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Death, Destruction & Derivative Existence

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Declaration

I, Charles Jansen confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Charles Jansen, September 2015

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Abstract

The ultimate goal of this thesis is to argue that a particular ontological claim, which I call the 'sortal instantiation thesis' (associated primarily with the work of David Wiggins), has been overstated. On this view, each object is given a metaphysically privileged characterisation, which references a kind of which it is an instance. Whilst I agree that such characterisations are deeply caught up with the metaphysics of objects, I dispute the further thought that an object must instantiate its characterising kind whenever it exists.

My first chapter introduces the sortal instantiation thesis and notes that it is faced with a particular challenge in accounting for identity through change (owing to the fact that kind terms typically hold of an entity at or across particular times). Following this, the following two chapters present a counter-example to this claim. I plan to argue that (at least some) animals do not cease to exist upon their deaths (instead they continue to exist as their corpses). A corpse, however, does not fall under the kind 'animal'; upon its death, an animal becomes little more than a structured collection of organic tissues. Following this, the fourth and final chapter of my thesis modifies the sortal instantiation thesis in light of this counter-example. I shall suggest that we see a corpse as a type of metaphysical 'remnant', whose continued existence depends upon a kind which it does not exemplify. The role that kinds play in settling identity questions does not, therefore, require their exemplification, as the sortal instantiation thesis suggests. Instead, I shall suggest, something much weaker is involved in an entity's being 'characterised' by a given sort.

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Colophon

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The Sortal Instantiation Thesis

The ultimate aim of this thesis is to argue that a particular claim, which I shall label the ‘sortal instantiation thesis’, has been overstated. This thesis is motivated by the (correct I feel) thought that an account of the truth conditions of identity statements must make use of a certain, metaphysically privileged, characterisation of their objects. According to this Fregean-cum-Aristotelian ontology, certain sorts play a central role in generating entities and, in virtue of doing so, settle all facts about their identity. The overstatement of this thesis rests in the claim that a single entity must always instantiate the sort which generates it. The aim of the first part of this chapter is to spell out this statement in a clear and general manner. Following this, I shall detail why I take questions of continuity through change to put it under particular pressure. With change, I shall claim, emerges the need to detail clearly what it takes for an object to instantiate some property or other – a key consideration when one begins to examine the sortal instantiation thesis. Whatever interpretation of this notion one chooses, a counterexample to the sortal instantiation thesis can be found if an object might ever be individuated by a sort under which it does not fall; in such a case, that object’s existence stems from its connection to some kind of which it is not, at that time, an instance. Having suggested this possibility, the remainder of this thesis aims to substantiate the claim that it does in fact occur and, further, to suggest how we should understand the idea that sorts play privileged ‘generative’ roles in light of this.

1.1 Sorts and Generation

To begin our examination of the sortal instantiation thesis, we should look to the thought that it is a precondition of the truth of any identity claim that the objects involved be subsumed under a single kind. Its most extended and recent exposition is, of course, found in the work of David Wiggins, from which we might consider the following statement:

One who knows what he is saying when he says that ' $a=b$ ' ought to be in a position to explain, where a and b are continuants, that a is a continuant which ...and b is a continuant which ____, and then to expand each specification separately in a way sufficient to make it determinate (with the help of the world) which continuant a is and which continuant b is. In the course of this being achieved, as a necessary condition of the truth of the identity claim, some common sort f will have to be found to which they each belong. (2001, p. 58)

Our interest in this claim shall be in its last element – the assertion that one must reference an object's kind in order to make it determinate which entity that thing is. To this end, I shall begin by sketching the context within which it should be understood (making it clear that Wiggins is neither making a point exclusively about continuants nor about the epistemology of identity statements). Following this, I shall detail how, on the Wigginsian view, objects might come into existence with identities already made determinate, drawing from this the 'sortal instantiation thesis'. Subsequently, I shall conclude this section by contrasting our way of approaching questions of 'generation' with an alternative approach, of which Dummett and Strawson's views about feature-placing are exemplary.

1.1.1 Preliminaries

There are, I think, multiple distracting elements within the above quotation from which its central claim should be disentangled. First, Wiggins explicitly restricts his attention here to continuants and, in the course of presenting his views, states that the "*special effectiveness of the [above suggestion] is that, in the case of continuants, it refers us back to our constantly exercised idea of the persistence and life-span of an entity*" (ibid, p. 61). As a result of this, one might initially

be inclined to think that the condition detailed above applies uniquely to the things which have life-spans – of which concrete material substances are the most paradigmatic example. Despite this, one should note that Wiggins explicitly states that one should apply the very same thesis to numbers deployed in the context of counting objects, at least if one “*subscribes to the idea that numbers are objects*” (ibid, p. 58). Although one need not deny that questions of identity take on a particular significance in the case of continuant objects (since one must establish an object’s identity by relatively direct means before ascribing to it historical properties (2001, p. 57)) there is, as yet, little reason to think that the above claim holds only when one considers the identity of substances. Further, Wiggins, at more than one point, approvingly references the similarities between his analysis of identity statements and Frege’s (see, for example, ibid, p. 60). Frege’s concerns, however, were quite clearly with the identity of abstract entities, such as numbers, across the variety of contexts into which they might be introduced. Given that Wiggins identifies a common concern across these variant subject matters, we should, I think, consider him to be applying a fully general ontological thesis to the case of continuant substances and showing how it might hold good even when one considers the complications introduced by change, not just in the manner in which an entity is introduced to us but also in the properties which it bears. Hence, despite the restriction of Wiggins’ attention to continuants (a consequence of his intention to detail how “*a notion of the exigency that we ascribe to the identity relation can find application in the changeable world of our experience*” (ibid, p. 3)), we should, I think, consider his suggestion to connect to a fully general thesis, intended to apply not only to substances but also to non-continuants for which questions of identity arise, including both particular events and processes and non-concrete entities such as numbers, concepts and thoughts.

It is further necessary to distinguish our concerns from the epistemic strands of Wiggins’ thought. One of Wiggins’ chief concerns in *Sameness and Substance Renewed* is to elaborate how thinkers might single out and think about individual objects. In this, Wiggins follows Strawson in thinking that “*in order for an identifying reference to a particular to be made, there must be some true empirical proposition known [...] to the effect that there is just one particular which answers to a certain description*” (Strawson 1959, p. 183). Many descriptions, however, may equally be uniquely true of a single entity, allowing us to unknowingly think of it under

more than one guise. In such a scenario, one might question in what sense the thinker can be considered to know which object it is that she thinks of under each of these contrasting guises. In light of this type of worry, we might understand the above quotation to suggest that a thinker must, in order to have a singular thought about any entity, characterise it in such a way that she could, in principle, explain how one might discover that it is (or is not) identical to the bearer of any other definite description; something which in turn requires her to conceive of it as a thing of some specific kind. Indeed, such considerations ultimately lead Wiggins to assert that “*the first concern of the philosophy of any subject matter must be to enhance our powers of finding the elucidation (whether or not we use here the language of criteria) for its disputed identity questions*” (2001, p. 61) – a focus which is apparent in many of his views, and in the arguments provided in their favour. Despite this, there is, I suspect, a more general metaphysical point to be made here, which we shall draw out below. Here, I shall suggest, we should understand Wiggins to suggest a perspective upon the conditions under which objects are generated and distinguished from one another (and consequently upon the underpinnings of facts about identity) which takes the kinds under which they fall to do key individuating work.

