



HAL
open science

Lotze's Debt to Kant Against Naturalism and Czolbe's Counterpoint. The Ambiguities of "Epistemological Kantianism" Around 1850

Charlotte Morel

► **To cite this version:**

Charlotte Morel. Lotze's Debt to Kant Against Naturalism and Czolbe's Counterpoint. The Ambiguities of "Epistemological Kantianism" Around 1850. *Journal of Transcendental Philosophy*, 2020, 1 (1), 10.1515/jtph-2019-0010 . halshs-02987281

HAL Id: halshs-02987281

<https://shs.hal.science/halshs-02987281>

Submitted on 14 Dec 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

LOTZE'S DEBT TO KANT AGAINST NATURALISM AND CZOLBE'S COUNTERPOINT. THE AMBIGUITIES OF "EPISTEMOLOGICAL KANTIANISM" AROUND 1850

-Charlotte Morel (CNRS, UMR 8547)-

Around 1850, many philosophers and scientists in Germany reacted against what they called, at best, the "excesses" of *Naturphilosophie*. In particular, some thinkers detached the label of "ideal-realism" from its Fichtean-Schellingian origin; they claimed that philosophy and natural science should be reconnected on a totally different basis, accepting their methodological discrepancy.¹ Such refusal of any speculative connection of the ideal and the empirical was likely to give rise to a new exploitation of the Kantian critical position. This perspective is well thematized in the second volume of Friedrich Albert Lange's milestone work, *History of Materialism and Criticism of its Present Importance: History of Materialism since Kant* (Lange 1875).² Building on Lange's analysis, Klaus-Christian Köhnke, in his masterful study of the emergence of neo-kantianism, clearly identifies the controversial impact of materialism as one of the factors at stake.³

Because philosophy in the 1850s and 1860s had to overcome the idealism of the past as well as the materialism of the present, it was able to develop a rather acute sense of the way Kant had striven to build bridges between *a priori* and *a posteriori* knowledge. (Köhnke 1993, pp. 175f).

Indeed, at that time, naturalistic-materialistic positions had become a very influential trend. After 1854, not only the German intelligentsia but society as a whole was involved in the so-called "materialism controversy" (to quote Frederick Beiser 2014b, p. 182: "the most important intellectual dispute of the 19th century") and experienced the tremendous influence of works by Ludwig Büchner, Carl Vogt and Jacob Moleschott.⁴ *Force and Matter* by Büchner was a huge editorial success throughout Europe, whilst Vogt and Moleschott had comparable influence in Germany. One of the characteristics of these works was their popular style which earned them the epithet "popular

¹ See, for instance, one of the most prominent of these thinkers, besides Lotze, Friedrich Überweg. His essay *Über Idealismus, Realismus und Idealrealismus* might be considered as a manifesto for the re-evaluation they posited was necessary. "Pure idealism does indeed defend the higher and nobler of the mind's tasks, but it cannot easily avoid the troubling pull of unscientific, mythological elements. Realism has the advantage of purifying scientific interest, but by rejecting the inadequate shell, it risks also losing the core of truth hidden within. Ideal-realism's achievement lies in the mediation of these two extremes, with both sides fully occupying their rightful place; yet it needs to sidestep the caricatural position of the middle ground, that risks representing little more than a lacklustre *juste milieu* which fails to do justice to either side." (Überweg 1859, pp. 78f.) – For plentiful information not only about Überweg but also many other minor figures in the same vein, see Köhnke 1993, in particular II- IV. 1. "*Erkenntnistheorie als Vermittlung zwischen altem Idealismus und neuem Materialismus*", pp. 168-179.

² An earlier version appeared in 1866, and an English translation of the 1875 German edition as early as 1877; the third edition in 1925 is provided with an introduction by Bertrand Russell. There is much secondary literature on Lange's position regarding materialism, see for instance: Knoll and Schoeps 1975 (see in particular the contributions of Hermann Ley, Helmut Holzhey and Hans-Martin Sass); Holzhey 2011; Hartung 2017; Seidengart 2017; Beiser 2014b, ch. 9. "Friedrich Albert Lange, Poet and Materialist manqué", pp. 356-397; Köhnke 1993, III.5 "*Von Langes Kritik des Materialismus zu Cohens Kritik der Erfahrung*", pp. 233-301.

³ See the references section for texts in which the issue of materialism is explicitly elaborated on to some extent with reference to Kant's position: Silesius, 1849; [Anonyme], 1856; Frauenstädt, 1856; Meyer, 1856, 1856a, 1856b, 1857a, 1857b; Helfferich, 1857: "Vorwort", p. I-IV; "*Endergebnis*", pp. 155-171; Fortlage 1857, 1858.

⁴ For more information on the materialism controversy, see: Bayertz, Gerhard and Jaeschke 2007 and 2012; Morel 2017.

materialism”, and enabled them to appeal to a wide audience beyond academic circles. A second characteristic was well summarized by Kurt Bayertz with the label “scientific materialism” (see Bayertz 2007): whilst 18th-century philosophers propounded as a metaphysical assertion that the whole world could be explained by studying its physical components, 19th-century thinkers instead interpreted this stance as a consequence of unlimited confidence in the explanatory powers of natural science.⁵

In this context, what did “being Kantian” signify, and why be one? It is quite well known nowadays how a first option resulted in a position which seems in itself a paradox, not to say a heresy, as seen through the very eyes of those whom we now name Neo-Kantians (i.e.: the Bade and Marburg school): “naturalizing the transcendental” i.e. connecting Kant’s theory of critical idealism with empirical physiology and psychology. From different perspectives, this was the stance either of philosophers such as Lange himself, or Jürgen Bona Mayer (“‘the last great hurrah’ of the psychological interpretation of Kant” following Jakob Fries’ interpretation, in the words of F. Beiser: 2014 b, p. 336); or of prominent scientists such as Rudolf Virchow (physician and anatomist), Hermann von Helmholtz (physicist and physiologist).⁶

But appeals to Kant soon also represented a very strong means to oppose the naturalistic-materialistic positions⁷ by pointing out an oversimplification of epistemological issues. Such is Lotze’s position against Heinrich Czolbe. Not only are Czolbe’s and Lotze’s views in direct conflict as naturalistic and anti-naturalistic (the following paragraphs will set forth this opposition in more detail, expanding on the preliminary remark in my previous footnote), but they have both specific characteristics that seem to me worthy of further discussion, as will be shown below.

⁵ This was quite clear to contemporaries too: cf. for example Wagener 1863, art. “*Materialismus*”, p. 62.

⁶ On this general topic, cf. in particular Hatfield 1990, especially ch. 4.2., “The Physiology and Psychology of Spatial Realism”, pp. 128-164, and ch. 5., “Helmholtz: the Epistemology and Psychology of Spatial Perception”, pp. 165-234. The authors discussed by Gary Hatfield show that the first disputes over reinterpreting the Kantian transcendental system on behalf of empirical approaches in psychology and psychology were contemporary with Kant himself: Johann Heinrich Abicht (1789), then at the beginning of 19th century Caspar Theobald Tourtual (1827). See too Köhnke, II, ch. III.4: “*Die früheste neukantianisch Programmatik : Helmholtz, Meyer, Haym, 1855-1857*”, pp. 151-163 for Lange, Helmholtz and Meyer.

