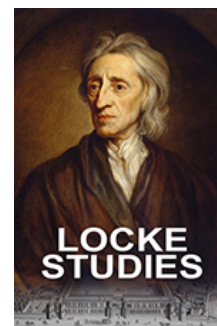


Locke Studies

"Wholly Useless and Unserviceable to Knowledge" Locke's Practical Case Against Species Realism

David Wörner



Volume 23, 2023

URI: <https://id.erudit.org/iderudit/1099978ar>

DOI: <https://doi.org/10.5206/ls.2023.8331>

[See table of contents](#)

Publisher(s)

Western Libraries at The University of Western Ontario

ISSN

1476-0290 (print)

2561-925X (digital)

[Explore this journal](#)

Cite this article

Wörner, D. (2023). "Wholly Useless and Unserviceable to Knowledge": Locke's Practical Case Against Species Realism. *Locke Studies*, 23, 1–29.
<https://doi.org/10.5206/ls.2023.8331>

Article abstract

In this paper I examine Locke's criticism of the view that some species of natural objects are determined by real essences, a view I call species realism. Most commentators have focused either on Locke's putative objections to the realist's claim that species determining real essences exist or on his semantic case against the assumption that our species terms can refer to real essences that determine species. I identify another objection, which, I argue, is independent from both of these lines of criticism. This objection is essentially practical. It is based on the claim that adopting species realism has detrimental practical consequences: it undermines, Locke believes, our ability to sort particular natural objects into species. This alone, he argues, is already sufficient to set aside and ignore species realism when trying to sort objects into species.

© David Wörner, 2023



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

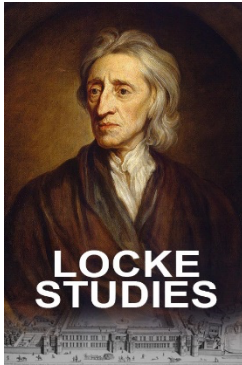
<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>



LOCKE STUDIES

Vol. 23

<https://doi.org/10.5206/lis.2023.8331> | ISSN: 2561-925X

Submitted: 30 September 2019

Revised: 3 February 2022

Published online: 29 APRIL 2023

For more information, [see this article's homepage](#).

© 2023. David Wörner.

“Wholly Useless and Unserviceable to Knowledge”: Locke’s Practical Case against Species Realism

DAVID WÖRNER (UNIVERSITY OF ZURICH)

Abstract:

In this paper I examine Locke’s criticism of the view that some species of natural objects are determined by real essences, a view I call *species realism*. Most commentators have focused either on Locke’s putative objections to the realist’s claim that species determining real essences *exist* or on his semantic case against the assumption that our species terms can *refer* to real essences that determine species. I identify another objection, which, I argue, is independent from both of these lines of criticism. This objection is essentially practical. It is based on the claim that adopting species realism has detrimental practical consequences: it undermines, Locke believes, our ability to sort particular natural objects into species. This alone, he argues, is already sufficient to set aside and ignore species realism when trying to sort objects into species.

Keywords: Locke, species realism, real essence

Locke Studies is published by [Western Libraries at The University of Western Ontario](#).

This is an open access article published under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International](#) license, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and shared under the original license.

1. Introduction

A central thesis of John Locke's *Essay concerning Human Understanding* is that “Men make sorts of Things” (III.vi.35) and that the “the essences of the sorts of things,” therefore, are “the Workmanship of the Understanding” (III.iii.12).¹ As Locke understands this thesis, it primarily concerns species for which we have names: our species terms, such as “gold,” “horse,” or “man,” he believes, are names of species we have created.² We have created these species because individual objects belong to them in virtue of bearing the right sort of relation to our ideas: whether an individual piece of matter belongs to the species *gold*, say, exclusively depends on whether it “conforms” to the abstract complex idea to which the term “gold” is annexed. Such ideas—which Locke calls *nominal* essences—are things we have created by combining and abstracting simple ideas. Locke opposes his own view to one on which species membership is a matter of what he calls *real* essences: whether a piece of matter belongs to the species we call “gold,” on this alternative view, exclusively depends on whether it possesses an alleged, mind-independent real essence. Call the thesis that at least some of our species terms are names of species that are in this sense determined by real essences *species realism*, or *realism* for short.

In interpreting Locke's criticism of species realism, some commentators focus on Locke's qualms with the assumption that there *are* real essences of the sort the realist needs. Among these authors, some, such as Michael R. Ayers,³ argue that Locke rejects this assumption because he takes it to be incompatible with the corpuscular hypothesis, while others urge that Locke's criticism of the assumption does not depend on any alleged commitment to corpuscularism.⁴ Still others, and most prominently, Martha Brandt

¹ In what follows, references to the *Essay* are to John Locke, *An Essay concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Clarendon, 1975), and are given in the standard form. If no contrary indication is given, emphases in texts quoted from Locke are his own.

² Throughout this paper, I use “species,” “sort,” and “kind” interchangeably.

³ See Michael R. Ayers, “Locke Versus Aristotle on Natural Kinds.” *The Journal of Philosophy* 78, no. 5, (May 1981): 247–72, <https://doi.org/10.2307/2025955>; cf. Michael R. Ayers, *Locke: Epistemology and Ontology*, vol 2, *Ontology* (London: Routledge, 1991), chap. 6. Other proponents of such a reading include Roger Woolhouse, *Locke's Philosophy of Science and Knowledge* (Oxford: Blackwell, 1971); Nicholas Jolley, *Leibniz and Locke: A Study of the New Essay on Human Understanding* (Oxford: Clarendon Press, 1984); Nicholas Jolley, *Locke: His Philosophical Thought* (Oxford: Oxford University Press, 1999); and Peter Alexander, *Ideas, Qualities and Corpuscles* (Cambridge: Cambridge University Press, 1985).

⁴ There are significant differences among authors who have put forward readings falling in this category. Some focus on Locke's observation that even if we knew an object's internal constitution, we could not identify its species-determining real essence without recourse to ideas; for such readings, see Pauline Phemister, “Real Essences in Particular,” *Locke Newsletter* 21 (December 1990): 27–55; P. Kyle Stanford, “Reference and Natural Kind Terms: The Real Essence of Locke's View,” *Pacific Philosophical Quarterly* 79, no. 1 (December 1998): 78–97; and Robert Pasnau, *Metaphysical Themes 1274–1671* (Oxford: Clarendon Press, 2011), pt. 6, chap. 27.7, 658–660. Judith Crane argues that Locke's anti-realism derives from his claim that individuals do not have essential properties apart from our ideas. See Judith Crane,

Bolton and Paul Guyer,⁵ argue that Locke's main objection to species realism is not directed against the idea that the real essences at issue *exist* at all, but against the thesis that we can have *names* for species determined by real essences, whether they exist or not.

This latter, semantic line of criticism of species realism rests on two important premises, both of which figure prominently in Locke's discussion of real essences: first, that we do not *know* real essences, and second, that we could have *names* for species determined by real essences only if we *did* know the real essences at issue. The first of these premises expresses a view Locke shares with most of his realist contemporaries. The second premise, by contrast, marks a radical break with views on reference widely accepted among Locke's more traditionally minded peers. As Bolton points out, this break with tradition is rooted in a crucial feature of Locke's theory of ideas: the fact that Locke "is unlike other important early modern philosophers in holding that possession of the idea of a kind ensures knowledge of what determines the boundary of the kind."⁶ This idea-theoretic basis of Locke's semantic criticism of species realism renders it highly innovative, but also *ineffective* if viewed from the vantage point of his contemporary opponents: a species realist who believes, as most early modern species realists do, that we can have names for species even if we do not know what determines their boundaries has no reason to find the criticism persuasive.

However, as I shall argue in this paper, Locke exploits the widely shared admission that real essences are unknown in order to articulate another line of criticism of species realism that presupposes *neither* that real essences of the sort the realist needs do not exist *nor* that we cannot have names for species if we do not know what determines their boundaries. This criticism is of an essentially *practical* nature. It is based on the claim that, due to our ignorance of real essences, adopting species realism undermines our ability to make informed judgments about which species include which natural objects. As I argue in what follows, Locke believes that this detrimental consequence *alone* would provide sufficient ground to set aside and ignore species realism even if the sort of real essences at issue existed and even if we could have names for them. I shall call Locke's argument to this effect the *impracticability objection* to species realism.

In section 2, I characterize species realism and the notion of real essence it is based on in more detail. In section 3, I examine Locke's claim that we do not and cannot know real

"Locke's Theory of Classification," *British Journal for the History of Philosophy* 11, no. 2 (2003): 249–59, <https://doi.org/10.1080/0960878032000104859>. Jan-Erik Jones maintains that Locke's skepticism about causation leads him to discard any notion of a (corpuscular) real essence that is particular to a species. See Jones, "Locke on Real Essences, Intelligibility, and Natural Kinds," *Journal of Philosophical Research* 35 (2010): 147–71, https://doi.org/10.5840/jpr_2010_12.

⁵ Martha Brandt Bolton, "The Relevance of Locke's Theory of Ideas to His Doctrine of Nominal Essence and Anti-Essentialist Semantic Theory," in *Locke*, ed. Vere Chappell, 214–25 (Oxford: Oxford University Press, 1998); Paul Guyer, "Locke's Philosophy of Language," in *The Cambridge Companion to Locke*, ed. Vere Chappell (Cambridge: Cambridge University Press, 1994), 115–45.

⁶ Bolton, "Relevance of Locke's Theory," 224.

essences and offer a brief outline of how this claim, based on the readings championed by Bolton and Guyer, provides Locke with a semantic objection to species realism. In section 4, I introduce Locke's impracticability objection, argue that it does not rely on the semantic considerations highlighted by Guyer and Bolton, and address two realist replies. In sections 5 I introduce a further, important difficulty for the impracticability objection. I offer a solution to the difficulty by refining the proposed reading of the target of the impracticability objection in section 6.