1.1.2 Generation

Whilst Wiggins’ views are couched deeply in awareness of our cognitive limitations, and of the particular difficulties faced by those keeping track of objects which might change, we might fruitfully apply his views when examining how it might be made metaphysically determinate that some properties are (uniquely or not) instantiated by a single entity rather than by several. This question ties naturally to our concerns with identity insofar as it seems sensible to think that one may only ascribe properties to an entity whose identity is already fixed. Thus, our inquiry into the determination of an object’s properties will naturally lead us towards an account of its identity. Further, I shall assume that any object’s existence should be thought to be intimately connected with those of its features which determine precisely which individual it is (i.e. which ‘fix’ its identity). Therefore, I shall speak interchangeably of ‘generation’ and of the ‘fixation’ of an object’s identity in what is to follow. It is important, however, to note here that metaphysical ‘generation’ need not involve an object’s coming to

be through the creative action of some other entity. Hence, when, for example, I speak of a ‘generative sort’, I do not mean to imply that sorts act in such a way as to cause anything to come into existence but merely to suggest that any object’s identity is grounded in its membership of some kind (which must therefore be referenced in any account of its existence). It is this position that I shall attempt to explicate in the remainder of this section, before finally giving an explicit characterisation of the sortal instantiation thesis.

When asked what it takes for some properties to be coinstantiated, the simplest answer is, I think, the best one; two properties are coinstantiated when they are borne by one and the same entity. It is in spelling out what it takes for this to be the case that we run into philosophical difficulties. To model our predicament, we might imagine ourselves faced with a range of open sentences (which may or may not contain repeated instances of any predicate or collection thereof, even to the point of differing only in the variable allocated to them), each predicating something of an entity represented by some unbound variable:

$$F_1x_1 \quad F_2x_2 \quad \dots \quad F_{n-1}x_{n-1} \quad F_nx_n$$

Each of these statements says that some object x_i bears some property F_i . Unless, however, it is settled which variables stand for the same entity, this does not yet give us the answers to every identity question which we might ask; we cannot, for example, know whether F_2 is true of the entity associated with x_1 . Hence, although these predications might inform us about some entities, they fail to properly introduce them into our domain of quantification and, consequently, provide us with little insight into its cardinality; at most, the above tells us only that we do not have more than n objects in this domain. To remedy this, we must associate the entities which populate our discourse with additional information in such a way that their identities are fixed. In what follows, we must therefore ask how we might introduce entities into a domain of quantification in such a way as to make sense of the constraints which we intuitively recognise upon its population.

To fix the cardinality of our domain of quantification, one might here be tempted simply to stipulate the extension of the identity predicate, stating that ‘ $x_1 = x_2$ ’ should be taken to be a true sentence, and so that F_1 and F_2 are instantiated by a single entity. In doing so, one effectively constructs a series of entities whose identities are fixed in a primitive manner, in-

dependently of their instantiation of any properties. Metaphysically speaking, this picture is somewhat unappealing. It is, I think, difficult to draw from this view an understanding of why certain properties cannot together be true of a single subject at one time (e.g. why we should not identify the thing with the property of being my cat with the thing which possesses the property of being my mother); this strategy hence leaves us with no resources (save the exclusion of logically contradictory qualities) by which to disqualify the stipulation that the variables involved in seemingly incompatible predications are associated with one and the same individual. Equally, it is not easy to see why we must take certain collections of properties to be associated with only one entity, rather than with several – it is not, for example, immediately evident why we could not ascribe the softness of my curtains to one entity, and their colour to another co-located with it. Indeed, even if no two entities could possess exactly the same collection of properties (a result of the identity of indiscernibles – plausibly an unavoidable constraint upon our interpretation of objects’ identities), it might yet be questioned why we cannot take any object to be associated with a number of alternative individuals, each of which bears only a proper subset of the properties which that thing has (e.g. one sub-curtain has no colour, but all the same physical properties as does the curtain in my room). Hence, not only does this picture enter few constraints upon the population of any domain of quantification with individual entities (and so do very little to determine its cardinality), it is further difficult to see what restrictions it places upon the introduction of property ascriptions into the series of open sentences from which entities are to be generated, and so how it might stave off their proliferation beyond necessity.

We should hence conclude that the above strategy gives little rationale for the restrictions which we usually recognise upon the properties which some entity might simultaneously bear or, similarly, for the exclusion relations we think to hold between entities (such as, for example, the principle that only one entity of a single kind might fit in one region of space). These ordinarily function to constrain our introduction of entities into a domain of discourse and consequently play a vital role in fixing its cardinality – determining upper and lower bounds for the number of entities which we may there recognise.¹ One may, of course, simply

¹I do not mean here to suggest that we must, in order to fix the identities of the particular objects in any domain of quantification, elaborate an entirely general method for enumerating them; as Wiggins notes (2001, pp. 74–75),

respond to this challenge by postulating the existence of brute (nomologically or metaphysically necessary) constraints upon the population of a domain of discourse with entities. It is, however, possible to do more than this if we instead take each object's identity to be fixed by a characterisation with which it is intimately (and uniquely) connected. It is, I should suggest, this strategy which ultimately leads us to the sortal instantiation thesis.

With this in mind, we should now note the artificiality of the above framework for thinking about identity and predication (and, upon this basis, reject it in favour of an alternative which better accommodates the constraints mentioned above). We have above imagined that a range of properties might be determinately ascribed to some entities whilst it is not yet made clear to which entity each property is ascribed (since an object's identity must be fixed independently of the ascription of properties to it). It is, I think, natural to demand instead that each property ascription not only tell us that some entity has a particular property but also detail more exactly which entity it is which has that property. In effect, this amounts to the requirement to find a metaphysically firm basis upon which to 'hook' singular property ascriptions. The approach that I should recommend again mirrors Strawson's views of the operation of property ascriptions in speech. Just as to knowingly ascribe a property to some entity, one must have access to some description which that object uniquely satisfies, we might fix the form of our property ascriptions as follows:

$$F_1[\text{the cat on the bed}], \quad F_2[\text{the third natural number}] \quad \dots \quad F_n[\text{the cat on the bed}]$$

The general form of this solution, relies upon us to introduce each entity into a property ascription using some description which it is guaranteed to uniquely satisfy.² In ordinary discourse, any such piece of information will suffice, provided only that one might reasonably (and correctly) believe that it is uniquely satisfied by the object of thought. In contrast, it is, I think, not implausible to insist that some descriptions are metaphysically privileged. Not only are these

there may, consistently with the above, be circumstances in which the mechanisms which fix objects' identities do not determine how many distinct entities are to be found in that domain. Rather, I mean only to point out that there ordinarily seem to be fairly rigid constraints upon the cardinality of any domain of quantification (stemming from constraints upon its population with individuals) which cannot be explained if we simply generate entities by stipulating their identities across a range of property ascriptions.