⁷ An important remark at this juncture is that at the time it was common to link materialism with naturalism as attested by several dictionaries and encyclopedia: cf. for example Wagener 1863, art. “*Materialismus*”, p. 53: “Essentially a synonym for this word (*materialism*), the term naturalism is also employed, the two expressions both denoting that philosophical way of thinking which attributes all existence and events to the known and perceptible matter surrounding us and explains them by the same); or Herzog 1858, p. 152; both quoted by Kühne-Bertram, 2000, p. 162. This corresponds to the second definition of “naturalism” by Baldwin in his *Dictionary of Philosophy and Psychology* (Baldwin 1902, p. 138; cf. Hatfield 1990, p. 15, who provides this reference). But notwithstanding this identification of naturalism with materialism which is at least partly valid in our context and justifies my provisional identification of both perspectives here, of course we still have to keep in mind the first and largest definition by Dewey, which adds a methodological dimension to the term: “The theory that the whole of the universe or of experience may be accounted for by a method like that of the physical sciences, and with recourse only to the current conceptions of physical and natural science ; more specifically, that mental and moral processes may be reduced to the terms or categories of the natural sciences.” (Baldwin 1902, p. 137.)

On this basis my paper will first consist in evaluating the role of Kant's work for both of them. But this inquiry is not a solely historical one. Historical knowledge is rather, in this case, conceived of as helping us formulate what I hope to be useful questions and distinctions about the following point: what exactly within the "transcendental claims", taken as a whole, is in a position to offer a logical theoretical objection to the premises of strict or broad naturalism, and how?⁸ This will lead me to question in particular the issue of whether appealing to Kant in this context amounts or not to appealing to transcendental claims whatever they are.

1. Lotze's Kantian background in physiology and psychology

Czolbe was physician in Königsberg, he had Feuerbach as a "mentor" (Gregory 1977, p. 141), and seemed to have played the same role to the ideal-realist philosopher Friedrich Überweg, his friend and patient, and also philosophy professor at the Königsberg university from 1862.⁹

As for Lotze, he is one of the most significant figures of this ideal-realist stance in the mid-19th century.¹⁰ He was trained both as a physician and a philosopher and his first epistemological writings¹¹ aroused interest amongst such wide and heterogeneous circles of theoreticians that he was hailed as a natural arbiter in the materialism controversy, being taken to task by both sides. However, he managed to firmly decline this role, making clear to materialists that his advocating unambiguously in favor of the integral mechanism as a strict methodological requisite for the rigorous practice of natural science (the investigation of empirical phenomena) could in no case be interpreted as being conducive to materialists views. Yet Czolbe did just that.¹²

To Lotze, the materialism of his time was a "naturalistic metaphysics". And this he comments on negatively as a one of those positions "which luxuriously proliferates wherever people believe they have freed themselves from all metaphysics, and to be standing firm upon the soil of experience and natural-scientific intuition" (Lotze 1852, § 3, p. 32). Leading authors of the popular materialism of his

⁸ For a definition of both terms see footnote 14.

⁹ On Überweg's philosophical evolution and Czolbe's commitment to it, see Lange 1875, pp. 515-523. Gregory (1977, p. 123) sketched Czolbe's biography before analyzing his writings.

¹⁰ For a consideration of both thinkers in their shared philosophical context, see Beiser 2013, but also Breilmann 1925.

¹¹ Cf. Lotze's books 1842/ 1848, 1851, 1852, respectively a *Pathologie*, a *Physiologie* and an *Medizinische Psychologie*; and his three important contributions to Wagner's *Handwörterbuch der Physiologie* (Wagner, 1842-1853): "Leben. Lebenskraft" (Lotze 1842); "Instinkt" (Lotze 1844) and "Seele und Seelenleben" (Lotze 1846).

¹² In his 1855 work, at the very end of the second part dedicated to natural philosophy, he notes that Lotze's *Allgemeine Pathologie* (Lotze 1842/1848), was "what prompted him next to defend sensualism" - as inspired by Hölderlin's *Hyperion* and the philosophy of the left-Hegelians, insofar as it was meant to "preclude the supersensory notion of a vital force as astutely as convincingly from medicine" (Czolbe 1855, p. 204). On this book see below, p. 5. See Lotze's reply to this declaration at the end of his recension von Heinrich Czolbe (Lotze 1855, p. 250: "This result is neither welcome to me, nor can I really understand it".

time had no sense of the distinction between methodological and ontological naturalism, primarily because they had no interest in epistemological topics but advocated materialism first as a world view – with little logical scrutiny. Today, however, now that naturalism has been promoted to a prevalent position within 20th-century epistemology, this is no longer true; this distinction between methodological and ontological naturalism has been made explicit through the careful subdivision of naturalism and even “scientific naturalism” into different versions, with ontological naturalism being based, for instance, mainly upon the causal closure of the physical realm.¹³ And from a methodological perspective, if we rely this time on the distinction between “strict” and “broad” naturalisms:¹⁴ the definition of materialism as equated to naturalism provided by Wagener in 1863 (and indeed matching the popular materialism contention), to which we have already referred above in footnote 7, allows us to conclude that this corresponds with our meaning of “strict naturalism”.

I summarized Lotze’s overall response to the materialistic naturalization of psychology¹⁵ in an online paper (Open Access: *Philosophical readings*); here I would like to discuss the function of some “Kantian” elements within this global framework.

In his formative years, Lotze had undertaken a very close reading of Kant, including his *Metaphysische Anfangsgründe der Naturwissenschaft*, as well as of Fries’ works.¹⁶ This is evidenced in his correspondence with a friend from his youth, Ernst Friedrich Apelt. Although Lotze objected to Kant’s and Fries’ dynamism in physics¹⁷, his early epistemological writings are evidence that he took a close interest in some of Kant’s other philosophical claims. It is important to note from the outset that this Kantian background is both explicit (any reader familiar with Kantian philosophy cannot fail

¹³ See David Papineau’s account of modern ontological naturalism: item “Naturalism”, 1.3., *Stanford Encyclopedia of Philosophy*.

¹⁴ See De Caro 2014, p. 55: “The ‘strict naturalists’ take the term ‘nature’ as referring only to the subject matter of the natural sciences, if not to the subject matter of physics alone. But according to other naturalist philosophers – the ‘liberal naturalists’ – while the subject matter of the natural sciences is certainly a fundamental component of the concept of nature, it does not exhaust it. This is because a ‘second nature’ to use the Aristotelian term revived by John McDowell [1994] also exists, which is distinct from the nature that is investigated by the natural sciences”. While de Caro is explicitly addressing McDowell’s own opposition between “restrictive” and “liberal naturalism” (cf. McDowell 2004, p. 95), his terminology here partly corresponds to Stewart Goetz’s and Charles Taliaferro’s contrasting “strict” with “broad naturalism” (2008, pp. 7f.): “According to what may be called ‘strict naturalism’, nature is all that exists and nature itself is whatever may be disclosed by the ideal natural sciences, especially physics.” In contrast “broad naturalism” enlarges what may be considered as an object of “science”: defenders of this philosophy “reject the view that there is anything in the world that cannot (ultimately) be accounted for in terms of the sciences, including psychology, history, and so on.” (*ibid.*, p. 8): so that they “allow for more than physics, chemistry and biology” to provide a *natural* explanation of things (vs. a supernatural one): in this understanding of naturalism, a *scientific* approach to a phenomenon, whatever the science in question, equals a *naturalistic* one; whereas strict naturalism, which identifies only *some* sciences as “natural sciences”, still defines “natural” independently from “scientific”.

¹⁵ Here are Lotze’s words about materialism in psychology: “It is necessary for these theories not only to avoid the existence of a psychical principle of its own, but also, above all, to entirely absorb psychology into natural science.” (Lotze 1852, § 3, p. 30)

¹⁶ Cf. Woodward 2015, pp. 45-53, pp. 60f.; Pester 1997, pp. 41-46.

¹⁷ Cf. Woodward 2015, pp. 52f.; Pester 1997, p. 41, pp. 46f.

to recognize it)¹⁸, and inexplicit (that is: Lotze makes no direct reference to Kant's works and very few to Kant's concepts *in Kant's wording*).

