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Locke and Leibniz on Substance

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Routledge
Taylor & Francis Group
NEW YORK AND LONDON

First published 2015
by Routledge
711 Third Avenue, New York, NY 10017

and by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Routledge is an imprint of the Taylor & Francis Group,
an informa business

Library of Congress Cataloging-in-Publication Data
Locke and Leibniz on substance / edited by Paul Lodge
and Tom Stoneham. — 1 [edition].
pages cm. — (Routledge studies in seventeenth-century philosophy ; 14)
Includes bibliographical references and index.
1. Substance (Philosophy) 2. Locke, John, 1632–1704. 3. Leibniz, Gottfried Wilhelm, Freiherr von, 1646–1716. I. Lodge, Paul, 1968– editor.
BD331.L785 2015
111′.1—dc23
2014033652

ISBN: 978-1-138-79197-8 (hbk)
ISBN: 978-1-315-76241-8 (ebk)

Typeset in Sabon
by Apex CoVantage, LLC

Printed and bound in the United States of America by Publishers Graphics, LLC on sustainably sourced paper.

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Abbreviations

The following abbreviations are used in the text:

A	Leibniz, G. W. *Sämtliche Schriften und Briefe*, ed. Deutsche Akademie der Wissenschaften (Darmstadt and Berlin: Akademie-Verlag, 1923–). Cited by series, volume, and page (e.g. A VI.ii, p. 229).
AG	*Leibniz: Philosophical Essays*, ed. and trans. Roger Ariew and Daniel Garber (Indianapolis: Hackett, 1989).
AT	*Oeuvres de Descartes*, 12 Vols., Nouvelle présentation, ed. C. Adam and P. Tannery (Paris: J. Vrin, 1964–76). Cited by volume and page (e.g. AT VIII.1, p. 71).
CSM	*The Philosophical Writings of Descartes*, 3 Vols., ed. and trans. John Cottingham, Robert Stoothof, Dugald Murdoch, and Anthony Kenny (Cambridge: Cambridge University Press, 1985–91). Cited by volume and page (e.g. CSM i, p. 235).
D	*Gothofredi Guillelmi Leibnitii Opera Omnia*, 6 Vols., ed. L. Dutens (Geneva: De Tournes, 1768; reprint ed. Hildesheim: Olms, 1989). Cited by volume, part, and page (e.g. D II.i, p. 33).
DNR	Hume, David. *Dialogues Concerning Natural Religion,* ed. Richard H. Popkin (Indianapolis: Hackett, 1980). Cited by part number (e.g. DNR 10).
ECHU	Locke, John. *An Essay Concerning Human Understanding*, ed. P. H. Nidditch (Oxford: Clarendon Press, 1975). Cited by book, chapter, and section (e.g. ECHU 4.3.6).
EnHU	Hume, David. *Enquiry Concerning Human Understanding,* ed. Peter Millican (1748; Oxford University Press, 2007). Cited by section and paragraph number within section (the paragraphing is the same for Nidditch/Selby-Bigge and Millican editions though only the latter includes the numbers) (e.g. EnHU 4.19).
G	*Die Philosophische Schriften von Gottfried Wilhelm Leibniz*, 7 Vols., ed. C. I. Gerhardt (Berlin: Weidmann, 1875–90; reprint ed. Hildesheim: Olms, 1960). Cited by volume and page (e.g. G VI, p. 264).

2 The Supposed but Unknown

A Functionalist Account of Locke's Substratum

Han-Kyul Kim

The world is occupied by many and varied things. What constitutes their *thingness*? In the *Essay Concerning Human Understanding* (ECHU). Locke addresses this question in book two, chapter twenty-three, titled '*Of our Complex* Ideas *of Substance*', wherein the much-contested definition of 'substratum' appears—'a supposed but unknown support of the Qualities' (ECHU 2.23.2). Most significant in this definition are the dual qualifiers that Locke uses: 'supposed' and 'unknown'. This chapter examines this two-qualifier definition, illuminating the historical and philosophical significance it may have.

On Locke's substratum, there have been two rival readings. The first takes it to be a bare substratum (Bennett 1971, 1987); and the second identifies it with what Locke terms as 'real essence'—that is, 'a real Constitution of the insensible Parts'—throughout the *Essay* (Ayers 1975, 1991). Critically reviewing these two major interpretations, I shall attribute to Locke a type of functionalism, according to which the status of a substratum is determined by its functional role of 'uniting' a bundle of qualities into an individual substance; by the term 'function', I mean the role-realizing activity performed by some distinctive yet unidentifiable (but not bare) property. I shall argue that the bare substratum reading deprives Locke's substratum of the active role—performed by its own positively-natured property—in unifying the bundle of qualities into a single substance. Challenging the bare substratum reading of Locke, Michael Ayers has identified the substratum with a particular constitution. This identity thesis, I shall further argue, might overlook the point Locke seeks to make that the substratum role is realized by—but not identified with—a particular constitution. This functionalist approach, as we shall see, underlies Locke's epistemic humility on the intrinsic properties of things themselves. Illuminating these neglected views, I shall explore what Locke means to propose when he provides the unique account of substratum in the *Essay*: a 'supposed but unknown support'.