²As a potential counter-example, one might imagine sentences which involve a type-token ambiguity. Here, we typically take a meaningful proposition to have been uttered when it makes little difference to the statement's significance how one resolves the ambiguity. To this, I shall simply reply that such a sentence, unlike the predications with which we are concerned, does not achieve singular reference until the ambiguity is resolved. Thus, I set it aside for now.

descriptions uniquely satisfied by the entities involved, they also play a particular role in the generation of their attendant particulars (since it is ultimately the properties referenced in such descriptions which individuate these objects). For example, although my cat is the only pet that I do not share with my sister, this description does not, metaphysically speaking, fix his identity; it is completely irrelevant to his existence as the very cat which he is. Thus, to return to the original question which engaged us, we might propose the following principle:

Characterisation: Any object is associated with some metaphysically privileged set of properties which it is guaranteed to uniquely satisfy.³ These properties fix its identity (and, as such, might be said to be responsible for its existence).

Once we have a principle such as the above in place, it is easy to populate any domain of quantification with entities and to make it determinate which properties each object bears. Consequently, we might easily, by spelling out the different ways in which individual objects might be uniquely characterised (and hence introduced into existence with the facts about their identities already made determinate), make sense of the constraints which we intuitively recognise upon the cardinality of any particular domain of discourse. With this in mind, we ought now to ask ourselves how objects might be generated in this particular manner. The answer to this will, I think, also allow us to explain why certain properties (or types of property) are always found co-instantiated, whilst others never are (for example, it is impossible for my cat to be prime, odd or even). What we might say, following Aristotle is that each entity is introduced into existence under some particular kind. This kind has

³It is important to note that the 'guarantee' involved in this solution need not be so strong as to entail that no two objects could have the same properties (provided they had those properties at different times or in different possible worlds) or that no object could ever be characterised by different properties than those which now individuate it. Rather, I mean only to highlight that some properties, key among which (one might think) is a physical object's spatial location, must be referenced in any account of the particular manner in which it (at any time) exemplifies its kind. Of course, one here runs into difficulties concerning the ontology of spatial locations, which one might think to be abstractions from objects' relative positioning (within a given frame of reference) and so to be ontologically posterior, rather than prior, to individual entities. If two objects could, in every respect besides their spatial locations, be qualitative duplicates of one another, how can one then hold that each object has a unique characterisation? The answer to this rests, of course, in the idea that so soon as one has a single material object, one might proceed to individuate a number of spatial locations without waiting for another entity to come onto the scene (such as, for example, the sum of points which lie between its surface and halfway into its exterior). Thus, we shall say that the sphere's existence alone, rather than extrinsic facts concerning its relations to other objects, suffices for us to begin individuating regions of space. Once this is made clear, I see little reason why such 'dependent' entities cannot be referenced in order to capture how it is that an object exemplifies its kind in a unique manner – indeed, every other property referenced in an object's characterisation is in some sense equally only available to do individuating work because of its prior connection with the object, thus calling into question the view that spatial properties are particularly tricky features by which to individuate objects.

associated with it a particular definition, which details a number of properties by which its members are to be characterised (e.g. a set is uniquely individuated by its members whilst a number might be individuated by its position in the number line, or, equivalently, by its relationship to the other numbers). These defining properties can typically be instantiated in a number of different ways and it is their particular implementation which distinguishes each entity of a single kind from every other entity of that kind. This at once explains why one tends to find particular configurations of properties coinstantiated in nature and also why it should seem so absurd to think that the shape of what seems to us to be a single mathematical figure should be associated with one entity whilst the length of its sides is associated with another (or that the colour of my curtains should similarly be borne by something distinct from the entity which bears their weight); these qualities, one might say, proceed from an entity's defining characterisation (or could only accrue to an entity which had some elements of that characterisation). Aristotle, of course, expands upon this ontological perspective by stating that an object's form 'carves up' undifferentiated 'prime matter' which, in turn, distinguishes it from everything else by providing a basis for its other properties (indeed, on later scholastic understandings of Aristotle, it is the object's matter itself which provides it with many of the properties which differentiate it from other members of its kind). We, in contrast, typically think that an object possesses many of its properties in virtue of its micro-chemical structure – a thesis which justifies the thought that no two objects of the same kind could, at one time, have the very same constituent parts (since they would then implement their kind in the same manner and so, by the thesis we have put forwards, be one and the same individual).⁴ Alternatively, one might individuate objects by reference to their spatial locations, and thus block instead the thought that two objects of the same kind might co-locate. In each of these cases, one characterises objects by reference to a number of parameters relevant to the implementation of their kinds, setting each entity apart as the sole object to (at any time at which it exists) take the values which it does for the parameters identified. From this, we get the following elaboration of the thesis which is the topic of our discussion:

⁴Throughout this thesis, I aim to remain neutral about the claim that objects of different kinds might sometimes spatially coincide – nothing of note here hangs upon its acceptance or rejection.

Sortal Instantiation: Each entity's existence depends upon its implementation of some kind,⁵ which gives its (fundamental) characterisation and, in doing so, reveals which additional properties set it apart from all other things.

The sortal instantiation thesis hence insists that we individuate an object simply by questioning how it implements its particular kind. There are, I think, a number of reasons to think that this is a sensible thesis. Primary among these is an incipient distinction in the way that we ordinarily think and speak between what an entity is and what it is like. It seems incredibly natural to think that some predicates play a more fundamental role in detailing what an entity is than do others; these characterise, one might naturally say, its 'identity' whilst the remainder simply detail different ways that the thing is. On our interpretation, we might think that the more important properties are those which are most intimately linked to its characterisation as an object of some particular kind (i.e. one might think that these characteristics explain, or describe, the particular manner in which it implements its kind). Thus, for example, an individual curtain is an extended physical object made of a certain kind of cloth, which possesses a certain shape (this being how it implements many of its physical properties). In contrast, its physical disposition, although only a little easier to change than its shape, simply features as a way that that thing is – it is, we might think, not directly involved in its implementation of its kind. Rather than delay longer explicating this distinction, I shall briefly canvass an alternative, and perhaps easier, way to think ourselves into the sortal instantiation thesis and detail my reasons for steering clear of in the above discussion. Following this, I shall, in the next section of this chapter, explain why I take the possibility of an object's changing its properties as time passes to provide a particularly interesting context within which to test the sortal instantiation thesis. The fact that an object need not always exemplify the kind most centrally involved in its individuation, I suggest, shows that we do not individuate objects by so coarse a method as equating them with the implementation of their kinds; rather, we must say that an object's characterisation may, if it references some

⁵At this point in our discussion, I do not wish to associate any particular metaphysical baggage with the notion of a 'kind' or a 'sort'. It is, for example, perfectly consistent with what I shall say here that the identities of material substances are simply set by their propensities to move as a whole in the face of outside influence (see, for example, Xu 1997 for a psychological argument which might be taken to suggest that such features are central to the identities of material substances).

kind, permit the object to exist without being an instance of that particular kind.

