a social environment, the “milieu” originated in early biology, where it referred to something like a habitat—the natural surroundings in which creatures live and which determine much of their existence. In the nineteenth century the term was taken up by sociology and aesthetics, and indeed, the first section of Scheerbart’s *Glasarchitektur* is called “Das Milieu und sein Einfluß auf die Entwicklung der Kultur.” He writes:

Wir leben zumeist in geschlossenen Räumen. Diese bilden das Milieu, aus dem unsre Kultur herauswächst. Unsre Kultur ist gewissermaßen ein Produkt unsrer Architektur. Wollen wir unsre Kultur auf ein höheres Niveau bringen, so sind wir wohl oder übel gezwungen, unsre Architektur umzuwandeln. [...] Das aber können wir nur durch Einführung der Glasarchitektur, die das Sonnenlicht und das Licht des Mondes und der Sterne nicht nur durch ein paar Fenster in die Räume läßt—sondern gleich durch möglichst viele Wände, die ganz aus Glas sind—aus farbigen Gläsern. Das neue Milieu, das wir uns dadurch schaffen, muß uns eine neue Kultur bringen. (Scheerbart, *Glasarchitektur*, 11)

Scheerbart’s straightforward style is at work: culture is a product of milieu, milieu emerges in architecture, therefore, cultural change must rely on architectural change. When Scheerbart wrote this, the word “milieu” would have carried its association with the deterministic sociological and literary theory of Hippolyte Taine, whose mechanistic interpretation of Auguste Comte’s harmonious relationship between creature and milieu situated literature and art as mere products of social conditions—“social document[s] which can be reduced to [their] social causes” (René Welleck, “Hippolyte Taine’s Literary Theory and Criticism,” *Criticism* 1.1 [1959]: 1–18, 2). Taine’s theory put human culture on a level with dominant—and equally reductive—biological theories of his day, which is beautifully, though rather sadly, illustrated by one French researcher who stated neatly that “Fish don’t lead their lives themselves, it is the river that makes them lead it, they are persons without will” (Louis Roule, *La Vie des Rivières*, quoted in Canguilhem, “The Living and Its Milieu,” 12). Unsurprisingly, milieu theory’s reductionism was ill received by many artists and thinkers of the following generation, including Behne, whose two-part essay “Kunst und Milieu” disdainfully situates Taine’s theory as “ein echtes Kind des materialistischen, positivistischen 19. Jahrhunderts [...] auf geisteswissenschaftlichem Gebiete eine Parallele zum Schaffen Darwins” (Adolf Behne, “Kunst und Milieu (I),” *Die Gegenwart* 42.2, no. 38 [Sept. 20, 1913]: 599–603. See also Adolf Behne, “Kunst und Milieu (II),” *Die Gegenwart* 42.2, no. 39 [Sept 27, 1913]: 616–619).

Given Behne’s antagonism towards the concept, Scheerbart’s use of it—during a period when he and Behne were working particularly closely together—is to a certain extent curious. Of course, by advocating for glass architecture as a means of re-approaching an inherently ethical society—a point perhaps more emphasized by Behne than by Scheerbart himself—Scheerbart’s use of the term “milieu” hearkens back more to its pre-natural-scientific, *moral* sense, retained through the Renaissance, of the “golden mean” (see Leo Spitzer, “Milieu and Ambiance: An Essay in Historical Semantics (I),” *Philosophy and Phenomenological Research* 3.1 [1942]: 1–42 169.). Scheerbart was not, however, as Bär points out, rigorous or academic in his use of terms or his engagements with contemporary concepts, and the decidedly mutual influence between inhabitants and their milieux in his work suggests that the then-deterministic nature of milieu is not an appropriate lens for bringing Scheerbart’s aesthetic-ethical *Glaskulturen* into focus. (Bär’s actual language regarding Scheerbart’s engagement with contemporary intellectual debates is “schnoddrig oberflächlich und ohne jegliche Detailkenntnisse” [*Natur und Gesellschaft bei Scheerbart*, 76]). On the history and development of “milieu,” see Canguilhem, “The Living and Its Milieu” and Leo Spitzer, “Milieu and Ambiance: An Essay in Historical Semantics [part 1],” *Philosophy and Phenomenological Research* 3.1 (1942): 1–42, the second part of which appears under the same title in the next issue of the same journal, 169–218.

gestures at here only with a dash—as a “Glaskultur.”⁵¹⁴ The first part of this chapter established an ethical-theoretical framework for interpreting the superficial profusion of color in Scheerbart’s works. This framework, drawing on Scheerbart’s reception of Fechner, as well as the criticism of his young contemporary Behne, laid out the ethical “Ziel” or “Idee” orienting Scheerbart’s colorful literary worlds: in a cosmos where there is nothing “behind” or “beyond” what appears, there is no separation between “appearing” and “being”; and each participant in the visible totality becomes reliant on and responsible for the beauty—which is to say the wellbeing—of the whole. In this part, I focus on Scheerbart’s own writing. I turn briefly to a short piece called “Das Glas-Theater” (1910) before delving into an examination of the *Glaskulturen*, that is, the relationships between subjects and environments, in two of Scheerbart’s later novels: *Das graue Tuch und Zehn prozent Weiß* and *Lesabéndio*. As representations of and experimentations with his colored-glass visions, Scheerbart’s fictional worlds construct imaginary *Glaskulturen* in which he played with characters’ constructions of environments, those environments’ ability to affect and shape their inhabitants, and the potential for subjects and environments to become a single aesthetic (and therefore, in the framework I developed above, ethical) whole.

In a short piece called “Das Glas-Theater” published in 1910, Scheerbart makes use of a significant concept through which the specifically colorful nature of his envisioned *Glaskultur* and the reciprocal influence structuring an environment that is so deliberately constructed by its inhabitant-observers. The director of the “Glas-Theater,” after banging his fist so energetically on the table that he causes his interlocutor’s champagne glass to shatter (“‘Ei! Ei!’ rief ich da,

⁵¹⁴ Scheerbart, *Glasarchitektur*, 125.

‘wollen Sie mir durch Gläserzerschlagen Ihren Glasfanatismus deutlich machen?’⁵¹⁵), tells his companion:

Stellen Sie sich mal sogenannte Schattenspiele mit durchsichtigen und nichtdurchsichtigen Glasplatten vor. Auf diesen Glasplatten, die jede Farbe zeigen können, lassen sich Schatten von farbigen Gläsern rauswerfen. Da habe Sie plötzlich *farbiges* Schattenspiel. Wollen Sie noch mehr? *Sind mit diesen farbigen Schatten nicht außerordenliche Stimmungen zu erzeugen?*⁵¹⁶

The director imagines a “shadow play” in which the action is seen through glass plates that are not only more and less opaque, but are also variously colored. Through his theater director, Scheerbart imagines a miniature environment of colored glass—“zwei bis drei Meter in der Breite”⁵¹⁷—that, as producing “außerordenliche Stimmungen,” appears to be a preamble to the Cathedral-like *Glaskultur* that, with Taut, Scheerbart hoped to inaugurate with the *Glaspavillion*, and which he explored in his *Glasarchitektur*. By 1910, the concept of *Stimmung* was developing along two axes—the aesthetic and the physiological—and I offer it as a useful base from which, first, to further understand how a *Glaskultur* might function within the colorful superficiality of Scheerbart’s imagined worlds, and second, to orient an ethically-attuned reading of Scheerbart’s superificially visual and color-filled literary texts. On the one hand, the glass theater constitutes a microcosmic glass landscape, and so the *Stimmungen* it evokes in the theater-goers aligns with the *Stimmungen* so prominent in landscape aesthetics of the late nineteenth and early twentieth centuries, in which colors sometimes served as microcosmic demonstrations of landscape’s larger and more complicated effects; on the other hand, colors themselves during this period were, as one turn of the century critic remarked, never before such a “Nervensache,”⁵¹⁸ and the

⁵¹⁵ Scheerbart, “Das Glas-Theater,” *Die Gegenwart* (12 November, 1910): 913–914, 914.

⁵¹⁶ Scheerbart, “Das Glas-Theater,” 914, second italics mine.

⁵¹⁷ Scheerbart, “Glas-Theater,” 14.

⁵¹⁸ Karl Scheffler, “Notizen über die Farbe,” *Dekorative Kunst* 4.2 (1901): 183–196, 190.

theater director’s comment must be seen in the context of physiological and psychological dimensions of color’s mood-producing power—an avenue of research which, under the heading of “experimental aesthetics,” had been gaining ground since Fechner.

Given *Stimmung*’s importance in landscape aesthetics—as both unifying the landscape itself and, at least according to Simmel, unifying landscape and viewer together—and color’s importance to psychological aesthetics’ growing interest in how visual stimuli habituate taste and attune the spirit, it is no wonder that, by the mid-1800s, color had already begun to appear in the language of *Stimmung* and that “Farbe” and “Stimmung” began, just like the observers and landscapes I discuss in *Das graue Tuch* and *Lesabéndio*, to blend and merge. Indeed, as though shadowing color’s movement along the Goethean axis, *Stimmung* traverses the spectrum from the apparently objective external world, through the mooded and moody landscape, and into the observer’s nervy inner life. Before its psychological sense had fully taken shape, Hegel described *Stimmung* as “determining [...] the colour” of an aesthetic whole⁵¹⁹; by the mid-1800s, psychologist Rudolf Hermann Lotze—a younger colleague of Fechner—referred to the “eigentümliche Färbung der körperlichen oder geistigen Stimmung im Bewußtsein”⁵²⁰; Georg Simmel, as I mentioned, wrote just a year before *Glasarchitecture* that a person’s *Stimmung* is “das Einheitliche [...], das dauernd oder für jetzt die Gesamtheit seiner seelischen Einzelinhalte färbt,”⁵²¹ and Moritz Geiger, who used color swatches to research the affective qualities of landscapes (since “bei Farben [...] das Problem relativ einfacher liegt”), wrote that a viewer’s experience of an object or landscape “drückt dem Gegenstand eine Färbung auf,” while at the

⁵¹⁹ Quoted in Welberry, “Stimmung,” 18, emphasis added.

⁵²⁰ Rudolf Hermann Lotze, *Medizinische Psychologie oder Physiologie der Seele* (Leipzig: Weidmann’sche Buchhandlung, 1852), 514, emphasis added.

⁵²¹ Georg Simmel, “Philosophie der Landschaft,” in Georg Simmel, *Brücke und Tür: Essays des Philosophen zur Geschichte, Religion, Kunst und Gesellschaft*, ed. Michael Landmann (Stuttgart: K. F. Koehler, 1957), 141–152, 149.

same time an object or a landscape can have its own “objektiver Gefühlsbestandteil, eine Färbung.”⁵²² Scheffler, orienting his “Erlebnis der Farbe” in relation to the line-color debate, later summed up as commonplace that: “man spricht von Linien des Willens und von *Farben des Gemüts*.”⁵²³ Both color and *Stimmung*, then, had become means of indicating that, somehow, what might otherwise be disparate parts had—whether psyche or landscape—become entangled, or even “ein Einheitliche[s],” a unified, harmonious whole. With its ability to affect and unify both “inside” and “outside,” landscape and observer, the perception of color, as Nicholas Gaskill sums up, became an important avenue by which psychology and aesthetics examined “the dynamic interaction between an embodied observer and an evolving environment.”⁵²⁴

My literary analyses therefore explore color and *Stimmung* as analogues—color as a visible manifestation of *Stimmung*, that is, emotional or aesthetic attunement; and *Stimmung* as a difficult-to-describe phenomenon whose elusiveness may be best described through the language of color. Before it expanded into the realms of landscape or psychology, *Stimmung* was a musical term, indicating attunement. After all, one voice (*Stimme*) alone, with neither accompaniment nor any system of standards against which to measure it, cannot be “out of tune.” Following its musical sense, as David Wellbery has outlined, *Stimmung* “undercuts” the “distinctions” that are “organised along the categorial axes inside/outside and subject/object,”⁵²⁵ and eventually came to belong neither to a subject nor an object, existing instead somewhere between the two, encompassing, exceeding, and relating them. Drawing from contemporary

⁵²² Moritz Geiger, “Zum Problem der Stimmungseinfühlung,” *Zeitschrift für Aesthetik und Allgemeine Kunstwissenschaft* 6.1 [1911]: 1–42, 5, 16.

⁵²³ Scheffler, “Das Erlebnis der Farbe,” 55, my emphasis.

⁵²⁴ Nicholas Gaskill, “Vibrant Environments: The Feel of Color from the White Whale to the Red Wheelbarrow,” Ph.D. Diss. (University of North Carolina Chapel Hill, 2010), 11.

⁵²⁵ David Welberry, “Stimmung,” trans. Rebecca Pohl, *new formations: a journal of culture/theory/politics* 93.2 (2017): 6–45, 6.

critical sources that (sometimes unwittingly) stage the convergence of color and *Stimmung*, I show how the “nervous” and the “landscape” axes of *Stimmung* provide a clarify how the colorful, mutually entangled environments function—environments in which, as I suggested in above, to speak of the environment is to speak of “our whole life.”

2.1 Tuning the Nerves in *Das graue Tuch und zehn Prozent Weiß*

It is not difficult to imagine, with the sheer amount of color that Scheerbart describes in *Glasarchitektur*, not to mention its continual shape-shifting, which turns the whole landscape into “etwas Schwebendes,”⁵²⁶ that people might become “Farbenkrank.”⁵²⁷ This is how the protagonist of Scheerbart’s other major 1914 publication—the “Damenroman,” *Das graue Tuch und zehn Prozent Weiß*—describes herself, shortly after marrying a colored-glass architect. While Goethe had famously situated the observing eye—and the whole, embodied person attached to it—as an active player shaping the content of perception, by the time Scheerbart was writing, this embodied observer was “nervous”: art critic Karl Scheffler, who, like Taut, published on urban architecture and the Gothic, had remarked in 1901 that “Niemals war der Farbensinn mehr Nervensache als in der Gegenwart.”⁵²⁸ And indeed, aesthetic thought and artistic practice of the late nineteenth and early twentieth centuries were profoundly shaped by physiology and psychology. John Gage summarizes how “The interests and even the methods adopted by painters and psychologists were very much in tune”⁵²⁹: both were invested in distancing themselves from the sort of prescriptive conventions of representational color that still

⁵²⁶ Scheerbart, *Glasarchitektur*, 48.

⁵²⁷ Scheerbart, *Das graue Tuch*, 120.

⁵²⁸ Scheffler, “Notizen über die Farbe,” 190.

