Lockean Mechanism and the Principle of Identity

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Abstract

Scholars have mainly concentrated their efforts on Locke's account of personal identity over time. However, over the last decade, several important studies have been devoted to Locke's view on identity of material things and organisms. These studies mainly focused on the consistency of this view, and Locke's position has been conceived alternatively as an example of relativist or absolutist theory of individual identity.

In this paper, my aim is to address his theory on the identity of material things and organisms from a different perspective. Acknowledging that Locke's conception of identity is entangled with several other vexing points of his metaphysics (mainly, his famous distinction between real and nominal essence, his conception of ideas of individual substances and of kinds of beings), I propose to make sense of one of the main interpretative difficulties raised by Locke's account of identity by showing it to be dependent on his view on natural philosophy.

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Introduction

The influence of Boyle's corpuscular hypothesis on Locke's philosophy is now very widely acknowledged.[2] Locke's distinctions between primary and secondary qualities and between real and nominal essences are generally held to be grounded in his allegiance to corpuscularianism. Subsequently, many important works have been devoted to estimate Locke's commitment to corpuscularianism,[3] but very few have considered the treatment of the principle of individuation Locke gives in Chapter 27 of Book 2 of *An Essay Concerning Human Understanding*[4] as a relevant aspect of his adhesion to the corpuscular hypothesis.

I have argued in a previous paper[5] that Locke's theory of qualities was not a strict application of the corpuscular hypothesis but is better understood as a metaphysical thesis necessary for his philosophy of natural philosophy. According to such a view, the corpuscular hypothesis should be considered as the best hypothesis available in natural philosophy during Locke's time rather than the particular theory that he wanted to ground in philosophical arguments. This paper expands this proposition by examining some difficulties raised by Locke's account of the identity of bodies (both living and non-living) vis-à-vis his distinction between real and nominal essences.

I will begin by recalling Locke's conception of the principle of individuation and its application to bodies (simple substances i.e. atoms, but also compounded substances 'masses of matter' and 'living bodies').

In the second section, I will expose what I think is the main tension in Locke's theory of identity of compounded bodies.

In the final section, I will propose a reading of the real / nominal essence distinction that entails a resolution of the tension pointed out in section 2 and comports with the kind of role I contend the corpuscular hypothesis played in Locke's philosophy of natural philosophy.[6]

1 Identity of bodies in the *Essay*

This first section proposes a general overview of Locke's treatment of identity as proposed in *An Essay Concerning Human Understanding*, 2.27, "Of

[2] For instance Margaret Atherton notes that "it is close to becoming a contemporary orthodoxy that Locke's motive in writing the *Essay* was to provide a foundation or defense for corpuscular mechanism" [Atherton 1991]

[3] The most important undoubtedly being Peter Alexander's *Ideas, Qualities and Corpuscles: Locke and Boyle on the External World* [Alexander 1985]. See [Downing 1998] for a good review of the literature on this topic.

[4] All references to *An Essay Concerning Human Understanding* are to [Locke 1975]. References are given by Book, Chapter, Section, and page number.

[5] See [Brun Forthcoming]

[6] In this paper, the phrase « philosophy of natural philosophy » points at the philosophical conception Locke supported on natural philosophy.

Identity and Diversity".[7] Most of the studies devoted to this chapter focused on Locke's account of personal identity over time.[8] However, during the last decade several important studies were devoted to Locke's view on the identity of material things and organisms. Locke's theory of individuation entails that two things of the same kind cannot be in the same place at the same time. This indicates that Locke allows spatiotemporal coincidence as long as the things which coincide are 'of different kinds'. The problem arises when this principle is applied to living creatures such as oaks, horses and men. Indeed, Locke distinguishes between the mass of matter that constitutes a man (an oak or a horse) at a time and the man (the oak or the horse) that perseveres over time. While the man must lose or gain particles constantly while maintaining its identity, any subtraction or addition of particles to the mass of matter that constitutes him will make a new (different) mass of matter. As reasonable as this distinction may seem, it introduces a tension in Locke's position. Thus, Locke's position has been alternatively conceived as an example of relativist[9] or absolutist[10] theory of individual identity. I will not enter in this first section the difficulties that Locke Scholars have noticed in this theory; rather, I will try to make this presentation as neutral as possible.

1.1 The structure of Locke's account of identity

At the onset of 2.27, Locke suggests that our philosophical concerns about identity affect only those objects which exist in both space and time. He writes:

> When therefore we demand, whether any thing be the same or no; it refers always to some thing that existed such a time in such a place, which 'twas certain, at that instant, was the same with it self, and no other. (2.27.1, p. 328)

This is corroborated by his well known statement that "the *principium individuationis* (…) is Existence it self" (2.27.3, p. 330). Indeed, Locke makes clear that each object is distinct from every other object of the same kind by the time and place at which it first began to exist and by every subsequent moment and location of its existence. In fact, his presentation of the principle of individuation in 2.27.1 specifies several crucial consequences of his definition of identity:

> From whence it follows, that one thing cannot have two beginnings of existence, nor two things one beginning; it being impossible for two things of the same kind to be or exist in the same instant, in the very same place, or one and the same thing in different places. (2.27.1, p. 328)

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[7] [Locke 1975], pp. 328-348.
[8] Especially in regard to the role of consciousness in the definition of personal identity.
[9] Thus, [Reid 1969], p. 356, [Geach 1967], p. 11 sq., [Mackie 1976], p.160, [Wiggins 1976], p. 142 n.23, [Noonan 1978], and [Wedeking 1990], pp. 179-181.
[10] Thus, [Alston and Bennett 1988], [Chappell 1989], [Uzgalis 1990], and [Conn 2003].

If we want to make sense of Locke's definition of the principle of individuation, we have to unfold its structure. Locke takes his principle of individuation to entail four propositions:[11]

P1 "one thing cannot have two beginnings of existence"

P2 two things of the same kind cannot have one and the same beginning of existence

P3 it is "impossible for two things of the same kind to be or exist in the same instant, in the very same place"

P4 it is impossible for one and the same thing to exist in different places at the same time

Among these four propositions, P3 seems to be the most general statement of the principle of individuation. Two important characteristics of principle P3 should be noticed:

(1) Locke claims P3 to be obvious and indisputable.

> For we never finding, nor conceiving it possible, that two things of the same kind should exist in the same place at the same time, we rightly conclude, that whatever exists any where at any time, excludes all of the same kind, and is there itself alone. (2.27.1, p. 328)

This statement directly originates in Locke's account of solidity in 2.4. Indeed, Locke defines solidity as:

> the resistance we find in Body, to the entrance of any other Body into the Place it possesses, till it has left it. (2.4.1, p. 122-123).