1.1.3 Feature-placing and Qualitative Holism

We have above seen the need for an explanation of the determinacy with which properties might be attached to individuals. This led us towards an Aristotelian ontology, under which individual objects are equated with particular instantiations of their kinds. To be an individual, on this account, is simply to manifest one's generative kind in a unique manner – a claim which is implicit in Wiggins' suggestion that knowledge of an object's kind must be factored into our understanding of its identity. One might complain that I have above said very little about how entities are generated, or why the world permits their generation. Once this question arises, one might think back to a view which some have read into Wittgenstein's claim that the world is "*the totality of facts, not of things*" (1961, 1.1), suggesting that the individuation of objects takes place against the background of a more fundamental picture of reality as a type of qualitative mosaic of objectless facts. In the remainder of this section of our discussion, I wish to briefly elaborate upon this alternative framework within which the sortal instantiation thesis could be introduced and subsequently to briefly outline my reasons for avoiding this in the above.

As I take it, the view under discussion states that there is nothing particularly 'meaty' about individual objects; they are not the fundamental constituents of the world, to be generated *ex nihilo* and then to bear properties. Rather, fundamentally, the world is made up of a mosaic of properties and relations, glued together to make facts (from which objects are abstractions, invented so that we might represent particularly rigid connections and patterns of instantiation of such qualities, such as that which ties the colour of my curtains to their solidity). The world is, to use Dummett's memorable turn of phrase, an 'amorphous lump' (see pp. 563–573 of his 1973 for more detail on how Dummett takes this picture to interact with an ontology of particular things), within which we might find objects in a variety of ways, depending on our particular interests.⁶ Here, the question of generation raised above

⁶For a less picturesque presentation of this idea, one might look to Dasgupta's 2009, 2011 and 2015. On Dasgupta's view, reality ultimately consists of the occurrence of a single, complicated quality (detailing the total state of the world), expressed by reference to a number of functors associated with all the properties which we think are exemplified, permuted in such a way as to make sense of their relations of co-instantiation. It is extremely difficult

is explicitly cognitive, asking how one could find and single out entities in such a world, and determine which properties they have (hence representing the more fundamental spread of qualities across reality).

In response to this puzzle, one might look to Strawson's discussion of 'feature-placing' languages (1959, pp. 202–209).⁷ Effectively, Strawson states that the distinction between a language of individuals and one which only describes the distribution of certain qualities in space lies in the determination of what is to count as being confronted with a single individual across a number of different contexts. This proceeds from the subsumption of a region of space which displays a certain characteristic pattern under a single sortal term characterising the entity which occupies that space (and consequently fixing its identity). Strawson's discussion is necessarily abbreviated and, as such, he does not discuss the possibility of two entities sharing the same spatial location and yet having different characterisations. Setting this aside, we might focus here upon the thought that we might find some master property, or feature upon which to hang the existence of an entity (which might, through its application to that object, set its spatial boundaries and determine what it is to be faced with the very same entity on a number of occasions). This has a similar character to the sortal instantiation thesis as elaborated above; in each case, we hang the existence of individuals upon their exemplification of some characteristic qualities. It is this which subsequently allows us to distinguish their properties from those which should instead be ascribed to other entities. In light of this, it matters little for the concerns voiced later in this thesis which of these frameworks one adopts; in either case, one will find a solid basis for the claim which I wish to unseat in what follows.

The sole difference, I take it, between our presentation and the alternative given here lies in the latter's insistence that we may be confronted with individual property instances without yet thinking of individual substances. Although this alternative framework avoids the

to understand the semantics of this system without referring back to a fixed range of individuals, a point which Dasgupta concedes, although he takes it to derive from the fact that we are naturally inclined to think of individual objects for reasons of cognitive efficiency. Nevertheless, we might take the thought to be that there is a single distribution of properties around a number of 'nodes', which do not themselves bear properties but which map out the qualitative distribution of properties in reality, just as might a grid overlaid onto a painting.

⁷To tie my discussion above to Strawson's, we might state that I have above concerned myself only with the conditions for the introduction₁ of entities into reality (i.e. the generation of particular entities, which may happily be, to some extent, interdependent). By moving to the idea of a qualitative mosaic, one questions also how one might introduce₂ substances into a (more primitive) description of the world.

artificiality of asking how one might tie down a series of predications to one object rather than another, I have avoided it for two reasons. First and foremost, I have attempted throughout the above to illustrate how the sortal instantiation thesis presupposes nothing unique to continuants and instead applies systematically to abstract as well as to concrete entities. It is, however, questionable whether the existence of abstract entities, such as numbers, can be understood to stem from the prior distribution of a number of properties across mathematical reality. Further, I am sympathetic to the view that there is something entirely primitive and irreducible about the frame of thought within which we introduce particulars into our discourse. Regarding reductive programs, which attempt to find within a scientist's view of the universe the materials upon which to ground the existence of concrete entities, Wiggins says "*in practice, it seems almost impossible to find again in the new framework either the things or the properties that our philosophical and everyday concerns and questions involve us with*" (2001, p. 182), a claim with which I am inclined to agree. Thus, rather than presupposing the prior existence of anything (from which we might then generate individual entities), I have here proceeded as though individual objects are the most fundamental existents, relying upon no prior materials for their existence. I have attempted to show that, even on this radical picture, it is possible to give a theory of objects which systematically explains how it is that the identity of any entity is determinately fixed and how this might constrain the properties which it may bear. With this covered, we might now turn to consider why the sortal instantiation thesis faces its greatest challenge in the context of questions about an object's persistence through change.

1.2 Change, Persistence and Sortal Predication

I have been careful to proceed above without reference to the ways objects might be at different times, or to the idea that they might change. This has, I hope, allowed me to give an abstract characterisation of the position under examination in this thesis without bringing in any of the complications or provisos which one encounters the moment one questions how one and the same object might bear different (even incompatible) properties at different points of its existence. It is now time to expose ourselves to these difficulties as they will, I hope, re-

veal most clearly what I take to be wrong about the sortal instantiation thesis (namely that it connects objects too intimately with their implementation of the sorts which generate them). In the following two chapters, my aim is to argue that the entities generated by a particular kind (labelled here *ANIMAL*) need not, whenever they exist, fall under that sort. Following this, the final chapter of this thesis will draw together the implications of this challenge, suggesting the importance of accepting something more subtle than the sortal instantiation thesis, at least in our treatment of concrete material continuants. First, however, I shall explain why I take the possibility of change to throw up a special set of issues.