2. Species Realism and Real Essences

The notion of a real essence takes center stage for species realism. As we shall see in more detail below, Locke speaks of real essences in different senses. He introduces the core component all these senses have in common in the *Essay* at III.iii.15, where he writes that the word "essence" in the sense of *real* essence stands for "the very being of any thing, whereby it is, what it is." In what follows, I shall focus exclusively on the real essences of "substances"—that is, roughly, the real essence of natural objects such as animals, plants, and quantities of chemical stuff. Such a real essence, Locke goes on to tell us, is "the real internal, but generally in Substances, unknown Constitution of Things, whereon their discoverable Qualities depend" (III.iii.15). Importantly, the idea that there are real essences in this core sense does not yet carry any commitment to species realism. Rather, Locke introduces species realism as one of two "opinions" about real essences.⁷ This opinion, he writes,

is of those, who using the Word *Essence*, for they know not what, suppose a certain number of those Essences, according to which, all natural things are made, and wherein they do exactly every one of them partake, and so become of this or that *Species*. (III.iii.17)

Even though the position Locke characterizes here includes no mention of language, Locke closely associates it with a view about the semantics of species terms. To see why, it is helpful to note that Locke has told the reader a few paragraphs before the quoted passage that "to be of any Species, and to have a right to the name of that Species, is all one" (III.iii.12). In a less elegant but slightly more familiar terminology, we may put the point in terms of the *correct* application of a species term: for an object to belong to a given species, Locke maintains, is the same as for the object to be such that the name of the species may be *correctly* applied to it.⁸ For an individual animal to be a dog, say, just

⁷ The other "opinion," which Locke considers "more rational," is widely taken to be his own view of how real essences are related to nominal ones and species terms, which I discuss in more detail in section 6 below.

⁸ This contention might strike the reader as blatantly implausible—could an object not belong to a species for which we lack a name? We need not assume that the contention in question rules out a positive answer. For keep in mind that Locke's interest, all through the relevant chapters of the *Essay*, is with species

is for the species term “dog” to correctly apply to it. Given this background assumption, the “opinion” about real essence becomes equivalent to a thesis about species terms: it expresses, as Locke puts it in a later passage, the view of those who “have supposed a real Essence belonging to every Species . . . and *would have their name of the Species stand for that*” (III.vi.49; my emphasis). This view is about what species terms “stand for” or refer to in the sense of what makes it correct to apply a species term to an object—a view about what gives an object the “right to the name” of the species:

R Some species terms *refer* to real essences in the sense that an object’s having the real essence *makes it correct* to apply the species term to it.⁹

In the following two sections, I will exclusively focus on Locke’s criticism of this semantic thesis, and I shall reserve the label “species realism” for it.¹⁰ Thus understood, Locke and the species realist disagree about what determines whether or not a species term can be correctly applied to an individual and, in the same vein, about what determines whether or not it belongs to a given species. The species realist maintains that, at least in some cases, this role is played by real essences, which, the species realist insists, are entities that have not been created by human beings. Locke, in contrast, holds that the only things playing this role are nominal essences, which are products of the mind. This is the core contrast that will be at issue in what follows. Let me add two clarificatory notes.

First, while **R** presupposes that there are at least some real essences, it is not wedded to any particular physical hypothesis about the *nature* of real essences. It is true that most scholars believe that Locke takes the “opinion” of real essences described in the quote from III.iii.17 given above to be the scholastic doctrine of substantial forms. And Locke indeed in various places closely associates species realism with that doctrine. It is not clear, however, that Locke takes species realism to be inseparably connected to the scholastic approach; he rather appears to treat the scholastic approach as one particularly

for which we have names: with regard to *such* a species, I venture, the claim that belonging to it and having a “right” to its name is the same thing, is at least not *patently* wrong.

⁹ **R** is a view about what species terms *refer* to; I have chosen this formulation because Locke, as we have seen, sometimes writes that the species realist holds that some species terms “stand for” real essences. I have also followed Locke in calling species terms “names” of species. Since we usually assume that names name what they refer to, this might seem to entail that, for the species realist, species *are* real essences. However, in what follows, I will not assume that the species realist is committed to this claim, and rather, I will say that the species realist takes some species to be *determined* by real essences. I take the sense of “refer” at issue in **R** to be restricted to the very particular one explained in **R**: species terms “refer” to real essence in the sense that an object’s having a real essence determines whether or not it is correct to apply a species term.

¹⁰ Of course, this is not to say that Locke *only* criticizes the species realist’s semantic claims nor that his troubles with the realist’s semantics are the only ones worth investigating.

unpromising version of species realism.¹¹ There certainly is conceptual space for non-scholastic versions of **R**. One might suggest, for example, that the real essences that determine species membership are configurations of insensible material parts together with their causal connections to observable qualities. Importantly, it is plausible, as Jan-Erik Jones has argued, that Robert Boyle endorses such an approach.¹² If so, Locke's criticism of species realism is plausibly directed, at least in part, at Boyle's version of the view. Even on such a reading, to be sure, there is still the question of whether Locke intends his characterization in the quoted passage to cover a corpuscularian version of species realism as well.¹³ I do not want to take a stance on this question here. For at any rate the line of criticism I focus on in what follows does not hinge on the assumption that Locke's target is spelled out in scholastic or corpuscularian terms. I will address some of the interpretative issues involved in the question below, in sections 5 and 6. For the moment, species realism may be taken to cover any view along the lines of **R**, *whatever* physical hypothesis is employed to further spell out the notion of real essence.

The second preliminary note is terminological. When I speak of *real essences* in the following two sections, I mean real essences in the sense the *species realist* employs. As already indicated above, there is a sense—or several senses—in which Locke accepts the claim that there are real essences,¹⁴ and I again shall have more to say about these notions

¹¹ In III.x.20, for example, Locke argues that species realism causes “a great deal of Uncertainty in Men's Discourses; *especially* in those, who have thoroughly imbibed the Doctrine of substantial Forms, whereby they firmly imagine the several Species of Things to be determined and distinguished” (my emphasis); compare also II.xxxi.6.

¹² See Jan-Erik Jones, “Boyle, Classification and the Workmanship of the Understanding Thesis,” *Journal of the History of Philosophy* 43, no. 2 (April 2005): 171–83, <https://doi.org/10.1353/hph.2005.0117> and Jan-Erik Jones, “Locke vs. Boyle: The Real Essence of Corpuscular Species,” *British Journal for the History of Philosophy* 15, no. 4 (2008): 659–84, <https://doi.org/10.1080/09608780701604955>. Jones's reading of Boyle goes against the once widely held idea championed, among others, by Ayers, that Boyle anticipated to some extent Locke's thesis that species are the workmanship of the understanding. *Ontology*, chap. 6, Pasnau, who also reads Boyle as a realist, has further pointed out that other non-scholastic seventeenth century authors, including Pierre Gassendi and the authors of the *Port-Royal Logic*, endorse species realism. *Metaphysical Themes*, pt. 6, chap. 27.6, 652–653.

¹³ For the suggestion that the “first opinion” about real essences can be given a generic reading that entails no commitment to the doctrine of substantial forms, see Jonathan Bennett, *Learning from Six Philosophers*, vol. 2, *Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume* (Oxford: Oxford University Press, 1991), chap. 26. Christopher H. Conn has argued that the first “opinion” about real essence characterized in the quoted passage is *exclusively* a corpuscularian one. *Locke on Essence and Identity* (Dordrecht, NL: Kluwer Academic Publishers, 2003). See Jones, “Locke vs. Boyle,” for criticism of that reading.

¹⁴ After all Locke points out to Edward Stillingfleet that “I easily grant there is reality in them; and it was from that reality that I called them real essences.” “A Letter to the Right Rev. Edward Lord Bishop of Worcester, concerning Some Passages Relating to Mr. Locke's Essay of Human Understanding, in a Late Discourse of His Lordship's in Vindication of the Trinity,” in vol. 4 of *The Works of John Locke*, new ed. corrected (London, 1823), 83.).

in sections 5 and 6. For the moment, the notion of real essence that matters is the one endorsed by the species realist: the notion of something that both causally accounts for an object's observable qualities and determines its species membership.¹⁵

3. Our Ignorance of Real Essences and Locke's Semantic Criticism of Species Realism

A central claim of Locke's discussion of species realism is that we do not, and cannot, *know* real essences. Locke's reasons for the claim are familiar: first of all, we cannot observe real essences; accordingly, if we knew anything about them, we could do so only by way of a hypothesis (see *Essay*, III.vi.9, for example). The doctrine of substantial forms, Locke believes, offers no help at all, as substantial forms are "wholly unintelligible" (III.vi.10). Corpuscularism fares better, but also falls short of knowledge.¹⁶ And even if we did know the corpuscular hypothesis to be true, it would leave unexplained crucial aspects of real essences, such as the coherence of matter or the ways in which primary qualities cause secondary ones.¹⁷ In sum, then, we barely know anything about real essences apart from their being the causal structures on which an object's observable qualities depend.

¹⁵ Another point that eventually needs clarification concerns the role of a real essence as giving rise to an object's observable qualities. The role may be fleshed out in two different ways: the realist may maintain either that all of an object's observable qualities depend on its real essence accounts or that only *some* of them do. I think that Locke takes the realist to make the former claim; see section 6 below.

¹⁶ For a discussion of how limited Locke takes the explanatory potential of the corpuscular hypothesis to be, see Margaret D. Wilson, "Superadded Properties: The Limits of Mechanism in Locke," *American Philosophical Quarterly* 16, no. 2 (April 1979): 133–50, <https://www.jstor.org/stable/20009751>; Jones, "Locke on Real Essences"; and Jan-Erik Jones, "Lockean Real Essences and Ontology," *Southwest Philosophy Review* 32, no. 2 (July 2016): 137–62, <https://doi.org/10.5840/swphilreview201632246>. What is more, as several commentators have argued, Locke does not *endorse* the hypothesis anyway; see Wilson, "Superadded Properties"; Lisa Downing, "The Status of Mechanism in Locke's *Essay*," *The Philosophical Review* 107, no. 3 (July 1998): 381–414, <https://doi.org/10.2307/2998443>; Marleen Rozemond and Gideon Yaffe, "Peach Trees, Gravity and God: Mechanism in Locke," *British Journal for the History of Philosophy* 12, no. 3 (2004): 387–412, <https://doi.org/10.1080/0960878042000253079>; Jones, "Locke on Real Essences" and "Lockean Real Essences."

