DOI: 10.59277/SIFU.2024.05

THE PHILOSOPHICAL SIGNIFICANCE OF GOETHE'S *FARBENLEHRE* FOR HEGEL

ANTON KABESHKIN

Potsdam University

Abstract: In this paper, I discuss Hegel's reception of Goethe's theory of colors and attempt to shed light on its philosophical significance for Hegel. I start with an overview of the central themes and concepts in Goethe's theory, focusing in particular on primordial phenomena, polarity, intensification, complementarity of colors, and Goethe's anti-reductionism. I then argue that it is especially the principle of polarity, as well as Goethe's anti-reductionism about the domain of color phenomena, that were attractive for Hegel and played the most significant role in his discussion of Goethe's theory. Finally, I argue that Hegel's interest in polarity is connected with his view that this principle anticipates, in a sensuous and not fully adequate way, his own account of the concept as the fundamental structure of reality.

Keywords: Hegel; natural philosophy; Goethe's science; Theory of colors; Polarity.

Hegel was an enthusiastic supporter of Goethe's theory of colors. He explicitly endorses it and discusses it in some detail in his *Philosophy of Nature*, and he also approvingly mentions it elsewhere. Well-known is his letter to Goethe from February 20, 1821, where Hegel writes that Goethe's *Urphänomene* or primordial phenomena are particularly significant for philosophy:

> Haben wir nämlich endlich unser zunächst austernhaftes, graues oder ganz schwarzes – wie Sie wollen – Absolutes doch gegen Luft und Licht hingearbeitet, daß es desselben begehrlich geworden, so brauchen wir Fensterstellen, um es vollends an das Licht des Tages herauszuführen; unsere Schemen würden zu Dunst verschweben, wenn wir sie so geradezu in die bunte verworrene Gesellschaft der widerhältigen Welt versetzen wollten. Hier kommen uns nun E.E. Urphänomene vortrefflich zustatten; in diesem Zwielichte, geistig und begreiflich durch seine Einfachheit, sichtlich oder greiflich durch seine Sinnlichkeit – begrüßen sich die beiden Welten, unser Abstruses und das erscheinende Dasein, einander. (*Briefe von und an Hegel* II, 250)[1]

But why and to what extent is Goethe's theory of colors important to Hegel? In this paper, I will look at Hegel's discussion of Goethe's *Farbenlehre* in the

[1] Here and in what follows I refer to Hegel's works either by volume and page number of the historical-critical edition (GW=*Gesammelte Werke*), or by volume and page number of the Suhrkamp edition, edited by Karl Michel and Eva Moldenhauer (W=*Werke*). For letters, I refer to Hoffmeister's edition (*Briefe von und an Hegel*) by volume and page number. In the case of *Encyclopedia* I use "Enz." and indicate paragraph numbers, adding A for remarks (*Anmerkungen*) and Z for additions (*Zusätze*). Translations are my own unless otherwise indicated.

Philosophy of Nature, and at the aspects of it that he finds particularly significant and worthy of discussion. This certainly does not exhaust Goethe's influence on Hegel. His *Farbenlehre* also has some significance for Hegel's aesthetics, Goethe's morphological studies are also taken up in Hegel's philosophy of nature and, if Eckart Förster's arguments are correct, Goethe's method had a more general formative influence on Hegel's dialectic.[2] These, however, are topics that I will not discuss here.

I will start with an account of Goethe's theory of colors itself, underlining its most significant aspects and its central concepts. I will then take a look at Hegel's philosophical reception of this theory and argue that it is primarily the principle of polarity that plays the largest role in this reception. Furthermore, I will show that, even so, Hegel is somewhat ambivalent with respect to this principle as it was presented in Goethe himself. Nevertheless, it is valuable for him because it prefigures his own account of the concept as the fundamental structure of reality.

1. GOETHE'S *FARBENLEHRE*

Goethe's theory of colors was developed in polemics with Newton. The latter argued that sunlight is not homogeneous, as it seems to us, but rather composed of diverse light rays with different degrees of refrangibility, each of which possesses "a certain Power and Disposition to stir up a Sensation of this or that Colour" in us.[3] Newton, then, postulates that light has a certain unobservable microstructure that is responsible for the observable color phenomena. Contrary to this, Goethe maintained that regular colorless light is not composed of colored rays (or, indeed, of diverse rays that are capable of causing in us sensations of diverse colors). Rather, light is something simple, whereas colors are due to certain interactions between light and darkness, which Goethe considered to be equally important factors in the production of colors.