Here is an example from Lotze's theory of biology in his essay "*Leben. Lebenskraft*" from 1842.¹⁹ Lotze describes the "application of teleology" to vital phenomena as a "heuristic maxim"; and then he comments on this point, underlining the difference between judging upon facts and judging about purposes, as the first and the third of Kant's *Critics* taught us to do:

Whilst universal laws can be understood *a priori*, and real facts and relationships can readily be observed and experimented upon, the purposes of nature are in no way directly given to us, and mostly they can only be derived by drawing a common analogy from phenomena themselves. (Lotze 1885, p. 151)

As for psychology, Frederick Beiser stressed that "Lotze's agenda is Kantian" (2013, p. 222)²⁰, based on two facts: Lotze adopted the Kantian tripartition of the faculties of the soul - cognition, feeling and desire,²¹ the great importance he attached to feeling can be traced back to Kant's having "rebelled against the rationalist tradition of reducing all faculties down to the *vis representativae*"²². Beiser was also the first to point out a significant element for establishing Lotze's Kantian background in Lotze's review of Czolbe's *Neue Darstellung des Sensualismus* (Lotze 1855), in the context of the materialism controversy.²³

Czolbe had first published a reply to Immanuel Fichte's critique of materialism²⁴, published immediately after the critique itself, the same year as *Force and Matter*. It proved an important contribution, siding with materialists, even if, as the title indicates and the author still later elucidates²⁵, Czolbe employed the label *sensualism* rather than materialism to define the way he commits himself to naturalism. And indeed, he uses this term too, advocating more exactly a

¹⁸ As Beiser (2013, p. 222) writes: "Any student of Kant quickly sees Lotze's debts".

¹⁹ Due to its methodological significance, it was granted an honorific position at the very beginning of Rudolf Wagner's first volume *Handwörterbuch der Physiologie* (Wagner 1842, vol. 1, p. IX-LVII). As a matter of fact, this text had considerable impact upon the scientific community in the field of life sciences in Germany.

²⁰ Besides he notes: "Remarkably, this point has been ignored in histories of psychology." (Beiser 2013, Part 2, chap. 4, 4. "A Kantian Psychology", p. 222).

²¹ Cf. the structure of book 2 in Lotze 1852, and the corresponding chapters about simple sensations, feelings, drives (Beiser 2013, p. 223).

²² *Ibid.*

²³ Lotze published a second recension of Czolbe (Lotze 1891, pp. 315-320), since the Königsberg physician's next text (see Czolbe 1856) was addressed to him personally. – On Czolbe cf. Lange 1875, pp. 105-114; Gregory 1977, pp. 122-141; Beiser 2014a, chap. II, 6. "Czolbe's sensualism", pp. 85-89.

²⁴ Both contributions (Fichte 1854a and 1854b); Czolbe 1855a) in Fichte's own *Zeitschrift für Philosophie und philosophische Kritik*, the philosophical organ for ideal-realism and speculative theism. Czolbe's text is followed by an "editorial afterword" by Fichte, pp. 110-113.

²⁵ As Gregory (1977, p. 242) indicates, see Czolbe 1855, p. 29: "Since not one materialistic system regards matter as the sole element, or explanatory principle, of all phenomena (I also consider, for example, space and, naively, the conceptual forms in nature as eternal, or elementary), a conception of the world whose principle is 'the exclusion from thought of everything supersensory' seems to me to be more correctly described by the term sensualism than by the more common term materialism.) (Czolbe's underlining.)

“cleansed naturalism” (Czolbe 1855a, p. 33).²⁶ This he understands, theoretically at least, as a demand for a pure, mechanical explanation of the world order.²⁷

Lotze’s first concern with Czolbe is to counter his radical empiricism in dealing with psychic activities. As Beiser summarizes, he proceeds here on the methodological level: “Lotze’s argument is basically a restatement of Kant’s famous reply to Hume, a timely reminder for materialists of a basic philosophical point: that the universal and necessary connections of our most fundamental concepts cannot be derived from experience” (Beiser 2014a, p. 86).²⁸

Here are Czolbe’s words quoted by Lotze:

It would seem that it is only possible to attain a clear intuition of this unity of all experiences if the activities which constitute these experiences are inherently self-reflexive, referring back to themselves. (Lotze 1855, p. 243)²⁹

Then comes Lotze’s point: when evoking unity in consciousness in these terms, the Königsberger physician may not be aware that he makes use of a “spatial metaphor” or, as Lotze puts it, “a spatial symbolization”; and quite contrary to Czolbe’s claim, Lotze criticizes this metaphor for being “unclear” (*unanschaulich*), – a frontal attack, since it targets his opponent’s principal philosophical criterion (above our footnote 26 and the “main principle of sensualism”). Materialists or sensualists such as Czolbe can be asked a very simple question: what exactly is making this “move”, “referring back to itself”? Lotze too uses metaphors, as a matter of fact he broadens his opponent’s metaphor to demonstrate the argumentative limitation of this spatial imaginization of conscious acts: “Shall we credit a potter’s wheel or a coach’s wheel with consciousness as long as they rotate, or an electric current as soon as it forms a closed circuit?” (Lotze 1855, p. 243) Assuming that a spatial metaphor brings “clarity” in such issues means confusing the two distinct meanings of the German “*anschaulich*” used by Czolbe on behalf on his sensualist premises: comparing something to an *intuition-based* process does not always make it *clear*.

And Lotze remains a logician first and foremost, which is why he asks about the “subject” to which the “predicate” “referring back to itself” refers (Lotze 1855, p. 243).³⁰

²⁶ Cf. too p. 46, and Czolbe 1855, p. 231, p. 234 (“A system of naturalism in my own terms”). “The main principle of sensualism” according to Czolbe is “to exclude any assumption of any supersensory element from the whole realm of thought.” This principle is “perfectly identical to” “what is named the mechanical or physicalist trend” (1855, p. 234. P. 236 : “A representation of naturalism aims purely and simply to satisfy man’s need for a perceptible (*anschaulich*) realization of the connection between psychic, physical and real political phenomena.”)

²⁷ Czolbe 1855, p. 3 : “Since all the so-called dynamic modes of explanation are supersensory, whilst the mechanical ones are perceptible (*anschaulich*), the knowledge of the mechanics of the world order is the goal of our thinking.”

²⁸ See Lotze 1855 in Lotze 1891, p. 240f.

²⁹ And again in the same page: “The brain is a complex machine which is able to give a self-directed orientation to certain activities taking place within it”. Lotze does not refer to a precise point in Czolbe’s text.

³⁰ See also p. 244: “Only when [the author] specifies the *subject* (whose predicate consists in referring back to itself, [...]) will we have a proper terrain conducive to debate.”

But then comes the main difficulty. And Lotze's response to it is, without using the term, Kant's *transcendental apperception*.

Besides, the author confuses two different issues one with another. First he predicates consciousness, i.e. referring back to itself, from *every* single psychic activity; yet his deduction could only prove how every single brain process achieves consciousness *of itself*; but not at all how it reaches our consciousness, that of the unique "I" :

that is the "unity of all experiences" (Lotze 1855, p. 243).³¹

Indeed, Lotze at least once used Kant's technical expression: "transcendental unity of perceptions". But it was in his very first theoretical text, the medical dissertation from 1838... in Latin wording: "This transcendental unity of perceptions *is not a category of natural philosophy* but belongs to an entirely different series of notions"³². Although not further developed, this statement by the young Lotze at least makes it perfectly clear that Kant's transcendentalism was originally a key inspiration for his objection to naturalism.

As for his objections to Czolbe, Lotze's claim is made very clear in its conclusion.

This is the old issue of how unity of consciousness is possible, and here the author totally forgot about it. But one thing is certain: until materialism considers this very fact, it cannot hope to persuade us that it is in a position to rebut its opponents. (Lotze 1855, p. 244)

So, to counter the sensualist version of naturalism, it is a certain kind of transcendental justification that is at stake here. As regards consciousness, you do not explain what needs explaining unless you make sure the *possibility of an experience* is indeed accounted for. To this extent, the phenomenon of consciousness was the only one that could enable Lotze to formulate his demand, because consciousness actually consists in the phenomenon of *experiencing something*. This transcendental condition regarding the unity of consciousness is what Kant named transcendental apperception. And if this answer to the problem were to be accepted, since this latter category pertains to "an entirely different series of notions" from that used by "natural philosophy" (to borrow Lotze's wording from his 1838 dissertation), it would indeed mean that we would have ceased to expect anything resembling a materialistic explanation.