1.2.1 The Temporal Structure of Sortal Predication

The sortal instantiation thesis states that each object exists in virtue of its implementation of some particular kind. It is easy to see how this thesis applies to certain kinds of abstract objects, such as numbers, whose properties (for the most part) are held neither at nor relative to individual times and places.⁸ An object may be held up as an instance of any property which it bears in this atemporal and aspatial manner; the number 2, for example, is not only an instance of a number but also, one might say, of evenness and of primeness. In what follows, I wish briefly to outline how complexities in the structure of spatial and temporal predication, absent from (most of) the properties by which we standardly characterise non-concrete objects, begin to raise difficulties for the sortal instantiation thesis, spelling out schematically the type of counter-example to this thesis which I aim to present in the following two chapters.

The case of predicates which hold of their objects atemporally and aspatially is naturally contrasted with more ordinary properties, such as ‘is red’ and ‘is curved’. Such properties might fail to hold true of an object everywhere that it is located (being borne by some of its parts but not by others), or be exemplified by that object at some times but not at others. Although this observation famously led Lewis to claim that objects have temporal parts (Lewis

⁸It is potentially important to note that there are two ways in which one might interpret the idea that spatial and temporal considerations are relevant to the evaluation of any predicative statement. First, one might hold that objects bear some of their properties relative to individual times, thus stating that some property ascriptions should be understood to have additional arguments (often suppressed in every day speech) which relativise them to individual times and places. Alternatively, it is possible instead to state that no such sensitivity is encoded in the content of any predicative statement but rather that its truth value might change at different times (or relative to different points in space). For the purposes of this thesis, it matters not which of these views of the grammar of predicative statements one adopts.

1986, pp. 202–205), I shall not here presuppose that it places one under any pressure to accept such ‘four-dimensionalist’ views. Indeed, nothing which is to come in this section of our thesis requires one even to accept that objects are composed from parts located in space; it is, in principle, possible to parse each of the key points to come whilst speaking only of an object’s temporal and spatial extent. Nevertheless, it is, I think, important to pay careful attention to the different predications in which objects might be engaged when looking into the connection between an object’s existence and its implementation of the kind which individuates it. Setting aside questions of composition, such predications draw our attention to complexities in the manner in which one might interpret the sortal instantiation thesis, and so, I shall suggest, reveal how it might be proven false.

To begin our investigation, we should note that it is somewhat unnatural to hold up an object as an instance of a property which it exemplifies at some but not all of the places that it is located; a red and white barber pole, for example, whilst it is closely associated with an instance of redness (the loop which wraps around it), cannot accurately be described as itself an instance of redness – at best, it may be thought to be an instance of redness at some points but not at others. If we are to make this a point of metaphysics, rather than simply one of pragmatics, and to understand an object’s temporal extent in much the same way as we do its spatial extent, then this would justify us in thinking that the sortal instantiation thesis states that every object must implement a single characterising kind at every moment at which it exists (as it would not otherwise be possible to claim that the object’s existence is grounded in its implementation of that kind). Although I shall not rule out this interpretation of the notion of an ‘instance’ in this thesis, it is, I think, intuitive to believe that there exists a great difference between temporal and spatial predication (mirrored in the fact that almost all sentences have tense, whilst very few are indexed to particular locations). Hence, we might instead consider an object to be an instance of a property at any time just in case it, at that time, exemplifies that property. The sortal instantiation thesis, on this interpretation, says not that every object should always implement some particular kind, but rather that any object must, at any time at which it exists, implement some characterising kind or other. It is, I think, easy to be sceptical of this suggestion’s ability to make sense of an object’s persistence through time (for more on this worry, see Wiggins 2001, pp. 64–68). Nevertheless, I shall set such worries aside for

now. Instead, I shall simply note that both of these interpretations of the sortal instantiation thesis have the consequence that an object must, at any time at which it exists, exemplify the sort which characterises it (at that moment in time). It is this claim which I shall take on in the following two chapters, arguing that corpses may be individuated by a kind under which they no longer fall. Before outlining the strategy to come, it is worth, however, looking also to an alternative account of the structure of sortal predication which holds that objects belong to kinds at particular points in time only in virtue of first belonging to those kinds across some period of time.

I have above elaborated the ontological consequences of two different ways in which we might understand an object to be an instance of a property which holds of it at particular moments in time. It is, further, worth canvassing the alternative suggestion that sortal predicates are most fundamentally ascribed to objects across stretches of time, and not at each moment at which they exist (such ascriptions being parasitic upon the wider ascription to the object of some property which is true of it across its temporal extent – much as we can say of an area of space covered by a single red thread that it contains a piece of tartan cloth only because of that thread’s integration with the material surrounding it).⁹ This might be thought to suggest that an object’s kind is fundamentally determined by the overall character of its career and not by the features which it bears at particular moments in time – consequently threatening our claim to disprove the sortal instantiation thesis by finding some properties, closely associated with an object’s characterising sort, which it lacks at some point in its existence. Nevertheless, even this different picture of the temporal structure of property ascription feeds into a reading of the sortal instantiation thesis which is incompatible with what I shall argue below. I shall suggest that animals are individuated, at every time at which they exist, by a kind which applies to them (at any time) only in virtue of their undertakings across particular portions of their careers. To put the point more plainly, I shall argue that animals must be individuated by reference to a specific type of activity. This activity, however, is not continued or developed after an object’s death (even though it must continue to be referenced in order to individuate

⁹It is, I think, this view of kind-terms which underwrites David Wiggins’ suggestion that “*the criterion for being a horse is essentially dispositional and diachronic*” and so that “*not everything that looks for a moment or behaves for a moment as if it were a horse is a horse*” (2001, p. 178; see also *ibid.*, pp. 71–72). Similarly, see Steward’s recent 2015 for the suggestion as to how the recognition of predicates such as these might be thought to have important ontological consequences.

an organism's corpse. Hence even if one might invent a predicate which animals implement both whilst they are alive and after their deaths, our understanding of this predicate (and of its application to a dead organism) will be wholly derived from a more fundamental account of the individuation of living organisms – thus justifying the thought that it is the kind *ANIMAL*, rather than this derived predicate (true across the whole of its subjects' careers), which individuates their corpses. Given this, we should say that the sort which fundamentally characterises organisms, dead or alive, might hold of them only while they are alive, rather than across the totality of their careers. Consequently, we cannot, as the sortal instantiation thesis suggests, take each object's existence to stem from its implementation of its characterising sortal; an object might exist without being an instance of this sortal at all.

To conclude, our key point of interest rests in the thought that in order for a predicate to characterise an object, it must (by itself) determine that a single object is involved all the circumstances in which that entity may be (determinately) identified. If each object's existence is, as the sortal instantiation thesis insists, to stem from its implementation of some sortal predicate, we should expect to be able to ascribe that predicate to the object whenever it exists (even if we are only able to do so in virtue of its exemplification across a longer period of time). It is this idea which I shall take on in this thesis, claiming that objects might exist without falling under sorts which remain (without the need for supplementary materials) perfectly able to characterise them. Such entities are, I shall suggest, individuated by reference to activities in which they are no longer able to engage. Hence, careful attention to the temporal structure of sortal predication shall reveal clearly that there is room to individuate entities by reference to sorts which they do not instantiate, and hence to reject the sortal instantiation thesis.