The central place in Goethe's theory is occupied by what he calls fundamental phenomena (*Grundphänomene*) or primordial phenomena (*Urphänomene*) described in §§150–151 of the didactic part of *Zur Farbenlehre*. In particular, Goethe identifies the following primordial phenomena:

> 150. The most energetic light, such as that of the sun, of phosphorus burning in oxygen, is blinding and colorless. Thus the light of the fixed stars achieves us as colorless for the most part. This light, however, seen through a medium which is at least slightly turbid, appears to us yellow. If the turbidity of such a medium is increased, or if it is made thicker, we shall see the light gradually assume a yellow-red hue, which eventually intensifies to ruby-red.

[2] See Eckart Förster, "Die Bedeutung von §§ 76, 77 der *Kritik der Urteilskraft* für die Entwicklung der nachkantischen Philosophie [Teil II]," *Zeitschrift für philosophische Forschung* 56, no. 3 (2002): 321–345; Eckart Förster, *Die 25 Jahre der Philosophie* (Frankfurt am Main: Vittorio Klostermann, 2011), Chapter 14.

[3] Isaac Newton, *Opticks* (New York: Dover, 1952), 124-125.

> 151. If, on the other hand, darkness is seen through a turbid medium that is illuminated by a light falling upon it, a blue color appears to us, which becomes lighter and paler as the turbidity of the medium is increased, but on the contrary appears darker and deeper the more transparent the medium becomes, and in the least degree of turbidity it affects the eye as the most beautiful violet. (LA, I, 4, 64)[4]

So, when we see colorless light through a turbid medium, we see it as yellow or, if the medium is made more turbid, as reddish or orange (for Goethe, this increased turbidity of the medium "heightens" [*steigert*] the color phenomenon). When, on the other hand, we see the dark background through turbid medium lit by a source of light, we see it as blue or, when the medium becomes less turbid, as violet (which also represents a heightening of blue towards red). The paradigm cases of these phenomena are, of course, respectively, the sun and the darkness of space seen through our atmosphere which contains multiple different particles making it not fully transparent.

Goethe later says more about the status of these fundamental phenomena and their role in his theory. Thus, he writes in §175:

> The circumstances which we become aware of in experience are, for the most part, only cases, which, with some attention, allow us to classify them under general rubrics. These in turn come under scientific rubrics which point further up, and through which we become better acquainted with certain indispensable conditions of appearances. From here everything gradually complies with *higher rules and laws*, which, however, reveal themselves not only by means of words and hypotheses to the understanding but, at the same time, by phenomena to observation. We call these primordial phenomena, because nothing in the appearance lies above them, whereas they are, on the contrary, perfectly fit to be a point to which we first gradually ascended, and from which we may likewise descend to the most common case of daily experience. Such a primordial phenomenon is that which we have earlier presented. We see on the one side light, the bright; on the other darkness, the obscure; we bring the turbid medium between the two, and from these oppositions, with the help of the intended [*gedachter*] mediation, the colours develop themselves, also in an opposition, which, however, by means of their interrelation, immediately point again to that which is common to them. (LA I, 4, 71; my italics)

In one sense, the primordial phenomena play a similar logical role in Goethe's theory as high-level laws in a more conventional physical theory, for example, the Newtonian hypothesis about the composite nature of colorless light. Together with the knowledge of the specific conditions of various observations and experiments and with the necessary background knowledge, they allow us to

[4] I use the following abbreviations for referring to Goethe's works: LA = Goethe, *Die Schriften zur Naturwissenschaft* hrsg. im Auftrag der Deutschen Akademie der Naturforscher Leopoldina, Weimar 1947 ff.; HA = *Goethes Werke* (Hamburger Ausgabe), Hamburg 1948 ff.; HABr = *Goethes Briefe* (Hamburger Ausgabe), München 1962 ff. I refer to these editions by volume and page number (for LA by series, volume, and page number). Translations are my own unless otherwise noted.