For Lotze, querying the essence of consciousness is also a way of stressing the difference – for him an unbridgeable one – between external and inner phenomena: only the latter being *experienced*. And I think this too engages reflexivity – this time in a way that does not primarily stress the category of

³¹ P. 240 Lotze also uses the expression "inner cohesion of the manifold forms and elements of existence" ("*inneren Zusammenhänge, den jede einzelne That des Denkens von dem Mannigfaltigen behauptet*").

³² "*Haec enim transcendentalis perceptionum unitas non est categoria philosophia naturalis, sed ad aliud prorsus notionum cyclum pertinet*": Lotze 1838 in Lotze 1885, p. 24. At this point in his text Lotze exposes the theoretical need not to confuse sensibility with self-consciousness; only a "transcendental unity of perception" corresponds to the latter and only this should be considered as the true *act* of what is called the *soul*.

unity, but that of quality. In other words, the only true “reflexivity” cannot exist on the level of external phenomena, those which are accounted for through determining their relationships in space and time – that is to say, via a quantitative analysis (typically, Czolbe only takes movement into account); instead experiencing a phenomenon means that a shift has been made from a quantitative to a qualitative dimension. Only an appeal to the logical incommensurability of quality and quantity can highlight the unity of consciousness as a *condition* of experience in general.

Lotze’s argumentation against Czolbe is that of a logician: these “entirely different series of notions” which depart from the “categories of natural philosophy” are indeed *logical categories*. But then here I have to raise the following question: since

(1) Lotze is behaving here as a logician

(2) So as to remind his reader of the necessity of “transcendental apperception” to counter crude simplifications in the way materialists try to make their psychological point:

(3) Then should we merge both these assertions to draw the following conclusion: must the logic to which he is appealing be, in turn, *a transcendental logic*? (That is, a logic that encompasses the subject’s pure contribution to the constitution of knowledge).³³

This question immediately takes on the proportions of a problem, because, as anyone who has read further works by Lotze knows, *this conclusion would be false*; quite on the contrary, Lotze’s *Logic* in 1874 dismisses any transcendental implication of the subject’s *acts* in constituting the objectivity of knowledge (to which I will refer from now on, in shorthand, as *transcendental logic*).

This is important to our present inquiry since I assume, then, this is the reason:

- why Lotze avoids any direct use of Kantian vocabulary even when making points that refer to a Kantian background;

- from which we should infer the correct understanding of how Lotze *did* make use of Kant against naturalism, although his own approach also *dismisses transcendental logic*.

³³ Cf. Hatfield 1990, p. 81; Kant 1787, “*Transcendental logic*”, Introduction, II, last paragraph (AA III, 78).

2. Two opposite ways of appealing to Kant to address naturalism: Lotze and the “second” Czolbe

2.1. Czolbe 1865: using Kant for an anti-materialistic naturalism?

Firstly, I shall return to Czolbe: despite Lotze and Czolbe’s opposing stances on naturalism, we find certain parallels in their consideration of Kant.

Mostly as a result of Lotze’s severe critique in 1856, Czolbe engaged in a substantial revision of his philosophical claims; in his second book in 1865, he both deals with Kant’s work *and* rejects what he labels Kant’s “subjectivism”³⁴, as an answer to those who, at that time, turned to Kant’s critical idealism as a form of “skepticism” (in the first place Jürgen Bona Mayer, the “neo-Kantian skeptic” in Frederick Beiser’s description).³⁵

Then what is the nature of Czolbe’s “way out” of that which he refers to as the “Kant-Hegel problem” - i.e. the search for a coincidence between subjective and objective in knowledge? Indeed, it is a still *naturalist* one. In his second book, Czolbe proved he had listened to what Lotze and others had to say³⁶, and had studied Kant; as a result, he retracted his former materialist stance and turned to a *non-materialistic form of naturalism*.

Rokitanski advises [the materialists] to study Kant and to understand from a Kantian perspective the problems that remain to be solved. This advice I have followed with much pleasure and conviction, and the result of the speculations this has led me to [is] the solution of the Kant-Hegel problem, from a naturalistic perspective, and the definitive refutation of materialism –as substantially different from naturalism [...]. (Czolbe 1865, p. VIII)³⁷

As I consequence of which I wish I could ask Czolbe the following question: Why should Kant’s “problem” be compatible with naturalism, rather than with materialism? Are transcendental claims

³⁴ This stance is fully in keeping with a contemporary philosophical trend: “Insofar as I abandon myself to the influence of the empirical-mechanicist principle and simultaneously keep in mind the efforts of many philosophers (Schleiermacher, Beneke, Trendelenburg, Überweg, Zeller etc) to move beyond Kant’s subjectivism through an objective theory of knowledge, I believe I have found an as yet untraveled path through the jungle of speculation, a way out of the Kant- Hegel problem that we are dealing with here.” (Czolbe 1865, “Vorwort”, p. V). The authors mentioned by Czolbe are proponents of heterogeneous philosophical traditions: romanticism (Schleiermacher), Herbartianism (Beneke), Hegelianism (Eduard Zeller) and the multifarious “ideal-realism” movement including Überweg (influenced by Czolbe as he himself he was moving towards naturalism) and Trendelenburg.

³⁵ Cf. Beiser 2014b, ch. 8, pp. 328-355. For Köhnke, the whole generation of men who set up the “earliest Neo-Kantian programme” were “skeptics”. Not only Meyer but also Helmholtz, Rudolf Haym, Carl Prantl, Friedrich Überweg, grew increasingly skeptical with regards to the possible achievements of philosophy in knowledge, yet developed a definite philosophical point of view: this was surely the reason for their orientation towards a Neo-Kantian perspective understood as a skeptical one (Köhnke 1993, “Die ‘skeptische Generation’ der 1850er Jahre”, pp. 140-151, notably pp. 147-150).

³⁶ See Czolbe’s reference to Rokitanský in the following quote. On Carl von Rokitanský and his treatment of Kant, see Rumpel and Denk 2005; the index includes a Kant entry.

³⁷ In 1862 Carl von Rokitanský, who was then professor of pathological anatomy in Vienna, gave a speech about “freedom in natural science” while inaugurating the Pathological Anatomy Institute. One of the hindrances to such freedom, Rokitanský said, is the fear of seeing natural research leading to a materialistic world view. In response to such a fear he advised young scientists to study Kant: there they would learn that matter, the actual object of scientists’ research and experiments, is also no more than a phenomenon and not a thing-in-itself (see reports of this speech in the *Vierteljahrsschrift für die praktische Heilkunde* 1862, 4, p. 1-5; p. 2-3 on this matter).

at stake here? At the very least, this issue questions the relationships between transcendentalist and naturalistic claims.

We find interesting comments on this question in the essay that Hans Vaihinger, himself a future Neo-Kantian, devoted to “the three phases of Czolbe’s naturalism” in 1876.

It is not the power of natural scientific facts or the concept of philosophy itself (which logically excludes the incomprehensible because it wants to comprehend everything) that leads to the exclusion of all supersensory elements, as [Czolbe] thought in his first period, but on the most fundamental level, morality [...]. This new development is enlightening; it clearly shows that by plunging deeper into the history of philosophy, Czolbe had gained insight into the logical possibility of another method and started doubting whether everything could really be reduced to perceptible (*anschaulich*) representations and purely mechanical processes [...]. Obviously Kant had had an impact on Czolbe; it was not in vain that Czolbe had studied the *Critique of Pure Reason*; but whereas Kant wants to support God, freedom and immortality through a *moral* requisite, Czolbe’s moral standpoint is quite the reverse, compelling him to dismiss these three supersensory assumptions. (Vaihinger 1876, p. 17f.)