Later in 2.4.4, he insists:

> solidity consists in repletion, and so an utter exclusion of other bodies out of the space it possesses. (2.4.4, p. 125)

According to Locke's definition of solidity, P3 is necessarily true concerning bodies. Since solidity is "essential to body" and "no where else to be found or imagin'd, but only in matter" (2.4.1, p. 123), Locke therefore reaches the conclusion that it is indubitable that two bodies cannot occupy the same place at the same time.[12]

(2) We can wonder, reading P3 what Locke exactly meant by kinds. Should we understand 'kinds' as an equivalent for 'kinds of bodies'? The text seems to speak against this view, for he indicates in section 2 that:

> We have the ideas but of three sorts of substances; 1. God. 2. Finite intelligences. 3. Bodies. (2.27.2, p. 329)

Locke also specifies that:

[11] For a discussion of the deductive links between these four propositions, see [Noonan 1978], pp. 343-344 and [Chappell. 1989], n.6, p. 81.

[12] Locke insists on this point in 4.7.5, p. 594, when describing *Maxims* (namely, self-evident propositions).

> though these three sorts of substances, as we term them, do not exclude one another out of the same place; yet we cannot conceive but that they must necessarily each of them exclude any of the same kind out of the same place (2.27.2, p. 329)

Hence, we should interpret 'kinds' here as an equivalent for 'sorts of substances'. Moreover, as we will see, Locke in the subsequent sections of the chapter places his principle of individuation in operation on each of these kinds of substances.

Therefore, if P3 applies indifferently to spirits and bodies, Locke seems committed to acknowledge that spiritual substances are also solid.[13]

His principle of individuation not only states that each object is distinguishable from every other object (of the same kind) by the space it occupies at a given time *t*. It also states that it is distinct from every other object of the same kind by the specific time and place *in which it first began to exist*. P1 — principle of individual beginning of existence — is stated as follows:

> That therefore that had one beginning, is the same thing; and that which had a different beginning in time and place from that, is not the same, but diverse. (2.27.1, p. 328)

P1 seems to be of particular importance in regard to finite spirits, since P3 is indubitable *only* for bodies. Moreover, Locke needed to show how we could account for diachronic identity. Thus, at the beginning of 2.27.2, Locke applies this principle to finite spirits:

> finite spirits having had each its determinate time and place of beginning to exist, the relation to that time and place will always determine to each of them its identity, as long as it exists. (2.27.2, p. 329)

What this principle of individuation amounts to, is that each object that exists is distinguished from every other object of the same kind by the time and place at which it first began to exist *and* by every subsequent moment of its existence. In fact, in saying that "the *principium individuationis* (…) is Existence it self", Locke aimed to give a general account of synchronic as well as diachronic identity.

To be sure, many difficulties arise from Locke's account of the principle of individuation, but they will not be entered into in this first section. Instead, I

[13] Maybe not. But Locke professes a diplomatic agnosticism on this point (See 2.15.11, p. 203-204: "what spirits have to do with space, or how they communicate in it, we know not. All that we know is, that bodies do each singly possess its proper portion of it, according to the extent of solid parts; and thereby exclude all other bodies from having any share in that particular portion of space, whilst it remains there."), but whereas he clearly argues that spirits are located in space, he never explicitly says that they are extended and solid. However, there is an obvious difficulty in Locke's application of P3 to spiritual substances, since it seems to introduce implicitly the ideas that spirits are solid or at least spatially located (thus extended). I won't enter this question here, though I think it is a decisive point concerning Locke's so called 'crypto-materialism'.

would like now to turn to Locke's application of this principle to the different sorts of substances he distinguished.

1.2 Locke's theory of identity of substances

So far, I have presented Locke's general account of his *principium individuationis*. This principle gives Locke a general concept of identity accounting for how a thing which was in p_1 at t_1 can be the very same thing which is in p_2 at t_2. The true originality in Locke's theory of identity (and perhaps the source of most of its difficulties) lays in his claim that a relevant judgment of identity *depends on the ideas of the things to which this relation is assigned*. Indeed, Locke is convinced that:

> That which has made the difficulty about this relation, has been the little care and attention used in having precise notions of the things to which it is attributed. (2.27.1, p. 328)[14]

In short, Locke's suggestion is that the changes that an object can tolerate and still continue to exist are determined by the sortal concept under which we categorise this object; e.g. horse identity is different from mass of matter identity. Thus, his treatment of diachronic identity follows a very gradual path from 'Atoms' and 'Finite Spirits' towards 'Living bodies' and 'Persons'. This aspect of Locke's account of identity led several commentators to count Locke among the supporters of a relative identity theory.[15]

1.2.1 Simple substances: Finite Spirits and Atoms

In section 2, Locke begins his enquiry with finite spirits and atoms (leaving aside the question of God's identity which is obvious). He asserts that both kinds of these simple substances have determinate time and place of origin, therefore, according to P1, "the relation to that time and place will always determine to each of them its Identity as long as it exists." (2.27.2, p. 329) He adds a further

[14] See also **2.27.7**, p.332: "It is not therefore unity of substance that comprehends all sorts of identity, or will determine it in every case: But to conceive and judge of it aright, we must consider what idea the word it is applied to stands for; it being one thing to be the same substance, another the same man, and a third the same person, if person, man, and substance, are three names standing for three different ideas; for such as is the idea belonging to that name, such must be the identity: Which, if it had been a little more carefully attended to, would possibly have prevented a great deal of that confusion which often occurs about this matter, with no small seeming difficulties." and **2.27.28**, p. 347: "the difficulty or obscurity that has been about this matter, rather rises from the names ill used, than from any obscurity in things themselves. For whatever makes the specifick idea to which the name is applied, if that idea be steadily kept to, the distinction of any thing into the same and divers will easily be conceived, and there can arise no doubt about it."

[15] Relative identity theory states that there is a different kind of identity for each sort of thing. It amounts to rejecting the principle of the Indiscernability of Identicals since it considers that two individuals *x* and *y* can be identical under some sortal term *F* while they are not identical under some other sortal term *G*, although *x* and *y* are both *Fs* and *Gs* (See: [Geach 1967], [Mackie 1976], [Noonan 1978], [Curley 1982], [Thiel 1998]) . I will come back on this interpretation in more details in the second section of this paper.

condition for the identity of atoms though: that during an atom's existence, "no addition or subtraction of matter" can be made (ibid.). Thus, when reading section 3 we have no difficulty in accepting his definition of an atom: "a continued body under one immutable superficies existing in a determined time and place." (2.27.3, p. 330). Applying his individuation principle to atoms, he states:

> 'tis evident that, considered in any instant of its existence, it is in that instant the same with itself. For being at that instant what it is, and nothing else, it is the same, and so must continue as long as its existence is continued; for so long it will be the same, and no other. (2.27.3, p. 330)

This statement is undeniable, but it looks like either a *petitio principii*, or a trivial statement. In fact, what really matters in this passage is the clear definition it gives of an atom, "a continued body under one immutable superficies [whose] existence is continued". An atom is individuated by its shape and size. And its identity – as Bennett and Alston contended[16] – is insured not only by this necessary requirement but also by its spatiotemporal continuity as stated in the phrase "a continued body".