1. SUBSTRATUM: A SUPPOSED BUT UNKNOWN SUPPORT

A group of qualities come together in a particular sort of substance such as gold, water, iron, a horse, a man, and so on. As Locke describes, a swan regularly displays the following types of qualities: 'white Colour, long Neck,

red Beak, black Legs, and whole Feet, and all these of a certain size, with a power of swimming in the Water, and making a certain kind of Noise, and so on' (ECHU 2.23.14). Some qualities are directly observable (e.g. colour, size, shape), while some are manifested when appropriate conditions are met (e.g. the power of swimming and the vocal ability). At any rate, those qualities are 'all united in one common subject' (ECHU 2.23.13)—namely, a substratum: 'we accustom our selves, to suppose some *Substratum*, wherein [a bundle of qualities] do subsist, and from which they do result, which therefore we call *Substance*' (ECHU 2.23.1).

At times, Locke uses the term 'substance' (rather carelessly) where the term 'substratum' should be used; yet, in their original definitions in ECHU 2.23, the former (substance) refers to a particular sort of substance whereas the latter (substratum) means its functional component—a unifier of the qualities or 'the Cause of their Union' (ECHU 2.23.6).

Locke ascribes the union role to a substratum as its crucial function. The bundle of qualities are 'united in one subject' (ECHU 2.23.1) by virtue of there being a support in it. In Locke's account, wherever there exists a group of qualities, regularly exhibited, there exists an underlying support unifying them into 'one thing' that deserves 'one [general] name' (ECHU 2.23.1). Yet, the intrinsic property of the union role player is not specified in the *Essay*—so, it is a supposed but unknown support. In the same section where the two-qualifier definition appears, Locke provides another definition of substratum, which is amazingly simple—it is 'something'. If it is 'questioned, what such a thing [substratum] is, which they know not', then the most satisfactory answer might be that:

> It is *something*; which signifies no more, when so used, either by Children or Men, but that they know not what; and that the thing they pretend to know, and talk of, is what they have no distinct *Idea* of at all, and so are perfectly ignorant of it, and in the dark.
>
> (ECHU 2.23.2)

Locke admits that this simpler manner of definition—that it is something—is a more effective way of expressing the character of a substratum, and provides a more refined account of it: 'So that of *Substance*, we have no *Idea* of what it is, but only a confused, obscure one of what it does' (ECHU 2.13.19). We do know—albeit in a somewhat confused, obscure fashion—what it does but not what it is.

The distinction that Locke draws between 'what a substance is' and 'what it does' can be taken as that between 'intrinsic' and 'functional' properties in more recent terminology. In fact, Locke did not use the term 'intrinsic' properties but 'internal essence' or 'real essence'. By 'real essence' he means an internal constitution that 'every Thing has within it self, without any relation to any thing without it' (ECHU 3.6.6)—namely, a property that any thing possesses independently of the existence of other contingent objects distinct from it. Locke sometimes used the term

'internal essence' in his letters to Stillingfleet as equivalent to 'real essence' in the *Essay*:

> If those powers and properties discover no more of those internal essences, but that there are internal essences, we shall know only that there are internal essences, but shall have no idea or conception at all of what they are.
>
> (Locke 1963, p. 26)

There are two major positions that Locke takes up in his account of substratum. The first is the moderate view—which might be referred to as 'epistemic humility'—on the intrinsic property of the union role player. The second is his belief that to be is to be positively natured. Nevertheless, the so-called bare substratum reading has been a long-standing interpretation of Locke on this issue. And the attribution of the bareness to Locke's substratum is a bitter criticism of his philosophy. On the bare substratum reading, if something supports a bundle of qualities, the support should be free from any quality of the bundle so that it is quality-less in itself. If extension is one of the qualities that it supports, then it is supposed to be extension-less. If thought is one of the qualities it supports, then it is supposed to be thought-less. Jonathan Bennett has accused Locke's substratum of being 'a subject in which a set of properties is instantiated while itself being property-less or bare or unqualified in some problematic way' (1987, p. 199).[1] As I see it, the grave mistake with this reading is that it undermines the epistemic import of the qualifier 'unknown', since it would explain the epistemic feature (unknowability) by reference to the ontological feature (the bareness or nakedness) rather than any perceptual limits on the perceiver's end. The bare substratum has no positive qualities at all, so that there is nothing knowable about it. On this view, the qualifier 'unknown' hardly represents any epistemologically moderate position.

Yet, while employing the negative qualifier 'unknown', Locke always ascribes some positive nature to a substance. In book three, Locke refers to some non-human kinds of intelligence in accounting for real essences of things, regarding the human mind as one of 'many *Species of Spirits*' (ECHU 3.6.12). Each mental kind is endowed with its own epistemic perspective, producing thereby a distinctive type of nominal essence about the same world. This remark is made where Locke makes the distinction between nominal and real essence. In the same section, Locke considers the existence of bestial minds: 'There are some Brutes, that seem to have as much Knowledge and Reason, as some that are called Men' (ECHU 3.6.12). Locke's inventory of mental natural kinds includes both these lower kinds and the higher kinds such as angels: 'There are different *Species of Angels*; yet we know not how to frame distinct specifick *Ideas* of them' (ECHU 3.6.11). Some higher species are capable of accessing the 'secret Composition' of things (ECHU 3.6.22), while humans are not: 'every thing that exits, has its particular Constitution' (ECHU 3.6.17) but 'the *Ideas*, we can attain to by our Faculties, are very disproportionate to Things themselves' (ECHU 4.3.23). It is typical of Locke's account to rely on the perspectival difference among the possible intellectual species whenever he addresses the issue of human epistemic humility. The following passage is one example:

> What Faculties therefore other Species of Creatures have to penetrate into the Nature, and inmost Constitutions of Things; what *Ideas* they may receive of them, far different from ours, we know not. This we know, and certainly find, that we want several other views of them, besides those we have, to make Discoveries of them more perfect.
>
> (ECHU 4.3.23)