⁵²⁹ John Gage, *Color and Meaning: Art, Science, and Symbolism* (Berkeley: University of California Press, 1999), 249–50.

governed some of Fechner’s aesthetics⁵³⁰ in favor of expressing their “immediate, naive sensation.”⁵³¹ The general upshot of physiological color research, from Wilhelm Wundt’s experiments in Leipzig in the 1880s through experimental aesthetics’ expansion during the 1910s with the work of Franz Brentano, Carl Stumpf, Ewald Hering, Ernst Mach, and others, was that colors traveled between “das Auge” and (though the exact nature of the connection was debated) “die Seele,”⁵³² exciting emotions or inspiring moods that were at least somewhat possible to isolate from their culturally or experientially formed “associative” values, and—this was the hope, at least—were somewhat verifiable as “Gefühlscharaktere” inherent to the colors themselves.⁵³³ Color was both the inspiration and the means, in other words, to find an

⁵³⁰ Fechner, apparently towing the Kantian line in relegating color to a subservient role in the field of aesthetics proper, includes it in his aesthetic purview only insofar as it contributes to representation of that “was sie darstellen soll” (*Vorschule der Aesthetik*, 1:179). In a discussion of kaleidoscopes and the popular nineteenth century attraction of the “Kalospinthechromokrene” or “Wunderbrunnen,” a brightly illuminated fountain that undoubtedly inspired the kaleidoscopic waterfall in the *Glashaus*, Fechner excludes these ‘liberated’ colors from the consideration of aesthetics. Though speaking to color harmony rather than immediate, non-associative perception, his remarks nevertheless reinforce conventional representation rather than direct perception: “so wohlgefällig die Symmetrie im Kaleidoskop erscheinen mag, wird sie doch weder in einem Landschafts- noch historischen Bilde vertragen, weil sie zur Bedeutung der dargestellten Gegenstände nicht passt [...] Eben so bestimmt sich das Colorit des Bildes vielmehr durch die Forderungen [sic] der Bedeutung als die Regeln der Farbenharmonie; denn so gut auch Blau oder Grün zu Roth ausserhalb eines Bildes stehen mag, kann man doch zum Roth der Wange das Gesicht nicht blau oder grün malen” (*Vorschule der Aesthetik*, 1:178).

⁵³¹ Gage, *Color and Meaning*, 249.

⁵³² Fechner, *Vorschule der Aesthetik* 2:213.

⁵³³ Even as their emphasis was on naive physiology or psychology, the importance of association in aesthetics was not underestimated by these researchers—indeed, it played a great role in their routinely racist considerations of climate, culture, and education in the development of perceptive and aesthetic sensitivity. (Differentiation, more or less explicit, in contemporary literature between the frequently unnamed white, educated man that was the normative perceiving subject and all his Others—women, children, “primitives,” sometimes “Gypsies,” followed perhaps by sighted and even *unsighted* animals—is too universal to merit citing individual instances (except to note that I have taken this explicit continuum from eyeless animals ‘up’ to white men from Emil Utitz, “Kritische Vorbemerkungen zu einer ästhetischen Farbenlehre,” *Zeitschrift für Ästhetik und allgemeine Kunstwissenschaft*, Volume 3 [Stuttgart: Ferdinand Enke, 1908]: 337–360.) Rather, empirical-aesthetic researchers of the late 1800s and early 1900s were attempting to bring into the light what may have been overshadowed by the previous generation’s overly ideal aesthetics (in philosophy) and stylistic norms (in art practice—what Drygulski Wright calls the “logic” of conventional imagery” [“Sublime Ambition,” 97]).

It is only slightly ironic, then, that it was Fechner’s pioneering research on “the eminent role of personal recollection, Zeitgeist, and cultural background in the formation of aesthetic experiences”—in short, the very *opposite* of the “immanent” “new reality” that Expressionist artists and their compatriots in psychology sought to

“Aesthetik der Nerven.”⁵³⁴ The feeling of being “Farbenkrank,” as Scheerbart’s protagonist expressed it, could be located in the relationship between the observer’s body (their eyes and nerves) and their environment, and diagnosed as the result of being “überreizt oder durch mangelnden Reiz unbefriedigt zu fühlen.”⁵³⁵

Hugo Magnus, an ophthalmologist who studied, lectured, and wrote extensively on color perception from the late 1870s through the very early 1900s, offers a helpful distillation of how aesthetic moods that might have been at home with the Romantics went blended with growing empirical research into observers’ nerves. In *Acht Vorlesungen über die Beziehung der Farben zum Menschen und zur Natur* (1881), Magus calls on his audience to reflect on their own relationship with colors:

Sie werden es an sich selbst erprobt haben, welchen Zauber die Pracht der Farben auf das menschliche Gemüth auszuüben im Stande ist. Sie werden es erfahren haben, in welche freudig erregte Stimmung gewisse Farben uns zu versetzen vermögen und wie andere

access—that opened the field of experimental aesthetics at all (Stefan A. Ortlieb, Werner A. Kügel, and Claus-Christian Carbon, “Fechner (1866): The Aesthetic Association Principle—A Commented Translation,” *i-Perception* 11.3 [2020]: 1–20, 2; Drygulski Wright, “Sublime Ambition,” 97). Indeed, as Sandra Richter outlines, empirical aesthetics essentially followed Fechner’s concept of an “Ästhetik von Unten”: “Man behandelt sie [die Ästhetik] nach einem kurzen Ausdruck von *Oben* herab, indem man von allgemeinsten Ideen und Begriffen ausgehend zum Einzelnen absteigt, von *Unten* herauf, indem man vom Einzelnen zum Allgemeinen aufsteigt. [...] Hier geht man von Erfahrungen über das, was gefällt und missfällt, aus, stützt hierauf alle Begriffe und Gesetze, die in der Aesthetik Platz zu greifen haben, sucht sie unter Mitrücksicht auf die allgemeinen Gesetze des Sollens, denen die des Gefallens immer untergeordnet bleiben müssen, mehr und mehr zu verallgemeinern und dadurch zu einem System möglichst allgemeinsten Begriffe und Gesetze zu gelangen” (Fechner, *Vorschule der Aesthetik* 1:1). See Sandra Richter, *A History of Poetics: German Scholarly Aesthetics and Poetics in International Context, 1770–1960* (Berlin: Walter de Gruyter, 2010), esp. 129–163. In this spirit, returning to the strain of racism that undergirded many conclusions within empirical aesthetics, pioneering research into color sense among so-called “Naturvölker” was conducted, contemporaneously with Wundt’s and others’ laboratory work, with the help of a vast network of missionaries, doctors, and military personnel, by the ophthalmologist Hugo Magnus. See Roger Schöntag and Barbara Schäfer-Prieß, “Color term research of Hugo Magnus,” in *Anthropology of Color: Interdisciplinary multilevel modeling*, ed. Robert E. Maclauray, Galina V. Paramei, and Don Dedrick (Amsterdam: John Benjamins, 2007), 107–122.

⁵³⁴ Markus Dauss and Ralf Haekel, introduction to *Leib/Seele—Geist/Buchstabe: Dualismen in der Ästhetik und den Künsten um 1800 und 1900*, ed. Markus Dauss and Ralf Haekel (Würzburg: Königshausen und Neumann, 2009), 32.

⁵³⁵ Fechner, *Vorschule der Aesthetik*, 2:218.

Farbentöne wieder eine mehr elegische Stimmung in uns anklingen lassen und noch andere gar das Gefühl der Wehmuth und der Trauer über unseren Geist bringen.⁵³⁶

Here, Magnus frames color in the language of enchantment (“Zauber”); refers to what will soon become the very material “Gehirn” of Gottfried Benn as the much more spiritually capacious “Gemüt”; and speaks of color’s *Stimmungen* as one might discuss music or poetry—“joyous,” “elegaic,” and “sorrowful.” Another passage from the same text, however, uses the language of *Stimmung* in a way that unites both milieu theory and atmosphere with the scientific, empirical nervousness of contemporary science. Discussing the various color palettes associated with different climates, Magnus asserts that those who live in regions where the “Lichtgehalt der Atmosphäre” is greater become accustomed to “die glühenden farbigen Effecte”—and that such psychological and ultimately aesthetic acclimatization is due to the physiology of the eye:

Die Netzhaut wird durch solch’ eine Pracht der lebendigsten lichtreichsten Farben an starke sinnliche Reize allmählich so gewöhnt, daß sie nur durch sie sich befriedigt fühlt; sie wird [...] hauptsächlich nur für die warmfarbige Hälfte des Spectrums gestimmt und so gewinnt diese ein entschiedenes ästhetisches Uebergewicht.⁵³⁷

“Gestimmt” of course does not mean “mooded”; rather, hearkening back to *Stimmung*’s musical roots, it suggests that the retina “tunes” or, more colloquially, “sets” itself in relation to its environment. Color, from this perspective, does not “shift” us into moods out of nowhere. Instead, it shapes our aesthetic sense by first affecting us as a “sensory stimulus.” For Magnus, everything from the colors we are drawn to the *Gemütsstimmungen* we are liable to feel in response to certain colors and our according aesthetic preferences are determined by the intertwined habituation of physiology and psychology.

⁵³⁶ Hugo Magnus, *Acht Vorlesungen über die Beziehung der Farben zum Menschen und zur Natur* (Breslau: Kern’s, 1881), 3.

⁵³⁷ Magnus, *Acht Vorlesungen*, 252, emphasis added.

An excellent example of the particular closeness between psychology and aesthetics during this period is Emil Utitz, who taught both subjects in Rostock and Halle, and whose *Grundzüge der ästhetischen Farbenlehre* (1908) attempted—in the midst of widening experimental research on individual color senses—to find “die allgemeinen Gesetze”⁵³⁸ of an aesthetics of colors. Upholding differences of race, age, gender, and education, Utitz nevertheless grounds his aesthetics on the universal level of what he calls “instinktive”⁵³⁹—i.e., innate, non-associative, physiological and psychological—perception of color(s). (These immediate perceptions, he conveniently claims, are simply sharpened and refined by culture and education.) In this way, Utitz, like Magnus, establishes an unbroken chain from the raw nervous “Erregung” caused by the color red, for instance, to its aesthetic “emotionelle[] Wirkung” as “aufregend, angreifend, erwärmend und belebend” and its “kulturhistorisch” associations with “Blut, Feuer, Glut und alles innerlich Heisse und Warm”—associations which in turn “verstärken noch den direkten Eindruck”⁵⁴⁰ and give educated people “reichere Gefühlserlebnisse.”⁵⁴¹ Utitz’s discussion of *Gefühlstöne* reenforces his delicate Eurocentric configuration of physiology, psychology, and aesthetics, and leads him to promote these fields working “Hand in Hand”⁵⁴²; it also suggests multiple access-points—theoretically separable, though in reality intertwined—for discussing what was variously referred to as the “Gefühlston” or “Gefühlswirkung” of various colors and their combinations.

In a nervous conception of *Stimmung*, a culture transformed by colored glass architecture would be a culture of minds educated in colors’ various associations, and a culture of bodies that

⁵³⁸ Utitz, “Kritische Vorbemerkungen,” 355.

⁵³⁹ Utitz, *Grundzüge*, 11.

⁵⁴⁰ Utitz, *Grundzüge*, 17–18.

⁵⁴¹ Utitz, “Kritische Vorbemerkungen,” 346.

⁵⁴² Utitz, *Grundzüge*, 18.

were in turn excited and soothed, pleased and angered, inspired and depressed, surprised and habituated by the ever-shifting colors of their environment. In such an environment, color becomes a tool for affecting the masses, and those who control the colors control the culture. It is no wonder, then, that the character on whom I focus in my reading of Scheerbart’s novel *Das graue Tuch und zehn Prozent Weiß* experiences vacillating allegiances and relationships to the colors that saturate her eyes and clothe her body. The novel tells the story of a young couple—the glass architect Edgar Krug and the organist Clara Weber—who, having married the first evening of their acquaintance with a color-based marriage contract, navigate their relationship to each other and to their social and built surroundings through the explicit frame of color. At the center of their marriage contract is Krug’s stipulation that Clara wear, from that day on, only outfits of the titular “gray cloth and ten percent white.” The two travel from Chicago, where the novel begins, to Antarctica, the Khuriya Muriya Islands, Japan, northern India, and many other places: everywhere, Krug has been commissioned to build or is attempting to get glass architecture off the ground. Unlike *Glasarchitektur*’s unusually programmatic style, *Das graue Tuch* is a roaring tour of Scheerbart’s extensive vision of glass architecture, from the mountains to the harbors, from vast halls to small “gallows” houses that can be raised, lowered, and rotated for constant mobility and perpetually shaded living rooms.⁵⁴³

But while Krug’s career defines the movement of the plot, and he is often referred to as the story’s protagonist or even its “hero,”⁵⁴⁴ it is Clara—whose very name suggests clarity, that is, a lack of color—to whose experience and development the narrative attends most closely. Indeed, the subtitle “ein Damenroman” suggests that the text is more oriented towards her. And

⁵⁴³ For a wonderful discussion of *Das graue Tuch* as a livelier presentation of Scheerbart’s architectural ideas, see Haag Bletter, “Paul Scheerbart’s Architectural Fantasies.”

⁵⁴⁴ Haag Bletter, “Paul Scheerbart’s Architectural Fantasies,” 85.

while Krug’s is the struggle to advance glass architecture throughout the world—to build a colorful glass environment, in other words—Clara’s is the struggle to direct and determine her manner of attuning to environments, both architectural and social. Everywhere, Clara’s white and gray outfit either complements her husband’s architectural prowess, or its role in her marital agreement causes a stir. A few times—always at the instigation of her friends—she breaks the agreement and (spoiler alert) it is eventually annulled from their marriage contract. Curiously, however, Clara opts, of her own volition, to continue wearing gray and ten percent white. In her extensive description of *Das graue Tuch*, Haag Bletter writes simply that, by the end of the novel, Clara “has become so convinced of the appropriateness of her costume to glass architecture, that from then on she wears her grey dress voluntarily. And everything ends happily with the acceptance of glass architecture around the globe.”⁵⁴⁵ While this is true, neither the novel nor Bletter is forthcoming about why Clara eventually arrives at this position. John Stuart, the novel’s English translator, makes little more of an attempt to parse Clara’s decision, saying (in an apparently unintentional play on her name) that she operates based on “reasons that do not seem clear either to her or the reader.”⁵⁴⁶ Instead of seeking to understand the colorful logic through which Clara navigates the question of her attire, Stuart frames the affair in terms of class: “Through her signature attire,” he concludes, “Clara resolves to reject the fashions of bourgeois culture for the higher goals of glass architecture. She does not, however, reject bourgeois life.”⁵⁴⁷ This is not wholly untrue—alongside her pursuit of her musical vocations, Clara continues to long for the quiet luxury of her home with Krug on the Lago Maggiore, and the novel closes with their enjoyment of their visually opulent home life. But neither is it

⁵⁴⁵ Haag Bletter, “Paul Scheerbart’s Architectural Fantasies,” 86.