Thus an atom x occupying p_1 at t_1 is the atom y occupying p_n at t_2 if, and only if, x and y have the same size and shape *and* x and y are spatiotemporally continuous. That is, x and y are identical if, and only if, they exemplify the very same qualities of shape and size at every single moment between t_1 and t_2.

Assuming that this accurately describes Locke's position (that is, provided that Alston and Bennett's interpretation of the 'continued' clause is right) we can now turn to 'masses of matter'.

1.2.2 Aggregates of simple substances: masses of matter

Since masses of matter are aggregates of atoms, the identity of such masses depends on the identity of its components: "if two or more atoms be joined together into the same mass, every one of those atoms will be the same" (2.27.3, p. 330). The question to be asked here is if this identity involves only a numerical identity or rather an organisational identity of its components. The text seems to preclude this second hypothesis.

> And whilst they exist united together, the mass, consisting of the same atoms, must be the same mass, or the same body, let the parts be never so differently jumbled: But if one of these Atoms be taken away, or one new one added, it is no longer the same Mass, or the same Body. (2.27.3, p. 330)

In other words, as Alston and Bennett contended,[17] this passage speaks for the idea that Locke supports a kind of *mereological essentialism* for masses of matter. Indeed, Locke explains that a mass of matter m_1 in place p_1 at t_1 will be

[16] See [Alston and Bennett 1988] pp. 32-33.
[17] See [Alston and Bennett 1988], p. 28.

identical to a mass of matter m_2 in p_n at t_2 if and only if m_1 and m_2 are composed of the very same atoms x_1 , x_2 , x_3 , …x_n at t_1 and t_2.

Because Locke's definition of a mass of matter is that of a numerically defined collection of atoms, the manner in which these parts are aggregated is a contingent feature of it. Therefore, any sort of change compatible with x_1 , x_2 , x_3 , …x_n being continuously aggregated is compatible with the continued existence of the mass they compose. They can change their relative position to one another and still compose *m*.

This account of identity of masses of matter allows Locke to account for the cases in which an atom *xn* has been first added to mass of matter *m1* (thus becoming *m2*) and to which this very same *xn* has been subsequently removed from *m2* (thus re-becoming *m1*).

1.2.3 Living Bodies

Locke next turns to the identity of 'Living Bodies' or 'Living creatures' (i.e. organisms). Building his thought upon the famous example of an oak tree, he acknowledges that any organism undergoes a continuous change of its constituent matter. This implies that we can have the same tree at *t1* and *t2* although we do not have the same mass of matter at *t1* and *t2*. Let us describe this example more precisely.

In section 3 of chapter 27, Locke makes the following observation:

> In the state of living creatures, their identity depends not on a mass of the same particles, but on some thing else. For in them the variation of great parcels of matter alters not the identity: An oak growing from a plant to a great tree, and then lopped, is still the same oak; and a colt grown up to a horse, sometimes fat, sometimes lean, is all the while the same horse: Though in both these cases, there may be a manifest change of the parts; so that truly they are not either of them the same masses of matter, though they be truly one of them the same oak, and the other the same horse. The reason whereof is, that in these two cases, a mass of matter, and a living body, identity is not applied to the same thing. (2.27.3, p. 330)

In other words, the changes incompatible with the continued existence — and therefore identity— of masses of matter are compatible with the continued existence of living bodies. Since a living body is composed of different particles of matter at different times, its identity cannot persist on the same grounds as a mass of matter.

Locke faces the necessity of explaining why living bodies are capable of gaining or losing parts and remaining the same despite the fact that they are ultimately masses of matter. He sees this difference in the fact that a mass of matter is "only the cohesion of particles any how united", whereas a living body (specifically an oak) is:

> such a disposition of them as constitutes the parts of an Oak; and such Organisation of those parts as is fit to receive, and distribute nourishment, so as to continue, and frame the Wood, Bark, and Leaves, etc. of and Oak, in which consists the vegetable life. (2.27.4, p. 331)

So the crucial difference, according to Locke, between a mere mass of matter and a living body is the way a living body's constituent particles are united in order to sustain physiological processes necessary to *its specific continued life*. The organisation or 'disposition' of particles constitutes the causal basis of the living body's specific functional unity, but also the causal basis of its sensible qualities. That is to say, a mass of matter has the life of an oak tree if, and only if, it has the appropriate organisation of particles; i.e. the specific corpuscular constitution that causes the sensible qualities of our idea of an oak tree.

Considering these features of Locke's theory of the identity of material beings, many have diagnosed that it was fundamentally flawed. The main concern rests on the problem of coinciding bodies. How can two substances (namely a mass of matter and a living body) coincide if their identity conditions are different? In order to see how this problem can be addressed from the perspective of Locke commitment to Boylean corpuscularianism, it is necessary to flesh this problem out more precisely.

2 The problem of coinciding bodies

Vere Chappell in his article "Locke and Relative Identity"[18] intends to refute the relative identity interpretation of Locke's theory of identity by showing that the example of the oak tree he used at 2.27.3 does not entail the canonical formulation of the strong relative thesis "*R*" pinpointed by David Wiggins in *Identity and Spatio-Temporal Continuity*. Wiggins states this thesis in the following manner: "the notion of identity is concept- or sortal-relative, i.e., relative to different possible answers to the question '*a* is the same *what* as *b*?'".[19] According to the relative identity interpretation, the example of the oak tree should be understood in the following way:

> Something is both an oak and a mass of matter at a time *t* (*Oa* at *t* & *Ma* at *t*); something also is an oak and a mass of matter at a later time *t'* (*Oa'* at *t'* & *Ma'* at *t'*); the oak at *t* and at *t'* are identical ($a = O = a'$); but the masses at *t* and at *t'* are not identical ($a \neq M \neq a'$). (I use the expressions "$= O =$" and "$\neq M \neq$" to abbreviate "is the same *O* as" and "is not the same *M* as" respectively.) [Chappel 1989], p. 72.

In his paper, Chappell contends that this formalisation is not the form of Locke's example:

[18] [Chappell 1989]
[19] [Wiggins 1967], p. 1.

> The reason it is not is that the oak which exists at *t* is not identical with the mass of matter existing then, nor is the oak at *t'* identical with the mass of matter existing at that time. The form of the case is there fore this: *Oo* at *t* & *Oo'* at *t'* & *o* = *O* = *o'* ; *Mm* at *t* & *Mm'* at *t'* & m ≠ *M* ≠ *m'* ; *o* ≠ *m* ; *o'* ≠ *m'*. (Ibid.)

Chappell gives several reasons in support of his contention.