Here, Locke's assumption is that to be is to be positively natured. The following passage from his first letter to Stillingfleet implies this position: every thing is 'granted to have a being, and be in nature, of which we have no ideas' (Locke 1963, p. 18). When Locke maintains that one has an 'obscure and relative *Idea* of Substance in general' (ECHU 2.23.3), the obscurity is ascribed to our idea of a substance, not the substance itself. Our idea of a substance is said to be 'obscure' in the sense that our idea only represents what the substance *does* (its function) without telling us what it is intrinsically. Thus, if Locke had regarded a substratum as being intrinsically bare, he would not have held that we have an 'obscure' idea of it, since we clearly know what it is in its entirety: a property-less being that supports—in some mysterious way—the bundle of qualities. In fact, there is nothing epistemologically obscure about a bona fide bare substratum, though it may be an ontologically bizarre entity. One might take such a bare substratum as a functional entity, but its function—that is, that of supporting the qualities—is not grounded in its intrinsic property in so far as it is intrinsically *bare*.

In my functionalist reading, 'function' is taken to mean a role-realizing activity performed by some positive intrinsic property. My proposal is that Locke's substratum should be understood not merely in terms of its support role but in reference to its union role. This more active role cannot be appreciated by the ontological negativity (the bareness or nakedness). There may be a different explanatory model for the union role than the bare substratum reading provides. For example, when a pincushion supports a bunch of pins, it does so by virtue of its own distinctive structure. The manner in which each pin is arranged is determined by the cushion's unique shape. The same set of pins will be arranged in different ways over different types of cushions. The bundle of pins and the pincushion constitute a unity in which the latter (the pincushion) plays the role of unifying the former (the pins). And there could be an even more intimate relationship than this. The support might be compared to a magnet, which actively exerts a force to hold individual iron shavings together and unite them into a single mass. The substratum of each kind would have a different mode of the union role,

since each has a different set of qualities. For example, the way in which the substratum of the water-kind unifies its own qualities would be different from that in which the substratum of the gold-kind unifies its own qualities. I take this more active type of union role as what Locke ascribes to the real essence 'from which [the bundle of qualities] flow' (ECHU 3.3.9)—that is, 'the real constitution of any Thing, which is the foundation of all those Properties' (ECHU 3.6.6) or 'an unknown Support and Cause of their Union' (ECHU 3.6.21).

Recently, the bare substratum reading has been rejected by a group of commentators, including Ayers, Peter Alexander, and E. J. Lowe. Ayers maintains that the ascription of the bareness to Locke's substratum is a distortion of a philosopher 'who is an anti-Aristotelian corpuscularian' (1975, p. 2). Agreeing with Ayers, Alexander holds that Locke was 'less imperceptive and inconsistent than is usually supposed and he was seldom foolish' but 'an intelligent man' (1991, p. 183). Now, the general stream of thought is that Locke's substratum is far thicker than the bare support, as expressed in Lowe's recent work on Locke:

> But *does* Locke's account of substratum in fact commit him to a belief in the existence of bare particulars? A 'bare particular' would, it seems, be something with an identity but no properties or nature of its own, while at the same time being an inseparable constituent of the object or thing of whose properties it would be the supposed 'bearer' or 'support.' Now, Locke says, to be sure, that a substratum is something 'we know not what' and that it is indeed not just unknown but unknowable to us. But at times he also intimates that a substratum may have a 'nature', which might in principle be knowable to other intelligences than ours—perhaps to angels and presumably to God.
>
> (Lowe 2005, p. 68)

If Locke's substratum is not a bare substratum, what is it? Ayers identifies Locke's substratum with a particular constitution of insensible particles—they must be 'the same thing' (1975, p. 14). Ayers notes their functional equivalence as follows:

> The observable qualities of any 'particular sort of substance' are said to flow from 'the unknown essence of that substance.' If this is the same relationship as 'inherence in' substance, then it seems that the essence from which observable qualities 'flow' and the substance 'from which they do result' must be the same thing.
>
> (Ayers 1975, p. 14)

As Locke describes, a bundle of qualities 'flow from' the real essence; and the substratum is 'the cause of the union of the Qualities'. In my view, however, their functional equivalence does not require them to be numerically identical. If one takes the real essence to *be* the substratum, this identification would end up overlooking the functional features Locke ascribes to substrata, which I shall examine in next section. Lowe identifies the substratum with a particular sort of substance itself: 'I prefer an account according to which the substratum of an object's properties should be identified with that very object' (2005, p. 70). This identification, too, tends to undermine the functional feature of the qualifier 'supposed'. It is rather more Lockean, as we shall see, to say that the substratum role is realized by—but not identified with—a particular constitution.

2. 'THE SECRET AND ABSTRACT NATURE'

We should note that Locke ascribes a 'secret and abstract Nature' (ECHU 2.23.6) to substrata. Here, the 'abstract' nature does not refer to the scholastic type of abstract entities such as substantial forms[2] but some modern notion of abstractness. In fact, 'functions' are abstract entities, realized by particular constitution. Whatever it is that performs the union role in a particular sort of substance counts as its substratum. This abstract role is realized by particular constitutions. And its realizers undergo changes over time. For Locke, real essences are in constant change: 'All Things, that exist, besides their Author, are all liable to Change . . . In all which, and the like Changes, 'tis evident, their real *Essence*, *i.e.* that Constitution, whereon the Properties of these things several things depended, is destroy'd, and perishes with them' (ECHU 3.3.19). Real essences are none the less 'real' in that they *realize* the abstract roles in the spatio-temporal world. The role realizer, however, is not a priori knowable: it is a matter of empirical discovery particularly *which* constitution actually occupies the union role in a particular sort of substance. Thus, a substratum has some 'secret' nature in that its role is observable but its actual role realizer is not. I take the following passage as more evidently implying this point: 'it is the real Constitution of its insensible Parts, on which depend all those Properties of Colour, Weight, Fusibility, Fixedness, *etc.* which are to be found in it. Which constitution we know not; and so having no particular *Idea* of, have no Name that is the Sign of it' (ECHU 3.3.18).