⁵⁴⁶ Stuart, “Unweaving Narrative Fabric,” 63.

⁵⁴⁷ Stuart, “Unweaving Narrative Fabric,” 64.

satisfactory. Rather than explain Clara’s decision to continue wearing gray and white, Stuart’s reading positions Clara in an unresolved opposition between the “higher goals” of her husband and the comfort of her (only somewhat) bourgeois life as a successful musician, ignoring the aesthetic dynamics of color itself that structure her dress and surroundings.

I propose an alternate frame of interpretation for the plot of Clara’s outfit: one that takes color as an integral element of human-environment *Stimmung*. In this frame, the apparently arbitrary and inconsistent twists and turns of the plot, and specifically Clara’s personal evolution in relation to her gray and white garb, represent the twists and turns of an evolving “nature of color”—or, in this case, a “built environment of color”—which emerges from the varying moody attunements of observer and environment. After all, as one character remarks, “hier kommt sehr viel auf die momentane Stimmungen an.”⁵⁴⁸ This process of attunement between Clara and her environment plays out not just in her psychological interior—which the narrative sometimes describes directly and sometimes reveals through Clara’s telegrams to friends—but in the shifting colors through which she and her world interact.

The opening scene of the novel stages color’s immense power to “tune” the nerves: at a sculpture show in Chicago housed within Krug’s magnificent colored glass architecture, the sun emerges from behind the clouds:

da gab es in den Ausstellungshallen einen kleinen Tumult, denn durch die Sonne wurde die Farbenpracht der Glasornamente so gestiebert, daß man gar nicht die Worte fand, um dieses Farbenwunder richtig zu preisen; viele Besucher riefen immer wieder: Entzückend! Wundervoll! Herrlich! Unvergleichlich!

Diese und ähnliche Worte wirkten nun auf das Ohr der Bessergebildeten schließlich recht unangenehm, da die Bewunderungsworte immerzu wiederholt wurden; glücklicherweise hörte die Bewunderung bald wieder auf, da sich draußen die Sonne nochmals hinter Wolken verkroch.⁵⁴⁹

⁵⁴⁸ Scheerbart, *Das graue Tuch*, 151.

⁵⁴⁹ Scheerbart, *Das graue Tuch*, 110.

Poking fun at stereotypical class divisions in color perception and nervous regulation, the narration establishes the comically overpowering force of color on the attendees. The scene is almost grotesque in the crowd’s uncontrollably enthusiastic response. This is color’s power to *impress*, to *affect*, as Scheerbart and his contemporaries imagined Gothic stained glass to do—to produce, in the words of the glass theater director, “außerordenliche Stimmungen,” without the audience’s equal and opposite power to build and to regulate. While this bright mix of colors has a stimulating effect, Krug and his companions, Mr. Löwe the lawyer and Miß Amanda the sculptor, later retire to other exhibit rooms in which “einfarbiges, sehr gedämpftes Licht leuchtete”: in contrast to the bright and *bunt* displays of just now, “Das einfarbige beruhigte.”⁵⁵⁰ Thus, as Haag Bletter as pointed out, Scheerbart’s architecture “functions specifically in two ways: in a traditional sense as shelter and in an untraditional way as extended garden architecture, enhancing peoples’ experience of the world. [...] he intends it to provoke an emotional response.”⁵⁵¹

The emotional structure of these two colorful scenes can be mapped onto Fechner’s differentiation, in his *Vorschule der Aesthetik*, between the psychological effects of color combinations and those of individual colors. Fechner writes that “der Eindruck jeder Farbe durch Zusammenstellung derselben mit andern mitbestimmt werden [kann],”⁵⁵² and that the “Eindruck” of any given color will vary at least to some extent depending on the other colors with which it is combined (or not combined, as the case may be). Thus, according to Fechner, we see “welch’ verschiedenen Eindruck jede [Farbe] macht, wenn sie das Gesichtsfeld in grossem

⁵⁵⁰ Scheerbart, *Das graue Tuch*, 111.

⁵⁵¹ Haag Bletter, “Paul Scheerbart’s Architectural Fantasies,” 87.

⁵⁵² Fechner, *Vorschule der Aesthetik*, 2:213.

Uebergewicht füllt, theils wie verschieden sich jede auf gleich weissem oder schwarzen Grunde verhält, theils was sich vom Eindruck jeder Farbe constant beim Eingehen in die verschiedensten Zusammenstellungen erhält.”⁵⁵³ The shifting color combinations in Krug’s main hall—changed further by the momentary illumination of the sun—will have different effects, taken together, than that of any single color that might happen to fill “das Gesichtsfeld in grossem Uebergewicht.”

Unlike these passive gallery-goers, Clara’s first interaction with her environment is active. Indeed, her ability to intervene in her surroundings appears in the narrative even before she herself does: in the midst of Krug’s colorful walls, behind a tall gray curtain, is revealed a gray organ covered in “feinen geschweiften Kurven” of gold that “das ganze Orgelwerk wie mit einem Netz überstrickten, so daß die Orgel als solche gar nicht zur Geltung kam.”⁵⁵⁴ Clara’s entrance into the novel is marked not only by a lack of color, but by invisibility altogether—the organ, decorated with its fine gold filigree, is hardly visible “als solche.” The music Clara plays brings the attendees to a new pinnacle of powerless aesthetic—or simply nervous—appreciation. Accompanied by “elektrische Licht” flaring within the colorful walls, the “stürmische Rhythmen” of the organ causes everyone to spring to their feet “mit offenem Munde,” and “in den großen Farbenzauber ganz geblendet hinein[zustarren].”⁵⁵⁵ Clara’s music, like her gray dress and gray organ, might have been a boring gap in Krug’s bright design; instead, they exercise their own influence, complementary to that of his colors. When the music stops, the crowd remains a single, affected mass of laughing, inarticulate gesticulation: “[es] flutete alles lachend

⁵⁵³ Fechner, *Vorschule der Aesthetik*, 2:213.

⁵⁵⁴ Scheerbart, *Das graue Tuch*, 110.

⁵⁵⁵ Scheerbart, *Das graue Tuch*, 111.

und gestikulierend durcheinander.”⁵⁵⁶ Like Krug’s colors, Clara’s music becomes a kind of environment—an environment that, though not visible, affects them, and in being affected, an environment of which they become a part. When the organ sounds, mouths open; when its rhythms emerge, they leap to their feet.

In Scheerbart’s narration of these early scenes, descriptions of encompassing, aesthetic environments alternate with accounts of their inhabitants, and both people and settings are given similar stylistic attention: both people and environments move and change (colors, positions, facial expressions); and both people and environments look at and appear to each other, respectively:

Man benutzte ein paar Fahrstühle, fuhr erst nach unten und dann wieder nach oben. Und so kam man draußen auf ein großes Dachplateau, von dem aus kleine Wagen fund um die große Kuppel des runden Mittelpalastes herumfahren. [...] Und—von außen wirkten die Ausstellungshallen fast noch prächtiger als innen. Man sah im Michigansee das ganz bunte Spiegelbild der Paläste; wie Kolibris, Libellen und Schmetterlinge zuckten die unzähligen Farben auf den bewegten Wellen des Sees.⁵⁵⁷

With the impersonal pronoun “Man,” the first sentence de-personalizes the characters, turning them into moving elements of the moving architecture as they ride “nach unten und dann wieder nach oben” in the elevators. As though riding along with them, the narration arrives on the rooftop and, in the third sentence, takes the part of the building itself: the exhibition hall, now the grammatical subject, makes a magnificent effect. The fourth sentence describes the mirroring interaction of the building and the lake (also in movement, upon the “bewegten Wellen”), and, by returning to the perspective of the scene’s people-elements, integrates the natural and the built environment into the totality of what “[m]an sah.” As Musielski writes, “Der Mensch wird auf

⁵⁵⁶ Scheerbart, *Das graue Tuch*, 111.

⁵⁵⁷ Scheerbart, *Das graue Tuch*, 113.

seiner zirkulierenden Bewegungsbahn architektonische funktionalisiert”: a complex interaction of moving, appearing, and seeing, the human, natural, and architectural elements of the narrative become a single intermingling mass—a variegated but ultimately unified environment of color.

Thus when Clara herself emerges wearing a simple gray dress with ten percent white trimming, Krug is “heftig überrascht” and “gleich begeistert [...] nach Herrn Krugs Meinung paßte zu Glaswänden nur ein graues Kostüm mit zehn Prozent weiß.”⁵⁵⁸ Rather than her music, however, which is invisible as such, Krug sees in Clara’s *appearance* the perfect complement to his colorful glass architecture: it “retreats [zurücktreten]” before color and, rather than presenting “competition [Konkurrenz],” “hebt sich [...] vom Buntfarbigen ab, bildet zur bunten Glasarchitektur einen prächtigen Kontrast.”⁵⁵⁹ This is, I propose, because gray was often not seen as a color at all, but simply a mixture of light and dark. In Fechner’s aesthetics, gray’s power—its potential “Helligkeitsreiz”⁵⁶⁰—is distinct from the “Kraft der Farbe”⁵⁶¹ that lies in the “Charakter”⁵⁶² of individual hues. The gray of Clara’s dress maps onto the gray of her organ, which recedes from visibility altogether.

Krug’s marriage proposal to Clara, which he makes over the course of dinner (with a morsel of pike liver waving nonchalantly on his fork), is thus a proposal of color: “Meine Gnädigste, würden Sie wohl bereit sein, Ihr ganzes Leben hindurch nur graue Kostüme zu tragen—mit zehn Prozent Weiß?”⁵⁶³ The contract, which they hash out and immediately formalize (thanks to their lawyer friend Mr. Löwe) allows Clara to wear all available

⁵⁵⁸ Scheerbart, *Das graue Tuch*, 114.

⁵⁵⁹ Scheerbart, *Das graue Tuch*, 115.

⁵⁶⁰ Fechner, *Vorschule der Aesthetik*, 2:214.

⁵⁶¹ Fechner, *Vorschule der Aesthetik*, 2:215.

⁵⁶² Fechner, *Vorschule der Aesthetik*, 2:215.

⁵⁶³ Scheerbart, *Das graue Tuch*, 114.

“Grautöne,” “vom tiefsten Grau bis zum hellsten.”⁵⁶⁴ But no matter the shade of gray she dons, Fechner reminds us that “Farbenreiz ist etwas Andres als Helligkeitsreiz”⁵⁶⁵ and thus her *Helligkeits*-effect will always be distinct from that of Krug’s colors. Precisely because of their “Farbenmangel,”⁵⁶⁶ however, Clara’s white and gray will always flatter Krug’s colors. As Fechner writes, white and black (and, presumably, gray) “sich am besten als Unterlage eignen, die eigenthümliche Wirkung von Farben und Farbencontrasten zur Geltung zu bringen.”⁵⁶⁷ In Krug’s eyes, at least, he and Clara—color and gray—are at once harmonious and essentially different. Clara and Krug’s relationship is, from the moment of its formalization, the relationship of color and not-color. Krug’s motivation seems clear: he wants a wife who will not compete with his architecture. (Miß Amanda Schmidt, a sculptor and a friend of Clara’s, had made a most unfavorable impression with her “dunkelviolettes Sammetkleid mit karminroten und chrysolithgrünen Afus schlägen und Schnuuren. Herr Edgar Krug sagte leise zum Rechtsanwalt: ‘Eigentlich habe ich hier ganz allein in Farben zu sprechen. Die Damen sollten diskreter in ihren Kostümen sein—aus Rücksicht auf meine Glasfenster.’”⁵⁶⁸) But Clara spends the rest of the novel trying to figure out what that relationship of color means, both for her husband and for herself.

Clara’s questioning process is largely revealed through her friendships with other women, though she eventually discusses the topic with Krug, as well. Shortly after departing Chicago in Krug’s blimp, she telegrams her Chicago sculptor friend Miß Amanda:

Glaubst Du, daß mich Edgar gewissermaßen als Reklamedame geheiratet hat? Glaubst du, daß er das nötig hat? [...] Wem soll ich in Grau imponieren? Ich verstehe meinen

⁵⁶⁴ Scheerbart, *Das graue Tuch*, 115.

⁵⁶⁵ Fechner, *Vorschule der Aesthetik*, 2:214.

⁵⁶⁶ Fechner, *Vorschule der Aesthetik*, 2:226.

⁵⁶⁷ Fechner, *Vorschule der Aesthetik*, 2:227.

⁵⁶⁸ Scheerbart, *Das graue Tuch*, 110.

Gatten noch nicht. Glaubst du, er will nur einen ästhetischen Kontrast in mir besitzen? Glaubst du, daß ihm seine furchtbar bunte Glaswelt bereits zu bunt wird? Manchmal glaube ich’s.⁵⁶⁹

Amanda agrees, and the two friends are not entirely wrong: on the island of Borneo, Krug “bat seine Frau, immer wieder in andrer Stellung vor den Glaswänden zu stehen,” which she does—until she feels so awkward that she excuses herself with a headache. Still, Clara’s ability “[sich] so gut in jede Situation zu schicken” impresses Krug, and mirrors, in the social realm, the advantages he sees in her gray clothing.⁵⁷⁰ In Antarctica, “Da die Seeleute stark rauchten, steckte sich Frau Clara auch eine leichte Zigarre an—und trank Grog—drei Glas—wie ein alter Seebär.”⁵⁷¹ At a fine dinner in Cyprus, “Die halle leuchtete dunkelviolet mit lila Ornament. Die Damen trugen Weiß mit viel Grün dazu. Da wirkte wieder Miß Clara mit ihrem grauen Tuch und den zehn Prozent Weiß sehr gut; man bewunderte ihre einfache Toilette.”⁵⁷² And, as Krug had hoped, her outfit aids his career—helping him convince those in charge of the Cyprus sea port that he can tastefully cover the harbor in colored glass.

“Allerdings,” sagte der eine der Direktoren, “wir machen den Herrn Architekten darauf aufmerksam, daß wir allzu viel Farben und allzu Bunt es vermeiden möchten. Wir wollen mehr das Einfache. Aber das einfache graue Kostüm der Gattin unsres Architekten bürgt uns ja dafür, daß Mr. Krug nicht den geschmackslosen allzu bunten Farbenzauber auch hier bei Kition auf der alten Insel Kypern einführen wird.”⁵⁷³

But just as her agreeable nature shows itself in relation to Krug—her gray garments complementing his bright buildings—she also attunes herself to others. To Amanda—who was vocal from the beginning about her suspicion of the union—Clara expresses doubt and

⁵⁶⁹ Scheerbart, *Das graue Tuch*, 121.