explain a variety of other phenomena (in this case of other color phenomena). As Goethe writes in the passage just quoted, they function as "higher rules and laws." However, there is a significant difference of this account from Newton's theory, as well as from more recent physical theories. In particular, Goethe accords the central explanatory role to *observable* phenomena and not to laws about unobservable entities postulated in a theory. As Goethe says in the same passage, the primordial phenomena are accessible not (only) to the understanding "by means of words and hypotheses, but rather also to observation [*Anschauen*]." This is something that Goethe seems to stress also in the letter to Christian Dietrich von Buttel from May 3, 1827:

> Furthermore, the primordial phenomenon is not to be compared to a *principle, from* which multiple consequences unfold, but rather it is to be considered as a *fundamental appearance, in* which the manifoldness is to be intuited (HABr IV, 231).

Goethe further characterizes the primordial phenomena by claiming that they cannot and should not be further explained:

> But even if such a primordial phenomenon were to be discovered, the evil still is that we refuse to recognize it as such, that we look for something beyond and above it, although we should admit that here there is the limit of experimental knowledge. The scholar of nature should leave the primordial phenomena to remain in eternal rest and splendor; let the philosopher admit them into his region, and he will find that in the fundamental and primordial phenomenon he receives worthier material for further work than in individual cases, general headings, opinions, and hypotheses. (LA, I, 4, 71–72)

Now, one can certainly question why scientists are not supposed to look for further explanation of, for example, the phenomena of propagation of light through turbid media, which seem to be constituents of what Goethe identifies as primordial phenomena. What I take Goethe to mean here, though, is that the phenomena that he describes in §§150–151 of *Zur Farbenlehre* are fundamental and not further explicable *as far as the theory of colors is concerned*. That is, one can well seek to understand the propagation of light or, in contemporary physics, electromagnetic waves, under different conditions, including the conditions of turbid media. However, for Goethe, such an investigation is not a part of the theory of colors. Goethe takes his primordial phenomena to stand at the highest explanatory level within the realm of the color phenomena, so that an attempt to explain them would have to cross the boundaries of this realm; thus it changes the topic of investigation. As he writes towards the end of the didactic part:

> If, on the other hand, the physicist can attain to the cognition of that which we have called a primordial phenomenon, *he* is safe; and the philosopher with him. The physicist is safe, since he is persuaded that he has here arrived *at the limits of his science*, that he finds himself at the height of experimental

> research; a height whence he could look back upon the experience in all of its stages, and forwards into the regions of theory, even if he cannot enter there. (LA I, 4:211; my second italics)

Goethe's primordial phenomena are, then, primordial phenomena of a circumscribed field of natural phenomena, and so they play the central explanatory role only within that field. The large part of the body of the *Farbenlehre* consists in Goethe's attempts to explain other color phenomena, prominently those which occur in refraction, by reducing them to some form, modification, or combination of the fundamental phenomena.

The two primordial phenomena discussed above also manifest a more general principle at work in the *Farbenlehre*, as well as in Goethe's view of nature more generally. This is the principle of polarity, that Goethe calls one of "the two great driving wheels of all nature" (the other "driving wheel" being what he calls heightening or intensification [*Steigerung*]) (HA, XIII, 489). Throughout *Zur Farbenlehre*, but especially in the discussion of the chemical colors, of the sensuous and moral effect of colors, and in the section "Allgemeine Ansichten nach innen," Goethe uses this principle to organize the totality of colors into two parts, which he associates, respectively, with light, warmth, activity, strength on the one side (corresponding to the color yellow and its intensifications), and with darkness, cold, privation, weakness on the other side (corresponding to the color blue and its intensifications). He also suggests that these sides are related to the chemical opposition of acids and alcalis.[5] Goethe thematizes the principle of polarity as such at the end of the didactic part of *Zur Farbenlehre*, in the section on the relation of his theory of colors to other disciplines. There, he suggests that polarity is something that one can find in all phenomena of nature, pointing specifically to magnetism, electricity, and chemistry as to other fields where this principle has already been made manifest.[6] He therefore sees himself as demonstrating the fruitfulness of this principle in the field of color phenomena as well:

> 744. The aim of our effort was to introduce and include the appearances of color into this series, this circle, this crown of phenomena… We found a primordial vast opposition between light and darkness, which one may more generally refer to as that between light and non-light. We sought to mediate it and thereby to let the visible world of light, shade, and color emerge, and in the course of the development of the phenomena we employed various formulations taken from the theories of magnetism, electricity, and chemistry. (HA, XIII, 489)

[5] This discussion is mostly based on §696 of *Zur Farbenlehre* (HA, XIII, 478).