1) The supposedly obvious confirmation of this reading that is stated at 2.27.3, p. 330 –namely "that in these two cases of a Mass of Matter, and a Living Body, *Identity* is not applied to the same thing" – cannot be counted as strong evidence since Locke could be understood as speaking of *ideas* when he means to refer to their *objects*. In other words, Locke would not be saying that the mass and the tree are different things, but rather that their ideas are different.
2) Relying on Locke's statement of P1 at 2.27.1, p. 328, Chappell shows that the oak tree existing at *t'* is the same tree that existed at *t* and therefore began to exist at *t* or at some time before, whereas the mass of matter at *t'* (being different from the mass of matter that existed at *t*) began to exist after *t*. "Thus the tree and the mass existing at *t'* had different beginnings: they began to exist at different times. And so they must, by Locke's principle [that is, P1] be two different things." [Chappell 1989], p. 73
3) Chappell also draws an argument from the structure of the text, noticing that "the principle [that is P3] is stated in the two sections immediately preceding that in which the case is described, and is reinvoked at the beginning of that section itself." (Ibid.)

If Chappell is right in rejecting the relative identity interpretation of the oak tree example, this seems to imply that the application of P1 to the example of the oak tree conflicts with the general statement of P3. Of course, Chappell is aware of this problem and tries to answer this objection. Chappell's strategy rests on the distinction of sub-kinds allowing for the principle of individuation in all its generality to apply. Hence, "the oak tree and the mass are two beings existing at one place at one time, but they are beings of different kinds, even though both are bodies" [Chappell 1989], p. 75. This answer seems to be insufficient for answering the problem. Indeed, the problem Chappell identified is not the only one Locke's conception of identity has to face.

Locke's theory of individuation apparently involves a tension between two contradictory theses. According to proposition P3 two things of the same kind cannot be in the same place at the same time. That is, spatiotemporal-coincidence is acceptable for Locke if and only if the coinciding things are 'of different kinds'. However, Locke's elaboration of the principle of individuation for living bodies seems to entail that masses of matter and living bodies can coincide even if they are two things of the same kind, that is, 'bodies'. The problem I want to highlight in the remainder of this section is just in what sense,

if one considers that living bodies and masses of matter are things of different kinds, it does help us out of the net.

We have seen that, in 2.27.3, Locke makes a sharp distinction between simple material substances and compounded material substances. Indeed, after presenting the "*principium Individuationis*", Locke indicates that this principle "seems easier to conceive in simple substances or modes; yet when reflected on, is not more difficult in compounded ones." A first difficulty arises since Locke said that simple substances and compounded substances were the most general kinds of substances. The question is now to determine if organisms (living bodies) are of the same kind of compounded substance as masses of matter.

Indeed, we should understand that the statement in 2.27.2 that "We have the ideas but of three sorts of substances; 1. God, 2. Finite intelligences, 3. Bodies." (p. 329) supports the view that God, finite intelligences and atoms are simple substances whereas masses of matter are bodies. (Obviously, given 2.27.3, atoms and masses of matter are bodies, but the former are simple and the latter compounded).

Thus, if we take seriously P3, the text seems to indicate that Locke holds that 'mass of matter' and 'organism' are two different kinds of compounded substance. Moreover, the following step in Locke's treatment of identity is to distinguish "wherein an Oak differs from a Mass of Matter." Following Chappell, I take it that this passage suggests that 'mass of matter' and 'living body' (or 'organism') are different kinds of compounded substance.

At first, this understanding of Locke's treatment of the coincidence of things of different kinds poses no problem. However, if one connects this account together with 1) his definition of solidity, and 2) his use of 'kinds' in the passages quoted; this reading either seems untenable or leads one to a major problem in Locke's account of identity.

Locke's discussion of solidity seems to rule out the possibility of two bodies being in the same place at the same time *simpliciter*, whether they are of 'different kinds' or not. If organisms and masses of matter are bodies, and if (as seen above) solidity is essential to bodies, then two bodies (however living or not) cannot coincide. And since Locke states that masses of matter are bodies (2.27.3, p. 330), he leaves us facing a great difficulty.

Moreover, and independently of Locke's conception of solidity, the indeterminacy in which Locke leaves the notion of 'kinds of substances' in the passages of 2.27.3 to 2.27.7 leads to a conflict between Locke's ontology and his treatment of identity of bodies. In a nutshell, one must face the following tension: Locke holds that two objects *of the same kind* cannot occupy the same place at the same time. Locke also holds that a mass of matter and the living body it constitutes at a given time *t* are not identical (they do not have the same identity conditions) but are in the same place at the same time. If we want to make sense of these statements, we have to consider that the mass of matter and the living body it constitutes are of different kinds.

First, however, the text encourages a reading of 'kinds' as equating 'God, finite intelligence, and bodies'. Since we have to accept that 'masses of matter' are 'bodies', and since 'living bodies' are also 'bodies', we end up either supporting the view that we have two things of the same kind (bodies) in the same place at the same time (namely, a mass of matter and the living body it constitutes) or we should reject that 'living bodies' are members of the kind 'bodies'. The first conclusion leads to a rejection of P3, which seems to be contradictory with Locke's intentions as stated in several occasions between 2.27.1 and 2.27.5. The second one also leads to a contradiction. Indeed, if 'living bodies' are not members of the kind 'bodies' then either 'living bodies' are 'God' or 'Finite Spirits' (which seems the most unlikely) or 'living bodies' are not substances at all. This last trend of interpretation has been followed by the 'mode interpretation' supported by William Alston and Jonathan Bennett and by Peter Uzgalis.[20] Their reading of 2.27 takes it that living bodies are mixed modes rather than substances, thus accounting for the possible coincidence of masses of matter (compounded substances) and living bodies, since they are of two different kinds. However appealing this interpretation might seem to be, it is a fact that Locke uses recurrently living bodies (such as horse, man, sparrow, swan, etc.) as examples of substances. Therefore, he holds explicitly that 'organisms' *are* substances of the kind 'bodies'; and we should admit that his position leads to a rejection of P3.

Ostensibly, there is a problem in Locke's conception of identity in regard to kinds of substances.[21] Either we have to accept that the same horse is in fact two individuals (namely a mass of matter and an organism) that coincide in the same place *p* at every moment *t* of their existences —thus violating P3—or we have to account for a different interpretation of the kinds of substances involved in this passage.

These two problems need to be accounted for if we want to make sense of Locke's theory of identity. Both rest on the question of the kinds of substances masses of matter and living bodies are members of. It is reasonable to consider that the keys to this problem can be found in Locke's theory of essences and in his related conception of mechanism.

3 Mechanism, essences and substances

As Michael Ayers stated in his seminal article "Locke Versus Aristotle on Natural Kinds", [22] there is a fundamental connection between Locke's

[20] See [Alston and Bennett 1988] and [Uzgalis 1990].

[21] Several interpretations intend to tackle this problem, but I will not examine these options here. I have already mentioned the relative identity interpretation (See: [Geach 1967], [Mackie 1976], [Noonan 1978], [Curley 1982], [Thiel 1998]), as well as anti-relativist interpretations (See [Chappell 1989], [Chappell 1990]), and the mode interpretation (Thus [Alston and Bennett 1988], [Uzgalis 1990]), we should also notice the four-dimensionalist interpretation supported by Christopher Conn (in [Conn 2003]).