⁵⁷⁰ Scheerbart, *Das graue Tuch*, 129.

⁵⁷¹ Scheerbart, *Das graue Tuch*, 129.

⁵⁷² Scheerbart, *Das graue Tuch*, 168.

⁵⁷³ Scheerbart, *Das graue Tuch*, 168.

dissatisfaction in her telegrams. And, before she and Krug have traveled far together, Clara’s new friend Käte Bandel from the artists’ colony in Antarctica convinces Clara, “Da nun die Damen tagelang sich selbst überlassen blieben, [...] doch mal statt zehn Prozent Weiß—zehn Prozent Schottisch (ganz bunt karierte Seide) zu tragen. Frau Clara willigte ein und tat, was Fräulein Bandel wollte.”⁵⁷⁴ Krug immediately happens upon this breach of contract, and after a quickly suppressed fight, Clara returns, for the time being, to gray with ten percent white. But her unruly ability to attune to others (and disgruntle her husband) appears beyond the color of her clothing, as well: when Clara and Krug meet the disapprobation of a crowd of brightly dressed ladies in Japan—“Mein edler Herr!” the Marquise Fi-Boh remonstrates, “Ihre Bemerkungen über die Kontrastwirkungen mögen ja wohl in dem ziemlich zurückgebliebenen Europa einen gewissen Eindruck gemacht haben. Was macht da *nicht* Eindruck? Aber wahr ist an Ihrer Ästhetik nicht eine Silbe [...] Das Kostüm Ihrer Gattin [...] ist abscheulich wie ein altes Gespensterlaken”⁵⁷⁵—Clara’s sudden laughter at this confrontation between her husband and the Marquise prompts the crowd of ladies to laugh with her (a display of social attunement that punctuates Scheerbart’s narration of gatherings, and whose sometimes inexplicable emergence, intensity, or duration makes his prose legible, at times, as *grosteque*). The ladies’ laughter makes Krug feel awkward, beg a headache, and usher Clara away. Thus during her first months with Krug, Clara enjoys the provocation that gray’s difference presents: “Jetzt wird die Sache amüsan. In Japan hat man mich einfach ausgelacht. Mein Gatte ist mit mir bei Nacht und Nebel davongefahren. Was man alles erlebt, wenn man graues Tuch mit zehn Prozent Weiß trägt! Es ist kaum zu glauben! Ich bin jetzt sehr gespannt, wie’s weitergeht.”⁵⁷⁶

⁵⁷⁴ Scheerbart, *Das graue Tuch*, 137–38.

⁵⁷⁵ Scheerbart, *Das graue Tuch*, 140.

⁵⁷⁶ Scheerbart, *Das graue Tuch*, 141.

“Wie’s weitergeht” is, in fact, that Clara breaks the contract again. This time, she does so while her husband is away and while she is in the company not just of one friend, but of a whole crowd of those very same “bunte Japanerinnen” with whom she laughed. The ladies visit Clara in northern India, arriving in the midst of her concert on the “Zehnturmorgel”: “das Wiedersehen ward auch zu einer großen Ovation für Frau Clara. Und Frau Clara sah sich plötzlich zwischen unzähligen bunten seidenen Gewändern. Und die Prächtigen Seidenstücke wurden der Orgelspielerin zu Füßen gelegt. Da ließ sie sich auch bunt kleiden.”⁵⁷⁷ Here again, Clara “passt sich” to the situation: but rather than doing so by according with Krug’s contract and letting her gray stand apart from Krug’s color, she lets herself be dressed in the colors of her peers. She submits, in other words, to merging with the “unzähligen” colors around her, becoming one of a mass and escaping into “uncountability” (not to mention “unaccountability” to her marriage contract). Amidst the colorful throng, Clara plays “wilde Walzermusik”⁵⁷⁸ late into the night. Miß Amanda, arriving soon thereafter for her own visit to Clara, “lachte, als sie ihre Freundin in bunter Seide sah.”⁵⁷⁹ Wild, uncountable, and filled with ladies’ laughter, the night seems to lose all normal proportions. Even the usually “dumpfe Ernst” of Clara’s organ sounds “wie eine Burleske.”⁵⁸⁰

Clara’s wild night, as well as the varying reactions that she receives to her gray clothing, can be parsed—like the audience’s color-enthusiasm at the novel’s opening—through Fechner’s color research. In his work, Fechner established what he more broadly referred to as the “Prinzip der ästhetischen Schwelle,”⁵⁸¹ which, in the realm of vision, stipulates that “the eye senses only

⁵⁷⁷ Scheerbart, *Das graue Tuch*, 150.

⁵⁷⁸ Scheerbart, *Das graue Tuch*, 150.

⁵⁷⁹ Scheerbart, *Das graue Tuch*, 151.

⁵⁸⁰ Scheerbart, *Das graue Tuch*, 150.

⁵⁸¹ See Fechner, *Vorschule der Aesthetik*, 1:49ff.

ratios of contrast above the average intensities [...reacting] to ratios of intensity rather than the absolute strengths.”⁵⁸² According to his aesthetics of color, therefore, Clara’s gray provides a “Massstab” for the brightness of colors around her. Her own outfit, which incidentally already includes one “ratio of intensity” between the gray and the white, becomes, alongside actual colors, a point of reference: itself “Charakter-” or hue-neutral, it acts as a baseline upon which the eye can gauge other colors’ relative brightness and in contradistinction to which the retina (and thereby the soul) will be “stärker oder schwächer erregt.”⁵⁸³ When that baseline is removed, as it is when the Japanese ladies dress Clara in their colorful clothing, the landscape of the novel becomes topsy-turvy, oriented only by the relative “Zusammenstellung” and ever-evolving *Stimmungen* of so many colors.

As I mentioned above, the *Damenroman*’s English translator, John Stuart, suggests that Clara opts to continue wearing gray with ten percent white “for reasons that do not seem clear either to her or the reader.”⁵⁸⁴ Yet Stuart does not take into account that Clara dressed in gray and white—of her own volition—before she had ever met Krug. Indeed, Clara’s changing relationship to her achromatic outfit, though never directly explained, is one of the more novellistically coherent elements the text, whose other elements tend to follow a somewhat arbitrary, rambling and consequence-free cadence. On the level of plot, Clara’s ultimate re-commitment to gray with ten percent white follows her deepening acquaintance with Krug and comfort in his luxurious lifestyle (“die Einrichtungen in diesem Luftomnibus mögen ja herrlich sein. Aber wer wie ich an Edgars Luftschiff gewöhnt ist, findet doch alles in diesem Omnibus

⁵⁸² Banks, *Ernst Mach’s World Elements*, 94.

⁵⁸³ Fechner, *Vorschule der Aesthetik*, 2: 214.

⁵⁸⁴ Stuart, “Unweaving Narrative Fabric,” 63.

herzlich primitiv”⁵⁸⁵). Likewise, as her musical fame increases, the dynamics of her marriage with Krug seem to equalize: “Gratuliere Dir!” he telegrams after her concert in northern India becomes a “Weltereignis”—“Ich trinke auf Dein Wohl ein paar Flaschen Champagner...Jedenfalls bin ich sehr froh, daß Du jetzt auch das vermaledeite Berühmthsein kennen lernst. Leidensgenossen nähern sich leichter. Hoffentlich sagst Du auch bald: Ruhm ist unbequem. Dann können wir uns trösten.”⁵⁸⁶ This affectionate (albeit pompous) communication from Krug “wirkte [...] ganz merkwürdig” on the colorfully-dressed Clara: she immediately changes out of her Japanese silks and back into gray and white.

Financially capable, as Amanda reminds her, of divorcing Krug and supporting herself, Clara’s newfound success forces her to reevaluate her relationship not just to Krug, but to more of her social environment, as well. Amanda’s suggestion that Clara free herself from her role as Krug’s “Scheingattin,” which might earlier have prompted Clara to vent more of her own frustrations, in harmony with Amanda’s opinion, evidently takes her off guard: “‘Scheingattin?’ Also brauste Miß Clara auf, und sie zitterte vor Wut.”⁵⁸⁷ Along with the option of becoming independent from Krug and from the gray and white contract comes, for Clara, greater independence from Miß Amanda’s social influence. Indeed, when “die Sache mit dem Grau und den zehn Prozent Weiß” is finally “erledigt”—i.e., removed by Mr. Löwe from Clara and Krug’s marriage contract—Clara once again spars with Amanda, who protests at her insistence that she will, regardless of contract, continue wearing gray and white.⁵⁸⁸ “‘Aber Clara!’ rief ganz entsetzt Miß Schmidt, ‘wenn aber Dein Gatte Dich bunt zu sehen wünscht, was dann?’ ‘Das geht uns nur

⁵⁸⁵ Scheerbart, *Das graue Tuch*, 155.

⁵⁸⁶ Scheerbart, *Das graue Tuch*, 154.

⁵⁸⁷ Scheerbart, *Das graue Tuch*, 155.

⁵⁸⁸ Scheerbart, *Das graue Tuch*, 166.

was an!’ bemerkte schnippisch Frau Krug.”⁵⁸⁹ Clara’s decision to continue donning gray and white is, this interaction suggests, a choice of her own—and a matter on which Krug himself may not even be able to sway her.

On the level of color theory, Clara’s insistence on continuing to wear gray and white can be read as an insistence on a certain orientation in relation to her visual environment; a certain manner of regulating it, but also a certain controlled manner of being a part of it at all. By donning colorful garments, Clara both defied her husband’s wishes and, ironically, integrated herself fully into his environment of color. When Krug first censured Miß Amanda for her violet and carmine red dress, his words were: “Eigentlich habe ich hier ganz allein in Farben zu sprechen.”⁵⁹⁰ Other peoples’ colors muddled the conversation of appearance that Krug was so intent on composing. At the start of her marriage, Clara’s obligation to wear gray and white relegated her to a subservient role in relation to color, and therefore to Krug and his environments. For Krug, Clara’s achromatic “Helligkeitsreiz” provided, as I suggest above, a means of balancing and measuring Krug’s environments without interfering with them. Once that “Paragraph[] im Ehekontrakt”⁵⁹¹ is annulled, however, Clara’s personal determination *not* to wear color is legible as a determination to occupy a position outside Krug’s conversation of color—beyond the realm of “tyrannische”⁵⁹² *Buntheit* in which people and architecture become, as Musielski writes, integrated in to an “unendlichen Fluß” of *Stimmung*, a “Wechselspiel von materieller Formierung und Auflösung, Verflüssigung und Verfestigung” that results in “die Entgrenzung von Subjekt und Objekt” and in which “Bau- und Lebensrhythment

⁵⁸⁹ Scheerbart, *Das graue Tuch*, 166.

⁵⁹⁰ Scheerbart, *Das graue Tuch*, 110.

⁵⁹¹ Scheerbart, *Das graue Tuch*, 166.

⁵⁹² Scheerbart, *Das graue Tuch*, 124.

verschmelzen.”⁵⁹³ In this light, if we take Krug as the novel’s hero, *Das graue Tuch* is the story of one man’s attempt to build a new milieu: to use color’s power to affect *Stimmungen* to attune observers (subjects) with their environments, and thereby to transform “unser ganzes Leben”⁵⁹⁴ into celebration of color such as I discussed in earlier sections. With Clara as the protagonist, however, *Das graue Tuch* becomes a critique of Krug’s *Glaskultur*, casting it as at once overwhelming (“Ich glaube, dieser Edgar macht mich ganz farbenkrank”⁵⁹⁵) and overbearing, breaking open observers’ interiority and compelling their moods to fall into step with their environment. As Musielski writes: “Bietet das Glashaus dem Besucher eine Sphäre des inneren Raumerlebens, so verlangt die Architektur wiederum vom Menschen ein rhythmisches Mitgleiten.”⁵⁹⁶ Furthermore, “Die illusionistische Auflösung der Gebäudegrenzen” that glass’s semi-transparency affords ultimately compels a “vitalistischen Identität zwischen Mensch und Raum”⁵⁹⁷ from which Clara—even as she decides that she supports Krug’s colorful architecture—remains at least partially independent.

2.2 Unifying Landscape and Observer in *Lesabéndio*

*Wenn eine Geschichte des Nachdenkens und Forschens wert ist, so ist es die Geschichte der Erde [...], eine Geschichte, in welcher die der Menschen nur ein Einschiebsel ist, und wer weiß es, welch ein kleines, da sie von anderen Geschichten vielleicht höherer Wesen abgelöst werden kann.*⁵⁹⁸

Whereas Clara, through her gray and white and her music, maintains one critical foot outside the nervous world of color, *Lesabéndio* tells the story of its titular character, an alien on

⁵⁹³ Musielski, *Bau-Gespräche*, 92.

⁵⁹⁴ Scheerbart, *Glasarchitektur*, 116.

⁵⁹⁵ Scheerbart, *Das graue Tuch*, 120.

⁵⁹⁶ Musielski, *Bau-Gespräche*, 92.

⁵⁹⁷ Musielski, *Bau-Gespräche*, 94.

⁵⁹⁸ Stifter, *Der Nachsommer*, 343.

the asteroid Pallas, who integrates himself so fully into his colorful environment that he dissolves into it, and begins a new life as a celestial body. The plot of *Lesabéndio* is thus inseparable from the environment in which it takes place, and so I begin with an overview of Scheerbart’s fictionalized version of the asteroid Pallas.⁵⁹⁹ Orbiting Jupiter, Pallas is barrel-shaped asteroid whose north and south poles both sink in cone-shaped openings towards the center of the asteroid. The “Nordtrichter” and the “Südtrichter” are connected by a relatively narrow opening. Most inhabitants, or “Pallasianer,” live on the *Nordtrichter*, although several artists have their ateliers in caves on the *Südtrichter*, where gravity is weaker. Above the *Nordtrichter* is “eine weiße große Wolke”—referred as the *Lichtgewebewolke* or the *Spinnwebewolke*—which lights up during the day and fades at night, and which, for most of the novel, is considered to be “Der eigentliche Lichtspender”⁶⁰⁰ for Pallas. Lesabéndio, who “immer nur einen so einfachen Plan mit sich herumführte, daß für den ein Atelier garnicht nötig wurde,”⁶⁰¹ decides to construct an enormous tower in order to see beyond the *Spinnwebewolke* and find out if there is anything above Pallas in its “System.” The Pallasianer suspect that above the cloud is the “Kopf” of their asteroid—the complement to its “Rumpf,” where they live. The story of *Lesabéndio* is the story of this tower’s construction, of the Pallasianers’ growing knowledge of their asteroid environment, and of Lesabéndio’s personal integration into Pallas itself. This transformation, foreshadowed throughout the novel, finally takes place when Lesabéndio ascends the tower, is taken up into the *Spinnwebewolke*, and is gradually absorbed first into it, and then into Pallas itself, thereby merging with Pallas, and revealing this environment as a subject unto itself.