From Kant, Czolbe learnt to distinguish a *methodological and an ontological level* in the problem he was dealing with. So in his new phase, he still stuck to the rejection of the “supersensory”, but only on the methodological level: ontologically, he now recognized a “soul” (more exactly a “world soul”) as a second element in the world, alongside material “atoms”. This was a step out of materialism; yet in Czolbe’s comprehension he remained within the limits of naturalism: as in the ancient stoicism, these elements distinct from matter are still *included in nature (physis)*.³⁸

From today’s perspective we would perhaps include this position within the bounds of *broad naturalism*; Czolbe claimed to be reconciling the Kantian premisses with this broader understanding of naturalism: even the non-sensory elements of reality are part of nature.

Of course, it is also impossible to state that Czolbe’s views here *are*, indeed, Kantian ones ... and Czolbe himself is clear about still opposing Kant’s “things in themselves”, for instance.³⁹ But however different the result may be from Kant’s own system, Vaihinger suggests that the impact on Czolbe of studying Kant is obvious when he comes to the issue of the limits of our knowledge:

The vehement systematic thinker who wanted to submit everything to his comprehension without any doubts about his logical method, now appeals to moral feeling and contents himself with pointing out the limits of our knowledge. (Vaihinger 1876, p. 19)⁴⁰

³⁸ Which Hans Vaihinger already pointed out: Vaihinger 1876, p. 15. The reference to ancient stoicism is my addition.

³⁹ Vaihinger rightly explained that Czolbe converted Kant’s “negative” statements about the limits of our knowledge (“the world of appearances being the field of the only possible knowledge”) to “positive” ones: for Czolbe actually pointed out the elements which, *in* the world, also delimit our knowledge of it (Vaihinger 1876, p. 19). For Czolbe these elements are now: atoms, organic forms, the world soul; they are conceived of as independent one from another and at the same time in mutual mechanical interaction.

⁴⁰ Vaihinger also characterized Czolbe’s system as a “personal mix of a mechanical naturalism with a teleological dualism, which could also be referred to as a mechanical spiritualism” (*ibid.*, p. 3).

So, as I aimed to establish here: although their conclusions regarding naturalism are in radical opposition, both Czolbe and Lotze testify that one can use Kant's *critical* impulsion without endorsing a transcendental point of view in one's personal system.⁴¹

2.2. *A priori* without transcendental logic: the Lotzean argument against naturalism

My last point sets out to show how Lotze addressed Kant in an opposite way, that is, against naturalism, notwithstanding his only feature in common with Czolbe's approach: non-transcendentalist claims. But *why* appeal to Kant without any reference to transcendentalism? Obviously, that is something we unlearned due to the greater influence of "classical" Neo-Kantianism from Marburg and Bade.

Kant's transcendental point of view in philosophy implies, on the one hand, ontological realism as regards the existence of empirical beings as such, independent from the mind (his "refutation of idealism"); and on the other hand, epistemic idealism as regards our knowledge of these beings as objects. In this criticist version of idealism, the very constitution of objectivity in knowledge implies the effectivity of subjective acts; in principle, this undermines the relevance of the question "what are things in themselves?". *A priori* is the basis for objectivity, but as the logical frame of the human mind: thus, we have a transcendental logic on which to base a transcendental system of knowledge.

Yet, since Herbart, being a "realist" means more than ontological realism; it implies epistemic realism *as well*. The human mind is not confined to phenomena; or more exactly, its phenomenal knowledge also provides it with knowledge of what things *are*. What realism objects to, in principle, is the transcendental idea of an unbridgeable gap between phenomena and "real being". Herbart developed this idea thanks to the linking of mathematics with metaphysics. As for "scientific" ideal-realism, the option was a different one: with, so to say, the task-sharing between natural science (empirical epistemic realism) and metaphysics (ontological idealism in the sense of an overall teleological spiritualism) on the presupposition that: (a) each of them has its own methodological jurisdiction but (b) they are also connected insofar as the latter is the ultimate basis for the validity of the former.

⁴¹ Vaihinger points out the function of "final purposes" as "absolute limits of knowledge" in the 1865-Czolbe system (*ibid.*, p. 19): to my view this is precisely the key element that makes Lotze a "Kantian" in the very broadest sense of the term, notwithstanding his other non-Kantian assumptions both in logic and metaphysics. Czolbe-1865 and Lotze-1874 display other similarities as regards the external aspect of their claim that sensations, or at least sensations' contents, and the objective world constitute objective content. But whereas Lotze's conception of this statement is a logical one as I summarized above, Czolbe's is to be considered on the metaphysical level (cf. Vaihinger p. 19 again).

Within the global frame of this dual system of ideal-realism, and here namely *as a realist*, Lotze objects to any form of radical epistemic subjectivism. His claim is radical, since he objects in principle to contrasting a “world of representations” and a “world of things” (Lotze 1989b, ch. 1, § 312, p. 504.⁴² A key concept in his *Logic* is, instead, that of a “world of the thinkable (*Denkbare*)” (Lotze 1989b/1974, in particular: ch. 2, § 318)⁴³ – whose elements are “conceptions having [...] their own fixed and unchanging meaning”⁴⁴ (Lotze 1884, part III, chap. 3, § 313, trad. Bosanquet mod., p. 434), and their relationships. That is, the “content” which the logician must single out from amongst all of our representations, as its “objective” part, in contrast with its “subjective part”, “affection” (Lotze 1884, part III, chap. 2, § 314, p. 435);⁴⁵ such ideal content “continues to be what it is and to mean what it means whether we are conscious of it or not” (Lotze 1884, part I, chap. 1, § 2, p. 11)⁴⁶, which then also implies that transcendental logic is being dismissed. This is Lotze’s theoretical breakthrough, that will mean so much to Frege and young Husserl – not to mention others still: in identifying an inner content within our representations that *holds true (gilt)* without any subjective act being required, Lotze gives a key role to the *a priori* in a non-transcendental way.

It is well known that Lotze put forward a new reading of Plato’s “Ideas” to set up these conceptions (Lotze 1989b/1874 and 1884, part III, chap. 2 as a whole: “Die Ideenwelt”). But Kant is never far away: we just have to take a close look at the whole of Lotze’s third book in the *Logic*.⁴⁷ And there is a connection with our investigation: what Lotze presents us with there is *how a realism which refuses to be naturalism could well learn from Kant*.

Commenting on the context of Lotze’s “World of Ideas” chapter in *Logic*, the Husserl scholar Françoise Dastur pointed out how this section directly builds on one of Lotze’s anti-Kantian statements about the way to dismiss skepticism (cf. Lotze 1989b, chap. 1, § 312; Dastur 1994, pp. 41f.). Could we respond to skepticism by distinguishing between “appearances” and the “essence” of things? According to Lotze, this would leave us only with default knowledge - meaning that we would do better to object to this very distinction “between our world of ideas and a world of

⁴² For Lotze, such an opposition is ... the “prejudice” or the “fallacy” that we have to eliminate when it comes to dismissing any possibility of skepticism. (§ 311; trad. Bosanquet in Lotze 1884, p. 430).

⁴³ Cf. above p. 5, Lotze 1885, p. 151; Lotze 1989a/1874, part I, ch. 2, § 3.

⁴⁴ Lotze 1884, part III, chap. 2, § 313, trad. Bosanquet mod., p. 434; Lotze 1989b, p. 506: “*die Begriffe [...] ihren eignen festen und unveränderlichen Sinn haben*”.