¹⁷ See Susanna Goodin, "Why Knowledge of the Internal Constitution Is Not the Same as Knowledge of the Real Essence and Why This Matters," *Southwest Philosophy Review* 14, no 1, (January 1998): 149–55, <https://doi.org/10.5840/swphilreview199814117> and Jones, "Locke on Real Essences" and "Lockean Real Essences." Compare also Michael Jacovides, *Locke's Image of the World* (Oxford: Oxford University Press, 2017), chap. 4. In this context, it is important to note that Locke assumes that we would be in a position to "deduce" all the qualities that depend on a given real essence if we knew it. See *Essay*, II.xxi.6. Knowing an object's real essence, therefore, is more demanding than merely knowing the intrinsic features of its internal make-up: it also must provide knowledge of how the object's observable qualities depending on the real essence come about. Compare again Goodin "Not the same." See also Margaret Atherton, "Locke on Essences and Classification," in *The Cambridge Companion to Locke's "Essay concerning Human Understanding"*, ed. Lex Newman, 258–85 (Cambridge: Cambridge University Press); Jones, "Lockean Real Essences"; Rozemond and Yaffe, "Peach Trees"; and Stanford, "Reference and Natural Kind Terms."

It is important to note from the outset that this epistemic claim, on its own, does not refute species realism. The species realist claims that some of our species terms refer to real essences, not that we can know real essences. On its own, therefore, Locke's epistemic pessimism about real essences is compatible with species realism. And as Robert Pasnau has emphasized, the standard view of the mainstream scholastic authors of Locke's period—at least some of which we can plausibly assume he is familiar with—is *also* that we cannot know the (real) essences of substances.¹⁸ The conjunction of species realism with epistemic pessimism about real essences, therefore, is not a mere conceptual possibility but a position which should be altogether familiar to Locke and his contemporaries. If Locke believes that the fact that we do not or cannot know real essences is a problem for species realism, he should supply some additional reason as to why this should be so.

As Bolton and Guyer argue, one such reason can be found in Locke's semantics of species terms and the theory of ideas on which this semantics is based.¹⁹ Locke's semantics of species terms rests on his central thesis that words immediately signify ideas only. While the interpretation of Locke's notion of signification is subject to scholarly debate,²⁰ what matters for our purposes is only that Locke apparently takes the thesis to

There is an additional epistemic problem for a version of species realism on which an object's real essence is taken to account for some but not all of the object's observable qualities. Locke argues that given such a view we would not even be able to identify the object's real essence even if we know its internal constitution and the ways in which its constitution accounts for the object's observable qualities. For we would still lack a criterion by reference to which we could decide which parts of its constitution belong to the object's real essence; see *Essay* III.vi.39 for this argument.

¹⁸ Pasnau writes that the “the standard scholastic approach was to treat both substantial form and prime matter as theoretical postulates. Not one – not even those who are most optimistic about our grasp of the natures of things – thought that our knowledge of these metaphysical parts is anything other than highly schematic. It was a scholastic commonplace, for instance, to remark that we do not know the nature even of a fly.” *Metaphysical Themes*, pt. 6, chap. 27.3, 640; cf. Pasnau, *Metaphysical Themes*, pt. 2, chap. 7.3–7.4, 124–34. In line with Pasnau's observation, for instance, Franco Burgersdijk, whose characterization of substance Locke quotes (see Locke, *Works*, 4:8, 449), writes that we know neither the essences of corporeal nor of incorporeal substances. See, *Institutionum logicarum libri duo* (Amsterdam, 1659), 2:47.

¹⁹ Bolton, “Relevance of Locke's Theory”; Guyer, “Locke's Philosophy of Language.”

²⁰ Several authors have stressed that this thesis must be understood against the backdrop of a traditional usage of “signification” and its cognates. See Jennifer Ashworth, “Do Words Signify Ideas or Things? The Scholastic Sources of Locke's Theory of Language,” *Journal of the History of Philosophy* 19, no. 3 (July 1981): 299–326, <https://doi.org/10.1353/hph.2008.0250>; Jennifer Ashworth, “Locke on Language,” *Canadian Journal of Philosophy* 14, no. 1, (March 1984): 45–73, <https://doi.org/10.1080/00455091.1984.10716368>; Guyer, “Locke's Philosophy of Language”; and Walter Ott, *Locke's Philosophy of Language* (New York: Cambridge University Press, 2004). On the reading championed by Ashworth and Guyer, words signify *what they make* known; on Ott's influential reading, they signify what they “indicate.” These readings differ in important respects, but we need not enter this debate here.

entail a certain conception of the correct application of species terms. Locke presents this conception in a somewhat convoluted passage in the *Essay*'s chapter on general terms:

The having the Essence of any Species, being that which makes any thing to be of that Species, and the conformity to the Idea, to which the name is annexed, being that which gives a right to that name, the having the Essence, and the having that Conformity, must needs be the same thing: Since to be of any Species, and to have a right to the name of that Species, is all one. (III.iii.12; see also III.vi.7)

An individual has the right to the name of species in virtue of “conforming” to the idea the name signifies or is “annexed” to.²¹ And for an individual object to belong to a species just is for the object to have a right to the name of the species. Thus, the object belongs to the species in virtue of conforming to the idea that name signifies. The idea a species term is annexed to is what Locke calls a nominal essence.²² Hence, whether a given object belongs to a certain species is determined by whether it conforms to the nominal essence to which the name of the species is annexed. An individual dog belongs to the species *dog*, for instance, in virtue of conforming to the nominal essence the word “dog” signifies.

This semantic conception alone does not yet rule out species realism. For the species realist may admit that objects belong to species by virtue of conforming to a nominal essence, but propose that some nominal essences are *ideas of* species determined by real essences. Suppose, for example, that the idea to which we annex the word “dog” is such that it represents dogs as having a certain real essence. Presumably, then, individual dogs would conform to this idea by having the real essence the idea represents. This idea of the species *dog*—which, we suppose, is the nominal essence to which we annex the term “dog”—would then be an idea of a *species determined by a real essence*. But then, given Locke's own semantics, an individual dog would belong to the species *dog* in virtue of conforming to this idea and, therefore, in virtue of having the real essence in question. **R** would be vindicated in spite of Locke's semantics for species terms.

Of course, this realist proposal presupposes that we can *acquire* ideas of species determined by real essences. On Bolton's reading, this is the point at which Locke's pessimism about our knowledge of real essences becomes crucial: “if we do not know what an (actual or purported) real essence is,” Bolton's Locke maintains, “then we cannot have an idea of the kind determined by it.”²³ This *epistemic requirement on possession of the idea of a species* results, on Bolton's reading, from a principle that lies at the heart of

²¹ For an in-depth discussion of Locke's relevant notion of “conformity,” see Timothy Pritchard, “Locke and the Primary Signification of Words: An Approach to Word Meaning,” *British Journal for the History of Philosophy* 21, no. 3 (2013): 486–506, <https://doi.org/10.1080/09608788.2013.771611>.

²² Bennett maintains that a nominal essence, for Locke, is the set of qualities represented by the idea a species term signifies. *Learning from Six Philosophers*, 2:98. For criticism of this reading, see Matthew Stuart, *Locke's Metaphysics* (Oxford: Oxford University Press, 2013), §20.

²³ Bolton, “Relevance of Locke's Theory,” 219.

Locke's theory of ideas as immediate objects of the mind:²⁴ the principle that ideas cannot be different from how they are immediately perceived to be.²⁵ Suppose we had an idea of the species *dog*, as determined by an alleged real essence of dogs. This idea would have to be such that individual objects conform to it by having the real essence in question. For this to be the case, the idea would have to represent dogs as bearers of certain qualities that make up the real essence of dogs. In order to represent dogs as bearers of these qualities, the idea would have to be composed out of simple ideas of these qualities. Since we do not know the qualities making up the alleged real essence of dogs, however, we do not know which, if any, simple ideas represent these qualities. Thus, we would not know the component ideas making up the idea of the species in question: we would not know which simple ideas the alleged idea of the species *dog* as determined by the real essence of dogs includes. But since we immediately and fully perceive our own ideas, they cannot be composed of such hidden components. Therefore, we cannot have ideas of species determined by unknown real essences.²⁶

This consideration provides a straightforward and clear way of bridging the gap between Locke's epistemic pessimism about real essences and his rejection of species realism. An object's possession of a given real essence could determine its species membership only if we had an idea of the species determined by this real essence. But, given Locke's theory of ideas as immediate objects of the mind, our ignorance of real essence prohibits us from having such an idea. Therefore, the object's possession of the real essence does not determine its species membership. **R** is false.

Locke appears to have precisely this line of argument in mind when he charges the realist of rendering species terms meaningless. Lacking ideas of species determined by real essence, he argues, species realists merely "put the name or sound, in the place and stead of the thing having that real Essence" (III.vi.49) and "make our Words the signs of nothing" (III.x.21): since we cannot have ideas of species determined by real essences, we cannot endow species terms with any *meaning* at all.

I here do not want to question the basic interpretation of Locke's semantics and theory of ideas on which Guyer's and Bolton's readings rest.²⁷ What I do want to challenge is the

²⁴ Guyer's reading differs from Bolton's in this regard; according to Guyer the epistemic requirement at issue derives from Locke's view that words have no "natural meanings." "Locke's Philosophy of Language," 119, Still, Guyer's and Bolton's reading are compatible as far as I can see.