⁵⁹⁹ Pallas was discovered by Wilhelm Olbers on March 28th, 1802, a year after he discovered the asteroid Ceres.

⁶⁰⁰ Scheerbart, *Lesabéndio*, 28.

⁶⁰¹ Scheerbart, *Lesabéndio*, 49.

Just as color become an agent of *Stimmung* along the nerve-axis I discussed with *Das graue Tuch*, in *Lesabéndio* it becomes an active element in the lives and interactions of subjects and landscapes, and everything from the mountains to the trees to the Pallasianer themselves are marked by color. Besides the green sky and purple sun and stars, “Die Berg auf dem Trichterrande waren auch zumeist weiß...einzelne Stellen zeigten blaue und graue Farben; in der Tiefe des Trichters waren die blauen und grauen Farben dunkler und vorherrschend.”⁶⁰² In addition to the steadier geological features, Pallas is filled with colorful forms that are constantly moving: “alle Bäume hatten an Stelle der Früchte und Blüten größere und kleinere Ballons, die am Tage schlaff herunterhingen, nachts aber nicht weit aufblähten und leuchtende phosphoreszierende Farben in die Nacht hinausstreuten. Leuchtkäfer gabs auch—sehr viele.”⁶⁰³ Even the *Pallasianer* themselves participate in this colorful landscape: while they are awake, various parts of their bodies “leuchtete[n],” and fade when they become sleepy. When *Pallasianer* are ready to die, their bodies lose their characteristic yellow coloring and brown spots and becoming increasingly pale and transparent. Like Fechner’s glowing flowers, color becomes not just a feature of the Pallasianer’s physical selves and surroundings, but the appearance of their own and their environment’s “eigene Seelenleuchten.”⁶⁰⁴ Indeed, in addition to being a mere sign of life—an indication that a given body is or has a living soul—color on Pallas is life’s sign—that is, the medium by which these variously embodied living souls communicate, both spiritually and materially, to each other. Throughout the novel we see various instances of what Innerhofer called “immaterielle[.]”⁶⁰⁵ languages of light and color: at one point,

⁶⁰² Scheerbart, *Lesabéndio*, 28.

⁶⁰³ Scheerbart, *Lesabéndio* 32.

⁶⁰⁴ Fechner, *Nanna*, 392.

⁶⁰⁵ Innerhofer, “Psychophysik der Strahlen,” 93.

for instance, the *Pallasianer* have the opportunity to communicate with a passing asteroid, on whose side is an enormous, two-mile long mirror:

Alle Pallasianer [...] gaben dem Spiegelstern Zeichen mit Scheinwerfern. Auf dem Spiegelstern sah man danach plötzlich ebenfalls eine Menge Scheinwerfer hervorbrechen. Und der Spiegel wurde dabei karminrot. Da veränderten die Pallasianer alle Farben in ihren Lichttürmen durch anders gefärbte Hautstreifen. Und gleichzeitig geschah das auch auf dem Spiegelstern.⁶⁰⁶

This encounter recalls Behne’s “Gedanken über Kunst und Zweck dem Glashause gewidmet,” in which he writes of the *Glaspavillon* that it is “unendlich reich an Beziehungen, *das Oben im Unten, das Unten im Oben spiegelnd*, beseelt, voller Geist und lebendig.”⁶⁰⁷ Later in the novel, as the tower approaches the mysterious white “Spinnwebewolke” hanging above them, the cloud sends out a phosphorescent glow onto Pallas’s mountain peaks, and “dieses Aufleuchten der Bergspitzen *hielt man doch für eine Antwort* der scheuen Wolkenwesen; diese Antwort konnte allerdings Niemand enträtseln.”⁶⁰⁸ When Lesabéndio is preparing to merge with the *Lichtgewebewolke*, and is standing atop his tower gazing down at Pallas, he is overwhelmed by “das Funkeln in den Tiefen des Nordtrichters” which suddenly becomes so bright “daß Lesabéndio seine Teleskopaugen zutückziehen mußte; er konnte den neuen Glanz nicht ertragen.”⁶⁰⁹ And, after Lesabéndio has merged with that cloud, he himself appears to his friend Biba, informing Biba that he is still alive by appearing as a “blaugrünlicher Lichtschimmer.”⁶¹⁰ Life on Pallas is thus a continual and meaningful transformation of color and light, and those colors and lights are

⁶⁰⁶ Scheerbart, *Lesabéndio*, 174. This encounter with the passing asteroid, on whose side is an enormous, two-mile long mirror that reflects the image of Pallas back to the Pallasianer, recalls what Behne wrote of the *Glaspavillon*: “unendlich reich an Beziehungen, *das Oben im Unten, das Unten im Oben spiegelnd*, beseelt, voller Geist und lebendig” (“Gedanken über Kunst und Zweck dem Glashause gewidmet,” 4).

⁶⁰⁷ Behne, “Gedanken,” 4, emphasis added.

⁶⁰⁸ Scheerbart, *Lesabéndio*, 145, emphasis added.

⁶⁰⁹ Scheerbart, *Lesabéndio*, 179.

⁶¹⁰ Scheerbart, *Lesabéndio*, 201.

an expression of life—among *Pallasianer*, between *Pallasianer* and elements of their environment, and even among asteroids and other celestial bodies. The breadth of this colorful communication renders it less narrowly analogous to “language” and more like the various “Bedeutungen” structuring Uexküllian *Umweltlehre*.

The result of all these colorful *Bedeutungen*—these visible interrelations unifying the cosmos of *Lesabéndio*, are a series of landscapes. C. C. L. Hirschfeld, whom I discussed in Chapter Two, defines a landscape as pieces of “den unermesslichen Flächen des Erdbodens [...] die für sich ein Ganzes ausmachen können.”⁶¹¹ Throughout *Lesabéndio*, we see a series of these “wholes,” at different scales in the cosmos. On a small scale, *Pallasianer* themselves, not thinking about the inner life of their asteroid, become mini-environments of their own each time they sleep. When it is time for them to retire from their brightly colored world, the *Pallasianer* create microcosmic environments unto themselves:

Bevor die Pallasianer einschliefen, bildete sich an ihrem Rücken ein Hautgewebe, das bei Eintritt der Müdigkeit sich nach beiden seiten ausspannte und hoch oben über dem Körper sich zuschloß, sodaß sich der Körper des Schlafenden gleichsam in einem großen länglichen Ballonsack befand.

In diesem Ballonsack rauchte der Pallasbewohner sein Blasenkraut, das an einem seiner links befindlichen Arme festgewachsen ist und an einem Wurzelende in den Mund gesteckt wird. Zieht der Mund nun den aromatischen Duft des Blasenkrautes ein, so kommen später durch die Nase und durch die Hautporen kleine Blasen durch, die in dem Ballon größer werden und an der Decke des Ballons haftig bleiben. Die Blasen reinigen den Körper—und sie leuchten.⁶¹²

Enclosing themselves within their bubbles, the *Pallasianer* proceed, by smoking the *Blasenkraut* that grows on their own arm, to fill their sleeping-bubble with even more bubbles. Just as Pallas

⁶¹¹ Hirschfeld, *Theorie der Gartenkunst*, 1:188.

⁶¹² Scheerbart, *Lesabéndio*, 41–42.

itself is filled with the “buntes Licht”⁶¹³ of fruits, bugs, and the *Pallasianer* themselves, so the *Pallasianer*’s sleep-bubbles become home to their own play of colored light:

die Blasen veränderten [...] immer wieder ihre Farben und sahen oft wie Perlmutter und wie Seifenblasen aus, wenn sie langsam sich drehend emporstiegen; und oben an der Decke des Schlafsackes bewegten sich die Farbenspiele noch lange Zeit in den Blasen, ohne daß diese zerplatzen.⁶¹⁴

On a large scale, however, as Lesabéndio discovers during his transformation, asteroids, planets, and stars are themselves filled with life, and, like the *Pallasianer*, filled with their own sense of purpose and desire: celestial bodies, he finds, are guided by the principle of “Sichunterordnen” that is, the drive to orient themselves in relation to—and even merge with—that which is bigger than or above themselves. Just as Lesabéndio wanted to merge with the *Spinngewebewolke*, he discovers that the *Spinngewebewolke* wants to unite Pallas’s *Kopf* and *Rumpf*, the Pallas-system as a whole yearns to join more closely in the asteroid belt, the asteroid belt is striving for a more perfect orientation around Jupiter, and Jupiter wishes for a closer relation with the sun. After his transformation, “Lesa sammelte sich und schaute mit seinen neuen Sehorganen ganz heftig in die Sonne zu ihm. Er horchte—und er hörte, daß sie sprach [...] ‘Fürchtet nicht den Schmerz—und fürchtet auch nicht den Tod.’”⁶¹⁵ In other words: don’t fear the process or the event of *Sichunterordnen*—that is, of dissolving into and merging with that which is greater. This “Umwandlungsprinzip,” as Lesabéndio calls the tendency of celestial bodies to merge with each other, is “in den Oberflächenwesen der Sterne zu konstatieren,” and “auch die Sonne [wird] durch ihre Planete umgewandelt.”⁶¹⁶

⁶¹³ Scheerbart, *Lesabéndio*, 93.

⁶¹⁴ Scheerbart, *Lesabéndio*, 117.

⁶¹⁵ Scheerbart, *Lesabéndio*, 179.

⁶¹⁶ Scheerbart, *Lesabéndio*, 163.

This “Umwandlungsprinzip” along which cosmic life in *Lesabéndio* takes place is expressed on the glowing surface of planets and stars, shining out from one to the others as color and light. But it also appears on the microcosmic scale of the *Pallasianer* themselves. The Pallasianers’ inward expansion of their world into their own microcosmic, color-filled environments during sleep is reversed upon death. (And, in the process, any likeness between sleep and death is dispersed). For individual Pallasianer, the mental and material boundaries of “das Persönliche” are transcended in death, when the body of the dying individual is quite literally absorbed by the body of a younger or stronger companion. This happens, Scheerbart explains, when the body of the dying individual “ganz trocken geworden ist, sodaß man beinahe durchsehen kann.”⁶¹⁷ Corporeal transparency—the absence of the Pallasianer’s normal coloration—indicates that they are ready to die. The first Pallasianer to die in the text is a friend of one of the main characters, Peka the artist, who will himself later be absorbed into *Lesabéndio*:

Dann aber hat der Sterbende den Wunsch, von einem Lebenden aufgesogen zu werden; der Lebende saugt den Sterbenden durch die Poren in sich auf. [...] Es ist zunächst nötig, daß der Aufsaugende auch damit vollkommen einverstanden ist, daß er aufsaugt. Wenn nun Jemand aufgesogen werden will, so fragt er zunächst bei dem, der ihn aufsaugen soll, höflich an. Sagt er “ja”—so geschieht das Gewünschte gemeinhin sofort.

So wurde der Peka [...] von einem alten Pallasianer, der schon ganz durchsichtig aussah, gefragt, ob er wohl geneigt sei, dem Sterbenden einen Dienst zu leisten. Der Körper des Sterbenden war ganz hellbraun; die gelben Flecken waren fort.

[...]

Nachdem Peka einwilligt, reckte er sich sofort zu seiner ganzen Höhe auf—fünfzig Meter hoch—Pekas Poren öffneten sich dabei ganz weit—und im Körper des Sterbenden, der—zehn Meter von Peka entfernt—höchstens fünf Meter hoch sich aufrecken konnte, entstanden plötzlich fluoreszierende Lichterscheinungen—dann gingen

⁶¹⁷ Scheerbart, *Lesabéndio*, 49.

all Teile des Körpers zerbröckelnd auseinander und wurden von Peka angezogen, diessen Poren der Körper des Sterbenden nach ein paar Augenlicken verschwand.⁶¹⁸

The “Aufsaugung,” the integration of two beings, is marked by sudden fluorescent lights; the transparent Pallasianer’s body disintegrates and is sucked into the pores of his fellow. Not only does the “Aufsauer” experience increased “Lebenskraft” immediately following the merge; “Eigentümlichkeiten des Gestorbenen übertrugen sich auf den, der den Gestorbenen aufnahm,” so that a psychic “Veränderung seines Wesens” occurs as well as a physical and energetic one.⁶¹⁹ Just as, according to Utitz, the “der Gefühlston” of a group of colors “nicht fixiert werden [kann] durch Angabe des Mischungsverhältnisses zweier Qualitäten, sondern lediglich durch das wirklich in der Erscheinung einer gegebenen Nuance Bemerkbare,”⁶²⁰ so, too, does “das Persönliche”⁶²¹ on Pallas become an increasingly complicated, mutually intertwined, and inherently relative concept.⁶²²

Such a “Veränderung” is visible in Lesabéndio immediately upon his absorption of Peka: “Langsam schlossen sich Lesas Körperporen, und dann wurde er langsam wieder kleiner und blickte langsam im Nordtrichter herum, als sähe her alles mit ganz neuen Augen.”⁶²³ Lesabéndio’s “new eyes” are significant: Fechner wrote that “man glaubt es nicht, wie neu und lebendig die Natur dementgegentritt, der ihr selbst mit neuem Aug’ entgegentritt;”⁶²⁴ Goethe,

⁶¹⁸ Scheerbart, *Lesabéndio*, 49.

⁶¹⁹ Scheerbart, *Lesabéndio*, 51.

⁶²⁰ Emil Utitz, *Grundzüge der ästhetischen Farbenlehre* (Stuttgart: Ferdinand Enke, 1908), 31.

⁶²¹ Scheerbart, *Lesabéndio*, 160.

⁶²² As Bär writes: “Der kosmischen Evolution des Individuums, der Evolution als biographie, wie sie Scheerbart in seinen Romanen phantastisch ausmalt, entspricht eine ebenso phantastische Evolution des gesamten Kosmos” (*Natur und Gesellschaft bei Scheerbart*, 123). In Bär’s analysis, this “Evolution des Individuums” is the expression of Scheerbart’s non-sexual eroticism, ie, the “Aufhebung der Individuation” in exchange for “Identität mit der Welt als Ganzheit” (152).

⁶²³ Scheerbart, *Lesabéndio*, 159.