For Locke, each quality, too, is functionally characterized. Not only the unifier but also each quality is characterized in terms of what it does (rather than what it is). Each quality (e.g. fragility, ductility, solubility, fusibility) is abstracted into a complex idea, representing its own causal role. Those qualities or powers are characterized by reference to the typical or general role. In this sense, Locke maintains '*Powers make a great part of our complex* Ideas *of Substances*' (ECHU 2.23.8). That is, a power is identified as a property that occupies a certain causal role. Thus, the complex idea of a substance spells out the bundle of causal roles, each described in reference to its lawful relation to other substances: 'all which *Ideas*, are nothing else, but

so many relations to other Substances' (ECHU 2.23.37). For example, the malleability of the gold depends on the hardness of a hammer; its solubility depends on chemical properties of its solvent, the aqua regia; its yellowness depends on the perceiver's visual system plus the various environmental factors. The union role can be considered a second-order function: it unifies the various types of qualities, each playing its own specific causal role. I take the following passage as implying these functionalist views mentioned above:

> That most of the simple *Ideas*, that make up our complex *Ideas* of Substances, when truly considered, are only Powers, however we are apt to take them for positive Qualities; *v.g.* the greatest part of the *Ideas*, that make our complex *Ideas* of *Gold*, are Yellowness, great Weight, Ductility, Fusibility, and Solubility, in *Aqua Regia*, *etc.* all united together in an unknown *Substratum*.
>
> (ECHU 2.23.37)

For Locke, as we have seen, the two components of thingness include a bundle of qualities and their unifier. In ECHU 2.23, Locke applies this general account of thingness to any sort of substance, whether macro or micro. This may explain why Locke talks about the 'insensible Parts' or 'minute Parts of corporeal things' at length in 2.23 (especially §§12, 13, and 23–7).

One might wonder why Locke refers to the insensible particles—namely, the little atoms or corpuscles—in the chapter on substratum. The reason is that he regards each particle, too, as a particular sort of substance. In so far as each particle has some qualities, accordingly, there should be some substratum within it—as the cause of their union. The Lockean world is a hierarchically ordered world. His functionalism applies at every level. In this vein of thought, Locke mentions the particles of water in the chapter on substratum:

> The little Bodies that compose that Fluid, we call *Water*, are so extremely small, that I have never heard of any one, who by a Microscope, (and yet I have heard of some, that have magnified to 10000; nay, to much above 100,000 times,) pretended to perceive their distinct Bulk, Figure, or Motion: And the Particles of *Water* are also so perfectly loose one from another, that the least force sensibly separates them. Nay, if we consider their perpetual motion, we must allow them to have no cohesion one with another; and yet let but a sharp cold come, and they unite, they consolidate, these little Atoms cohere, and are not, without great force, separable. He that could find the Bonds, that tie these heaps of loose little Bodies together so firmly; he that could make known the Cement, that makes them stick so fast one to another, would discover a great, and yet unknown Secret.
>
> (ECHU 2.23.26)

Any ordinary-sized object has a distinctive constitution, which consists of insensible particles. Water, for example, has sub-parts, such as oxygen and hydrogen particles. Each type of particle has its own constitution that further consists of sub-particles. Each particle has its own bundle of qualities. Given this, each particle can be said to have its own substratum. A bundle of qualities is united into a single unit by virtue of there being an underlying substratum. On this Lockean account, to be aware that water is composed of H_2O would not involve the awareness of the real essence of water. The particles of the hydrogen kind and those of the oxygen kind are taken as 'unknown substances'. Each particle of either kind is characterized in terms of its causal-theoretical role alone, so that we remain ignorant about the intrinsic property of the union role player in each substance. Thus, each minute particle, too, is conceived to have a 'supposed but unknown support' in it.

This epistemic humility is underpinned by the aforementioned functionalist account of substrata. The role of a substance, whether macro or micro, is multiply realized *spatially* as there exist a multitude of realizers of the same kind in different places. For Locke, there is a sense in which a substance can be multiply realized even *metaphysically* as the following quotation implies:

> It is true, the real constitutions or essences of particular things existing, do not depend on the ideas of men, but on the will of the Creator; but their being ranked into sorts, under such and such names does depend and wholly depend on the ideas of men.
>
> (Locke 1997, p. 690)

The will of the creator decides the real constitution of a substance, while their being 'ranked into sorts' depends on 'the ideas of men'. I take this contrast between the *will* of the creator and the *ideas* of men as implying that it is possible for God's omnipotence to replace the current role realizers with another set—without our even noticing this change. That is, God is able to compose anything of whatever components he desires and even change that composition; yet, our knowledge of that thing will stay the same so long as its functional role remains unchanged.[3] What Locke refers to as the 'ideas of men' represents a set of archetypical functional features of things, that is, their 'nominal essences'. When he draws the distinction between real and nominal essence in book three of the *Essay*, the nominal essence of a substance includes the set of archetypical roles specified in the complex idea of that substance—so, 'the [nominal] *Essence* of any thing, in respect of us, is the whole complex *Idea*, comprehended and marked by that Name' (ECHU 3.6.21). By contrast, the real constitution of the fundamental things occupying the world does not appear in our theories, wherein they are identified in terms of their causal role alone. Thus, we have no knowledge of the intrinsic properties of

things in themselves. It is in this sense that Locke maintains we can only talk about the *idea* of substance, while the *being* of substance is beyond the scope of human understanding: 'it is of the idea [of substance] alone I speak there, and not of the being of substance'. The full text of this distinction is as follows:

> The other thing laid to my charge, is, as if I took the being of substance to be doubtful, or rendered it so by the imperfect and ill-grounded idea I have given of it. To which I beg leave to say, that I ground not the being, but the idea of substance, on our accustoming ourselves to suppose some substratum; for it is of the idea alone I speak there, and not of the being of substance . . . So that I think the being of substance is not shaken by what I have said: and if the idea of it should be yet (the being of things depending not on our ideas) the being of substance would not be at all shaken by my saying, we had but an obscure imperfect idea of it, and that the idea came from our accustoming ourselves to suppose some substratum; or indeed, if I should say, we had no idea of substance at all. For a great many things may be, and are granted to have a being, and be in nature, of which we have no ideas.
>
> (Locke 1963, p. 18)

The distinction Locke draws here between 'the idea of substance' and 'the being of substance' can be considered as being parallel to that between the role and the role player. The *idea* of substance represents the role of a substance, and the *being* of substance refers to the role occupant. Where Locke puts forth the theory of nominal essence, Locke maintains that extension and solidity are 'the complex *Ideas*' that 'need the word *Body*' and that the statement 'the essence of *body* is extension' is nominally true (ECHU 3.6.21). Even though the occupant of the body role is replaced by a different kind of substratum, we cannot notice it in so far as we are confined to our abstract theories wherein things are identified in terms of their causal role and that role alone.

As we have seen, Locke's view is that the thingness of a thing (whether macro or micro) is constituted by a bundle of qualities and their unifier. Each individual substance is composed of the insensible particles; and each particle is also observed in its causal interaction with other particles. Things are observed at every level in terms of their causal role. For Locke, the statement 'the essence of *body* is extension'—which is perhaps one of the most basic statements describing the materiality—is nominally true, regardless of which type of substratum (among the many possible types) occupies the body role. The statement 'x is extended' is true, on the Lockean account, regardless of what sort of substrata currently occupies the role. That is, the predicate 'extended' is applicable to things in terms of their satisfying the description of being extended. What sort of substratum is actually playing the role is not determined by nominal essence.

The Lockean view is that x is physical (or mental) when it satisfies the physical (or mental) description.[4] This nominalist position, I find, is implied in the following statements: '*We have as clear a Notion of the Substance of Spirit, as we have of Body*' (ECHU 2.23.5) and yet 'The substance of Spirit is unknown to us; and so is the substance of Body equally unknown to us' (ECHU 2.23.30). Why does x satisfy physical descriptions? Locke would abstain from answering this sort of question; instead, he would say that x does so in virtue of some unidentifiable properties that he describes as 'unknown'. When Locke uses the term 'science' or 'scientific' in the *Essay*, this term is not synonymous with what we would now call 'natural science'. Rather, it is the term '*experimental* Philosophy' that Locke uses below as equivalent to today's term 'natural science':

> I am apt to doubt that, how far soever human Industry may advance useful and *experimental* Philosophy in *physical Things*, *scientifical* will still be out of our reach: because we want perfect and adequate *Ideas* of those very Bodies, which are nearest to us, and most under Command . . . we are not capable of *scientific Knowledge*.
>
> (ECHU 4.3.26)

What Locke describes as 'scientific' lies beyond our reach in principle; it includes knowledge about what properties occupy which roles. We call things 'extended' or 'physical' objects in that the physical predicates are applicable to them; however, the predicate 'physical', Locke would say, applies only to their functions. Strictly speaking, the predicate 'physical' does not yield any truth about the intrinsic property of things themselves. In the Lockean account, physical things appear in our theories as role occupants, and we are acquainted with the roles but not with those things that occupy the roles. Locke addresses substrata of mind and body in the second half of 2.23 (§§15–37) after having discussed those of particular sorts of substances.

3. FUNCTIONALISM, MIND, AND BODY

According to Locke, as we have seen, a bundle of qualities and their unifier are the two principal components of a particular sort of substance. He applies this general account, not only to the specific kinds, but also to the more general sorts: minds and bodies. When Locke addresses the mind–body issue in 2.23, he makes their distinction in terms of the 'ideas' (of mind and body): '*The primary* Ideas *we have peculiar to Body*, as contradistinguished to Spirit, *are the cohesion of solid*, and consequently separable *parts, and a power of communicating Motion by impulse*' (ECHU 2.23.17) and '*The* Ideas *we have* belonging, and *peculiar to Spirit, are Thinking, and Will*, or a power of putting Body into motion by Thought' (ECHU 2.23.18). The

idea of the mind that Locke frequently refers to in parallel with that of the body is concerned with cognitive or volitional functions, as we can see from Locke's examples: '*Thinking*, and *Will*'. In regard to the mental nominal essence, Locke's concern is more with mental activities, operations, or functions, rather than the qualitative dimension of experience. Let's consider the following passage where Locke refers to substrata in regard to the more general sorts:

> By supposing a Substance, wherein *Thinking*, *Knowing*, *Doubting*, and a power of Moving, *etc.* do subsist, *We have as clear a* Notion *of the Substance of Spirit, as we have of Body*; the one being supposed to be (without knowing what it is) the *Substratum* to those simple *Ideas* we have from without; and the other supposed (with a like ignorance of what it is) to be the *Substratum* to those Operations which we experiment in ourselves within.
>
> (ECHU 2.23.5)