²⁵ For some passages in which Locke makes this or closely related claims, see *Essay*, I.ii.5, II.xxix.5, IV.i.4, IV.ii.1, IV.iii.8, 543–44, IV.vi.4, IV.vii.4, 592, and IV.vii.10.

²⁶ This consideration, to be sure, raises the difficulty of how Locke can hold that talk of real essences is nonetheless meaningful enough for Locke's own claims about real essences to remain meaningful; for a proposal as to how to solve the difficulty, see Ott, *Locke's Philosophy of Language*, 105–7.

²⁷ This being said, I have argued in Wörner, *Im Namen der Dinge* (Basel, Schwabe, 2019), 39–68, and Wörner, "Locke on Fixing Ideas," *Archiv für Geschichte der Philosophie* 103, no. 3 (September 2021): 481–500, <https://doi.org/10.1515/agph-2018-0101>, that Locke in some cases allows for an idea to be an idea of a given species even if the idea's components do not determine the qualities of which possession is necessary

idea that the semantic consideration just outlined is, as Bolton claims, “the key to Locke’s position” on why our ignorance of real essences should make us abandon species realism.²⁸ For Locke has another powerful reason to think that this ignorance is problematic for the realist.

Before discussing this additional reason, it is worthwhile to note that the semantic consideration highlighted by Bolton and Guyer would not be acceptable to most of Locke’s realist contemporaries. Some of these authors would reject Locke’s core semantic thesis that words immediately signify ideas only and, thus, would reject the basic assumption on which his semantics of species terms rest. But even these authors would likely concede that we can use a species term meaningfully only if we have an idea or concept of the species in question.²⁹ The most contentious premise of the semantic consideration, rather, is the epistemic requirement to the effect that we can have an idea or concept of a species determined by a real essence only if we know the real essence in question. As mentioned above, late scholastic authors would typically be prepared to accept a far-ranging skepticism about our knowledge of real essences, but they, of course, would not infer from this that we cannot meaningfully use species terms that refer to real essences: they would allow for us to have concepts of species determined by real essences even if we

and sufficient for belonging to the kind. I here lack the space to justify this thesis in more detail, and given that the basic premises of Bolton’s reading are widely accepted, I do not want to predicate my own reading on a controversial claim such as this. For some authors endorsing the claim that the components of the idea of a species determine the conditions of membership of the species, see Lionel Shapiro, “Toward ‘Perfect Collections of Properties’: Locke on the Constitution of Substantial Sorts,” *Canadian Journal of Philosophy* 29, no. 4 (December 1999): 551–93, <https://doi.org/10.1080/00455091.1999.10715991>; Samuel C. Rickless, *Locke* (Chichester, UK: Wiley Blackwell, 2014), 147; and Kenneth Winkler, “Locke on Essence and the Social Construction of Kinds,” in *A Companion to Locke*, ed. Matthew Stuart, 212–35 (Chichester, UK: Wiley Blackwell, 2016). For a line of criticism of the claim at issue that is different from mine, compare Margaret Atherton, “The Inessentiality of Lockean Essences,” *Canadian Journal of Philosophy* 14, no. 2 (June 1984): 277–93, <https://doi.org/10.1080/00455091.1984.10716382>.

²⁸ Bolton, “Relevance of Locke’s Theory,” 219.

²⁹ While the authors at issue agreed about this, they disagreed about whether words *primarily* signify ideas/concepts or things. See Ashworth “Do Words Signify Ideas” and “Locke on Language.”

do not know these real essences.³⁰ Similarly, as Bolton stresses,³¹ early modern rationalists such as Descartes, Malebranche, and, most clearly, Arnauld, maintain that we can have an idea of a species even if we do not know what determines membership in it—such an idea would just be a *confused* rather than a *distinct* one. Most prominently, Gottfried Wilhelm Leibniz holds that we can have confused ideas of things whose definitions we cannot give.³²

In Bolton's eyes, the fact that Locke's epistemic requirement on idea possession diverges from the mainstream of his time helps explain how he could arrive at a radically novel conception of the species of natural objects. But note that this fact also significantly weakens his semantic criticism of species realism, at least as viewed from the vantage point of his contemporaries: from this perspective, the criticism cannot be effective. One might, with Ayers, take this observation as a reason to focus instead on Locke's metaphysical criticism of species realism, that is, on his alleged arguments to the effect that the real essences to which the realist appeals do not in fact exist.³³ Here I want to pursue a different approach. For as I shall argue now, Locke uses his epistemic pessimism about real essences as part of an objection to species realism that does *not* presuppose that we can have ideas of species only if we know what determines membership in them.

4. The Impracticability Objection

In the very paragraph in which Locke introduces species realism, he puts forward two objections. The first is an empirical one that is presumably aimed at the assumption that species-determining real essences exist. The objection is that animals do not come in neatly distinguishable species: rather, “monsters” and “strange Issues of humane Birth”

³⁰ One scholastic author who explicitly discusses the question of how we can refer to things we do not know is the Polish Jesuit Marcin Śmiglecki. Śmiglecki argues that all we need in order to refer to something is a confused apprehension or concept of it; one that need not convey knowledge of what its object is. *Logica* (Ingolstadt, DE: Eder, 1618), 2:15. This conception shows that what an author like Śmiglecki would deny in Locke's semantic criticism of species realism is the epistemic requirement discussed above. It is noteworthy that it is highly plausible that Locke was aware of Śmiglecki's views on these issues: according to John R. Milton, Locke recommended two works on logic by Śmiglecki to his students for purchase. Milton, “The Scholastic Background to Locke's Thought,” *The Locke Newsletter* 15 (December 1984): 25–34. Ashworth has also pointed out that some of Locke's statements about signification appear to echo passages in Śmiglecki's discussion. Ashworth, “Do Words Signify Ideas,” 307, 311–318, and “Locke on Language,” 62–63.

³¹ Martha Brandt Bolton, “The Epistemological Status of Ideas: Locke Compared to Arnauld,” *History of Philosophy Quarterly* 1, no. 4 (October 1992): 409–24, <https://www.jstor.org/stable/27744035>.

³² See Gottfried Wilhelm Leibniz, “Meditationes de Cognitione, Veritate et Ideis,” in vol. 4 of *Die Philosophischen Schriften von Gottfried Wilhelm Leibniz*, ed. C. I. Gerhardt, 422–26 (Berlin: Weidmannsche Buchhandlung, 1880).

³³ Ayers argues that Locke's true quarrel with species realism is with its metaphysical underpinnings and that “Locke's ideational theory of meaning draws at least as much support from the attack on Aristotle as it gives to it.” “Locke Versus Aristotle,” 249.

exhibit some but lack other traits characteristic of a given species (*Essay*, III.iii.17).³⁴ The second objection, which I want to focus on in what follows, is that the supposition at the heart of species realism is “useless”:

But were there no other reason against it, yet the *supposition of Essences, that cannot be known*; and the making them nevertheless to be that, which distinguishes the Species of Things, is so *wholly useless*, and unserviceable to any part of our Knowledge, that that alone were sufficient, to make us lay it by; and content ourselves with such *Essences* of the Sorts or Species of Things, as come within the reach of our Knowledge. (III.iii.17)

Call this objection the *impracticability objection*. The impracticability objection has not received separate and sustained attention in the literature. Perhaps this is because the objection seems obvious to modern readers: surely, one might think, there is no use in postulating species-determining real essences if we cannot know these essences. But note that this point plausibly would not seem obvious to Locke’s realistically minded contemporaries. And, on closer inspection, the content and force of the objection should also not be obvious to us. For it raises at least two questions. First, what *exactly* is it about the supposition of unknowable species determining essences that makes it useless, on Locke’s view? Second, why and in what sense does he consider the uselessness of the supposition to be sufficient to “lay it by”? These questions do not, I submit, have *obvious* answers.

Another reason scholars have not given separate attention to the impracticability objection may be that it seems altogether natural to see it as a mere corollary of Locke’s semantic criticism of species realism introduced above: Locke calls species realism “useless,” this reading goes, *because* it requires our species terms to have a signification they cannot have. But note that this reading does not easily fit the quoted passage. If this reading were correct, Locke’s point would be that realism is *false* and *therefore* useless. But, first, Locke claims in the passage, not that species realism is false, but that we should “lay it by”: we should *set it aside* or *ignore* it when using species terms to classify objects. And second, he does not argue that the supposition should be set aside because it can be discarded for *independent* reasons, but that the supposition should be set aside *because* it is useless.

So why—if not because it is false—is the supposition useless? The answer I wish to propose is that Locke holds that the supposition is useless because adopting it makes it impossible for us to make informed judgments about whether or not a given individual

³⁴ Pinpointing why exactly Locke thinks that such deviant specimens are problematic for species realism is not a trivial matter; the most convincing readings of these considerations, in my mind, are those provided by Pasnau, *Metaphysical Themes*, pt. 6, chap. 27.2 and Phemister, “Real Essences in Particular.”

belongs to a given species. Adopting species realism, in other words, undermines our ability to *apply* species terms to individuals.³⁵

One text that supports this reading is at III.vi.50, where Locke considers two senses one might give to the statement “All gold is fixed”:

§50. For let us consider, when we affirm, that all *Gold* is fixed, either it means that Fixedness is part of the Definition, part of the nominal Essence the Word *Gold* stands for; [...] Or else it means, that Fixedness . . . is a Property of that Substance it self; in which case, it is plain, that the Word *Gold* stands in the place of a Substance, having the real Essence of a Species of Things, made by Nature.