1.3 Summary

I have above suggested that we must individuate objects by reference to a privileged characterisation of the kind of thing which they are. Since, however, objects frequently implement their sorts in different ways as they undergo change, it is not entirely clear what we should count as a single instance of any given predicate. This already weakens the claim, associated with the sortal instantiation thesis, that we might individuate objects simply by reference

to their instantiation of their kinds; to cope with change, the sortal instantiation thesis asks that we avail ourselves of additional criteria for determining under what conditions we may consider an object to be an instance of a property. I have above suggested that, however we interpret the temporal structure of sortal predication, it is not possible for an object to be characterisable as an instance of a kind which it does not, at the time of characterisation, implement. In what follows, I hope to decisively falsify the sortal instantiation thesis by showing that objects might sometimes be individuated by reference to kinds to which they do not belong. I shall argue that the higher animals are individuated by sorts which they need not, at every time at which they exist (in particular, the moments after their deaths), instantiate. Thus, I argue, we ought to distinguish the implementation of some sortal predicate from the role which it may take in characterising, and hence individuating, an object – thereby rejecting the sortal instantiation thesis.

The Life of an Organism

In this, the second chapter of my thesis, I aim to argue that no individuating sortal concept is exemplified by an organism both whilst it is alive and after its death. This chapter is divided into two parts. First, I show that we must, in order to link together the various stages of an organism's life, rely upon a sortal concept which gives special importance to the life processes which characterise living organisms. To do so, I begin by presenting some problems for the idea that we might characterise and track animals without recourse to their biological activities. Such an approach, I suggest, fails to properly explain the ontological significance of the considerations upon which it takes an organism's existence to depend. Even if an organism's compositional features play a crucial role in its individuation, they do this, I conclude, only in virtue of their connection to its biological activity. Hence, an organism's life remains central to its characterisation as the thing which it is. Having done this, I argue that a corpse is not simply a bad exemplar of its kind (failing to display features which are characteristic of its conspecifics) but that it, in fact, completely fails to instantiate the kind associated with the living thing which it once was; a dead organism is, I argue, too unlike a living animal to be thought an instance of the kind which it exemplified whilst it was alive. Thus, I conclude, there is no individuating sort which is instantiated throughout both the career of a living entity and that of its corpse.

2.1 Biological Individuality

At first sight, organisms seem to feature in both our everyday, folk-theoretic picture of the world (not only do we farm, hunt and protect ourselves from organisms of different kinds, it also seems intuitive to think that we are ourselves such things) and the ontologies of the life sciences (our ecological, physiological and evolutionary theories, for example, seem to quantify over organisms and populations thereof). Organisms are, we ordinarily think, a distinctive kind of continuant, endowed with capacities for sensation and for purposive action. Such things, one might suggest, display a level of internal complexity and organisation unparalleled by any other natural object. Indeed, because of this, Aristotle (and many of his followers) took organisms to be the paradigm substances, after whose model one's ontological views should be developed. Nevertheless, philosophers of biology have, in the last century, approached this aspect of our folk biology with some scepticism, even suggesting that organisms play no essential role in the biological sciences.¹ Whilst such a perspective is liable to seem unnecessarily revisionary, I should, given its broad influence, briefly explain how the discussion to follow shall steer clear of such worries. By doing this, I hope to show that I am not illegitimately helping myself to a folk-theoretical concept of no real ontological standing.

One source of scepticism about the organism concept stems from the sheer scope of biological inquiry. One need not stray very far from the range of supposedly paradigmatic organisms (individual trees, animals and unicellular organisms) to happen upon a variety of objects which are much more difficult to differentiate from one another. Thus, for example, one might ask whether a mushroom cluster, or an aspen grove, is a single entity or merely a tight-knit community of organisms. Whilst such cases involve a number of separate complex above-ground structures (each able to survive apart from its peers), these structures are connected to one another by a single underlying root system. Similarly, slime moulds, despite displaying a rudimentary form of coordination and cellular differentiation, are formed when,

¹Thus, for example, Dawkins famously argued that genes are the primary units of natural selection whilst organisms are merely vehicles which carry those genes through their evolutionary trajectory (1976). Similarly, one might think that 'fitness' is properly ascribed to genotypes or to populations of like organisms. Additionally, it has been questioned whether there are multiple 'organism concepts' with differing extensions and whether, in the final analysis, the life sciences turn out not to need any conception of the individual organism in order to do their work. Useful summaries of the treatment of the organism in the philosophy of biology might be found in Clarke (2011); Clarke and Okasha (2013); Nicholson (2014) and Wilson (1999; 2000).

due to adverse local conditions, a number of individual amoebas cluster together and, later, compete to form the mould's reproductive clusters. How could one determine whether these things are true individuals or merely aggregations of cells? Against the sheer range of examples with which biologists must concern themselves, it seems very likely that no unequivocal answer can here be given – a conclusion with surprising, and far reaching metaphysical implications.

My hope, in what is to follow, is to steer clear of such difficult questions, and their attendant worries. To do so, I restrict my focus to more paradigmatic cases of biological individuality – the various members of the animal kingdom. There are, I suspect, few difficulties associated with treating these things as individual substances. In support of this, one should note that animals (at least typically) interact with their environment in a significantly different manner than do (for example) plants. The fact that they do not produce their own sustenance has required them to develop incredibly complex sensory, locomotive and digestive systems (hence Aristotle's claim that animals do not simply have the nutritive soul shared by all living things but also, further, have a sensory soul). In virtue of this, one might take the activities of their parts to be much more tightly integrated (and thus interdependent) than those of the entities whose individuality has been called into question by philosophers of biology. To this extent, there is reason not to worry about borderline cases of biological individuality as we proceed here. Moreover, because of this greater level of integration, it seems clear to me that we have no choice but to count these paradigmatic organisms as individual things, raising questions about how they are differentiated from one another (and hence about the sort under which they fall) which cannot be dismissed on account of the difficulties encountered by those looking for a more general perspective upon biological individuality. I thus take myself to be on safe ground in looking for an individuating sort which applies to animals without considering its impact upon broader debates in the philosophy of biology.

Given the above, it would not be surprising if animals were to display significant metaphysical differences from other living entities, legitimising their treatment as beings of different kinds. Indeed, this seems altogether plausible if one considers that multicellularity has evolved separately at many points in earth's history, at each point associating itself with very different survival and organisational strategies. Hence, I take myself to be justified in consid-

ering only 'ordinary' biological individuals in what follows. To reflect this, I shall here use the sortal term ANIMAL to label the members of the restricted set of entities with which I am here interested, leaving it open whether or not this metaphysical kind comprises entities outside of the animal kingdom (and, indeed whether all members of the animal kingdom fall under this kind).²

2.2 Animals and their Lives

There is a surprising lack of argument for the (frequently made) claim that life is central to the individuation of animals. One route to this thesis derives from the sparse ontological views of van Inwagen, according to which a plurality of things (such as the atoms which together form a living body) can only compose a further object if they are caught up in a life – “*a self-maintaining, well-individuated, jealous event*” (1990, p. 121). Upon this view, it is quite easy to see that ANIMAL can only apply to, and hence individuate, living organisms (since such things are the only composite individuals). Since I shall shortly argue that organisms do continue to exist after their deaths, my argument here must not rest upon such revisionary ontological views. Nevertheless, I hope here to detail why we should understand life to play a role in the individuation of animate organisms. Following this, I shall further argue that the importance of life is such that we cannot consider a corpse to simply be a poor exemplar of animality.