As is the case with the specific kinds, the mind–body distinction depends on their nominal essences—namely, the '[abstract] *Ideas*, the one of Body, the other of our Minds, every days experience clearly furnishes us with' (ECHU 2.23.28). In the above passage, the phrase 'substance of Spirit' (or 'the substance of Body') refers to a substance classified as being of the spiritual kind (or the material kind)—namely, the spirit role player (or the body role player). The abstract idea of spirit (or that of body) represents the spirit role (or body role), acquired a posteriori. According to Locke, we acquire the idea of body 'from without', that is, from the external world, whereas the idea of spirit is formed through our introspective observation on our own mental activities that 'we experiment in ourselves within'. Namely, sensation and reflection are two distinct modes of experience: through the former, one observes the physical qualities regularly co-exhibited in particular sorts of substances; through the latter, one observes the operations of one's own mind, including the occurrence of ideas and the regular patterns of their association.

However, this functional account of the mind and body provides no metaphysical principles by which to divide created things into two substantial kinds. In fact, Locke's functionalist position is too weak to be metaphysically dualistic. His contemporary critics, particularly orthodox Cartesians dualists, accused this weak position of 'discard[ing] *Substances* out of the reasonable part of the World' (Stillingfleet 1697, p. 240). According to Stillingfleet, the Lockean substratum—defined in terms of its function without reference to its intrinsic property—is unintelligible so that its existence cannot be rationally accepted. In contrast, Locke insists that the unknown substratum is intelligible in so far as we know what it *does*: it functions as a unifier of the qualities.

In reference to Locke, Thomas Lennon has divided substance dualism into two sorts: essential and bare. Cartesian dualism falls into the first

category in which 'things are *essentially* of one kind or the other' (1993, p. 321). In the second category (i.e. bare dualism), there are two kinds of thing, but 'the kinds are inessential to things, which may change kinds and remain numerically the same, or for that matter, may exemplify both kinds' (ibid.). When one says that a thing is of a certain kind, one tends to think that it has a certain essential nature or intrinsic property; however, it is doubtful whether the idea of an 'inessential kind' (or a kind that has no intrinsic nature) can constitute a viable version of metaphysical dualism. If the kind is inessential such that bare things can change kinds while remaining numerically the same, then there would be no point to bare *dualism*. In the above-cited passage, in fact, Lennon implies that bare dualism may collapse into bare monism. The same might be true in the functionalist view that I ascribe to Locke. According to Locke, we posit one substratum for a bundle of material qualities, and one for mental qualities; yet, his functionalism does not lead to metaphysical dualism. As he emphasizes, 'the general idea of substance [is] the same everywhere'—a supposed support:

> The general idea of substance being the same everywhere, the modification of thinking, or the power of thinking joined to it, makes it a spirit, without considering what other modification it has, as whether it has the modification of solidity or no. As on the other hand, substance, that has the modification of solidity, is matter, whether it has the modification of thinking or no.
>
> (Locke 1963, p. 33)

What makes a substance spiritual is just the 'modification' or 'power' of thinking 'joined to it', and the condition for it to be material is the power of resistance when acted upon (i.e. solidity) 'joined to it'. Here, Locke's view is symmetrical in regard to the two types of modification or power—mental and physical. Both are 'joined to' the same substance.[5]

The term 'immaterial' is often used in 2.23, in contrast to the adjective 'material'. When Locke uses the term 'immaterial spirit' in sections fifteen, twenty-two, thirty-one and thirty-two, the context in which it is used is in the comparison between the complex ideas of body and spirit: 'we are able to form *the complex* Idea of *an immaterial Spirit*' (ECHU 2.23.15). The way in which we have the complex idea of an immaterial spirit is as follows: 'And thus by putting together the *Ideas* of Thinking, Perceiving, Liberty, and Power of moving themselves and other things, we have as clear a perception, and notion of immaterial Substances, as we have of material' (ECHU 2.23.15). Locke continues:

> For putting together the *Ideas* of Thinking and Willing, or the Power of moving or quieting corporeal Motion, joined to Substance, of which we have no distinct *Idea*, we have the *Idea* of an immaterial Spirit; and by

> putting together the *Ideas* of coherent solid parts, and a power of being moved, joined with Substance, of which likewise we have no positive *Idea*, we have the *Idea* of Matter.
>
> (ECHU 2.23.15)

Here, Locke accounts for the perceptual processes in which one acquires the two types of ideas (of minds and bodies). These Lockean ideas are descriptive of the dual modes of our experience. They are 'superficial *Ideas* of things, discovered to us only by the Senses from without, or by the Mind, reflecting on what it experiments in it self within' (ECHU 2.23.32). In other words, the two disparate ideas are formed in different perceptual contexts through different modes of experience, so that the terms 'mind' and 'body' carry different meanings irreducible to one another.