[22] See [Ayers 1981], p. 254.

conception of abstraction, his antirealism about essences and his adoption of mechanism. I contend that this connection rests on his conception of natural philosophy and underlies his conception of identity; and that a precise understanding of this connection can help us to address the problem of coinciding bodies as stated in the last section.

Locke is well known for being one of the most prominent defenders of an antirealist view about essences. One can describe his position as entailing the following three theses:

1) The world is naturally divided up into particular individual objects.
2) Yet, there is no mind independent essence of objects according to which an object *O* should be counted as a member of the species *S*.
3) There is no ontologically privileged way of sorting objects into kinds.

This view about essences has to be described in much more details in order to grasp the theoretical links between Locke's conception of identity, his mechanism and his theory of abstract ideas. Grounding my argument on these elements, a way out of the problem of coinciding bodies is at least partially possible.

I will first precise the context in which Locke presents his theory of essences and then propose what I believe to be the correct interpretation of Locke's distinction between real and nominal essences.[23] I will then present how this theory of essences can help us address the problem of coinciding bodies presented in section 2. This will lead me to present in what sense Locke's theory of identity of bodies and anti-essentialism rest on his conception of natural philosophy.

3.1 General terms and ideas

Locke's conception of our knowledge of things (and particularly of living bodies such as men) is well described in the famous passage of the *Essay* where he compares our knowledge of the constitution of a man to the one a country-man has of the "famous clock of Strasbourg" (3.6.3). In fact, we really only know of things are the sensible qualities they display, and in no way can we know the internal mechanical realities underlying and producing them (the corpuscular constitution of things). Locke's favoured argument here is that of the clockmaker: the internal mechanical structure of things is known only to God (and possibly of angels) as he is the maker of all things but we are limited in our knowledge of things to the collection of "all those qualities which are the ingredients of our complex idea" (ibid.).

One must connect this matter of facts concerning the possibility of our knowledge of the world with the famous distinction Locke introduces in his discussion of the meaning of general terms: the distinction between real and nominal essences.

[23] Following [Owen 1991] and [Phemister 1990].

Given Locke's mild nominalism (in the sense that he believes only particulars to exist) and given his conception of meaning according to which (most) terms refer to ideas. Locke needed to produce a conception of the meanings of general terms depending on general ideas. As Locke states:

> Words become general, by being made the signs of general Ideas: and Ideas become general, by separating from them the circumstances of Time, and Place, and any other Ideas, that may determine them to this or that particular Existence. By this way of abstraction they are made capable of representing more Individuals than one; each of which, having in it a conformity to that abstract Idea, is (as we call it) of that sort. (3.3.6, pp.410-411)

In the following section, Locke addresses the issue of how one forms (as a child) general ideas and uses general terms to refer to them.

> When time and a larger Acquaintance has made them observe, that there are a great many other Things in the world [than there "nurses" and "Mammas"], that in some common agreement of Shape, and several other Qualities, resemble their Father and Mother, and those Persons they have been used to, they frame an *Idea*, which they find those many Particulars do partake in; and to that they give, with others, the name *Man*, for Example. And thus *they come to have a general Name*, and a general *Idea*. Wherein they make nothing new, but only leave out of the complex *Idea* they had of *Peter* and *James*, *Mary* and *Jane*, that which is peculiar to each, and retain only what is common to them all. (3.3.7, p. 411)

This leads Locke to show how the same thing can be named differently depending on the generality of the idea which is made up from the collection of qualities shared by this very thing and some others.

> For observing, that several Things that differ from their *Idea* of *Man*, and cannot therefore be comprehended under that Name, have yet certain Qualities, wherein they agree with *Man* by retaining only those Qualities, and uniting them into one *Idea*, they have again another and more general *Idea*; to which having given a name, they make a term of a more comprehensive extension: which new *Idea* is made not by any new addition, but only, as before, by leaving out the shape, some other Properties signified by the name *Man*, and retaining only a Body, with Life, Sense, and spontaneous Motion, comprehended under the Name *Animal*. (3.3.8, pp. 411-412)

For Locke, one can produce different general ideas which the same thing can be annexed to according to the qualities taken into account for the production of these general ideas. In other words, the same individual can be named by different general terms meaning different general ideas at different levels of generality. But what is really important for my purpose is the

conception of essences that Locke draws from this theory of abstraction and his adoption of the "corpuscular hypothesis".

3.2 Real and nominal essences

At 3.3.13, Locke makes the connection between his theory of general ideas and the essences of things as follows.

> For when we say, this is a *Man*, that a *Horse*; (…) what do we else but rank Things under different specifick Names, as agreeing to those abstract *Ideas*, of which we have made those Names the signs? And what are the Essences of those *Species*, set out and marked by Names, but those abstract *Ideas* in the Mind; which are, as it were, the bonds between particular Things that exist and the Names they are to be ranked under? (3.3.13, p. 415)

In fact, abstract ideas of things *are* nominal essences. Locke's argument, presented in 3.3.15 (where he distinguishes nominal and real essences) rests on the evidence "that Things are ranked under Names into sorts or *Species*, only as they agree to certain abstract *Ideas*, to which we have annexed those Names, the *Essence* of each *Genus*, or Sort, comes to be nothing but that abstract *Idea*, which the *General*, or *Sortal* (…) Name stands for." And this conception of nominal essences is designed to account for the classification of things on the basis of the experiences we have of the qualities of things. Obviously, Locke is presenting his conception of nominal essence as an alternative account of categorisation to that offered by the Scholastic-Aristotelian tradition. This purpose is closely interlinked with Locke's adhesion to the corpuscular hypothesis and it is no surprise then that his conception of real essence should follow this line too.

Locke gives a first general definition of real essence at the beginning of 3.3.15:

> *Essence* may be taken for the very being of any thing, whereby it is, what it is. And thus the real internal, but generally unknown Constitution of things, whereon their discoverable Qualities depend, may be called their *Essence*. (…) And in this sense it is still used, when we speak of the *Essence* of particular things, without giving them any Name. (3.3.15, p. 417)

In this passage (and several others, e.g., 2.23.3, 2.31.6, 3.3.15, 3.3.17) Locke considers that real essences are characterised as those unknowable aggregation of corpuscles responsible for *all* of an individual's observable qualities. I label this first definition of 'real essence' the *'real individual essence'* of a thing; this is the real essence that any individual has 'before we give [it] a Name', before we sort it into a kind, or a species, by abstracting a general idea or defining a nominal essence.