A better reason to think that life plays a central role in the individuation of living organisms is, of course, the thought, central to much of what is to come, that many of an organism's features stem from the generative kind to which it belongs. Our enduring interest in animals stems primarily from their biological activities and capacities for purposeful action. Since such capacities are so widespread among animals, it seems reasonable to count them among the features characteristic of their kinds. These capacities, however, are deeply dependent upon an animal's life processes, suggesting in turn that life is particularly central to animality. In place of adding further detail to this argument, I shall here present two cases against

²A further question which shall have to be set aside here is whether these entities all fall under a single generative sort. My temptation here is to think that, insofar as we wish to uphold the view that an object's kind endows it with a particular mode of activity and natural developmental path, we shall eventually have to recognise ANIMAL to be a genus under which many objects, each generated by a different sortal, fall. I do not, however, think that this calls into question anything said below; animals of different kinds are, I feel, sufficiently similar that we need not despair of laying down some general guidelines for their individuation.

which to test any account of the individuation of animals, drawing from these the suggestion that no account of the individuation of living entities can succeed unless it makes reference to their status as biological individuals. Following this, I shall briefly note that the mere notion of biological activity, unless supplemented by some coordinating process (best specified, I think, by looking to an animal's compositional features), cannot answer them. Although the development of a detailed account of the individuation of biological things would merely distract from the core thrust of this thesis, it is important to note that I do not mean to deny that compositional features have some role to play in an organism's individuation. This suggestion will, as we shall see, play an important role in the background of our next chapter, in which it is argued that death need not cause an organism to cease to exist.

In what follows, we shall take the following two possibilities to present a test for any account of the individuation of living things:

Conjunction: In some circumstances, two individual organisms may come into existence fused to one another (as with conjoined twins), or subsequently become attached to one another.

Division: It is possible for a single unfortunate animal to lose a significant amount of its body mass (often more than half) and yet survive. Further, should its removed tissues be put in the appropriate conditions (or like the limbs of a starfish, be capable of regenerating a living body), they might continue to engage in biological activity, and so be alive.

Any adequate account of the kind *ANIMAL* must either provide us with a principled way to distinguish animals from one another and to trace them through change in the above situations or give us good reason to think that these are not cases in which there is a single metaphysically correct way to individuate and track the entities involved.³ Although I am willing to accept that there might sometimes be no definitive answer to individuating questions, I suppose it clear that we can, and often do, make individuating judgements in cases such as the above. Thus, for example, conjoined twins are ordinarily thought to be two organisms rather

³One might here follow Wiggins (2001, pp. 74–76) in thinking that it is possible to single out and answer questions about individual animals without further possessing an entirely general method to determine how many animals one encounters in any given situation. My contention here is simply that the cases raised above do not admit of such individuating uncertainties.

than one and we readily accept that earthworms might lose their posterior half (even when this comprises the bulk of their mass) and yet survive to regenerate the lost segment of their body. Hence, I submit that we ought to question how these judgements, which we seem ordinarily to make without difficulty, could be incorporated into an account of animality. If any plausible view of animality is able to do exactly this (in a principled manner), this shall in turn bolster our confidence that no indeterminacy is involved in the above cases.

It is, I think, difficult to see how any perspective upon animality might produce the correct description of the above cases without looking to the idea of an organism's life (or its biological activities – construed sufficiently widely as to include its actions). To my mind, any promising alternative strategy for the individuation of animals must focus its attention on the complex organic tissues from which they are made. Ultimately, such a strategy will lay down a number of guidelines for picking out and separating from one another the bodies of living organisms based upon their compositional features alone. As a toy example, one might consider counting organisms by reference to the organ structures they possess, tying each animal's continued existence to those of its organs which are the most complex or have the longest evolutionary pedigree. I see no reason to deny that one might individuate organisms in such a way; indeed, as I shall suggest in the fourth chapter of this thesis, I am sympathetic to the suggestion that compositional considerations must play a crucial role in the individuation of material substances. I do, however, doubt very much that it is satisfactory to take the foregoing considerations to ground the continued existence of an animate organism without first tracing their connections to the biological activities of a living organism. There is, I take it, no real reason to think that either complexity or evolutionary novelty are ontologically significant (and hence, in this context, explanatory). Rather, if either of these suggestions does light upon a reliable way to single out animals, this is ultimately because an organ structure must be complex in order to coordinate the various aspects of an organism's life, or because life-preserving structures must have been among the first (and hence the most widespread) evolved adaptations (since no organism which lacked them could survive for long enough for its other features to influence its reproductive success). These compositional criteria thus allow us to successfully distinguish animals from one another only because they (non-accidentally) coincide with a more fundamental criterion guiding the individuation of

living organisms – one which references their capacities to sustain their own lives and to act as unified entities. If this is so, we must accept that it is the notion of an entity's life (or, as we shall see, of its biological functions) which ultimately sustains the above suggestions regarding the individuation of animals, and not simply their structural features – it provides, we might say, the most fundamental explanatory perspective upon the considerations which ground the existence of such organisms.

I have above suggested that compositional suggestions cannot alone carry the weight of an account of the individuation of living organisms. Rather, even if one must reference an organism's tissues in order to identify it, this is fundamentally because of the deep connection between the biological activities of an organism and those of its parts – a connection which must be made explicit if one is to understand how an organism's identity could be so intimately tied to some of its parts. It is, of course, not a surprising discovery that the notion of biological life is central to any account of what animals are. It is, however, surprisingly rare to find an extended discussion of the individuation of animals in the philosophical literature surrounding identity. This omission is especially critical given that an ordinary understanding of a life as constituted by a series of coordinated (possibly homeostatically regulated) biological events is unlikely to provide us with the guidance necessary to tackle the problem cases raised above; conjoined organisms may share their 'lives', thus understood, and lives (and indeed the capacities to sustain them – a favourite method for connecting lives more closely to individual organisms) may split in two without the organism involved ceasing to exist.⁴ Lives must be tied much more closely to individual organisms if they are to aid us in the development of an individuating view. It is, I think, highly likely that compositional considerations will be relevant to this endeavour.⁵ Not only do such factors allow us to clearly

⁴Thus, for example, some entities reproduce by asexual budding. When this occurs, one object grows a distinct organism whose life it initially sustains. Following this, they separate from one another, each preserving the capacity to sustain its own life. Often this does not involve the destruction of the initial organism, which continues its existence whilst its offshoot develops a life of its own.