The complex ideas of the mind and body can be said to describe the set of typical functions they play (rather than their intrinsic properties): for example, thinking, willing, and the power of moving the body (mental functions); the power of being moved, and that of communicating motion by impulse (physical functions). When he criticizes the Cartesian theory of mental substance, he maintains that 'it is to beg, what is in Question, and not to prove it by Reason' to claim that 'actual thinking is essential to the Soul, and inseparable from it' (ECHU 2.1.10). Something is 'supposed' to exist that performs the mind role. The following passage from the *Essay* can be interpreted by using this role/role player distinction:

> We know certainly by Experience, that we sometimes think, and thence draw this infallible Consequence, That there is something in us, that has a Power to think: But whether that Substance perpetually thinks or no, we can be no farther assured, than Experience informs us.
>
> (ECHU 2.1.10)

The phrase 'something in us' can be taken as referring to a role player, while 'a Power to think' can be taken as a role to play. Locke regards the human mind as having two sorts of mental power—intellectual and volition: 'two great and principal Actions of the Mind' are 'Perception, or Thinking' and 'Volition, or Willing' (ECHU 2.6.2). These powers are what 'we find in ourselves' (2.21.5), what we 'reflect on' (2.21.15), and what we 'experiment on' (2.23.5). Locke says, 'this or that actual Thought' is 'the occasion of Volition . . . or the actual choice of the Mind' (2.21.19). The activity of thinking is the result of 'exercising the power a Man has to chuse'. What exercises that power, then? More specifically, what possesses the powers and exerts them? Locke says that 'it is the Mind that operates, and exerts these Powers', and that 'the actual choice' of the mind is 'the cause of actual thinking' (2.21.19). Locke introduces another term—'agent'—to refer to the subject that has and exerts the mental powers: 'it is the Agent that has power, or is able to do' (2.21.19). By 'agent', here, Locke means a thing that has the bundle of powers—a 'substratum'. To put it another way, the term 'agent' can be understood as meaning a role player.

What is striking about Locke's functionalism is that, as we examined in the previous section, he is a functionalist in regard to the body as well. We should further note that Locke's account of the primary qualities becomes more descriptive in regard to the microscopic objects. While 'senses' take the ordinary-sized objects as being 'enough to be perceived', the 'Mind' understands them somewhat differently. In reference to the ordinary-sized objects, the idea of solidity refers to the simple idea of touch: 'The *Idea* of Solidity we receive by our Touch' (ECHU 2.4.1). When it comes to the insensible objects, however, Locke describes their solidity in more conceptual (or functional) terms. The following passage can be taken as an example where Locke relies on the two levels of observation, macro and micro:

> The Mind, having once got this *Idea* [the idea of solidity] from such grosser sensible Bodies, traces it farther; and considers it, as well as Figure, in the minutest Particle of Matter, that can exist; and finds it inseparably inherent in Body, where-ever, or however modified.
>
> (ECHU 2.4.1)

With regard to the insensible particles, this cited passage implies, one should do some sort of inductive reasoning such that one ascribes to microscopic objects the same type of features one has observed in macroscopic objects: 'The Mind, once got this *Idea* . . . considers it . . . in the minutest Particles of Matter'. Locke's account of the primary qualities in general becomes more descriptive, functional, and agnostic when it comes to the insensible particles:

> These insensible Corpuscles, being the active parts of Matter, and the greatest Instruments of Nature, on which depend not only all their secondary Qualities, but also most of their natural Operations, our want of precise distinct *Ideas* of their primary Qualities, keeps us in an incurable Ignorance of what we desire to know about them.
>
> (ECHU 4.3.25)

In regard to the infinitesimal objects, the idea of primary qualities would be rather abstract to the extent that the alleged 'resemblance'—that is, between the primary qualities and the idea of them—should be seen to consist in descriptive accuracy or rigorousness of description: 'the *Ideas of primary Qualities* of Bodies, *are Resemblances* of them and their Pattern do really exist in the Bodies themselves' (ECHU 2.8.14).[6]

Locke avoids clearly characterizing the intrinsic property of any sort of substance, whether physical or mental, instead describing it as 'a supposed I know not what'. He believes in the ground for the bundle of qualities it supports, yet at the same time characterizes it in terms of its functional role

alone. So, substrata are taken to be 'supposed but unknown' supports. Our ideas of things are 'very disproportionate to Things themselves', whether macro or micro, or whether physical or mental. Meanwhile, Locke provides a unified account of a particular sort of substance. Its ingredients include a bundle of qualities and their unifier (substratum). Their qualities are observed through different modes of experience. The acquired ideas of mind and body are disparate in their content; yet, this conceptual or semantic distinction—wherein each is characterized in terms of its own typical function—does not actually address metaphysical dualism with regard to the human mind and body.

CONCLUSION

According to Locke, a bundle of properties and their unifier (substratum) are two components of the thingness of any thing, whether macro or micro, or whether mental or physical. Whatever plays the union role counts as a substratum. The role realizer is a particular constitution of the insensible particles, which is the subject matter of what Locke refers to as 'experimental philosophy', which we would now call 'natural sciences'. Indeed, there are two dimensions in Locke's account of substratum: experimental and speculative. The functionalist position we have explored can be considered its speculative dimension, which entails the idea of epistemic humility and which is a preview of the recent metaphysical claims that roles and intrinsic properties can come apart. This multifaceted account of substratum in the *Essay* has been somewhat neglected. The bare substratum reading has ignored the experimental dimension of its realizers as well as the epistemic import of the qualifier 'unknown'. The substratum role player is no such naked particular but a positively natured being, the intrinsic property of which is unknown due to the fact that our empirical theories are confined to the observation of roles. By contrast, the identification of the substratum with a determinate constitution tends to overlook the functional import of the qualifier 'supposed' and thereby its rather speculative dimension. A bundle of qualities and their unifier are universal components of any thing—whether macro or micro, or whether corporeal and mental—while its 'sort' or 'kind' depends on its nominal essence. Locke's modernized account requires equal consideration of both qualifiers: 'supposed' and 'unknown'. I have sought to offer a view in which Locke's crucial theses, reflected in the two qualifiers, are equally illuminated in the proper historical context.