⁴⁵ In this way, “a sensation or idea whose content has no fixed and determinate place, no fixed relations of affinity and difference in the universal world of thought, but stands in complete isolation, [as] the possession of a single individual mind alone, is in fact an impossibility”. (Lotze 1884, p. 443): “*Unmöglich ist es dagegen, dass ein einzelnes Subject etwas empfinde oder vorstelle, dessen Inhalt nicht in dieser allgemeinen Welt des Denkbaren seine bestimmte Stelle, seine Verwandtschaften und Unterschiede gegen Anderes en für allemal besässe.*” (Lotze 1989b, chap. 2, § 318, p. 515f.).

⁴⁶ The German text is slightly more specific at the end: “*gleichviel, ob unser Bewusstsein sich auf ihn richten oder nicht.*” (Lotze 1989a, chap. 1, § 2, p. 15).

⁴⁷ I already set this out in a French paper about Lotze, Kant and Plato; I summarize the key ideas here in order to connect it with our present investigation.

things” (Lotze 1884, III, chap. 1, § 312, pp. 431f.).⁴⁸ There is now room for Plato’s re-reading. Yet we should not read Lotze’s chapter 2 about Plato *without then* reading chapter 3 about “a priorism and empiricism”. Kant *is not dismissed* by Plato: he reappears *after* the “Platonic” second chapter with a very significant function regarding what has been gained in the first step. For what is at stake is the issue of natural science and its philosophical foundation in logic.

In § 320, Lotze addresses not only “ideas” but also “laws”: and it still remains to him “a profoundly mysterious fact” (“*ein Abgrund von Wunderbarkeit*”) “that there should be universal laws, which have not themselves existence like *things* and which nevertheless rule the operations of things” (Lotze 1884, III, chap. 3, § 320, p. 520, p. 446. My underlining). According to the last paragraph of chapter 2, Plato failed in one thing: Plato’s ideas logically present themselves in the form of concepts and not of *judgements*. But such are laws, which “rule the operations of things” on the phenomenal level and constitute as such the operator of *scientific knowledge* of things for human reason. There we find Kant back: he too “made the mistake at the outset of developing [the *a priori*] form of single concepts, the categories” (Lotze 1884, III, chap. 3, § 321, p. 448; Lotze 1989b, p. 521f.); but at least,

thereupon [he] followed up with the attempt to derive judgments from them again, and so he arrived at the ‘Principles of Understanding’. (Lotze 1884, p. 448)

In chapter 5, “The *A Priori* Truths”, Lotze is definitely clear about the ultimate use of these “contents” that were gained as “ideal” ones: the inner structure of the “world of thought”, as pure thought, “is not all that we desire to know” (this would be the Platonic Dialectic);

What we want to understand is the significance which is to be attached to this systematic* arrangement of the world of knowledge in relation to that empirical* and unsystematic order of events, in which a causal reality independent of thought presents contents of possible ideas to our perception. What we wish to understand is not only the *classification** of things, which is eternal, *but also the course* of things which is in movement*. (Lotze 1884, III, ch. 5, § 346, trad. mod., p. 497).⁴⁹

I assume that this corresponds to our knowledge of the natural world.⁵⁰ For Lotze, *apriorism* in the meaning of concepts and laws is the logical requirement for founding *natural science*, thus avoiding *naturalism’s* lack of logical consistency. This *aprioristic* claim is clearly of Kantian origin but, thanks to its Platonic “reelaboration”, it dismisses the transcendentalist claim in logic just as clearly.

⁴⁸ Lotze 1989b, pp. 503f.: “*Lassen wir gänzlich den Gegensatz unserer Vorstellungswelt zu einer Welt der Dinge beiseite.*”

⁴⁹ Lotze 1989b, p. 574. Asterisks: Lotze’s underlining; italics: my underlining.

⁵⁰ For further support of this interpretation, see, for instance, § 321 in chapter 2 (Lotze 1884, p. 447; Lotze 1989b, p. 520): “As concerns Aristotle’s criticism [of Plato’s Ideas] let us turn to the sciences of our own day. What shall we say of our laws of Nature? Do they contain in themselves a beginning of motion? On the contrary, they all presuppose a series of data which they cannot themselves establish, but from which, *once given*, the necessary connexion one with another of the phenomena which ensue is deducible.”

Conclusion

Contrary to the position of the Marburg and Bade schools, to Lotze's view it is not the transcendentalist claim that proves to be the convenient perspective in order to counter naturalism. And from this a significant consequence is to be derived: there is no more risk of "naturalizing the transcendental", as in Helmholtz's or Lange's approach to Neo-Kantianism. Consequently, this broad reading of both Lotze and Czolbe invites us, as was my purpose, to reconsider what *exactly* in Kant's system is conflicting with naturalism.

For Lotze, a first answer could have been the identification of the ideal thought frame with a *teleological* structure. But in Czolbe's writings, this is not relevant anymore: Czolbe too accepts teleological structures, whilst at the same time siding with naturalism.⁵¹

Then we may stress the role of logic in natural science. Lotze's non-naturalistic understanding of the validity of science is based upon the central role assigned to logic to that purpose. By contrast, Czolbe's naturalism (among others) takes no interest in a logical perspective. That is also the reason why what is at stake here is not ontological, but methodological naturalism – the latter being dismissed by Lotze on the basis of *a priori* claims.

In Lotze's case, the distinctions pointed out by Joel Smith and Peter Sullivan as regards "transcendental idealism" and "transcendental arguments" seem effective (2011, pp. 2-5). In particular, if we adopt Kant's own elucidation of what a "transcendental philosophy is", there is no objection to classifying Lotze in this group: "I call all cognition transcendental that is occupied not so much with objects but rather with our mode of cognition of these objects insofar as this is possible *a priori*. A system of such concepts would be called transcendental philosophy" (Kant 1787, introduction, VII, AA III, 43). As a matter of fact, this does not necessarily imply the claim of transcendental idealism as "the doctrine that [appearances] are altogether to be regarded as mere representations and not things in themselves" (Kant 1781, "Kritik des vierten Paralogismus der transcendentalen Psychologie", AA IV, 232). And indeed, as we saw, this is a claim that Lotze does not accept. Within the set of Kant's philosophical claims, Lotze singles out *apriorism* as the specific and central element suited to dismiss naturalism. And in his logical perspective this does *not* imply transcendental idealism nor transcendental logic.

⁵¹ See Czolbe 1865, p. VII: in his own words his new system expresses "the principles of a naturalistic-teleological mechanicism"; p. VI: "the unity of the world" "does not consist in a primary substance [...] but in its final ends or ideals": which means a "teleology" producing "unity within diversity or the world's harmony".

This reading of 19th-century writers who took a stand on naturalism allows me to conclude with the following remarks:

1. The contemporary labels distinguishing different forms of naturalism prove to be relevant for this prior period in the history of the problem, just as they were in the context in which they were coined. The second version of Czolbe's naturalistic system is a "broad naturalism", which sharply contrasts with the scientific materialism at stake with Büchner, Vogt and Moleschott a decade earlier: this latter matching, on the contrary, the features defining a "strict naturalism".

2. As regards the respective positions of naturalism and transcendental claims, I think this historical inquiry allows us to expand our understanding of the contemporary issue. Since our authors refer to Kant in some respects but not to his general philosophical stance, it is up to us to accurately discriminate in which *different* respects transcendental claims are involved *or not* in objecting to the methodological stance of naturalism. This imperative is useful for us : will the apriorism claim (see Kant's definition of transcendental philosophy above), or rather "transcendental idealism" (with its corresponding claim that a transcendental logic constitutes objectivity on the basis of subjective acts, and the assumption of appearances departing from "things in themselves"), take precedent in our own investigation?

And lastly: this attests that such a debate was already underway long before 21st-century philosophers began to consider the issue.

REFERENCES

[Anonymous] (1856). *Wissenschaftliche Beleuchtung des Materialismus. Zur Streitfrage: existiert eine Seele oder ist die Geistestätigkeit Gehirnfunktion*, Darmstadt, Jonghaus, 1856; Julius Frauenstädt, *Der Materialismus, seine Wahrheit und sein Irrtum. Eine Erwiderung auf Dr. Louis Büchner's „Kraft und Stoff“* (Leipzig: Brockhaus).