In other words, these real essences are independent of nominal essences and general terms. Therefore, all the qualities included in a nominal essence 'flow from' and 'depend on' these real individual essences.[24]

In fact, there is also a second use of the phrase 'real essence' in the *Essay*. In this second sense, the term 'real essence' amounts to the group of corpuscular characteristics that are responsible for the particular qualities included in some specific nominal essence. For instance, malleability is a quality included in gold's nominal essence. That is, there are some corpuscular features of the *real individual essence* of each particular piece of gold that is responsible for that piece of gold's malleability. I will call this part of the real individual essence of a thing its *real specific essence* or 'real essence of species'.[25]

Locke repeatedly states that the nominal essence is the "Workmanship of the Understanding" (3.3.14). Indeed, we decide which qualities to include in the nominal essence, and, according to Locke's adhesion to the corpuscular hypothesis, these qualities are causally produced by the individual real essence. Thus, Locke does not contradict himself[26] when he states in 3.6.6 that:

> 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. But *Essence*, even in this sense, *relates to a Sort*, and supposes a *Species*: For being that real Constitution, on which the Properties depend, it necessarily supposes a sort of Things, Properties belonging only to *Species*, and not to Individuals (…). 3.6.6. p. 442

As a consequence, the *real individual essence* is the entire set of corpuscular structures determining the individual, whereas the *real specific essence* is only a subset of these corpuscular structures, subset which produces the qualities determining the relevant nominal essence.

Hence we can understand how a single particular thing (given its real individual essence) can be sorted into different kinds of things (at different levels of generality). When abstracting the general idea (i.e. the nominal essence) to which the general term is annexed, one leaves some of the features involved in the definition of a less general idea. Thus, a more general nominal essence is simply a complex idea that is only a 'part' of a less general nominal essence.[27]

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[24] See 3.3.17: "The other, and more rational Opinion [concerning essences], is of those, who look on all natural Things to have a real, but unknown Constitution of their insensible Parts, from which flow those sensible Qualities, which serve us to distinguish them one from another, according as we have Occasion to rank them into sorts, under common Denominations."

[25] Using a phrase to be found in Locke's Letter to Stillingfleet, *Works* IV, p. 90

[26] See [Phemister 1990], 39-40 and [Conn 2003], p. 30-31 for a more detailed analysis of this matter.

[27] See 3.3.9,p. 412, and 3.6.32, p. 459

Since Locke's principle of individuation, in particular P3, entails that the difference of kind is important to his theory of identity; this distinction of levels of generality could be helpful to address the difficulty raised in section 2. But even if we accepted that masses of matter and organisms are of different kinds would this help the problem of coinciding bodies?

3.3 Identity, Lockean mechanism and natural kinds

As we have already seen, Locke states the necessity of kinds for his theory of individuation in the following important passages:

> Tis not therefore Unity of Substance that comprehends all sorts of *Identity*, or will determine it in every Case: But to conceive, and judge of it aright, we must consider what *Idea* the Word it is applied to stands for: It being one thing to be the same *Substance*, another the same *Man*, and a third the same *Person*, if *Person*, *Man*, and *Substance*, are three Names standing for three different *Ideas*; for such as is the *Idea* belonging to that Name, such must be the Identity. (2.27.7, p. 332)

> For whatever makes the specifick *Idea*, to which the name is applied, if that *Idea* be steadily kept to, the distinction of any thing into the same, and divers will easily be conceived, and there can arise no doubt about it. (2.27.28, p. 348)

In these passages, 'idea' and 'specifick idea' explicitly refer to nominal essences, i.e., to abstract general ideas. Thus, I think we can come to a general resolution of the problem of coinciding bodies once we understand the nature of Locke's distinction between real and nominal essences and its relationship with the corpuscular hypothesis.

In order to spell out this resolution, I think it necessary to consider the passage of 3.3.9, where Locke explains how one can form different general ideas of the same thing by leaving out some features of the less general idea:

> For let any one reflect, and then tell me, wherein does his *Idea* of *Man* differ from that of *Peter*, and *Paul*; (…) but in the leaving out something, that is peculiar to each Individual; and retaining so much of those particular complex *Ideas*, of several particular Existences, as they are found to agree in? Of the complex *Ideas*, signified by the names *Man*, and *Horse*, leaving out but those particulars wherein they differ, and retaining only those wherein they agree, and of those, making a new distinct complex *Idea*, and giving the name *Animal* to it, one has a more general term, that comprehends, with Man, several other Creatures. Leave out of the *Idea* of *Animal*, Sense and spontaneous Motion, and the remaining complex *Idea*, made up of the remaining simple ones of Body, Life, Nourishment, becomes a more general one, under the more comprehensive term, *Vivens*. And not to dwell longer upon this particular, so evident in it self, by the same

> way the Mind proceeds to ***Body***, ***Substance***, and at last to *Being*, *Thing*, and such universal terms, which stand for any of our *Ideas* whatsoever. (3.3.9, p. 412 Emphasis (in bold) are mine)

In this passage, Locke insists that one 'individual', or 'particular existence', can be signified by different general terms standing for general ideas. Thus, in the case of the oak tree, there are no two different bodies in the same place at the same time but only one single individual, and we must reject Chappell's double-existence reading of the oak tree example.

The very same thing is sorted under two different but *subsumed* general ideas (i.e. 'mass of matter' and 'living body'); what distinguishes them cannot be their respective *real individual essence* but only their *real specific essences*, that is, the corpuscular features of their respective real individual essence that cause the qualities we take into account in order to sort them under these general terms 'mass of matter' and 'living body'. In the oak tree case, the nominal essence of the mass of matter is abstracted from the less general idea of an organism. There are no two distinct bodies in the same place at the same place but one single body for which we form different general ideas by leaving out some features of the less general idea we may form (e.g. 'this particular oak tree in the yard').

And so, we do not have to take Locke's position for flawed or inconsistent. There is one *thing* (that is one *real individual essence* or corpuscular constitution at a given time) and this thing can be named (at least) in two ways: namely, as a mere mass of matter however united and as a living body; each description being only a different nominal essence according to the selected qualities which are caused by the only real individual essence.

To sum up my point here, four steps seem to be necessary for Locke's *principium individuationis* to hold:

1. kinds are determined by nominal essences,
2. nominal essences are created by abstracting ideas of qualities (caused by the particular corpuscular arrangement of material parts) from a complex idea;
3. *at any given time t*, a mass of matter and the organism it constitutes have all and only the same corpuscles aggregated in exactly the same manner.
   - therefore, the mass of matter and the organism have the very same real individual essence (they are constituted by exactly the same corpuscles) at *t*.
4. the very same thing can be sorted into different more or less general ideas or nominal essences like: Peter, man, animal, *vivens*, body, substance, being, thing.
   - therefore, there is one single individual existence that can be described in many different ways; each description relying on a (specific) nominal essence set up according to the qualities

experienced and determining in turn the identity conditions of this kind of things.

Locke's individuation theory is interconnected with his rejection of natural kinds and his adhesion to the corpuscular hypothesis. If Locke statement that the nominal essence is 'the Workmanship of the understanding" is to be taken seriously, we have to admit that there is nothing like an absolute criterion for *identity through time*, even if every single thing is *individuated* by its (unknown and unknowable) real individual essence.