NOTES

Earlier versions of this chapter have been read at Oxford Seminar in Early Modern Philosophy (University of Oxford, 2010) and South Central Seminar in Early Modern Philosophy (Texas A&M University, 2010). I am grateful to the participants for their suggestions and criticisms in the seminars and to Tom Stoneham and Justin Zortea, who read this final version and gave me extremely helpful comments.

1. In the same vein of thought, A.S. Pringle-Pattision accused Locke of suggesting a naked support stripped of all its positive features, 'to which any kind of qualities may be arbitrary annexed' so that the set of qualities it allegedly supports is merely tied to or seated in it (rather than rooted in it) no matter how they could be so. Pringle-Pattision made this accusation in his footnote to his edited *Essay* (Oxford, 1924) 3.3.15. In support of this bare substratum reading, David Armstrong remarks that 'the great hostility to substance that you find in the British tradition has been hostility to [Lockean] substratum' (1989, p. 61). Armstrong goes on to observe that 'The British Empiricists were really reacting against Locke's unknown substratum. This in turn created a climate of opinion favorable to the Bundle Theory, which gets rid of substratum by identifying a thing with the bundle of its properties' (ibid.).
2. Locke's criticism of scholastic essentialism is stated in the following quotations: 'The Learning and Disputes of the Schools, having been much busied about *Genus* and *Species*, the Word *Essence* has almost lost its primary signification; and instead of the real Constitution of things, has been almost wholly applied to the artificial Constitution of *Genus* and *Species*' (ECHU 3.3.15); 'when I am told that something called *substantial form* is the Essence . . . I have no *Idea* at all, but only of the sound Form' (ECHU 2.31.6).
3. In reference to this functionalist view, I have elsewhere examined the underlying idea of Locke's epistemic humility on the intrinsic properties of things themselves. See Kim (2014).
4. Elsewhere, I have drawn some parallels between Locke and Donald Davidson on this issue and argued for Locke's commitment to nominal dualism, refuting metaphysical dualism interpretations. See Kim (2010).
5. It is beyond the scope of this paper to delve into the issue of what Locke meant by the 'superadded' power of thought (ECHU 4.3.6), which will be a topic for another work; however, briefly put, my observation is that the divine act referred to in Locke's text should be read in the context of referencing the nominal duality (and thus functional duality) rather than in its literal sense which suggests property dualism. In most cases, Locke refers to the divine act in the context of his discussion of natural kinds (e.g. elements, horses, peach trees, men) or the more general kinds (i.e. minds and bodies)—however, 'kinds' are nominal essences for Locke. The addition might be considered as some functional addition.
6. In this regard, I find a Lockean view in Stephen Mumford's (1998) functionalist approach of dispositions. He has in mind a moderate view according to which the categorical/dispositional distinction is a distinction in the way in which we describe properties or states in the world: the two categories present 'two distinct ways of characterizing the same non-linguistic world' (1998, p. 192). Here is Mumford's humility: 'The danger is projection of this distinction onto the world such that it is taken to be a division in reality rather than a division in ways of talking about reality' (ibid.). The statement 'all properties are categorical' means that the predicate 'categorical' has universal application to all the properties, and the same is true of the predicate 'dispositional'. In this regard, he proposes the term 'neutral monism' in the course of resolving the tension between categorical monism and dispositional monism; however, the neutrality would not mean (when applied to Locke) the bareness that Bennett ascribed to Locke. The unidentifiable property has a positive nature, in virtue of which it performs the role. It is 'neutral' in that it refrains from classifying reality as either *really* categorically or *really* dispositional.

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3 Hume on Substance
A Critique of Locke

Donald L. M. Baxter

The ancient theory of substance and accident is supposed to make sense of complex unities in a way that respects both their unity and their complexity. On Hume's view such complex unities are only fictitiously unities. This result follows from his thoroughgoing critique of the theory of substance.

I will characterize the theory Hume is critiquing as it is presented in Locke. My reading of Locke will follow Jonathan Bennett in presupposing what he calls the 'Leibnizian interpretation' of the relevant texts.[1] Locke uses the word 'substance' in two senses. In one sense, an individual or mass such as 'a Man, Horse, Gold, Water, *etc.*' is a substance. In another sense a substance is the principle of unity and identity for an individual in which its accidents such as 'Colour or Weight' inhere. It is a 'Substratum', a 'pure Substance in general' (*John Locke: An Essay Concerning Human Understanding* (ECHU) 2.23.1–4). Call substance in the first sense 'individual substance' and in the second sense 'pure substance'.[2] In the *New Essays* Leibniz locates both senses in Locke.[3]

Hume's view in the *Treatise* is that pure substance is a fiction, as is complex individual substance. Only simple individual substances are real. Surprisingly, however, they turn out to be the so-called accidents that were supposed to inhere in a pure substance, namely, qualities and perceptions.

I will discuss the seven main parts of Hume's view: (1) that we have no idea of pure substance; (2) that there is no complex individual substance, except in a loose sense; (3) that the fiction of complex individual substance arises in a way parallel to that of the fiction of identity through time; and (4) results in the fiction of pure substance; (5) that simple qualities and perceptions satisfy the definition of individual substance; (6) that there is no such thing as inherence; and (7) that there is no such thing as pure substance.

Hume's views on substance are often mentioned without being discussed in detail. Kemp Smith, Stroud, and Garrett, for example, mostly summarize various claims of Hume in the course of expounding on his theory of the idea of personal identity.[4] In contrast, I will attempt to present a systematic treatment of Hume on substance.