With Locke’s semantic criticism of species realism in mind, one might expect him to proceed by arguing that the realist’s understanding of the statement renders the statement meaningless as “gold” cannot be a name of a species determined by an unknown real essence. But this is not the objection he goes on to make. He continues:

In which way of Substitution, it has so confused and uncertain a signification, that though this Proposition, *Gold is fixed*, be in that sense an Affirmation of something real; yet ’tis a Truth will always fail us in its particular Application, and so is of no real Use nor Certainty. For let it be never so true, that all *Gold*, i.e. all that has the real Essence of *Gold*, is fixed, What serves this for, whilst we know not in this sense, what is or is not *Gold*? For if we know not the real Essence of *Gold*, ’tis impossible we should know what parcel of Matter has that Essence, and so whether it be true *Gold* or no. (III.vi.50)

At least for the sake of argument, Locke appears prepared to assume that we can meaningfully use the term “gold” in the way the realist envisions—after all, he writes that the statement that all gold is fixed, on the realist’s understanding, is an “Affirmation of something real.” His point is that even if the statement understood in this way were meaningful—and even if it were true—it could not convey knowledge of *particular* objects. For even then, he argues, our ignorance of real essences would preclude us from identifying individual “parcels of Matter” as belonging to the species *gold*. This is why our purported knowledge of the purported general fact is pointless.

In III.x.21, Locke argues that the realist is committed to the false assumption that we have ideas of real essences. This claim may seem to be part of a reiteration of the semantic criticism, but again Locke does not draw on semantic considerations in the passage at issue. Species realism, he writes,

³⁵ Note that this is not merely a restatement of Locke’s claim that we cannot know real essences, for one may hold—and as we shall see below, some of Locke’s contemporaries have held—that we can make informed judgments about whether a given individual belongs to a certain species even if we do not know what makes the individual belong to the species.

tacitly also insinuates, as if we had *Ideas* of these proposed Essences. For to what purpose else is it, to enquire whether this or that thing have the real Essence of the Species *Man*, if we did not suppose that there were such a specific Essence known? Which yet is utterly false: And therefore such Application of names, as would make them stand for *Ideas* which we have not, must needs cause great Disorder in Discourses and Reasonings about them, and be a great inconvenience in our Communication by Words.

As before, the problem is that species realism renders the use of species terms pointless: since we do not know—and thus lack ideas of—real essences, we are unable to bring enquiries about species membership to an end if we suppose species to be determined by real essences. Again, this problem in no way depends on the requirement that words can be names of species only if we know what determines membership to the species. It only depends on the observation that making our species terms refer to things we cannot know has detrimental *practical* consequences for our use of these terms.

Other arguments which may seem to be iterations of Locke's semantic criticism appear in a different light if viewed against the backdrop of this reading. After having emphasized in III.vi.7–8 that only the ideas to which species terms are annexed determine species boundaries, Locke begins III.vi.9 by arguing: "Nor indeed *can we* rank, and *sort Things*, and consequently (which is the end of sorting) denominate them *by their real Essence*, because we know them not." He concludes the paragraph with the statement that, due to our ignorance of real essences, we "in vain pretend to range Things into sorts, and dispose them into certain Classes, under Names, by their *real Essences*, that are so far from our discovery or comprehension." Bolton maintains that this consideration is an application of Locke's semantic criticism and that the argument he puts forward in this passage is one to the effect that we cannot rank things in accordance with their real essences because our species terms cannot refer to real essences.³⁶ But note that this reading unnecessarily complicates matters. On the reading I propose, Locke's argument is the more direct one that species realism *betrays the point of sorting* objects into species as it undermines our ability to know which individuals belong to which species. This is *already* sufficient, he argues, to set the view aside. This argument does not depend on and, I submit, is superior to Locke's semantic criticism of species realism.

Let me briefly address two possible realist replies before moving on to what I take to be the most pressing difficulty for the impracticability objection.

One way in which the realist may attempt to vindicate her position is simply by rejecting the idea that a thesis about what determines the correct application of species terms must heed the *practical* demands of everyday life or even of science. Leibniz, for one, expresses some reservation about the relevance of such practical considerations. Consider the complaint Leibniz lets his spokesman in the *New Essays* make about Locke's epistemic and practical arguments against species realism:

³⁶ "Relevance of Locke's Theory," 219.

I don't know why you and your associates always want to make virtues, truths and species depend upon our opinion or knowledge. They are present in nature, whether or not we know it or like it. To talk of them in any other way is to change the names of things, and to change accepted ways of speaking, without any cause.³⁷

Perhaps Leibniz would insist against the impracticability objection that species terms refer to real essences *whether we like it or not*, whether or not the fact that they refer to real essences is useful to us. Such a position, of course, is worlds apart from Locke's, as he famously writes in the *Essay's* "The Epistle to the Reader" that his ambition is merely "*to be employed as an Under-Labourer in clearing Ground, and removing some of the Rubbish, that lies in the way to Knowledge*" (10). Since the impracticability objection depends on a view of the role of philosophy such as this one, we might say that it does, in a sense, beg the question against certain species realists. But it does so only because it reflects a methodological approach that has been part and parcel of a transformation of both philosophy and science that is characteristic of the advent of modernity.

A second realist rejoinder focuses on Locke's move from the claim that we cannot know real essences to the charge that species realism undermines our ability to sort objects into species. On the standard, realist view among scholastic authors, we *are* able to make informed judgments about whether a given species term applies to a given individual object even though we do not know the object's real essence. For we can, such authors insist, apply species terms on the basis of the observable *propria* or, to use the term Locke employs, the "*Properties*" of natural objects.³⁸ A natural object's *Properties* are observable qualities it has in virtue of its real essences, qualities that "flow from" its real essence.³⁹ As long as we know the *Properties* a given object has, the present proposal goes, we can know what species it belongs to even if we are ignorant of its real essences. Thus, the realist argues, our ignorance of real essences does not jeopardize our ability to sort natural objects into species—and the impracticability objection fails.

Locke explicitly considers this reply when he writes that, in view of our ignorance of real essences, "the only imaginable help . . . would be, that having framed perfect complex *Ideas* of the *Properties* of things, flowing from their different real Essences, we should thereby distinguish them into *Species*" (III.vi.19). He goes on to offer the following objection:

³⁷ Gottfried Wilhelm Leibniz, *New Essay on Human Understanding*, trans. and ed. Peter Remnant and Jonathan Bennett (Cambridge: Cambridge University Press, 1996), 327.

³⁸ Compare the discussion of this scholastic reply in Ayers, *Ontology*, chap. 6.

³⁹ For a more detailed discussion of Locke's notion of *Property*, see Michael Jacovides, "Locke on the *Propria* of Body," *British Journal for the History of Philosophy* 15, no. 3, (2007): 485–511, <https://doi.org/10.1080/09608780701444923>.

But neither can this be done: for being ignorant of the real Essence it self, it is impossible to know all those Properties, that flow from it, and are so annexed to it, that any one of them being away, we may certainly conclude, that that Essence is not there, and so the Thing is not of that *Species*. We can never know what are the precise number of Properties depending on the real Essence of *Gold*, any one of which failing, the real Essence of Gold, and consequently Gold, would not be there, unless we knew the real Essence of Gold it self, and by that determined that *Species*. (III.vi.19)

We only know that an object has a certain real essence if it has *all* the *Properties* the real essence gives rise to, as the absence of any one such *Properties* entails the absence of the real essence. In order to have a criterion sufficient for having, say, the real essence of gold, we would therefore need a *complete* list of the *Properties* of gold. But we could only know such a list to be complete if we had some criterion at our disposal to tell if a given observable quality flows from the real essence of gold or not. Since we cannot know real essences, however, we lack such a criterion. Appealing to *Properties*, Locke therefore concludes, is no help in trying to sort objects in accordance with their real essences. So far, then, the impracticability objection remains pressing.

5. A Difficulty with the Impracticability Objection

This is not to say that the impracticability objection is without problems. One difficulty in particular threatens to undermine it, a difficulty that arises even within the context of Locke's own philosophical picture. To see the problem, note first of all that in order to classify objects in accordance with their real essences, we need *not* be able to know real essences. We only need to be in a position to make informed judgments about whether or not different objects have the *same* real essence. If we have this ability, we may introduce species terms by way of a sample—we may, for instance, introduce the term “dog” by singling out a sample animal—and then apply the term only to objects that have the same real essence as the sample. If we can re-identify real essences, therefore, the impracticability objection loses its force.

One may justify the idea that we indeed are able to re-identity real essences on the basis of an assumption Jones calls the *top-down similarity thesis*⁴⁰ and which I shall label **T** for short:

T Ceteris paribus, similarities in observable qualities indicate similarities in the internal constitutions on which these qualities depend.⁴¹

⁴⁰ Jones, “Locke on Real Essences,” 149.

⁴¹ The “ceteris paribus” clause (which Jones omits) is needed because many, if not all, observable properties of an object partly depend on conditions apart from the object's internal constitution, such as air

If we say that such similarities in internal constitutions correspond to a common real essence, we may infer from **T** that the presence of similar observable qualities indicates the presence of the same real essence. A realist who endorses **T** can concede that we lack a *complete* list of the *Properties* flowing from real essences and that we are sometimes wrong when we conclude that things with observable similarities share a common internal constitution. For she may admit that our way of sorting things has, at best, a *provisional* status.⁴² This realist can yet insist that we are not *totally* in the dark when sorting things into species determined by real essences: based on **T**, we can tentatively but plausibly tell whether different objects share the same real essence.⁴³

What would Locke reply to this realist proposal? Jones argues that Locke rejects **T**,⁴⁴ and there are several passages which seem to support such a reading. For example, Locke criticizes the supposition that

Nature works regularly in the Production of Things, and sets the Boundaries to each of those *Species*, by giving exactly the same real internal Constitution to each individual which we rank under one general name. (III.x.20)

His objection to the supposition is that

anyone who observes their different Qualities can hardly doubt, that many of the Individuals, called by the same name, are, in their internal Constitution, as different one from another as several of those which are ranked under different specific Names. (III.x.20)

In the same vein, Locke in an earlier passage recounts the “sad Experience” of chemists who “sometimes in vain, seek for the same Qualities in one parcel of Sulphur, Antimony, or Vitriol, which they have found in others” (III.vi.8). The differing parcels conform to the same nominal essence, so the same species term is applied to them; “yet,” Locke goes on in the same paragraph, “they often, upon severe ways of examination, betray Qualities so different one from another, as to frustrate the Expectation and Labour of very wary Chymists.” Had the parcels the *same* real essence, such surprises could not occur.

pressure, lighting conditions, and so on; Locke, at any rate, emphasizes this in *Essay*, IV.vi.11. In what follows, I leave out the clause for the sake of brevity.