⁶²⁴ Fechner, *Nanna*, 391.

that “Jeder neue Gegenstand, wohl beschaut, schließt ein neues Organ in uns auf.”⁶²⁵ To see with new eyes is to perceive a new world, and, likewise, to observe the world (or an element of it) anew is to gain new eyes—“ein neues Organ.” Dying Pallasianer’s absorption by their fellows is, in the first part of the novel, the most obvious example of the quite literally “porous” boundaries between subject and other, and subject and environment, in Lesabéndio’s world.

In the midst of these color-filled landscapes, in which subjects create their own environments and environments become subjects, who and what “counts” as a subject and who and what is recognizable as an “environment” becomes fluid. Hirschfeld, in articulating “den verschiedenen Charakteren der Landschaft und ihren Wirkungen [...] auf die Seele,”⁶²⁶ was minute in his attention to the role of color in determining a landscape’s emotional effects.⁶²⁷ But the attunement or *Stimmung* that, for him, obtains between landscapes and observers, is nevertheless an attunement between two fundamentally different parties: the landscape, on the one hand, and the subject, on the other. Never do they overlap, and although a landscape produces *Stimmungen*, never does it experience them. It was not until the work of Carl Gustav Carus, a doctor and painter writing nearly two generations after Hirschfeld, that the *Stimmung* of a landscape became subjective, that is, not only the mood communicated to an observer by a

⁶²⁵ Johann Wolfgang von Goethe, “Bedeutende Fördernis durch ein einziges geistreiches Wort” in Goethe, *Sämtliche Werke* 12:306–309, 306.

⁶²⁶ Hirschfeld, *Theorie der Gartenkunst*, 1:186.

⁶²⁷ Indeed, Hirschfeld suggests that color is the fundamental means by which nature prevents us from viewing her artistry “mit Kaltsinnigkeit”: in other words, he proposes that color’s power to move people (“Die Farben rühren den Menschen”) is the basis of nature’s power to move and attune the soul (Hirschfeld, *Theorie der Gartenkunst*, 168). Thus, a landscape as a whole might elicit various moods, from “lebhaften Freude,” “ruhigen Ergötzung,” “sanften Melancholie,” to “Ehrfurth, Bewunderung und einer feyerlichen Erhebung” and “ein niederschlagendes Gefühl unsrer Bedürfnisse und Schwäche, Traurigkeit, Furcht, Schauder und Entsetzen,” partially thanks to its colors, which might independently excite “das Gefühl der Freude, der Liebe, der Ruhe” (186, 168). Hirschfeld breaks down the visual-emotional elements of a landscape even further, distinguishing the various qualities of color that determine its effect: “Das Feuer der Farben erzeugt Freude; die Reinigkeit und Helle wirkt Heiterkeit. Das Gemäßigte in den Farben giebt Erquickung und liebliche Empfindung der Ruhe, wie das Violet, oder milde Fröhlichkeit, wie das lichtere Blau und Rosenroth” (170).

landscape, but the expression of that landscape’s subjectivity, or, in Carus’s words, the expression of “Erdleben.” Thus while Hirschfeld focused on the power of certain landscape elements to produce various *Stimmungen* in the observer, for Carus, the “Hauptaufgabe landschaftlicher Kunst” was the “Darstellung einer gewissen Stimmung des Gemütlebens (Sinn) durch die Nachbildung einer entsprechenden Stimmung des Naturlebens (Wahrheit).”⁶²⁸ Implicit here and in the term *Erdleben* is precisely what we see in *Lesabéndio*: that the environment, just like the observing subject, is “alive” enough to contain *Stimmungen* that are independent from—but correspond with—the observer’s own. Rather than being prompted by landscape elements that, beyond their objective “Charakter,” lack independent subjectivity (Hirschfeld’s view), for Carus the *Stimmung* of an observer can be elicited by presenting them with the visible form of the corresponding *Stimmung* in nature. Thus we might return to the scene of *Lesabéndio*’s leave-taking with Pallas, before his attempt to merge with the *Lichtgewebewolke*, and read it more consciously as an intersubjective exchange between the asteroid and himself:

unten in der Tiefe des Nordtrichters sah er ein Funkeln in den Steinen, das er noch niemals dort gesehen. [...] Es war da unten alles ganz hell und ganz still; kein Pallasianer schwebte da unten herum [...] Da sah der Lesabéndio, daß sich das Funkeln in den Tiefen des Nordtrichters weiter hinaufzog. Und plötzlich funkelte es an so vielen Stellen im ganzen Nordtrichter, daß Lesabéndio seine Teleskopaugen zutückziehen mußte; er konnte den neuen Glanz nicht ertragen.⁶²⁹

Although the *Nordtrichter*’s suddenly intense sparkling could, like the quivering, wobbling, and bending of the visual scene around Betty Flanders in the opening of Virginia Woolf’s *Jacob’s Room*, be the effect of tears in *Lesabéndio*’s eyes, and although Scheerbart is highly interested in the mutual dependence between what is seen and the perceptual organs by which it is seen, it is

⁶²⁸ Carl Gustav Carus, *Neun Briefe über Landschaftsmalerei, geschrieben in den Jahren 1815–1824* (Dresden: Jess, 1927), 49.

⁶²⁹ Scheerbart, *Lesabéndio*, 179.

more likely, in Scheerbart’s matter-of-fact style, that what Lesabéndio glimpses here is the subjective “Innere” of Pallas—an expression of “wie heftig [es] lebte[.]”⁶³⁰

For Carus, the *Stimmung* between observers and landscapes rests on their underlying similarity as alike parts of “jenes Unermeßliche”—God—and his “unermeßlichen Harmonie”—divine creation.⁶³¹ Carus, like Fechner, speaks of an “inside” and an “outside,” aligning the inside of God’s creation with reason, and the outside with nature: “Offenbart ist uns diese Höchst in Vernunft und Natur als Inneres und Äußeres.”⁶³² We feel ourselves to be part of this revelation, Carus writes, “das ist als Natur- und Vernunftwesen, als ein Ganzes, welches Natur und Vernunft in sich trägt, und insofern als ein Göttliches.”⁶³³ Thus when we feel *Stimmung*, what are experiencing is our resonance with the larger creation of which we are part: just as “die angeschlagene Saite eine zweite, ihr gleichnamige, wenn auch höhere oder tiefere, mit in Schwingungen versetzt, so müssen auch in Natur und Gemüt die verwandten Regungen sich hervorrufen.”⁶³⁴ In other words, when we see the “outside” of creation in nature’s changing colors and forms, what we are actually observing is the expression of *Erdleben* itself, and our own “inside” is “mit in Schwingungen versetzt.” By this metaphorical process

[wird das] unbefangenen Gemüt [...] daher vom angeregten, aufstrebenden Naturleben, reinem Morgenlicht, heiterer Frühlingswelt ermutigt und belebt, von reiner blauer Sommerluft und voller, ruhiger Blätterfülle der Waldung erheitert und beruhigt, vom Erstarren der Natur im trüben Herbst schwermutig gestimmt, und von den Leichentüchern der Winternacht in sich selbst gewaltsam zurückgedrängt und gelähmt.”⁶³⁵

⁶³⁰ Scheerbart, *Lesabéndio*, 199.

⁶³¹ Carus, *Neun Briefe*, 42, 47.

⁶³² Carus, *Neun Briefe*, 42.

⁶³³ Carus, *Neun Briefe*, 42.

⁶³⁴ Carus, *Neun Briefe*, 55.

⁶³⁵ Carus, *Neun Briefe*, 55.

Through this correspondence between humans and nature, Carus’s concept of a *Stimmungslandschaft* “dissolves strict subject/object relations between the human and nonhuman world” and positions *Stimmung* itself as the feeling of “(momentary) similarity” between them.⁶³⁶

In *Lesabéndio*, of course, this similarity is more than “momentary,” and *Stimmung* with a landscape becomes integration and unification. Lesabéndio’s merging with Pallas is anticipated throughout the novel. Indeed, one of the narrative’s first descriptions of Lesabéndio acts as a blueprint of his future: echoing the “master-of-all-I-survey” trope,⁶³⁷ Lesabéndio looks out from atop the first “große Lichtturm” on Pallas on the lights and sights below. But rather than remain separate from it, allowing it to affect him, or maintaining an illusory sense of dominance over it, he leaps into the air to join it:

er kam aber nicht fünfzig Meter hoch und breitete danach oben seine Rückenflügel aus und schwebte seitwärts schräg in den Trichter hinein und sah dabei sich langsam drehend überall die unzähligen elektrischen Lichter im Trichter [...] Er zog seinen langen Schlangenleib im Kreise hintenüber und erfaßte mit seinem Saugfuß seinen Hinterkopf und schwebte so langsam sich drehend mit ausgebreiteten Flügeln in bequemster Lage langsam zur Tiefe.⁶³⁸

Twisting his long body into a circle, with his suction-foot resting on the back of his head, and turning slowly as he drifts through the air (fig. 7), Lesabéndio anticipates his later life when, having merged with Pallas’s nearly-spherical form,

er fühlte nur, wie er sich langsam drehte [...] Und da reckte er kraftvoll seinen ganzen Leib—und er fühlte, daß sein Leib der ganze Pallas-Rumpf war. Und der Doppelstern drehte sich weiter. Und die Asteroïden begrüßten den zu neuem Leben erwachten

⁶³⁶ Downing, *The Chain of Things*, 27–28.

⁶³⁷ This phrase, whose scholarly history is traced in *Keywords for Travel Writing Studies: A Critical Glossary*, ed. Charles Forsdick, Zoë Kinsley and Kathryn Walchester (London: Anthem, 2019), n.p., was first substantially theorized by Mary Louise Pratt in *Imperial Eyes: Travel Writing and Transculturation* (New York: Routledge, 1992).

⁶³⁸ Scheerbart, *Lesabéndio*, 32–33.

Doppelstern mit glänzenden elektrischen Lichtern. [...] Und er drehte sich ruhig weiter...”⁶³⁹

And, when the “Lesabéndioturm” is half finished, Lesabéndio’s friend Biba observes: “Du willst oben in dem großen Kometensystem aufgehen—willst selbst ein Komet werden” and Lesabéndio affirms, “*Ich will ein Komet werden.*”⁶⁴⁰ Whereas Carus posits that the *Stimmung* between observers and environments rests on their joint participation in the “unermesslichen Harmonie” of divine creation, for Lesabéndio, it seems to rest on his fundamental, *a priori* oneness with Pallas itself: “Wir handeln eben garnicht in ersten Linie nach unserm Willen,” he says “Der große Geist unsres Sterns herrscht in uns, und wir sind nur scheinbar selbstständige Wesen.”⁶⁴¹ And, much closer to the scene of his actual *Aufgehen* into the cloud, Lesabéndio reflects: “was kommt es darauf an, ob ich lebe oder nicht lebe. Wenn nur der Stern mit mir, in mir lebt—ein Weltenleben.”⁶⁴² Lesabéndio’s construction of the tower, from which he reaches the *Lichtgewebewolke*, is a way of chipping away at the distinction, present in Carus’s landscape aesthetics, between the “Erdleben” (or “Asteroidealben”) of an environment, on the one hand, and the “eigenleben” of a subject, on the other.

⁶³⁹ Scheerbart, *Lesabéndio*, 218.

⁶⁴⁰ Scheerbart, *Lesabéndio*, 144, 146, emphasis in original.

⁶⁴¹ Scheerbart, *Lesabéndio*, 117.

⁶⁴² Scheerbart, *Lesabéndio*, 202.



Figure 7. *Lesabéndio*, illustrated by Alfred Kubin

Lesabéndio’s integration with the *Lichtgewebewolke*—and then with Pallas, and then with the solar system—takes place through a series of visual upheavals and colorful transformations which reflect the entanglement of color and *Stimmung* since Hirschfeld. For Hirschfeld, as I alluded to above, color is a fundamental element of a landscape’s wholeness and aesthetic character: just as the larger character of a landscape is determined by the “Vollkommenheit und Harmonie der verschiedenen Charaktere der einzelnen Gegenden,” so, on a smaller scale, “eine sorgfältigere Mischung der Farben” creates “eine neue Verbindung” and, accordingly, “ein neues Ganze.”⁶⁴³ Corresponding to Hirschfeld’s color-focused sense of landscape—but encompassing the dual subjectivities of observer and landscape—is Simmel’s later definition of a landscape as a kind of “mooded” collection of natural features, and of

⁶⁴³ Hirschfeld, *Theorie der Gartenkunst*, 188–89, 170.

Stimmung, implicitly, as the internal landscape of a subject: just as “wir unter Stimmung eines Menschen das Einheitliche verstehen, das dauernd oder für jetzt die Gesamtheit seiner seelischen Einzelinhalte färbt, [...] so durchdringt die Stimmung der Landschaft alle ihre einzelnen Elemente.”⁶⁴⁴ Indeed, Simmel situates the visible landscape and the felt *Stimmung* not, as in Carus and Hirschfeld’s conception, as “Ursache und Wirkung,”⁶⁴⁵ but as one and the same thing, seen from two different “sides”: “Sollte nicht wirklich die Stimmung der Landschaft und die anschauliche Einheit der Landschaft eines und dasselbe sein, nur von zwei Seiten betrachtet?”⁶⁴⁶ This rejection of cause and effect in favor of a double-sided identity recalls Fechner’s “inside” and “outside,” and provides a frame for Lesabéndio’s visible and visual integration into the *Lichtgewebewolke* both as the process appears to the Pallasianer watching below, and as he himself experiences it.

The narration begins with his transformation from the outside. Apace with their own rising excitement, the Pallasianer watching the process from below observe how

Die schwarzen Flecke in der Licht[wolke] wurden plötzlich dunkelviolet, und die grauen Flecke wurden hellbraun.

Und nun wurden die Flecke immer größer, sodaß die Wolke schließlich nur noch ein seltsames Licht ausströmte, das sich aus Hellbraun und Dunkelviolett zusammenmischte.

Violette zitternde Scheinwerfer—wie Kometenschweife—schlugen nach unten und umzitterten die Spitzen der Stangen, die immer höher kamen.”⁶⁴⁷

The *Lichtwolke*, which had become increasingly agitated (visible in the form of black spots on its surface) as the *Lesabéndioturm* neared completion, now seems to anticipate Lesabéndio’s *Aufgehen* in its color-mixture: on the one hand “dunkelviolet,” the color of the cloud-beings’

⁶⁴⁴ Simmel, “Philosophie der Landschaft,” 149.

⁶⁴⁵ Simmel, “Philosophie der Landschaft,” 150.

⁶⁴⁶ Simmel, “Philosophie der Landschaft,” 149.