Baldwin, James Mark (1902), *Dictionary of Philosophy and Psychology*, vol. 2 (London and New York: MacMillan).

Bayertz, Kurt (2007). 'Was ist moderner Materialismus?', in Kurt Bayertz, Myriam Gerhard and Walter Jaeschke (eds.). *Weltanschauung, Philosophie und Naturwissenschaft im 19. Jahrhundert*, (Hamburg: Meiner), pp. 50-70.

Bayertz, Kurt, Gerhard, Myriam and Jaeschke, Walter (eds.) (2007). *Weltanschauung, Philosophie und Naturwissenschaft. Vol. 1, Der Materialismus-Streit* (Hamburg: Meiner).

Bayertz, Kurt, Gerhard, Myriam and Jaeschke, Walter (eds.) (2012). *Der Materialismus-Streit. Texte von L. Büchner, H. Czolbe, L. Feuerbach, I. H. Fichte, J. Frauenstädt, J. Froschammer, J. Henle, J. Moleschott, M. J. Schleiden, C. Vogt und R. Wagner* (Hamburg: Meiner).

Beiser. Frederick (2013). *Late German Idealism: Trendelenburg and Lotze* (Oxford: Oxford University Press).

Beiser. Frederick (2014a). *After Hegel. German Philosophy 1840-1900* (Princeton: Princeton University Press).

Beiser. Frederick (2014b). *The Genesis of Neo-Kantianism 1796-1880* (Oxford: Oxford University Press).

Breilmann, Hedwig (1925). *Lotzes Stellung zum Materialismus unter besonderer Berücksichtigung seiner Controverse mit Czolbe. Inaugural-Dissertation.* (Telgte in Warendorf: J. Hansen).

Czolbe, Heinrich (1855). *Neue Darstellung des Sensualismus* (Leipzig: Costenoble).

Czolbe, Heinrich (1855a). "Die Elemente der Psychologie vom Standpunkte des Materialismus", *Zeitschrift für Philosophie und philosophische Kritik* 26: 91-109. Reproduced in: Bayertz, Kurt, Gerhard, Myriam and Jaeschke, Walter (eds.) (2012). *Der Materialismus-Streit. Texte von L. Büchner, H. Czolbe, L. Feuerbach, I. H. Fichte, J. Frauenstädt, J. Froschammer, J. Henle, J. Moleschott, M. J. Schleiden, C. Vogt und R. Wagner* (Hamburg: Meiner), p. 135-154.

Czolbe, Heinrich (1856). *Die Entstehung des Selbstbewusstseins. Eine Antwort an Herrn Professor Lotze* (Leipzig: Costenoble).

Czolbe, Heinrich (1865). *Die Grenzen und der Ursprung der menschlichen Erkenntnis im Gegensatze zu Kant und Hegel. Naturalistisch-teleoogische Durchführung des mechanischen Principis* (Leipzig: Costenoble).

Dastur, Françoise (1994). "Husserl, Lotze et la logique de la 'validité'", *Kairos* 5: 31-48.

De Caro, Mario (2014). "Two forms of non-reductive naturalism", *Phenomenology and Mind* 7: 54-62.

Fichte, Immanuel Hermann (1854a), "Die Seelenlehre des Materialismus, kritisch untersucht. Erster Artikel", *Zeitschrift für Philosophie und philosophische Kritik* 25, 58-77.

Fichte, Immanuel Hermann (1854b), "Die Seelenlehre des Materialismus, kritisch untersucht. Zweiter Artikel", *Zeitschrift für Philosophie und philosophische Kritik* 25, 169-179.

Fortlage, Karl (1857), "Materialismus und Spiritualismus? Dritter Artikel", *Blätter für literarische Unterhaltung* (Leipzig), 19, May 7, pp. 337-347.

Fortlage, Karl (1858), "Materialismus und Spiritualismus? Vierter Artikel", *Blätter für literarische Unterhaltung* (Leipzig), 12, March 18, pp. 205-215.

Goetz, Stewart, and Taliaferro, Charles (2008). *Naturalism* (Grand Rapids, Michigan and Cambridge, UK: W. Eerdmans Publishing Company).

Gregory, Frederick (1977). *Scientific Materialism in Nineteenth Century Germany* (Dordrecht and Boston: D. Reidel).

Hartung, Gerald (2017). 'Friedrich Albert Lange et l'histoire critique du matérialisme', in Charlotte Morel (ed.), *L'Allemagne et la querelle du matérialisme (1848-1866). Une crise oubliée ?* (Paris : Classiques Garnier), pp. 155-171.

Hatfield, Gary (1990). *The Natural and the Normative. Theories of Spatial Perception from Kant to Helmholtz* (Cambridge, Mass. and London: The MIT Press).

Helfferich, Adolf (1857). *Die neuere Naturwissenschaft, ihre Ergebnisse und ihre Aussichten* (Triest: Literarisch-artist. Abtheilung des österr. Lloyd).

Herzog, Johann Jakob (ed.) (1854-1866). *Real-Encyclopädie für protestantische Theologie und Kirche* (Stuttgart and Hamburg: Besser).

Herzog, Johann Jakob (ed.) (1858). *Real-Encyclopädie für protestantische Theologie und Kirche*, vol. 9 (Stuttgart and Hamburg: Besser).

Holzey, Helmut (1975). 'Philosophische Kritik. Zum Verhältnis von Erkenntnistheorie und Sozialphilosophie bei F. A. Lange', in Joachim H. Knoll and Julius H. Schoeps (eds). *Friedrich Albert Lange. Leben und Werk* (Duisburg: Braun; *Duisburger Forschungen* vol. 21), pp. 207-225.

Holzhey, Helmut (2011). "Idéalisme et matérialisme. Hermann Cohen, sur Friedrich Albert Lange", *Revue de métaphysique et de morale*, 69 (1): p. 7-17.

Kant, Immanuel (1998/1781/1787). *Kritik der reinen Vernunft*, ed. J. Timmermann (Hamburg: Meiner).