⁴² Compare Leibniz’s statement that when trying sort things in accordance with their “inner truth,” “[i]t is true that we cannot judge accurately, for lack of knowledge of the inner nature of things; but, [...] we judge provisionally and often conjecturally.” *New Essays*, 325.

⁴³ Jolley, for one, thinks that this is one regard in which Leibniz’s position on species is superior to Locke’s. Jolley argues that Leibniz reasonably allows that “it may not always be possible for us to say whether a particular substance belongs to a certain kind,” while Locke is “committed to saying that this must be an easy matter.” *Leibniz and Locke*, 152. The impracticability objection, however, does not require that judgements about species membership be *easy*.

⁴⁴ See Jones, “Locke on Real Essences.”

In other passages, however, Locke appears surprisingly *confident* about **T**:

Nature makes many particular Things, which do agree one with another, in many sensible Qualities, and probably too, in their internal frame and Constitution.
(III.vi.36)

In his correspondence with Stillingfleet, Locke even claims that it is “impossible” for things to conform to the same nominal essence yet to differ with regard to the constitution on which this conformity depends:

[W]hilst the same specific name, *v.g.* of man, horse, or tree, is annexed to, or made the sign of the same abstract, complex idea, under which I rank several individuals, it is impossible but the real constitution on which that unaltered complex idea, or nominal essence, depends, must be the same: *i.e.* in other words, where we find all the same properties, we have reason to conclude there is the same real, internal constitution, from which those properties flow.⁴⁵

Passages such as these have led a majority of commentators to conclude that Locke thinks it likely that different individual substances conforming to the same nominal essence share aspects of their internal constitutions.⁴⁶

Against these authors, Jones argues that Locke has a strong reason to deny **T**, a reason sufficient to make us read the passages just quoted in non-obvious ways.⁴⁷ His reading is founded on Locke’s claim that we cannot know *how* secondary qualities result from internal constitutions: “Since knowledge of the necessary connections between the ideas of secondary qualities and the physical constitution is impossible,” Jones writes, “it follows that, as far as we know, similarity in real constitution does not guarantee similarity in observable qualities.”⁴⁸ Jones calls the thesis at issue here the *bottom-up similarity thesis*, and I shall label it **B** for short:

⁴⁵ Locke, *Works*, 4:91.

⁴⁶ These commentators include Ayers, *Locke, Onology*, chap. 6; Dan Kaufman, “Locke on Individuation and the Corpuscular Basis of Kinds,” *Philosophy and Phenomenological Research* 75, no. 3 (October 2007): 499–534, <https://doi.org/10.1111/j.1933-1592.2007.00091.x>; David Owen, “Locke on Real Essences,” *History of Philosophy Quarterly* 8, no. 2 (April 1991): 105–18, <https://www.jstor.org/stable/27743968>; Phemister, “Real Essences in Particular”; Matthew Stuart, “Locke on Natural Kinds,” *History of Philosophy Quarterly* 16, no. 3 (July 1999): 277–96, <https://www.jstor.org/stable/27744822>; Stuart, *Locke’s Metaphysics*, §24; Woolhouse, *Locke’s Philosophy of Science*; and John W. Yolton, *Locke and the Compass of Human Understanding* (New York: Cambridge University Press, 1970).

⁴⁷ Jones argues that Locke’s use of “probably” in the first passage quoted indicates hesitation and that Locke, in the second quoted passage, adopts a view he ascribes to Stillingfleet merely for the sake of argument. Jones, “Locke on Real Essences,” 152.

⁴⁸ Jones, “Locke on Real Essences,” 162.

B Ceteris paribus, similarities in internal constitution result in observable similarities.

If Locke does not accept **B**, Jones plausibly reasons, he surely also does not accept **T**: if Locke denies that similarities in internal constitution give rise to observable similarities, then he surely also denies that similarities in observable qualities indicate similarities in internal constitution.

The problem with Jones's reading, however, is that Locke, despite his skepticism about the explanation of secondary qualities, appears to presuppose **B** in various places. As we have seen, he argues in III.x.20 that anyone who observes the differences in observable qualities among things ranked under the same kind can "hardly doubt" that there are also differences in the internal constitutions of these things. And Locke insists in III.iii.17 and III.vi.8 that things with different *Properties* cannot have the same real essence. He thus clearly appears to assume that *there are differences in internal constitutions if there are observable differences*. This assumption is a cornerstone of Locke's empirical case against the uncritical inference from observable similarities to similarities in internal constitution—without it, his observations that "monsters" and "strange issues of humane birth" differ with regard to their observable qualities from non-deviant individuals would not support his claim that the internal constitutions of the former differ from those of the latter (III.iii.17). But, of course, the assumption at issue is just the contraposition of the thesis that *there are no differences in observable qualities if there are no differences in internal constitutions*. And surely the only reason Locke can plausibly have to accept this thesis is **B**: things with similar internal constitutions have similar observable qualities because similar constitutions *give rise* to similar qualities.

Jones is right in claiming that Locke believes that we cannot even conceive of how secondary qualities result from primary ones.⁴⁹ What this shows, however, is merely that Locke cannot justify **B** by appealing to the *corpuscular hypothesis*. But it is independently plausible that Locke operates with a *metaphysical* framework he does not ground on any particular *physical* hypothesis. As Lisa Downing has argued,⁵⁰ Locke employs the corpuscular hypothesis as a particularly clear *illustration* of how one might spell out certain elements of his metaphysical framework such as the primary-/secondary-qualities distinction or the notion of the internal constitutions of bodies. I agree with her assessment—which Jones accepts as well—that Locke does not commit himself to the truth of the corpuscular hypothesis. But the passages just mentioned indicate that he does not equally distance himself from the more basic metaphysical framework of which this thesis is a part. Downing has argued that Locke accepts a view she terms "essentialism":

⁴⁹ See *Essay*, IV.iii.11, IV.iii.13; compare Jones, "Locke on Real Essences," 160.

⁵⁰ Downing, "The Status of Mechanism."

the thesis that “the qualities and behavior of a body flow from its real constitution”⁵¹—whether or not that real constitution can be spelled out in corpuscular terms.⁵²

So far then, we have not encountered a decisive reason to think that Locke rejects **B**. If so, Jones’s argument for thinking that he rejects **T** also loses its force. The difficulty for the impracticability objection thus should remain pressing for Locke: if we have reason to think that objects with similar observable qualities have similar internal constitutions, we have reason to think that we can—provisionally, at any rate—re-identify real essences. If so, the impracticability objection fails: despite our ignorance of real essences, we can sort things in accordance with their real essences on the basis of plausible assumptions about which things have the same real essence.

6. Strict and Moderate Realism

The impracticability objection can be saved, however. To see how, we first need to draw a widely accepted distinction between two notions of real essence. On the one hand, an object’s real essence is the causal basis of *all* its observable qualities, its *complete* internal constitution together with the causal connections to the totality of these qualities. Following Matthew Stuart’s terminology, a real essence in this sense may be called a *total* real essence.⁵³ On the other hand, a real essence may be identified with the causal basis of only *some* of an object’s observable qualities: such a partial real essence comprises that part of the object’s total real essence which accounts for the object’s possession of these pre-selected qualities. Among all partial real essences, the ones that matter most for us are those that comprise features that account for the observable qualities we represent in our nominal essences. Such partial real essences are specified *in terms* of nominal essences—adopting a common terminology, let me call them (*nominal-essence*) *relative* real essences. The main text in which Locke explains this notion is this:

⁵¹ Lisa Downing, “Locke’s Ontology,” in *The Cambridge Companion to Locke’s “Essay concerning Human Understanding,”* ed. Lex Newman (Cambridge: Cambridge University Press, 2007), 368.

⁵² In a later publication, to be sure, Jones argues that Locke accepts the claim that there are “generic” real essences which need not be spelled out in corpuscularian terms. More particularly, Jones writes that “Locke is metaphysically and semantically, but not epistemologically, committed to generic real essences.” “Lockean Real Essences,” 154. Jones does not specify, however, whether he believes that Locke accepts **T** and **B** for generic real essences—if Jones does believe this, his reading is compatible with the one defended here. Thanks to an anonymous referee for pressing me on this.

⁵³ Some commentators hold that Locke, at least on his considered view, reserves the term “real essence” for the parts or aspects of their internal constitution shared by different members of the same species, see Guyer, “Locke’s Philosophy of Language” and Jean-Michel Vienne, “Locke on Real Essence and Internal Constitution,” *Proceedings of the Aristotelian Society* 93 (1993): 129–53, <https://www.jstor.org/stable/4545170>. I here follow the majority-view, according to which Locke allows for real essences that comprise all of an object’s internal constitution; for discussion, see Conn, *Locke on Essence and Identity*; Kaufman, “Locke on Individuation”; Owen “Locke on Real Essences”; Phemister, “Real Essences in Particular”; and Stuart, *Locke’s Metaphysics*, §21.

By this *real Essence*, I mean, that real constitution of any Thing, which is the foundation of all those Properties, that are combined in, and are constantly found to co-exist with the *nominal Essence*; that particular constitution, which every Thing has within it self; without any relation to any thing without it. (III.vi.6)

Although relative real essences comprise intrinsic features of an object—features the object has “without any relation to any thing without it,” they are relative in the sense that *we* identify them in terms of nominal essences. This is the sense in which the notion of a relative real essence “*relates to a Sort*, and supposes a *Species*” (III.vi.6).