⁶⁴⁷ Scheerbart, *Lesabéndio*, 188.

eyes, and on the other hand light brown, like Lesabéndio’s aged body. When the tip of Lesabéndio’s tower platform actually touches the cloud, “die ganze Wolke begann, an den Rändern zu blitzen [...] Und die Mitte der Wolke, die ganz dunkelviolet leuchtete, bekam plötzlich einen Riß, der gelb aussah und unregelmäßig wurde...”⁶⁴⁸ And as Lesabéndio stretches himself up to meet the cloud,

Das Gelbe sandte mächtig glänzende Strahlen aus. [...]

Danach riß das Mittelstück der Wolke ganz und gar auseinander. Und die violetten äußeren Teile traten weit zurück, und die ganze dunkelvioletle Wolke trat immer weiter zurück und bildete einen dunkelviolet leuchtenden, unregelmäßig gebildeten Ring.

Und wo früher die Wolke war, sah man jetzt nur ein wogendes Lichtmeer von gelben Schlangenleibern, die auch leuchteten.

Und die Pallasianer [...] sahen, daß Lesabéndio ganz lang wie eine lange braune Stange hineinschoß—in das wogende Meer der gelben leuchtenden Schlangenleiber.

Und die Schlangenleiber zitterten.

Und Lesabéndio verschwand.⁶⁴⁹

Although for Simmel it is perhaps casual and metaphorical, his definition of a landscape as “[ge]färbt” (“Denn wie wir unter Stimmung eines Menschen das Einheitliche verstehen, das dauernd oder für jetzt die Gesamtheit seiner seelischen Einzelinhalte färbt, [...] so durchdringt die Stimmung der Landschaft alle ihre einzelnen Elemente”) is significant: Lesabéndio’s “lange braune” body joins the celestial landscape in a blaze of gold and purple.

From the “inside,” Lesabéndio’s experience of his integration into the *Lichtgewebewolke* is, at first, as a crisis of vision: blinded by “die gelben Lichtschlangen,” he “sah nichts mehr.”⁶⁵⁰ But after sensing “daß sein ganzer Körper zerging und—sich ausbreitete—weithin nach allen

⁶⁴⁸ Scheerbart, *Lesabéndio*, 189.

⁶⁴⁹ Scheerbart, *Lesabéndio*, 189–90.

⁶⁵⁰ Scheerbart, *Lesabéndio*, 191.

Seiten,” he regains an ability to see—this time, not through the eyes of his own body, but through the innumerable collective eyes of the *Lichtwolke*⁶⁵¹:

Ihm wahr so, als gingen überall auf allen Seiten von ihm feine Fühlfäden aus [...] Und die fernen Spitzen seiner fühlfäden wurden empfindlich, und sie umfühlten, wie er glaubte—große feine zitternde Glasschalen. Und die Spitzen der Fäden verbanden sich mit den Glasschalen und wurden zusammen zu großen, sich ausbreitenden Glaskugeln, durch die er plötzlich alles im Sonnensystem viel viel größer sah als bisher.

Nun sah er wieder durch die großen Glaskugeln, und er konnte die Kugeln beliebig vergrößern und verkleinern. Und er konnte ihnen auch andre Formen geben, konnte sie heranziehen und weit vorstoßen. Und er fühlte *nirgendwo* ein Hemmnis.⁶⁵²

As the Pallasianer had earlier observed, the *Lichtwolke* is composed of “ganz kleine winzig kleine Köpfchen [...]—Köpfchen mit ganz spitzen, dunkelvioletten Stielaugen.”⁶⁵³ These are the creatures that illuminated the mountains of Pallas with their mysterious light-message, and that, surprised by the curious Pallasianers’ bright investigative light, recede into darkness as though “lemblos.”⁶⁵⁴ Here, Lesabéndio comes to exist within the *Lichtwolke*, and, looking out through the cloud’s many “Stielaugen,” sees the solar system beyond “viel viel größer...als bisher” (fig. 8). What appears to the *Pallasianer* below as color, he experiences as sight, suggesting that in this cosmos of subject-environments, to glow and be colorful is, at the same time, to see the glowing color of others.

⁶⁵¹ Scheerbart, *Lesabéndio*, 191.

⁶⁵² Scheerbart, *Lesabéndio*, 191–192.

⁶⁵³ Scheerbart, *Lesabéndio*, 138.

⁶⁵⁴ Scheerbart, *Lesabéndio*, 134.

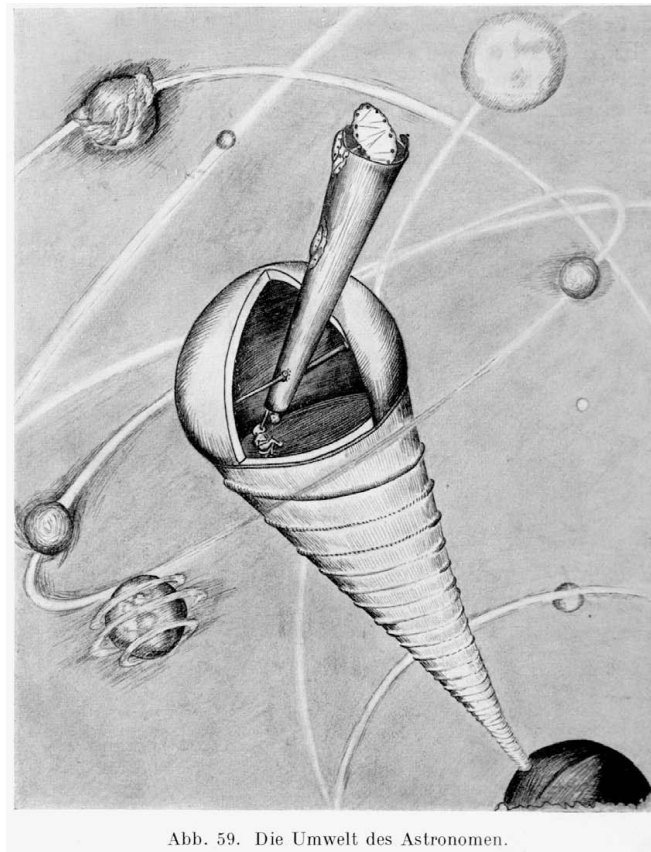


Figure 8. *Lesabéndio*’s new ocular experience recalls the astronomer’s *Umwelt*, illustrated by Georg Kriszat in Uexküll’s *Streifzüge durch die Umwelten von Tieren und Menschen*⁶⁵⁵

Following an extended, dream-like sequence of his shifting experiences and observations as part of the *Lichtwolke*, in which he senses “immerfort ganz neue Dinge im Planetensystem” and “sah in das Innere der Planeten hinein und sah, wie heftig sie lebten,”⁶⁵⁶ Scheerbart’s consciousness integrates with Pallas’ *Kopf*, which in turn approaches the *Rumpf*. Again, this approach takes place through vision and colored light: “Und dann fühlte er einen Starrkrampf in seinen neuen Sehorganen—und sie gingen alle nach unten—und verbanden sich mit dem großen Pallas-Rumpf—wurden mit diesem eins.”⁶⁵⁷ What *Lesabéndio* experienced as the descent of his

⁶⁵⁵ Uexküll, *Streifzüge*, 100. Image from Katja Kynast, *Bilder der Umwelttheorie. Fotografien, Zeichnungen und Schemata bei Jakob von Uexküll*, Ph.D. Diss. (Humboldt-Universität zu Berlin, 2021), 263.

⁶⁵⁶ Scheerbart, *Lesabéndio*, 199.

⁶⁵⁷ Scheerbart, *Lesabéndio*, 213.

many eyes towards the *Rumpf*, the Pallasianer observe as “feinen Lichtarmen” with “großen, wolkig wirkenden Gasgebilden”—“überall große Kometenschweife” which illuminate the entire north cone.⁶⁵⁸ The actual integration of the Lesabéndio/Pallas-system entails, for Lesa’s consciousness, another temporary crisis of vision: “Ganz finster wurde es. Lesa sah nichts mehr.”⁶⁵⁹ Not for long, however: this “neues Leben”—this “*Pallas*-Leben”—eventually brings with it still newer “Sehorganen,” namely, the surface and atmosphere of Pallas itself: Lesabéndio

fühlte ganz anders als einst; er fühlte, daß er allmählich ganz zum Stern wurde. [...] Er bemerkte auch, daß er abermals neue Organe bekam—mit der Atmosphäre seines Sterns konnte er allmählich sehen—die Atmosphäre wirkte auf allen Seiten für ihn wie ein kolossales Teleskop.⁶⁶⁰

As the spherical eye of the newly-unified Pallas, Lesabéndio and his “große Weltaugen” join what Karl-Heinz Ebnet calls Scheerbart’s “Kosmos der Augen.”⁶⁶¹ Anchored within Lesabéndio’s consciousness as it shifts away from the concerns of the Pallasianer, the narration affords no view of this process from the outside. We can only imagine, however, that this transformation, just as it comes with new organs of vision for Lesabéndio/Pallas, is observable as light and color by the surrounding celestial bodies. Certainly, those celestial bodies notice the change. In addition to setting off the unification of Pallas’ *Kopf* and *Rumpf*, Lesabéndio’s unification with Pallas seems to attract a neighboring asteroid, Quikko, into its orbit, and their newly dependent relationship contributes to the overall tightening of the asteroidbelt. This interdependence of the lives of Lesabéndio/Pallas and the rest of the solar system recalls Simmel’s contemporaneous definition of “Landschaft” as a collection of natural elements joined together into a single whole through *Stimmung*: “Landschaft, sagen wir, entsteht, indem ein [...]

⁶⁵⁸ Scheerbart, *Lesabéndio*, 210.

⁶⁵⁹ Scheerbart, *Lesabéndio*, 213.

⁶⁶⁰ Scheerbart, *Lesabéndio*, 216–17.

⁶⁶¹ Scheerbart, *Lesabéndio*, 202; Ebnet, introduction to *Lesabéndio*, 12.

ausgebreitetes Nebeneinander natürlicher Erscheinungen zu einer besonderen Art von Einheit zusammengefasst wird”⁶⁶² What is more of an “ausgebreitetes Nebeneinander” than an asteroid belt, a solar system? The solar system’s acknowledgment of this renewal of its *Stimmung* is visible in the fact that “die grüne Sonne strahlte so hell auf—als wäre auch auf ihr ein neues Leben erwacht.”⁶⁶³ As Simmel outlines, Lesabéndio/Pallas’s subjectivity and his/its colorful appearance is “nur nachträgliche Zerlegungen eines und desselben seelischen Aktes.”⁶⁶⁴

Conclusion: Constructing a Chromo-Ecology

This chapter has outlined the contours of a Scheerbartian *Glaskultur*, in two parts. I first sketched an “ethics of appearance” around which to orient readings of Scheerbart’s colorful literary and built environments, and then examined, as thought experiments in the relation between and integration of observers and environments *Das graue Tuch* and *Lesabéndio*. I showed how the ethics of appearance, first articulated in relation to Scheerbart’s work in Behne’s critical writings, becomes legible in the world of appearance posited by Fechner, and as a new thread of Fechner’s influence on Scheerbart. For Scheerbart, inspired by Fechner, to appear is to exist, and vice versa—and his sumptuously colored literary escapades become explorations of subject-environment relationships whose whole “substance” obtains in their appearance. Thus, as I have suggested, each of the novels I addressed plays out a different dynamic of what Scheerbart called *Glaskultur*, that is, the mutual encounter and formation of subjective and environmental realities.

⁶⁶² Simmel, “Philosophie der Landschaft,” 148.

⁶⁶³ Scheerbart, *Lesabéndio*, 219.

⁶⁶⁴ Simmel, “Philosophie der Landschaft,” 150.

Clara, who over the course of her marriage with a colored glass architect navigates color as a means of approaching and disturbing social, sartorial, and environmental harmony, experiences and participates in color’s power to produce *Stimmungen* (moods), modulating her integration within her environment through the gray and white clothing she ultimately chooses to continue wearing. The glass-architectural creations of her husband, whose colors have such potential to influence the moods of their inhabitants, certainly institutes a *Glaskultur*—but Clara’s clothes mark her separation from his “tyrannische” physiological and psychological regime. By contrast, Lesabéndio dwells little on the mooded aspect of *Stimmung*, and my reading of this novel drew on the entanglement of color and *Stimmung* in the tradition of landscape aesthetics in order to chart Lesabéndio’s eventual integration into his asteroid environment, and gesture at further aesthetic unification of his asteroid-self within its new, asteroid-belt environment. Throughout *Lesabéndio*, color indicates life and subjectivity, and, since so many of the novel’s colorful elements have traits of both subjectivity and environmentality, their relations to each other become legible as the relations through which, in Georg Simmel’s contemporary discussion of it, the aesthetic unit of a landscape comes into being. Whereas color, in Clara’s development, was primarily linked with the realm of the *Gemüt*, *Glaskultur* in *Lesabéndio* plays out among various (and varyingly subject-like) elements of the environment: Lesa’s own relationship with Pallas does not appear through his mental assimilation of his surroundings, but, first, through his surroundings’ physical assimilation of him.

In both of these novels, color becomes not just the visible point of “dynamic interaction”⁶⁶⁵ between observers and environments—the object of observation, and the appearance of seeing—but also the realm of attunement or inexplicable “wholeness” to which

⁶⁶⁵ Gaskill, “Vibrant Environments,” 11.

that interaction might give rise. What matters in both *Lesabéndio* and *Das graue Tuch* is not a subject’s (Darwinian) ability to best “adapt” to a temporal environment, but rather, their ability to best integrate and attune with their visible surroundings, as colors among colors. (Even in death, Lesabéndio’s friend Peka, who disagreed with him about the tower, remained part of the *Pallasianer*’s colorful social totality—not to mention the color-marked process of his *Aufgehen* into Lesabéndio). Thus, what in this chapter I have called a *Glaskultur* can also be understood as a “chromo-ecology”: a secondary nature of color, an architectural, technological world of colored glass and electric light, which functions not by the survival of the fittest, but by the same laws as the interaction and mutual supplementation of color. Certainly, such environmental and social attunement was something that Scheerbart both craved and despaired of: “I became a humorist out of rage, not out of kindness.”⁶⁶⁶ As experiments in such chromo-ecologies, however, both novels show cracks. While Clara reaches what seems to be a stable accord with her colorful glass surroundings, that environment is, as the creation of one man, hardly a true ecology, and, through her gray and white dresses, Clara retains her independence from his “tyrannical” *Glaskultur*. Conversely, by integrating himself fully into Pallas, Lesabéndio, though gaining new relations in a broader celestial landscape, now exists not with but *as* that asteroid-environment. To what extent a true chromo-ecology is possible—even in Scheerbart’s fiction—remains open.