Indeed, the principle of identity through time of living bodies being defined by the continuous life of which they partake, Locke implicitly define them as non-discrete sets of particles (they are things "whose existence is in succession" (2.27.2, p. 329)). In fact, masses of matter being defined as discrete sets of atoms cannot be identical with any non-discrete set whatsoever. This reading could account for Chappell's reading of the oak tree example and his rejection of the relative identity interpretation. However, I contend this gives the key to the problem of coinciding bodies if one takes into account the fact that *at a given time t* there is only one *fixed* corpuscular aggregate.

Indeed, considering a living body at a given time *t* implies to leave out the continuity of life in the organism, therefore reducing it to a mere mass of matter. The definition Locke gives of an animal indicates that "the same animal (…) is the same *continued* life communicated to different Particles of Matter, as they happen *successively* to be united to that organiz'd living Body" (2.27.8, pp. 332-333, emphasises are mine). Hence, when one considers a living body synchronically – that is, independently of any past or future moment of its existence – its general idea cannot be adequate to it *as a living body*, but will only be adequate to it *as a mere mass of matter.* Indeed, nothing considered synchronically can display the qualities of 'partaking to the same continuous life' necessary for the production of the general idea of an animal. In fact, the forming of the general idea of a mass of matter supposes its inadequacy to any living body; therefore there are not two bodies in the same place at the same time; but only one, considered differently (one being a synchronic episode of the continued existence of the other).

This accounts also for the 'two beginnings of existence clause' of Locke's principle of individuation (labelled P1 in my first section). The question raised was to consider how a mass of matter and the oak tree it constitutes at *t* could have different beginnings of existence in time if they were only one single individual. I contend that if the mass of matter is to be understood only as an idea of a thing, the problem does not stand. The mass of matter / living body distinction is a distinction of general ideas (as Locke repeatedly insists; (see particularly: 2.27.7, p. 332 and 2.27.28, p. 348)). If there is one single individual considered either synchronically or diachronically, then there is no two different beginning of existence of the same thing (the mass of matter having no *real* beginning of existence at *t* but being only *considered synchronically* at *t*), but only one (the beginning of existence of the oak tree). Nowhere does Locke

indicate anything like the idea that a living body is a simple succession of (non-living) bodies. His mechanism does not go that far. The reiterated mention of the "continued organization" of the parts of the living body through time precludes the plausibility of the two beginnings of existence objection to my reading.

While I am not sure this reading of Locke's principle of individuation could be counted among the relative identity interpretations of his position, I think it is *compatible* with a relative identity theory. It satisfactorily interprets Locke's presentation of the *principium individuationis* without introducing any strong reinterpretation of Locke's positions about substances and modes, or making any 'bizarre' assumption about Locke's ontology. Moreover, I think this reading shows its persuasiveness when considered in regard with Locke's conception of natural philosophy and I would like to conclude on this aspect of my reading by indicating the main convergences between this reading of Locke's theory of identity through time and his philosophy of natural philosophy.

4 Locke's philosophy of natural philosophy and the problem of identity

As I have already noticed, Locke subscribed to the kind of corpuscularian mechanism one can find in Boyle's works.[28]

Locke repeatedly stated his epistemic modesty (some say 'pessimism') and therefore the necessity of considering the corpuscular theory as the best hypothesis at hand at that time –whether we count him as a consistent mechanist or not. As Lisa Downing contended in her article "The Status of Locke Mechanism in Locke's *Essay*" [Downing 1998]:

> Locke embraces a moderate scepticism: our position as perceivers and conceivers makes corpuscularianism an especially intelligible theory for us, but this position also leaves us unable to ascertain the real essences of things and to reach a fully satisfactory scientific knowledge of them. ([Downing 1998], p. 412)

Locke's conception of natural philosophy throughout the *Essay* is also well-known. It rests on two essential distinctions: between real and nominal essences, and between "certain knowledge" and "probable opinion".[29] These two distinctions are in fact bound together by an epistemological link: the conception of abstract ideas of substances.

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[28] This adhesion to the corpuscular hypothesis is now a *topos* of Locke's scholarship. Peter Alexander in his *Ideas, Qualities and Corpuscles: Locke and Boyle on the External World* [Alexander 1985] notably contended that the *Essay* could be understood as a philosophical and metaphysical defence and confirmation of the corpuscular hypothesis. I consider that this is an overstatement (see [Brun Forthcoming] and [Downing 1998]) and that Locke does not take Boylean mechanism as a starting point for his philosophical enterprise. It should rather be understood as the best hypothesis at hand in natural philosophy and the most consistent with his epistemology and his conception of natural philosophy (see also [Jacovides 2002]).

[29] See especially 4.3.29, p. 559, 4.6.13, p. 588, 4.8.8, p. 614, 4.8.9, p. 615, and 4.15.3, p.655

At 4.3.29, Locke states the differences between "certain knowledge" and "probable belief" or "experimental knowledge". Certain knowledge is only possible insofar as the real essence and the nominal essence are identical (that is, in the case of an idea of mixed mode, as in the idea of triangle). For instance, it is because the ideas used in mathematical propositions are ideas of mixed modes (of which we know the real essences) that our knowledge of these propositions is certain. Conversely, natural philosophy is doomed to be constituted only by probable beliefs because the ideas used in the propositions of natural philosophy are ideas of substances (of which we only know the nominal essences and ignore the real essences). The following passages of 4.8.9 and 4.12.9 state clearly this difference:

> We having no knowledge of what combinations there be of simple ideas existing together in substances, but by our senses, we cannot make any universal certain propositions concerning them, any farther than our nominal essences lead us; which being to a very few and inconsiderable truths, in respect of those which depend on their real constitutions, the general propositions that are made about substances, if they are certain, are for the most part but trifling; and if they are instructive, are uncertain, and such as we can have no knowledge of their real truth, how much soever constant observation and analogy may assist our judgement in guessing. (4.8.9, p. 615)

> We advance not here [in natural philosophy], as in the other (where our abstract ideas are real as well as nominal essences [mathematics, and, possibly, morality]) by contemplating our ideas, and considering their relations and correspondences (…). (4.12.9, p. 644)

Thus, whereas one can attain certain (that is, demonstrative) knowledge in the field of mathematics (and, Locke contended, in the field of morality) natural philosophy has no hope in truly proposing any real knowledge of things. Locke insists on the necessity to adopt a different method of inquiry depending on the nature of the ideas of the things studied.

> We must therefore, if we will proceed as reason advises, adapt our methods of inquiry to the nature of the ideas we examine, and the truth we search after. (4.12.7, p. 643)

As it appears clearly in the above mentioned passage of 4.8.9 Locke states that natural philosophy can attain 'universal certain propositions' concerning substances; but, then, these propositions are but 'trifling'. I think the distinction between 'trifling' and 'instructive' propositions drawn in 4.8 is a key support for the kind of interpretation of Locke's identity theory I have outlined in the preceding section.