With this distinction in mind, Locke’s diverging comments about the top-down similarity thesis can be given a consistent reading. Different objects conforming to the same nominal essence share the qualities in virtue of which they conform to the nominal essence at issue. They do, Locke believes, plausibly share a relative real essence responsible for these qualities. This, at any rate, seems to be what Locke affirms when he tells Stillingfleet that, regarding objects conforming to the same nominal essence, “it is impossible but the real constitution on which that unaltered complex idea, or nominal essence, depends, must be the same.”⁵⁴ But when Locke argues in III.x.20 that many objects conforming to the same nominal essence “are, in their internal Constitution, as different one from another as several of those which are ranked under different specific Names,” he has in mind differing *total* real essences. We cannot assume, he argues, that objects sharing *some* of their observable qualities have a *total* real essence in common.

The same point underlies Locke’s dismissal, in III.vi.19, of the realist’s appeal to *Properties*. Locke there argues, as we have seen, that we could know whether a given object has a certain real essence only if we knew *all* of the *Properties* that flow from the real essence. Given that Locke accepts **T**, this requirement seems excessively strict if all that is at issue is whether things conforming to the same nominal essence have the same *relative* real essence. The requirement seems reasonable, by contrast, if what is at issue is whether such things share a *total* real essence. Assume that something counts as gold if and only if it has the (alleged) total real essence of gold. If so, we are not allowed to infer that a given piece of matter conforming to the nominal essence of gold is in fact gold. For the piece may possess some as yet unobserved quality that differs from the qualities of gold pieces, forcing us (by the contraposition of **B**) to conclude that its total real essence is not the same as that of true gold pieces. The impracticability objection applies: adopting the view that the species into which we sort objects are determined by total real essences undercuts our ability to tell if a given individual belongs to a given species.

Call the view that some species terms refer to *total* real essences *strict* realism, and call the view that some species terms refer to *relative* real essences *moderate* realism. The strict realist holds that some of our species terms apply correctly to individuals in virtue of the fact that these individuals possess certain total real essences. The moderate realist believes the same about relative real essences. Since Locke rejects **T** if it is taken as a thesis about total real essences, he can coherently take the impracticability objection to be

⁵⁴ Locke, *Works*, 4:91.

effective against the strict realist. But since he accepts the top-down thesis about relative real essences, the objection fails to jeopardize moderate realism.

One might think that this limitation in scope reveals a flaw with the impracticability objection as it fails to engage the full spectrum of realist views. However, I want to opt for a different perspective: some commentators, including Pasnau and Pauline Phemister,⁵⁵ argue that the target of Locke's discussion of real essences—the view he consciously tries to refute—is first and foremost the *strict* version of realism. The standard doctrine of the later scholastics, after all, is this version: the view, as Pasnau puts it, that “the essence of a given substance explains all of the intrinsic accidents of that thing.”⁵⁶ If this reading is correct, it would seem that the impracticability objection has exactly the scope it should have: it points out a pressing problem for strict realism. To complain that it fails to engage moderate realism would be anachronistic and misguided.

To reinforce this reading, note that there is independent reason to hold that Locke's thesis that species are the workmanship of the understanding is best read as directed against strict realism. Locke writes in III.iii.17 that proponents of the realist “opinion” about real essence assume that there is “a certain number of real essences” and that each natural object “exactly partakes” in one of them. Locke takes these two assumptions, I propose, to have a common source in the underlying thesis that each object's real essence determines a determinate and unequivocal answer to the question, regarding any given species, of whether the object belongs to the species. If this thesis were true, there would be a very robust sense in which nature—not human understanding—produces species and determines species membership; for there would be *one uniquely natural way of assigning a species to each natural object*. Only strict realism is compatible with this vision of naturally determined species. For the vision to be true, there must be “a certain number of real essences” that does not depend on which nominal essences we construct. Furthermore, each natural object must have precisely *one* real essence, no less and no more. Total real essences meet these requirements. But relative real essences do not: Which among the totality of all partial real essences count as *relative* real essences depends on the nominal essences we construct. And one and the same natural object may conform to several different nominal essences—and thus it may have different relative real essences if the qualities represented in those nominal essences have different causal bases.

In view of these considerations, it seems highly plausible to assume that Locke intends the workmanship-thesis, and his discussion of real and nominal essences, to be targeted against strict realism. The impracticability objection, accordingly, properly engages the

⁵⁵ Pasnau, *Metaphysical Themes*, pt. 6, chap. 27.7, 658; Phemister, “Real Essences in Particular.” Compare also the response to Phemister in Susanna Goodin, “A Refutation of the Possibility of Real Species in Locke: A Response to Phemister,” *The Locke Newsletter* 28 (1997): 67–76 and the reply in Pauline Phemister, “The Possibility of Real Species in Locke: A Reply to Goodin,” *The Locke Newsletter* 28 (1997): 77–86.

⁵⁶ Pasnau, *Metaphysical Themes*, pt. 6, chap. 27.7, 658.

position Locke wants to refute. It leaves moderate realism untouched, but Locke is not *trying* to disprove this version of realism anyway.

Now, to be clear, I do *not* want to suggest that Locke would *endorse* moderate realism. The moderate realist's position is close to Locke's own—both agree that it is likely that our classification of natural objects tracks relative real essences. But the moderate realist's view of the *role* relative real essences play for our classification is unacceptable to Locke. For the moderate realist, a given species term applies correctly to a given individual *because* it has the relative real essence in common to members of its species—it is the relative real essence that gives the object a “right to the name” of the species. As we have seen in section 3 above, Locke's semantics, coupled with his theory of ideas, prohibit him from adopting this view: since relative real essences are unknown to us, an object's relative real essence (just like its total real essence) cannot determine whether it has the right to the name of a given species.

This shows that Locke's semantic criticism of species realism is of a broader scope than the impracticability objection as Locke's idea-theoretic semantics is incompatible with both strict and moderate realism. Whether we see this as an advantage or a drawback in part depends on our assessment of moderate realism. Although I cannot defend this contention here, I personally consider moderate realism more plausible than Locke's own idea-theoretic semantics. From such a perspective, the more limited scope of the impracticability objection is a virtue rather than a flaw: for even the moderate realist can concede that this objection provides Locke with a cogent reason to reject strict realism.

Before concluding, let me add one more clarification about the target of the impracticability objection. I have argued that the objection is designed to target strict realism, which is closely connected to the thesis that nature determines a unique species for every natural object. In one sense, then, we may say that the objection is directed against the view that the species into which we sort natural objects are *natural kinds*. However, there are more relaxed conceptions of natural kinds that do not involve any commitment to strict realism or to the idea that nature determines precisely one species for every natural object. On one such conception, most prominently championed by Richard Boyd, natural kinds can be specified in terms of homeostatic property clusters—roughly, clusters of stably co-instantiated properties.⁵⁷ As Stuart argues⁵⁸—convincingly, I think—Locke would be prepared to accept that our classification of natural objects tracks

⁵⁷ Two of the many publications in which Richard Boyd has discussed natural kinds in terms of homeostatic property clusters are Boyd, “Kinds as the ‘Workmanship of Men’: Realism, Constructivism, and Natural Kinds,” in *Rationalität, Realismus, Revision*, ed. Julian Nida-Rümelin, 52–89 (Berlin: de Gruyter, 2012) and Boyd, “What Realism Implies and What it Does Not,” *Dialectica* 43, no. 1/2, (June 1989): 5–29, <https://doi.org/10.1111/j.1746-8361.1989.tb00928.x>. Compare also Hilary Kornblith, *Inductive Inference and Its Natural Ground* (Cambridge, MA: MIT Press, 1993). Stuart argues, moreover, that Locke would also accept that our classification of natural objects plausibly track natural kinds in the sense introduced by Joseph LaPorte. Stuart, “Locke on Natural Kinds” and *Locke's Metaphysics*, §24. On LaPorte's view, what is distinctive about natural kinds is that they have a certain explanatory and predictive value. *Natural Kinds and Conceptual Change* (Cambridge: Cambridge University Press, 2004).

⁵⁸ Stuart, “Locke on Natural Kinds” and *Locke's Metaphysics*, §24.

such clusters: if our sorting tracks relative real essences, it plausibly tracks homeostatic property clusters. If we adopt such a conception of natural kinds, we can thus say that Locke can coherently accept *both* the claim that our sorting tracks natural kinds *and* his view that species are the workmanship of the understanding.⁵⁹ The impracticability objection, therefore, should not be seen as an objection to the thesis that our sorting tracks natural kinds, but to the much more specific position adopted by the strict species realist.

7. Conclusion

I have, in this paper, sought to isolate and examine a practical line of criticism Locke advances against the thesis that some of our names of species of natural objects refer to real essences. I have argued that this line of criticism is independent of Locke's familiar semantic case against this thesis. This helps recognize that Locke's criticism of species realism in part stems from his contention that a reflection on what our words refer to (and philosophy in general) cannot be conducted without taking into account the practical demands sourcing from the epistemic restrictions of our finite state. This contention remains as powerful and consequential today as it was in Locke's time. I have, moreover, argued that the impracticability objection is best read as directed not against a moderate—and I think, plausible—version of species realism, but against the more robust vision of a uniquely natural sorting of objects. Against this view, the objection is strong and deserves lasting attention.

⁵⁹ Note that Boyd explicitly acknowledges that his view of natural kinds is compatible with the idea that they are, as he writes, the “workmanship of men” and also references Locke as a source. “Kinds as the ‘Workmanship of Men’,” 55.