⁶⁶⁶ Quoted in Oliveira, “Paul Scheerbart’s Kaleidoscopic Fantasies,” 20.

Afterimages

Against the backbone of developing empirical research in psychology and color perception, this dissertation has argued for an understanding of color as the dynamic point of observer-environment entanglement. The word “entangled” connects the readings of the last two hundred pages with the work of other thinkers who, following Karen Barad, analyze nodes of interrelation and interdependence between entities, without which those entities would not be themselves. This community of inquiry—spreading outwards, we might imagine, from the “growing point” of “entanglement”—is important, and at once opens contemporary vistas towards which the “nature of color” could lead, and suggests places, traditions, disciplines, and literatures within which it could be a productive analytical concept.

At the same time, a concept so rooted in the literature and science of a single linguistic tradition must reckon with its specificity. While I believe that “the nature of color” would travel gracefully and constructively across several time-periods and linguistic traditions, there is a significant extent to which, emerging in Goethe’s peculiar and capacious shadow in both literary and empirical realms, it is specifically German. The rigorously phenomenological nature of Goethean science created a tradition of *wissenschaftliche* empiricism unlike the experimental and increasingly abstract “science” of contemporary anglophone traditions. Indeed, the seriality and visibility of his natural research—not to mention his manner of integrating poetry and science into a single text—rendered *Naturwissenschaft* akin to literature.

Rather than distancing it from the wider “entangled” sphere of ecocritical discourse, the nature of color’s specifically German character places it at the root of those conversations. On the one hand, there is a degree to which “entanglement”—first referred to by Arthur Schrödinger as “Verschränkung,” in the 1930s—is anachronistic to nineteenth and early twentieth century

natures of color. Really, however, founded on the principle of complementarity and wholeness, these natures of color, though visual rather than material, ought to be seen as predecessors of the quantum entanglements of matter and meaning that Barad makes so widely productive in ecocritical contexts. Niels Bohr's "Komplementaritätsprinzip," according to which light can be seen as either a wave or a particle but never both at the same time, echoes the "complementarity" of the alternating blue and yellow of Goethe's *Urphänomen*, as well as the frequent toggling between "surface" and "depth," or between color as process and color as phenomenon, that takes place throughout my readings. Likewise, the mutually constitutive existences of both observer and observed that I reveal in both Stifter's and Scheerbart's colorful literary worlds stage the "non-decomposable joint states"⁶⁶⁷ of quantum entanglement on an environmental scale. In Barad's language, they stage the "lack [of] an independent, self-contained existence," the iterative "intra-actions" and "reconfigurations" through which observers and environments "come into existence."⁶⁶⁸

It is therefore important that color, and not another phenomenon, has been the object of this study. It is color's exacting and exclusive complementarities, rather than, for instance, the more open-ended (although of course highly rigorous and mathematical) harmonies of music that truly model the "entanglement" or *Verschränkung* of subject and environment that is at issue. Of course, as the source of so many clarifying metaphors for both Goethe and Uexküll, music would be the obvious next choice, and in an everyday dictionary, "Verschränkung" is defined musically, as "das Ineinandergreifen zweier musikalischer Phrasen, wobei der Schluss der ersten

⁶⁶⁷ Don Howard, "What Makes a Classical Concept Classical? Toward a Reconstruction of Niels Bohr's Philosophy of PHysics," in *Niels Bohr and Contemporary Philosophy*, ed. Jan Faye and Henry J. Folse (Dordrecht: Springer Science+Business Media, 1993), 229.

⁶⁶⁸ Barad, *Meeting the Universe Halfway*, ix.

zugleich der Anfang einer neuen Phrase ist.”⁶⁶⁹ Likewise, music and color can both be defined as “not a single thing but instead a complex field of ratios and relations.”⁶⁷⁰ But it is not only color’s Goethean “complementarity principle,” and its place in the genealogy of the concept of entanglement that makes color such an apt phenomenon through which to examine the shifting dynamics and histories of observer-environment relations. It is color’s fundamentally relative appearance. In the Goethean tradition of science—a tradition that refuses to cave into the distinction between what is *seen* and what *is*, or between “the objective ray of light and the sensory impression of light”⁶⁷¹—there is no distinction between appearance and existence, and so the shifting appearances of a given color based on those that surround it (*fig. 10*) serve as an undeniable and ever-visible example of the mutually-constitutive “intra-relating”⁶⁷² through which, in an entangled world, we all come into being.

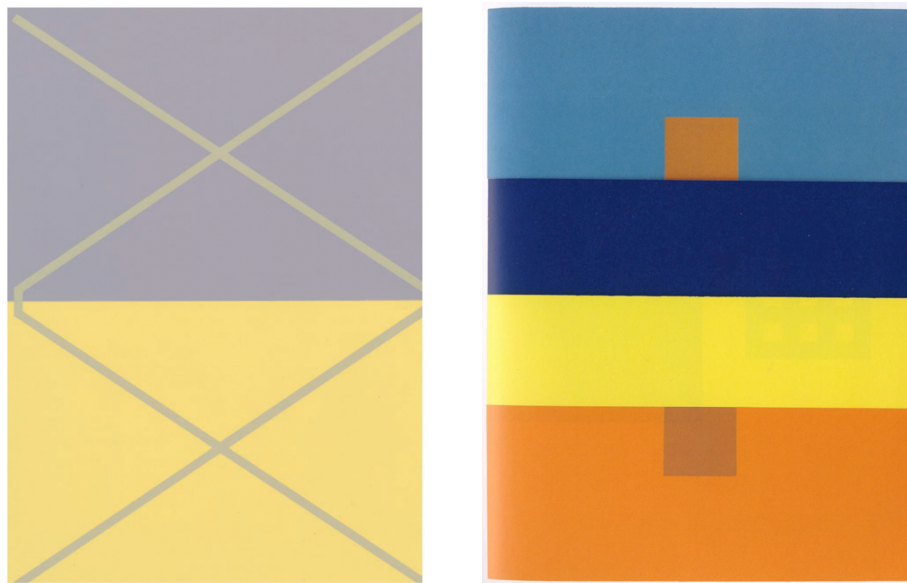


Figure 9. *On the left, compare the apparent color of the “x” above versus below; on the right, that of the square above versus below.*⁶⁷³

⁶⁶⁹ “Verschränkung,” Duden online <<https://www.duden.de/rechtschreibung/Verschraenkung>>, accessed 26 April 2023.

⁶⁷⁰ Gaskill, *Chromographia*, 8.

⁶⁷¹ Gerald Holton, “The Roots of Complementarity,” *Daedalus* 117.3 (1998): 151–197, 160.

⁶⁷² Barad, *Meeting the Universe Halfway*, ix.

⁶⁷³ Josef Albers, *Interaction of Color: 50th Anniversary Edition* (New Haven: Yale University Press, 2013), 89, 77.

Both Goethe and Uexküll use pictures and diagrams in their texts, and though color's roles in their images differ, for both authors it either indicates or is shown as the result of such "intra-relation." Goethe, of course, explicitly frames his *Farbenlehre* as the script of a play, which would be best seen in person—and his various color wheels and tables are, accordingly, an attempt to approximate as much as possible for the reader the "live" results of his various experiments.⁶⁷⁴ In other words, these diagrams use color to show color, and the colors that *are* shown appear illustrate the ultimate (entangled) harmony and complementarity of the color wheel. Uexküll, on the other hand, includes in his *Streifzüge durch die Umwelten von Tieren und Menschen*—whose subtitle is, not coincidentally, *Ein Bilderbuch unsichtbarer Welten*—illustrations of environments in which color indicates how the same place or setting might exist in different animals' *Umwelten*. In other words, he uses colors not to illustrate colors themselves, but to indicate the invisible relationships that determine the functions and identities of various environmental elements (fig. 10). Each of these Uexküllian scenes is so constituted by its (imagined) observer that, at least theoretically, a glance at the picture would be as sure to reveal the identity of the perceiver as staring a red circle would be to call forth a green afterimage.

⁶⁷⁴ Russell Maret's *Colored Objects* (New York, 2022–23)—a stunning fine press/artist's book of that section of Eastlake's translation of the *Farbenlehre*—begins to bridge this gap. As Maret writes, "why not make a book in which the phenomena Goethe describes are able to be experienced by readers as they page through the book?" ("Colored Objects by Johann Wolfgang von Goethe," *In Progress: News and Notes from Russell Maret's Studio*, 15 April 2023, <<http://russellmaret.blogspot.com/>>, accessed 1 May 2023. A short video of *Colored Objects* can be seen on Maret's Instagram, @alphabetishist, here: <<https://www.instagram.com/p/CofFNMGDt0o/>>.

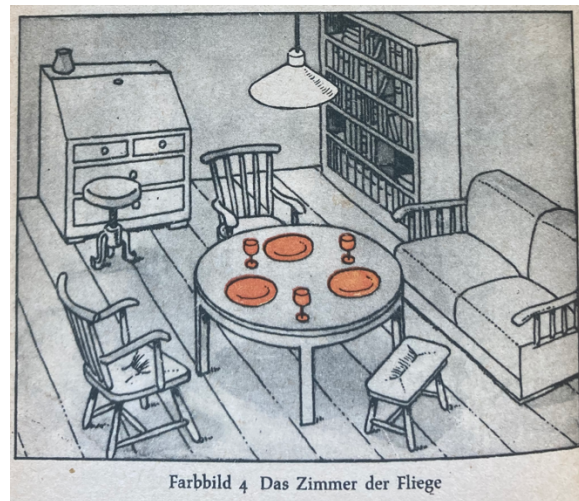
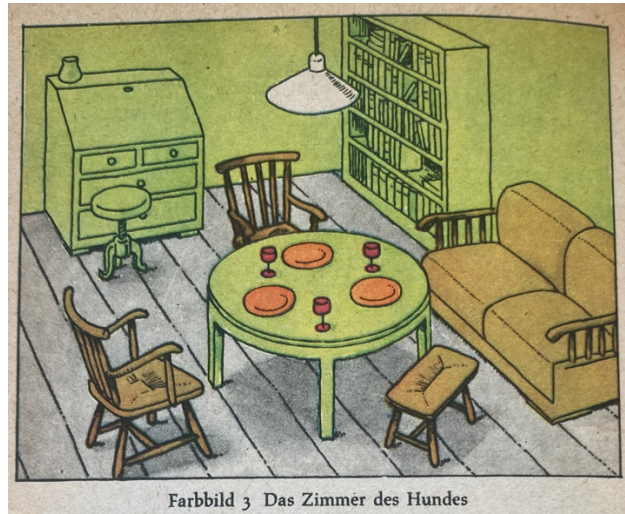
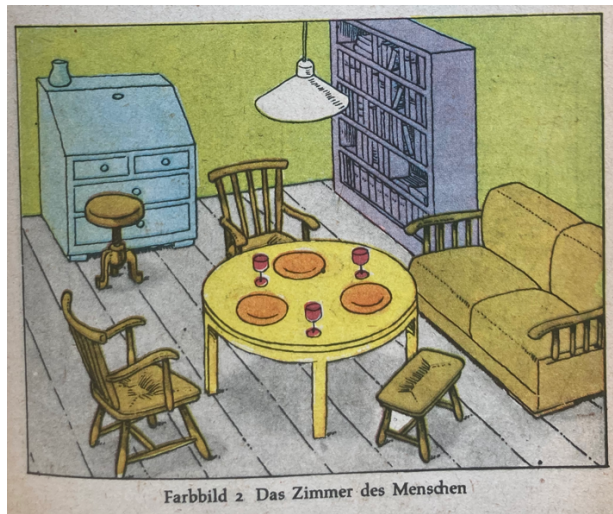


Figure 10. *The colors of environmental relationships, illustrated by Georg Kriszat*⁶⁷⁵

Stifter and Scheerbart explore these visible totalities from numerous perspectives, and while their natures of color intersect and complement each other at myriad points, two scenes in particular illustrate the similarly inextricable integration of observer and environment across their works: Stifter's account of the solar eclipse, and the Scheerbart's of the glowing colored-glass exhibition hall at the opening of *Das graue Tuch*. Both passages interweave descriptions of breathtakingly

⁶⁷⁵ Uexküll, *Streifzüge*, 97–98.

colorful phenomena with those of their gaping, speechless, and otherwise deeply affected observers, and in doing so collapse any difference in narrative treatment of observing subjects and visible environments. From the point of view of the observers, the colors before them are undoubtedly sublime: they are overwhelming and powerful, yet pose no threat to their wellbeing. The narrative, however, removes the space between the subjects and the colors, integrating them into a single picture, and confronting the reader with a new way of conceiving of their own envired existences: as part of a nature of color, that is, an ecological whole whose interconnections are not only visible in color, but come into being through the same patterns of harmony and complementarity as color itself does.

The nature of color that this study explores is therefore oriented towards what Gernot Böhme identifies as a “Grundthema” of ecological aesthetics, namely, “Das ‘sichbefinden in Umwelten.’”⁶⁷⁶ Böhme writes: “Die Farben, die einen umgeben, zu sehen, ... bedeutet unmittelbar sich in bestimmter Weise zu befinden.”⁶⁷⁷ Alongside Barad’s “entanglement,” Böhme’s “ecological aesthetics”—within which he recognizes the non-neutrality of our “sichbefinden in Umwelten”—provides a means of articulating the larger insights and arguments of my research: the first, which the chapter on Goethe and Uexküll explores in more detail, is that our base-line encounter with our environments, which I say can be seen in and as color, is not neutral; and the second, which my discussions of Stifter and Scheerbart’s work explores, is that that encounter is malleable. As these readings show, both authors were attached to humans’ ability to change both our environments and ourselves in order to alter and shape the tenor of our envired lives. These broad conclusions open several directions for further research. It would

⁶⁷⁶ Gernot Böhme, *Für eine ökologische Naturästhetik* (Frankfurt am Main: Suhrkamp, 1989), 9.

⁶⁷⁷ Böhme, *Naturästhetik*, 48.

be interesting to follow the trajectory from Stifterian natural scenes to Scheerbart's urban environments and into the increasingly colorful interior environments of the mid-nineteenth century, about which so many design manuals were written. A similar trajectory could be followed from the colors of Stifter's nature—usually pre-industrial—to those of Scheerbart's "second nature"—often glass and electric—to those of the modern-day Anthropocene, with the shifting saturations and bleachings of environmental extraction, ecological degradation, and greenwashing. Behind both of these trajectories is the historical backdrop of increasing industrialization and globalization in architectures, color industries, and color cultures, and both open onto the political, ideological, and affective dimensions of the nature of color and the drive to control it.