Trifling propositions are of two kinds. First, "identical propositions" are "such wherein the same term, importing the same idea, is affirmed of itself" (4.8.3, p. 611). Locke illustrates this kind of "trifling propositions" with the

propositions that “a vacuum is vacuum” and that “a centaur is a centaur”. The second kind of ‘trifling propositions’ can be labelled “subsumption propositions”; they result “when a part of the complex idea is predicated of the name of the whole” (4.8.4, p. 612). Locke exemplifies this kind by the propositions that “lead is a metal” and that “gold is fusible”. Trifling propositions have been understood by the tradition as a foreshadowing of Kant’s analytical propositions, mainly because Locke distinguishes them from the “instructive propositions” on the basis of the analytical link between the ideas related in the proposition. The proposition that lead is a metal is trifling because the idea of metal is subsumed under the idea of lead: that is, the idea of metal is identical with a part of the idea of lead. The equation, in Locke’s thought, between nominal essence and abstract idea makes this conception of trifling propositions not only understandable, but essential to the problem of identity.

Indeed, the idea of a horse or an oak tree is only subsumed under the idea of a mass of matter, and according to Locke’s conception, this is a “trifling proposition”; a proposition of which we can form no doubt whatsoever. Since the propositions “this oak tree is a mass of matter” or “this horse is a mass of matter” are cases where “a part of a complex idea is predicated of the name of the whole”, these propositions are among the few universal certain propositions about their nominal essences.

Thus, Locke’s identity theory of living bodies cannot be considered as involving the problem of coinciding bodies. There is only one body, of which we can form at will countless abstract ideas (nominal essences), which, in turn, have different identity conditions. But one cannot account for the identity of the thing in itself since its real essence (on which depends its identity) will remain out of our reach. If Locke subscribed cautiously to the corpuscular hypothesis, his epistemology and his conception of natural philosophy evince that he could not have put very much hope in the project of determining the real essences of things and therefore the absolute criteria of their identity.

References

[Alexander 1985]Alexander, Peter. 1985. *Ideas, Qualities and Corpuscles: Locke and Boyle on the External World*. Cambridge: Cambridge University Press.

[Alston and Bennett 1988] Alston, William and Jonathan Bennett. 1988. "Locke on People and Substances." *Philosophical Review* 97: 25-46.

[Atherton 1991] Atherton, Margaret. 1991. "Corpuscles, Mechanism, and Essentialism in Locke." in *Journal of the History of Philosophy* 29: 47-67.

[Ayers 1981] Ayers, Michael, R. 1981. "Locke versus Aristotle on Natural Kinds." *Journal of Philosophy* 78: 247-71.

[Ayers 1991] Ayers, Michael. 1991. *Locke: Epistemology and Ontology*, 2 volumes. London: Routledge.

[Bolton 1998a] Bolton, Martha Brandt. 1998a. "Universals, Essences, and Abstract Entities." In *Cambridge History of Seventeenth-Century Philosophy*, edited by M. Ayers and D. Garber. Cambridge: Cambridge University Press.

[Bolton 1998b] Bolton, Martha Brandt.. 1998b. "The Relevance of Locke's Theory of Ideas to His Doctrine of Nominal Essence and Anti-Essentialist Semantic Theory." In Chappell (1998): 214-225.

[Brun Forthcoming] Brun, Cédric. "Le corpuscularisme de Boyle et la distinction des qualités dans l'épistémologie de Locke." in Denehy, Myriam. and Ramond, Charles. (eds.) *La philosophie naturelle de Robert Boyle*, Paris, Vrin.

[Chappell 1989] Chappell, Vere. 1989. "Locke and Relative Identity." *History of Philosophy Quarterly* 6: 69-83.

[Chappell 1990] Chappell, Vere. 1990. "Locke on the Ontology of Matter, Living Things, and Persons." *Philosophical Studies* 60:19-32.

[Conn 2003] Conn, Christopher. 2003. *Locke on Essence and Identity*. Dordrecht: Kluwer.

[Curley 1982] Curley, Edwin. 1982. "Leibniz on Locke on Identity." In *Leibniz: Critical and Interpretive Essays*, edited by M. Hooker. Minneapolis: University of Minnesota Press, 302-326.

[Downing 1998] Downing, Lisa. 1998. "The Status of Mechanism in Locke's Essay." *Philosophical Review* 107: 381-414.

[Geach 1967] Geach, Peter. 1967. "Identity." *Review of Metaphysics* 21: 3-12.

[Jacovides 2002] Jacovides, Michael. 2002. "The Epistemology under Locke's Corpuscularianism." *Archiv für Geschichte der Philosophie*, 84, 161-189.

[Locke 1823] Locke, John. 1823. *The Works of John Locke*. 12th ed corrected. London : printed for Thomas Tegg [and others], 10 vol. Past Masters Electronic Edition, Intelex.

[Locke 1975] Locke, John. 1975. *An Essay Concerning Human Understanding.* Edited by P.H. Nidditch. Oxford: Clarendon Press.

[Locke 1976] Locke, John. 1976 - . *The Correspondence of John Locke*. Edited by E.S. de Beer. 9 Volumes. Oxford: Clarendon Press.

[Locke 1990] Locke, John. 1990. *Drafts for the Essay Concerning Human Understanding, and Other Philosophical Writings*, volume 1. Edited by P. Nidditch and G.A.J. Rogers. Oxford: Oxford University Press.

[Mackie 1976] Mackie, J.L. 1976. *Problems from Locke*. Oxford: Oxford University Press.

[McCann 1987] McCann, Edwin. 1987. "Locke on Identity: Matter, Life, and Consciousness." *Archiv für Geschichte der Philosophie* 69: 54-77.

[Noonan 1978] Noonan, Harold. 1978. "Locke on Personal Identity." *Philosophy* 53: 343-353.

[Owen 1991] Owen, David. 1991. "Locke on Real Essence." *History of Philosophy Quarterly* 8: 105-18.

[Phemister 1990] Phemister, Pauline. 1990. "Real Essences in Particular." *Locke Newsletter* 21: 27-55.

[Reid 1969] Reid, Thomas. 1969. Essays on the Intellectual Powwers of Man, edited by B. Brody, Cambridge, Mass.: The MIT Press.

[Thiel 1998] Thiel, Udo. 1998. "Individuation." In *Cambridge History of Seventeenth-Century Philosophy*, edited by M. Ayers and D. Garber. Cambridge: Cambridge University Press.

[Uzgalis 1990] Uzgalis, William. 1990. "Relative Identity and Locke's Principle of Individuation." *History of Philosophy Quarterly* 7: 283-297.

[Wedeking 1990] Wedeking, Gary. 1990. "Locke on Personal Identity and the Trinity Controversy of the 1690's", *Dialogue* 29: 163-188.

[Wiggins 1967] Wiggins, David, 1967, *Identity and Spatio-Temporal Continuity*, Oxford, Blackwell.

[Wiggins 1976] Wiggins, David. "Locke, Butler and the stream of consciousness: and Men as a Natural Kind". *Philosophy* 51: 131-158