Bibliography

- Alexander, Peter. *Ideas, Qualities and Corpuscles*. Cambridge: Cambridge University Press, 1985.
- Ashworth, E. Jennifer. "Do Words Signify Ideas or Things? The Scholastic Sources of Locke's Theory of Language." *Journal of the History of Philosophy* 19, no. 3 (July 1981): 299–326. <https://doi.org/10.1353/hph.2008.0250>.
- Ashworth, E. Jennifer. "Locke on Language." *Canadian Journal of Philosophy* 14, no. 1, (March 1984): 45–73. <https://doi.org/10.1080/00455091.1984.10716368>.
- Atherton, Margaret. "Locke on Essences and Classification." In *The Cambridge Companion to Locke's "Essay Concerning Human Understanding"*, edited by Lex Newman, 258–85. Cambridge: Cambridge University Press, 2007.
- Atherton, Margaret. "The Inessentiality of Lockean Essences." *Canadian Journal of Philosophy* 14, no. 2 (June 1984): 277–93. <https://doi.org/10.1080/00455091.1984.10716382>.
- Ayers, Michael R. *Locke: Epistemology and Ontology*. Vol. 2, *Ontology*. London: Routledge, 1991.
- Ayers, Michael R. "Locke versus Aristotle on Natural Kinds." *The Journal of Philosophy* 78, no. 5, (May 1981): 247–72. <https://doi.org/10.2307/2025955>.
- Bennett, Jonathan. *Learning from Six Philosophers*. Vol. 2, *Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume*. Oxford: Oxford University Press, 1991.
- Bolton, Martha Brandt. "The Epistemological Status of Ideas: Locke Compared to Arnauld." *History of Philosophy Quarterly* 1, no. 4 (October 1992): 409–24. <https://www.jstor.org/stable/27744035>.
- Bolton, Martha Brandt. "The Relevance of Locke's Theory of Ideas to His Doctrine of Nominal Essence and Anti-Essentialist Semantic Theory." In *Locke*, edited by Vere Chappell, 214–25. Oxford: Oxford University Press, 1998.
- Boyd, Richard. "Kinds as the 'Workmanship of Men': Realism, Constructivism, and Natural Kinds." In *Rationalität, Realismus, Revision*, edited by Julian Nida-Rümelin, 52–89. Berlin: de Gruyter, 2012.
- Boyd, Richard. "What Realism Implies and What it Does Not." *Dialectica* 43, no. 1/2, (June 1989): 5–29. <https://doi.org/10.1111/j.1746-8361.1989.tb00928.x>.
- Burgersdijk, Franco. *Institutionum logicarum libri duo*. Vol. 2. Amsterdam, 1659.

- Conn, Christopher H. *Locke on Essence and Identity*. Dordrecht, NL: Kluwer Academic Publishers, 2003.
- Crane, Judith. "Locke's Theory of Classification." *British Journal for the History of Philosophy* 11, no. 2 (2003): 249–59. <https://doi.org/10.1080/0960878032000104859>.
- Downing, Lisa. "Locke's Ontology." In *The Cambridge Companion to Locke's "Essay concerning Human Understanding"*, edited by Lex Newman, 352–80. Cambridge: Cambridge University Press, 2007.
- Downing, Lisa. "The Status of Mechanism in Locke's *Essay*." *The Philosophical Review* 107, no. 3 (July 1998): 381–414. <https://doi.org/10.2307/2998443>.
- Goodin, Susanna. "A Refutation of the Possibility of Real Species in Locke: A Response to Phemister." *The Locke Newsletter* 28 (1997): 67–76.
- Goodin, Susanna. "Why Knowledge of the Internal Constitution Is Not the Same as Knowledge of the Real Essence and Why This Matters." *Southwest Philosophy Review* 14, no. 1, (January 1998): 149–55. <https://doi.org/10.5840/swphilreview199814117>.
- Guyer, Paul. "Locke's Philosophy of Language." In *The Cambridge Companion to Locke*, edited by Vere Chappell, 115–45. Cambridge: Cambridge University Press, 1994.
- Jacovides, Michael. "Locke on the *Propria* of Body." *British Journal for the History of Philosophy* 15, no. 3, (2007): 485–511. <https://doi.org/10.1080/09608780701444923>.
- Jacovides, Michael. *Locke's Image of the World*. Oxford: Oxford University Press, 2017.
- Jolley, Nicholas. *Leibniz and Locke: A Study of the New Essay on Human Understanding*. Oxford: Clarendon Press, 1984.
- Jolley, Nicholas. *Locke: His Philosophical Thought*. Oxford: Oxford University Press, 1999.
- Jones, Jan-Erik. "Boyle, Classification and the Workmanship of the Understanding Thesis." *Journal of the History of Philosophy* 43, no. 2 (April 2005): 171–83. <https://doi.org/10.1353/hph.2005.0117>.
- Jones, Jan-Erik. "Lockean Real Essences and Ontology." *Southwest Philosophy Review* 32, no. 2 (July 2016): 137–62, <https://doi.org/10.5840/swphilreview201632246>
- Jones, Jan-Erik. "Locke on Real Essences, Intelligibility, and Natural Kinds." *Journal of Philosophical Research* 35 (2010): 147–71. https://doi.org/10.5840/jpr_2010_12.

- Jones, Jan-Erik. "Locke vs. Boyle: The Real Essence of Corpuscular Species." *British Journal for the History of Philosophy* 15, no. 4 (2008): 659–84. <https://doi.org/10.1080/09608780701604955>.
- Kaufman, Dan. "Locke on Individuation and the Corpuscular Basis of Kinds." *Philosophy and Phenomenological Research* 75, no. 3 (October 2007): 499–534. <https://doi.org/10.1111/j.1933-1592.2007.00091.x>.
- Kornblith, Hilary. *Inductive Inference and Its Natural Ground*. Cambridge, MA: MIT Press, 1993.
- LaPorte, Joseph. *Natural Kinds and Conceptual Change*. Cambridge: Cambridge University Press, 2004.
- Leibniz, Gottfried Wilhelm. "Meditationes de Cognitione, Veritate et Ideis." In vol. 4 of *Die Philosophischen Schriften von Gottfried Wilhelm Leibniz*, edited by C. I. Gerhardt, 422–26. Berlin: Weidmannsche Buchhandlung, 1880.
- Leibniz, Gottfried Wilhelm. *New Essay on Human Understanding*. Translated and edited by Peter Remnant and Jonathan Bennett. Cambridge: Cambridge University Press, 1996.
- Locke, John. *An Essay concerning Human Understanding*. Edited by Peter H. Nidditch. The Clarendon Edition of the Works of John Locke. Oxford: Clarendon, 1975.
- Locke, John. "A Letter to the Right Rev. Edward Lord Bishop of Worcester, concerning Some Passages Relating to Mr. Locke's Essay of Human Understanding, in a Late Discourse of His Lordship's in Vindication of the Trinity." In vol. 4 of *The Works of John Locke*, new ed. corrected, 1–96. London, 1823.
- Milton, John R. "The Scholastic Background to Locke's Thought." *The Locke Newsletter* 15 (December 1984): 25–34.
- Ott, Walter. *Locke's Philosophy of Language*. New York: Cambridge University Press, 2004.
- Owen, David. "Locke on Real Essences." *History of Philosophy Quarterly* 8, no. 2 (April 1991): 105–18. <https://www.jstor.org/stable/27743968>.
- Pasnau, Robert. *Metaphysical Themes 1274–1671*. Oxford: Clarendon Press, 2011.
- Phemister, Pauline. "Real Essences in Particular." *Locke Newsletter* 21 (December 1990): 27–55.
- Phemister, Pauline. "The Possibility of Real Species in Locke: A Reply to Goodin." *The Locke Newsletter* 28 (1997): 77–86.

- Pritchard, Timothy. "Locke and the Primary Signification of Words: An Approach to Word Meaning." *British Journal for the History of Philosophy* 21, no. 3 (2013): 486–506. <https://doi.org/10.1080/09608788.2013.771611>.
- Rickless, Samuel C. *Locke*. Blackwell Great Minds. Chichester, UK: Wiley Blackwell, 2014.
- Rozemond, Marleen and Gideon Yaffe. "Peach Trees, Gravity and God: Mechanism in Locke." *British Journal for the History of Philosophy* 12, no. 3 (2004): 387–412. <https://doi.org/10.1080/0960878042000253079>.
- Shapiro, Lionel. "Toward 'Perfect Collections of Properties': Locke on the Constitution of Substantial Sorts." *Canadian Journal of Philosophy* 29, no. 4 (December 1999): 551–93. <https://doi.org/10.1080/00455091.1999.10715991>.
- Śmiglecki, Marcin. *Logica*. Vol. 2. Ingolstadt, DE, 1618.
- Stanford, P. Kyle. "Reference and Natural Kind Terms: The Real Essence of Locke's View." *Pacific Philosophical Quarterly* 79, no. 1 (December 1998): 78–97.
- Stuart, Matthew. "Locke on Natural Kinds." *History of Philosophy Quarterly* 16, no. 3 (July 1999): 277–96. <https://www.jstor.org/stable/27744822>.
- Stuart, Matthew. *Locke's Metaphysics*. Oxford: Oxford University Press, 2013.
- Vienne, Jean-Michel. "Locke on Real Essence and Internal Constitution." *Proceedings of the Aristotelian Society* 93 (1993): 129–53. <https://www.jstor.org/stable/4545170>.
- Wilson, Margaret D. "Superadded Properties: The Limits of Mechanism in Locke." *American Philosophical Quarterly* 16, no. 2 (April 1979): 133–50. <https://www.jstor.org/stable/20009751>.
- Winkler, Kenneth. "Locke on Essence and the Social Construction of Kinds." In *A Companion to Locke*, edited by Matthew Stuart, 212–35. Chichester, UK: Wiley Blackwell, 2016.
- Woolhouse, Roger. *Locke's Philosophy of Science and Knowledge*. Oxford: Blackwell, 1971.
- Wörner, David. *Im Namen der Dinge. John Locke und der Begriff des Wesens*. Basel: Schwabe, 2019. <https://doi.org/10.24894/978-3-7965-3938-1>.
- Wörner, David. "Locke on Fixing Ideas." *Archiv für Geschichte der Philosophie* 103, Nr. 3 (September 2021): 481–500. <https://doi.org/10.1515/agph-2018-0101>.
- Yolton, John W. *Locke and the Compass of Human Understanding*. New York: Cambridge University Press, 1970.