[6] Olaf Müller has discussed the role of the principle of polarity in the research of Goethe (complementary spectra, reversed experiments, etc.), as well as in the work of such scientists as Ritter, where it has led, in particular, to the discovery of ultraviolet rays. See especially Olaf Müller, *„Mehr Licht". Goethe mit Newton im Streit um die Farben*. (Frankfurt am Main: S. Fischer, 2015), and Olaf Müller, *Ultraviolett. Johann Wilhelm Ritters Werk und Goethes Beitrag – Zur Geschichte einer Kooperation* (Göttingen: Wallstein, 2021).

I have already mentioned that the principle of polarity organizes the totality of colors. But of course, this totality is not simply divided into two parts; rather, as is well-known, Goethe presents it as a circle. Within the circle, there are multiple relations between colors. We are already familiar with the polar opposition of the "yellow" and "blue" sides of the circles, but it is also important for Goethe that both sides exhibit within themselves a sort of hierarchy, organized by Goethe's concept of heightening or intensification (*Steigerung*). Thus, yellow intensifies into orange or yellow-red, and further into red, whereas blue intensifies into violet or blue-red, and further into red. Furthermore, as Goethe says, either through the continued intensification, or through a mixture of the intensified colors of the yellow and blue poles, "there arises the pure red, which we often, due to its high dignity, have called purple [*Purpur*]" (HA, XIII, 479). From various remarks Goethe makes throughout the work, and especially from the section on the sensuous and moral effect of colors, it is clear that Goethe really thinks of this "vertical" relation within the circle as a sort of hierarchy, with purple at its top and green, the product of the mixture of non-intensified yellow and blue, at the bottom.

Finally, a very important relation within the color circle is that of complementarity, in today's terminology, or demand (*Forderung*) in Goethe's. Demanded (with respect to their opposites) or complementary colors are those that lie across from each other in the circle, so that yellow and violet, blue and orange, and red and green are complementary to each other. These pairs constitute simple harmonious relations which is something that is particularly important for a painter. But complementarity also plays major role in Goethe's discussion of what he calls "physiological colors." Physiological phenomena, such as the afterimages which exhibit the colors complementary to those which just overstimulated our eyes, are something that Goethe turned to after the publication of his earlier *Contributions to Optics* (*Beiträge zur Optik*).[7] I*n Zur Farbenlehre* he even claims that they constitute the foundation of the color theory: "These colors, which constitute the foundation of the whole theory and reveal to us the chromatic harmony, which has been argued about so much …" (LA I, 4:25), as he writes in §1of the main text of the didactic part of *Zur Farbenlehre*. By providing us the insight into the harmonious relations between colors by means of the phenomena that most easily disclose the complementary pairs of colors, physiological phenomena play a particularly important role in articulating the holistic character of Goethe's theory of colors, that is, the fact that, in this theory, colors stand in internal relations to each other.

To summarize, such concepts and principles as the concept of the fundamental phenomenon, polarity, intensification and complementarity play the most significant role in Goethe's theory of colors. Also important is his opposition to the reductionist

[7] See Michael Duck, "Newton and Goethe on Colour: Physical and Physiological Considerations," *Annals of Science* 45, no. 5 (1988): 507–519; (1988, 513–514) and Eckart Förster, *Die 25 Jahre der Philosophie* (Frankfurt am Main: Vittorio Klostermann, 2011), 179–180, for somewhat different accounts of Goethe's abandonment of the project of the *Contributions*.

theories which overstep the boundaries of the phenomena of the particular domain under discussion, in this case to those which try to explain light and colors by reference to unobservable constituents of light (light rays, particles).