- Kant, Immanuel (1998). *Critique of pure reason*, ed. P. Guyer and A. W. Wood (Cambridge: Cambridge University Press).
- Köhnke, Klaus-Christian (1986/1993). *Entstehung und Aufstieg des Neukantianismus. Die deutsche Universitätsphilosophie zwischen Idealismus und Positivismus* (Frankfurt am Main: Suhrkamp).
- Knoll, Joachim H. and Schoeps, Julius H. (eds) (1975). *Friedrich Albert Lange. Leben und Werk* (Duisburg: Braun; *Duisburger Forschungen* vol. 21).
- Kühne-Bertram, Gudrun (2000). 'Zum Begriff 'Materialismus' in der zweiten Hälfte des 19. Jahrhunderts', in Andreas Arndt and Walter Jaeschke (eds.), *Materialismus und Spiritualismus. Philosophie und Wissenschaft nach 1848* (Hamburg: Meiner).
Lange, Friedrich Albert (1866). *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart* (Iserlohn: Baedeker).
- Lange, Friedrich Albert (1875). *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart. Zweite, verbesserte und vermehrte Ausgabe. Zweites Buch. Geschichte des Materialismus seit Kant* (Iserlohn: Baedeker).
- Lange, Friedrich Albert (1887). *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart*, ed. H. Cohen (Iserlohn and Leipzig: Baedeker).
- Lange, Friedrich Albert (1925/1877, 1880, 1881). *The History of Materialism and Criticism of its Present Importance*, 3 vol., trans. E. C. Thomas. (London: Trübner and Boston: James R. Osgood). Third edition 1925 with an introduction by Bertrand Russell (London: K. Paul, Trench, Trubner & Co, and New York: Harcourt, Brace & Co.).
- Ley, Hermann (1975). 'F. A. Langes 'Geschichte des Materialismus'', in Joachim H. Knoll and Julius H. Schoeps (eds). *Friedrich Albert Lange. Leben und Werk* (Duisburg: Braun; *Duisburger Forschungen* vol. 21), pp. 174-187.
- Lotze, Rudolf Hermann (1838). *De futurae biologiae principis philosophicis*, Diss. med. (Leipzig: Breitkopf und Härtel).
Reproduced in Lotze (1885), pp. 1-25.
- Lotze, Rudolf Hermann (1842). 'Leben. Lebenskraft', in Rudolph Wagner (ed.). (1842). *Handwörterbuch der Physiologie, mit Rücksicht auf physiologische Pathologie*, vol. 1, p. IX-LVII (Braunschweig: Vieweg); reproduced in Lotze (1885), pp. 139-220.
- Lotze, Rudolf Hermann (1842/1848). *Allgemeine Pathologie und Therapie als mechanische Naturwissenschaften* (Leipzig: Weidmann).
- Lotze, Rudolf Hermann (1844), 'Instinkt', in Rudolph Wagner (ed.). *Handwörterbuch der Physiologie, mit Rücksicht auf physiologische Pathologie*. Vol. 2 (Braunschweig: Vieweg); reproduced in Lotze (1885), pp. 221-250.
- Lotze, Rudolf Hermann (1846), 'Seele und Seelenleben', in Rudolph Wagner (ed.). *Handwörterbuch der Physiologie, mit Rücksicht auf physiologische Pathologie*. Vol.3.1 (Braunschweig: Vieweg); reproduced in Lotze (1886), pp. 1-204.
- Lotze, Rudolf Hermann (1851). *Allgemeine Physiologie des körperlichen Lebens* (Leipzig: Weidmann).
- Lotze, Rudolf Hermann (1852). *Medicinische Psychologie oder Physiologie der Seele* (Leipzig: Weidmann).
- Lotze, Rudolf Hermann (1855). "Recension von Heinrich Czolbe, *Neue Darstellung des Sensualismus, ein Entwurf* (Leipzig 1855)", *Göttingische Gelehrte Anzeigen* 153-155: 1521-38. Reproduced in Lotze (1891), pp. 238-250.
- Lotze, Rudolf Hermann (1989a/ 1874). *Logik. Erstes Buch. Vom Denken*, ed. G. Gabriel (Hamburg: Meiner).
- Lotze, Rudolf Hermann (1989b/ 1874). *Logik. Drittes Buch. Vom Erkennen*, ed. G. Gabriel (Hamburg: Meiner).
- Lotze, Rudolf Hermann (1884). *Logic in Three Books: Of Thought, Of Investigation, and Of Knowledge*, ed./trans. B. Bosanquet (Oxford: Clarendon Press).
- Lotze, Rudolf Hermann (1885). *Kleine Schriften*. Vol. 1 (Leipzig: Hirzel).
- Lotze, Rudolf Hermann (1886). *Kleine Schriften*. Vol. 2 (Leipzig: Hirzel).
- Lotze, Rudolf Hermann (1891). *Kleine Schriften*. Vol. 3 (Leipzig: Hirzel).
- McDowell, John Henry (2004). "Naturalism in the Philosophy of Mind", in Mario De Caro and David Macarthur (eds.). *Naturalism in Question* (Cambridge, Mass./London, Harvard Univ. Press) , 2004, pp.91-105.

Meyer. Jürgen Bona (1856). *Zum Streit über Leib und Seele. Worte der Kritik. Sechs Vorlesungen am Hamburger akademischen Gymnasium* (Hamburg: Perthes-Besser und Mauke).

Meyer, Jürgen Bona (1856a), "Zum neuesten Stand des Streites über Leib und Seele 1. Kann die Materie denken?", *Deutsches Museum*, 49: December 4, 826-834.

Meyer. Jürgen Bona (1856b), "Zum neuesten Stand des Streites über Leib und Seele. 2. Die Lehre von der Willensfreiheit im Materialismus und Idealismus", *Deutsches Museum*, 51: December 18, 906-916.

Meyer, Jürgen Bona (1857c), "Zum neuesten Stand des Streites über Leib und Seele. 3. Willensfreiheit und Sittlichkeit", *Deutsches Museum*, 10: March 5, 345-358.

Meyer, Jürgen Bona (1857d), "Zum neuesten Stand des Streites über Leib und Seele. 4. Über den Sinn und Werth des Kritizismus", *Deutsches Museum*; 11: March 12, 395-402.

Morel, Charlotte (ed.) (2017). *L'Allemagne et la querelle du matérialisme (1848-1866). Une crise oubliée ?* (Paris: Classiques Garnier).

Papineau, David (2016/2007). "Naturalism", in Edward N. Zalta (ed.). *The Stanford Encyclopedia of Philosophy* (Winter 2016 Edition), URL = <<https://plato.stanford.edu/archives/win2016/entries/naturalism/>>.

Pester. Reinhard. *Hermann Lotze. Wege seines Denkens und Forschens. Ein Kapitel deutscher Philosophie- und Wissenschaftsgeschichte im 19. Jahrhundert* (Würzburg: Königshausen & Neumann).

Rumpler, Helmut and Denk Helmut (eds) (2005). *Carl Freiherr von Rokitansky (1804-1878): Pathologe - Politiker – Philosoph - Gründer der Wiener Medizinischen Schule des 19. Jahrhunderts; Gedenkschrift zum 200. Geburtstag* (Wien, Köln and Weimar: Böhlau).

Sass, Hans-Martin (1975). 'Der Standpunkt des Ideals als kritische Überwindung materialistischer und idealistischer Metaphysik', in Joachim H. Knoll and Julius H. Schoeps (eds). *Friedrich Albert Lange. Leben und Werk* (Duisburg: Braun; *Duisburger Forschungen* vol. 21), p. 188-206.

Seidengart, Jean (2017), 'Entre matérialisme et idéalisme, une nouvelle alliance est-elle possible dans la philosophie de Friedrich A. Lange?', in Charlotte Morel (ed.), *L'Allemagne et la querelle du matérialisme (1848-1866). Une crise oubliée ?* (Paris : Classiques Garnier), pp. 173-192.

Smith, Joel and Sullivan, Peter (eds) (2011). *Transcendental Philosophy and Naturalism* (Oxford: Oxford University Press).

Silesius. Eduard [Eduard von Badenfels] (1849). *Der moderne Materialismus in seiner Nichtigkeit und Erbärmlichkeit ; oder : Karl Vogt, der Physiolog der Frankfurter Nationalversammlung, ein für alle Mal aus dem Tempel der Philosophie hinausgeworfen* (Leipzig: Teubner).

Überweg, Friedrich (1859). "Über Idealismus, Realismus und Idealrealismus", *Zeitschrift für Philosophie und philosophische Kritik* (ed. I. Fichte and H. Ulrici), 1859, 34: 63-80.

Vaihinger, Hans (1876). "Die drei Phasen des Czolbe'schen Naturalismus. Vortrag im philosophischen Verein in Leipzig", *Philosophische Monatshefte* 12: 1-31.

Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag (1862), 4: 1-5.
Wagener, Hermann (ed.) (1859-1867). *Neues Conversations-Lexicon. Staats- und Gesellschaftslexicon* (Berlin: Heinicke).

Wagener Hermann (ed.) (1863). *Neues Conversations-Lexicon. Staats- und Gesellschaftslexicon*, vol. 13 (Berlin: Heinicke).

Wagner, Rudolph (ed.) (1842–1853). *Handwörterbuch der Physiologie, mit Rücksicht auf physiologische Pathologie* (Braunschweig: Vieweg).

Woodward. William (2015). *Hermann Lotze. An Intellectual Biography* (New York: Cambridge University Press).