2. HEGEL ON THE PHILOSOPHICAL SIGNIFICANCE OF THE *FARBENLEHRE*

Hegel shares many philosophical motivations with Goethe. Like Goethe, he is critical of Newton's account of light and colors, and he rejects the idea that colorless light consists of colored light rays (even if, as we have seen above, Newton did not say exactly this, but rather spoke of rays that have the capacity to evoke different color sensations in us). This is part and parcel of Hegel's general rejection of attempts at reductionist mechanical explanations of natural phenomena which, for him, belong to the higher stages of nature.[8] For example, Hegel attacks Newton's account of optical phenomena because of Newton's use of the postulated light particles, rays, and their bundles, of which light is supposed to consist of:

> The representation of discrete and simple *light-rays* and *particles* and their *bundles*, out of which light limited in its diffusion is supposed to arise, belongs to the barbaric usage of the categories, which was made dominant in physics in particular by Newton. (Enz. §276 A; W 9, 117)

By contrast, like Goethe, Hegel takes light to be something simple rather than composed. More generally, Hegel develops a multifaceted contrast between light and "qualified [that is, physical, not merely mechanical] matter" (*Enz*. §275; *W* 9, 111), which includes an interesting insight into light's being weightless (as we would say today, not possessing rest mass), and furthermore the characteristic of not being able to occupy space by resisting matter to enter that space. Thus, Hegel enthusiastically accepts Goethe's anti-reductionism about light and the related phenomena such as colors.

Of the other main principles and concepts that are central to Goethe's theory of color – the primordial phenomena, polarity, intensification, and complementarity – the one that plays by far the largest role in Hegel's discussion is polarity. In his exposition of Goethe's theory Hegel certainly mentions intensification,[9] demanded colors,[10] and the primordial phenomena[11] but, as far as the first two of these are concerned, there is no substantial discussion of them of any kind. The primordial

[8] For Hegel's opposition to reductionism, see Anton Kabeshkin, "Hegel's Anti-Reductionist Account of Organic Nature," *Intellectual History Review* 31, no. 3 (2021): 479–494; Anton Kabeshkin, "Hegel's Metaphysics of Nature," *European Journal of Philosophy* 30, no. 2 (2022): 778–792; Thomas Posch, "Hegel's Anti-reductionism: Remarks on What Is Living of His Philosophy of Nature," *Angelaki: Journal of Theoretical Humanities* 10, no. 1 (2005): 61–76.

[9] See GW 24, 1, 58; 588; GW 24, 2, 836; 840.

[10] See GW 24, 1, 311; GW 24, 2, 840.

[11] See Enz. §320; W 9, 243; GW 24, 1, 306; GW 24, 2, 1122.

phenomena are discussed from the methodological perspective, the clearest discussion being the one in the lectures on the philosophy of nature from 1821–22, found in the *Nachschrift Uexküll*:

> Thus, with his great sense of nature he grasped the main phenomena in a simple way; the great sense depends exactly on the ability to grasp the matter from the side where it presents itself in the most simple way, the primordial phenomenon. What follows is the complication of the simple, essential appearance by a whole host of other conditions. One has set the fundamental phenomenon next to such circumstances, and if it stands there together with these circumstances, it is then often difficult to realize what the principal thing is. We must proceed philosophically precisely in this way, beginning with the simple. The truly scientific sense consists in this, to recognize the simple as the first, and then to show, how it appears under other circumstances. Now, this is what Goethe has done. (GW 24, 1, 306)

This methodological point was certainly very important for Goethe, but it is interesting that Hegel does not discuss the more metaphysical, or even religious, significance of the primordial phenomena that we can glimpse from some of Goethe's terminology that we have already seen above ("eternal rest and splendor" [LA, I, 4, 71–72] of the primordial phenomena), as well as in some remarks on them found in the *Maxims and Reflections*, such as that "The immediate awareness of the primordial phenomena moves us into a kind of anxiety: we feel our inadequacy; only through the eternal play of empirical phenomena they enliven, gratify us" (HA 12, 367).

Now, polarity presents a clear contrast to other central aspects of Goethe's theory of colors in its obvious importance for Hegel, not so much as a principle of organization of the totality of colors, but more so as the thesis, according to which colors are the product of interaction between light and darkness. In fact, Hegel refers to this even outside of his discussions of Goethe, and in fact this can give us a key to the significance of this principle for him. Thus, at the end of the second remark to the "Being" chapter of the 1832 edition of the *Science of Logic*, after arguing that both pure being and nothingness are mere abstractions which have the same (lack of) content, so that anything concrete must have both being and negation as its moments, Hegel makes this visual comparison saturated with references to Goethe's theory of colors:

> But one does imagine being, for example, in an image of pure light, the clarity of unclouded seeing, whereas one imagines nothing as the pure night, and the distinction between the two is then related to this well-known sensuous difference. But in fact, if one imagines this very seeing more precisely, one can easily realize that in absolute clarity one sees just as much and just as little as in absolute darkness; that the one seeing is just as much as the other the pure seeing that is a seeing of nothing. Pure light and pure darkness are two voids which are the same. Only in the determinate light (and light is determined through darkness: thus in clouded [*im getrübten*] light), just as only in determinate darkness (and darkness is determined through light: thus in illuminated darkness),

> can something be distinguished, because only clouded light and illuminated darkness have distinction in themselves and hence are determinate being, *Dasein*. (GW 21, 80)

Now, the conclusion argued for in this chapter of the *Logic* recurs throughout this work in different forms: as a unity of essence and appearance in the thought-determination of actuality in the Logic of Essence, and, later, as a unity of universality, particularity, and individuality in the concept. It is this unity of what Hegel calls "moments" of the concept that is, ultimately, fundamental for him, and it is this unity that he refers to when he gets to the discussion of Goethe's theory of colors in the *Philosophy of Nature*:

> This is in general the way in which the concept as concrete contains the moments in their ideality and unity, which are at the same time distinguished. This determination is expressed in the *Goethean* presentation in the sensible way proper to it. (*Enz*. §320A; *W* 9, 246)

What are the moments of the concept that are expressed in the Goethean theory of colors? Goethe speaks of both light and darkness being the necessary conditions for the emergence of colors. In Hegel's reception of this theory, this opposition is specified into that of abstract light and individualized non-transparent bodies. As he points out, "the light relates itself only to the surface of this initially nontransparent, that is hereby manifested" (*Enz*. §277; *W* 9, 121), or, at greater length, in an addition from the lecture:

> The light, as the beginning of the material manifestation, is something excellent only in the sense of abstraction. Due to this abstraction light has its limit, its lack; and only by means of this border does it manifest itself. The determinate content must come from somewhere else; something different from light is needed in order for something to be manifested. Light as such is invisible; in the pure light one does not see anything – as little as in the pure *darkness*; it is dark and nightly. (*Enz*. §275 Z; *W* 9, 114)

Such nontransparent bodies that are conditions of manifestation of light are, according to Hegel, individualized bodies in contradistinction to such universal elements as water and air, which are transparent, and even to some pure and completely homogeneous crystals. Thus, in the remark to §320, Hegel writes that "the depicted course of the darkening is this *individuation* of the lucid [*des Hellen*], that is, in this case, of the transparent, namely of the passive manifestation in the domain of the shape [*im Kreise der Gestalt*], towards the *being in itself* [*in sich sein*] of the individual matter" (*Enz*. §320A; *W* 9, 242). And in the main text of the same paragraph Hegel relates this progression from the abstract transparency to the individuality of concrete bodies to colors:

> The darkening does not remain to be merely a principle, but rather it progresses towards the *abstract* one-sided extreme of solidity, the passive

> cohesion (metallicity). There is then also something *dark that exists* for itself and something *light* [*Helles*] that is present for itself, set at the same time into concrete and individualized unity by means of transparency, the appearance of *color*. (*Enz*. §320; *W* 9, 241)

Here I do not have space to discuss the whole progression from elements to individualized bodies that occurs in the "Physics" section of the *Philosophy of Nature*, and thereby to explain the precise sense of these passages. I want to close with a remark on Hegel's formulation to the effect that Goethe's presentation of the concept is made "in the sensible way proper to it" (Enz. §320A; W 9, 246), as we saw above. This is related to Hegel's ambivalent attitude towards the concept of polarity as it was used at that time more generally, not only by Goethe. This ambivalence is best visible in the introductory part of the lecture notes from 1823/24 (*Nachschrift Griesheim*) where Hegel, on the one hand, says that the concept of polarity, which was much discussed by natural scientists, constitutes "a great progress that the physics has made in its metaphysics" (GW 24, 1, 516). At the same time, however, polarity remains too tied to the sensible representations, while being conceptually poorer than what Hegel calls the concept. Hegel thus refers to magnetic phenomena, which provided the principle of polarity with the material, from which one could depart, and points out these limitations of the representation of polarity:

> The northern pole is also the south pole in that, when there is one there is also the other; from this side this is inseparable unity. This floats before the representational thinking in connection to the concept of polarity. This polarity, however, restricts itself only to the opposition, to one and the other. But if we consider the magnet, we momentarily find a point where there is neither northern nor southern pole, or where they are both, the point of indifference, the middle between the both, indifferent against both differences. This third is not contained in the concept of polarity, this reversion of the opposition into itself, which is at the same time unity of the one and the other. This is then one concept too many for polarity. (GW 24, 1, 517)

In other words, while the principle of polarity is kindred to the theory of the concept elaborated in Hegel's logic, it also falls short of it and, at best, presents it in a way accessible to sensuous representation. Now, some of Goethe's own formulations indicate that he might actually have been closer to Hegel than some of Hegel's passages on him suggest.[12] Nevertheless, it is true that Goethe does not provide a systematic presentation of his central concepts including that of polarity; rather, we have to gather the meaning of such concepts from the use he makes of them and his scattered, although insightful, remarks. Thus, even if his is not a merely sensuous way of representing his central concepts, neither is it systematically philosophical, which explains Hegel's ambivalence towards it.

[12] For example, in this passage from the *Maxims and Reflections*: "The highest is the viewing [*das Anschauen*] of the different as identical" (HA 12, 366).

BIBLIOGRAPHY

Duck, Michael. "Newton and Goethe on Colour: Physical and Physiological Considerations." *Annals of Science* 45, no. 5 (1988): 507–519.

Förster, Eckart. *Die 25 Jahre der Philosophie*. Frankfurt am Main: Vittorio Klostermann, 2011.

Förster, Eckart. "Die Bedeutung von §§ 76, 77 der "Kritik der Urteilskraft" für die Entwicklung der nachkantischen Philosophie [Teil II]." *Zeitschrift für philosophische Forschung* 56, no. 3 (2002): 321–345.

Goethe, Johann Wolfang von. *Goethes Werke*. Hamburger Ausgabe. 14 vols. Edited by Erich Trunz. München: C. H. Beck, 1989.

Goethe, Johann Wolfang von. *Goethes Briefe*. Hamburger Ausgabe. 4 vols. Edited by Karl Robert Mankelow. München: C. H. Beck, 1986.

Goethe, Johann Wolfang von. *Die Schriften zur Naturwissenschaft.* Edited im Auftrage der Deutschen Akademie der Naturforscher Leopoldina. Weimar: Böhlaus Nachfolger, 1947.

Hegel, Georg Wilhelm Friedrich. *Werke in zwanzig Bänden*. *Theorie Werkausgabe*. 20 vols. Edited by K. M. Michel and E. Moldenhauer. Frankfurt am Main: Suhrkamp, 1970–.

Hegel, Georg Wilhelm Friedrich. *Gesammelte Werke*. Hamburg: Felix Meiner Verlag, 1967–.

Hoffmeister, Johannes, ed. *Briefe von und an Hegel*. Hamburg: Meiner, 1969–1981.

Kabeshkin, Anton. "Hegel's Metaphysics of Nature." *European Journal of Philosophy* 30, no. 2 (2022): 778–792.

Kabeshkin, Anton. "Hegel's Anti-Reductionist Account of Organic Nature." *Intellectual History Review* 31, no. 3 (2021): 479–494.

Müller, Olaf. *Ultraviolett. Johann Wilhelm Ritters Werk und Goethes Beitrag – Zur Geschichte einer Kooperation*. Göttingen: Wallstein, 2021.

Müller, Olaf. *„Mehr Licht". Goethe mit Newton im Streit um die Farben*. Frankfurt am Main: S. Fischer, 2015.

Newton, Isaac. *Opticks*. New York: Dover, 1952.

Posch, Thomas. "Hegel's Anti-reductionism: Remarks on What Is Living of His Philosophy of Nature." *Angelaki: Journal of Theoretical Humanities*10, no. 1 (2005): 61–76.