⁵In connection with this, I recommend Aristotle's suggestion as to how we may "decide whether [an animal with duplicated organ systems] is one or is composed of several grown together by considering [its] vital principle" (773^a7). Aristotle postulates that the 'vital principle' of an animal (that which enables it to exemplify its form) is particularly associated with only one of its parts and subsequently submits that we should distinguish fused organisms from one another by reference to these central parts. Hoffman and Rosenkrantz develop this statement into an account of the compositional unity of organisms, making much of the thought that some organs have "a more central role to play in the unification or organization of an organism's parts than others" (Hoffman and Rosenkrantz 1997, p. 124). This is, I think, a plausible empirical conjecture and, should it be true, might easily be developed into an account of the individuation of animals. Here, I shall note only two provisos. First, Hoffman and Rosenkrantz, due to their concerns

distinguish conjoined organisms despite their high degree of functional integration (and, further, the degree to which each entity's life might depend upon that of its sibling), they may also be crucial to the individuation of animals whose behaviour is somehow aberrant, failing to be coordinated in the manner characteristic of other members of their species – a suggestion which will have some importance in our treatment of corpses, and whose merits will be drawn out in more detail in the final chapter of this thesis.

In the above, I have attempted to spell out the centrality of an organism's life (and so, of its biological kind) to its individuation. Any account of an organism's characterising sort must detail how organisms may be distinguished from one another and traced through change. Even though it may seem plausible to think that one might successfully identify organisms by reference to independently identifiable aspect of their material composition (e.g. individual organs and systems thereof), it is impossible to explain the ontological significance of these of its features unless one first notes their close connection to the maintenance of its biological activities. Hence, these suggestions may only be raised against the background assumption that we aim to individuate a distinctive type of organic structure, characterised in a deep manner by a specific type of biological activity. Armed with this, we might now turn to the suggestion that a corpse cannot be counted as a living organism because the laws of biology do not apply to it. Following this, the next chapter will develop the claim that animals need not cease to exist upon their death.

2.3 Animals and Death

Since an organism's body (and hence any of its parts which play a key role in its individuation) might remain in existence after its deaths (albeit in a non-functional state), we should now turn to consider, in light of what has been said above, whether anything can be dead and yet fall under the sort *ANIMAL*. To set the stage, one might first consider the suggestion

with questions of composition, make much of the role of an organism's 'master parts' in regulating the activities of its other parts. We might, however, instead accord more weight to a master part's role in coordinating an organism's actions, rather than to its interactions with the organism's other parts – a suggestion more in keeping with Aristotle's own. Further, one should deny that the above entails that an organism must, throughout its existence, conserve a single master part. This will, in turn, allow one to recognise that an organism might, in clearly defined circumstances (such as the metamorphosis of a caterpillar into a butterfly), break down and replace those of its parts on which its existence previously centrally depended.

that, since animals are living things and it is impossible for anything to be simultaneously dead and alive, we must think the idea of a dead animal incoherent. This argument fails to recognise that the statement that animals are living things says only that it is of the nature of an animal to be alive – a nature which something might fail to exemplify fully whilst remaining an animal. Similarly, even though watches tell the time, one might own a watch whose internal mechanism has rusted to the point where it is unable to move.⁶ In light of this, one might state instead that corpses fall under a kind of which they are poor exemplars, failing to bear all the properties characteristic of their conspecifics, as, for example, would be a wingless bee. My aim here is to argue that we should consider the differences between dead and living animals to be much more extensive than this, suggesting that we take the former not to be animals at all.

2.3.1 Activity

To begin our argument, we might note the following claim of Wiggins, regarding the determination of an object's kind:

All the doctrine [that whether or not an object falls under a given natural kind is determined by its similarity to good exemplars of that kind] implies is that the determination of a natural kind stands or falls with the existence of lawlike principles, known or unknown, that will collect together the extension of the kind around two or three good representatives of the kind [...] To be something of that kind *is* to exemplify the distinctive mode of activity that they determine (2001, p. 80)

In what follows, we shall question whether a dead animal is sufficiently similar to its living counterparts to instantiate the kind ANIMAL. This is, in many ways, a difficult question to answer. A dead organism's genetic material does not instantly degrade. Nor does it cease to be physically akin to its living counterparts. Indeed, we cannot even make a case for their

⁶Once the position argued in this thesis has been set out, I would urge the reader to return to this point and reconsider this judgement. I think that our conclusion applies equally to artefactual kinds as to those which are natural. Nevertheless, since I am willing to admit the existence of things which fall under a kind without exemplifying it well and I take it that the burden is upon me to give good reasons to take up my position, we shall proceed, for now, upon the assumption that a broken watch is still a watch, albeit a bad one.

difference in kind by appealing to the popular idea that a single mechanism must account for the similarities between the members of a natural kind (see, for example, Boyd 1999a; 1999b and Millikan 1999); a corpse's similarities to living organisms result from the very same processes of reproduction and gene transcription as usually underwrite the similarities between conspecifics. Thus far, then, it is not obvious that *ANIMAL* does not apply to dead organisms in the same way as it does to living ones.

Despite the above similarities, it is, I think, clearly false that a corpse exemplifies the distinctive mode of activity associated with its genetic and physiological structure. First, we should note that it does not behave as does an ordinary living being; it has no means of engaging with its external environment. Given that our interest in biological organisms is arguably piqued by their impressive sensory and locomotive abilities (i.e. by their capacities for coordinated action), a corpse's complete lack of agency should immediately lead us to suspect that it is not the same type of thing as is an animal; it simply cannot, one might say, lead the same type of life as can an animal. Of course, this suggestion cannot be thought to be conclusive when we look to animals whose nervous systems have been severely damaged, or which are asleep. These entities similarly lack agential powers and yet seem still to be animals. Cases such as these might easily lead one to think that death is simply an especially extreme form of debilitation. In light of this suspicion, it is worth adding that not only do corpses lack the agency of a living organism, there are also a range of basic biological activities which characterise living organisms (and play an important role in maintaining their physical unity) but in which corpses do not engage. Soon after an organism's biological death, the frenetic metabolic activity which characterised its life ceases. Hence, those of its parts which played a central role in individuating it cease to actively do anything to ensure its continued existence. It is, I think, partly in virtue of this that we should ultimately suspect that corpses are not biological organisms. Before proceeding to offer some arguments for this conclusion, I shall offer a final intuitive consideration in favour of the claim that corpses are very much unlike living organisms.

It is, I think, central to many people's thoughts about death that they can no longer be harmed or benefitted after their deaths (even if their interests may be furthered or hindered in a way which is, in some abstract sense, still of value for them). In contrast, however, a living

animal may be benefitted or harmed even when it is in a coma. Indeed, there seem to be important constraints upon the manner in which we can interact with animals, even when they are severely wounded, which are not mirrored in the case of corpses – whatever dignity we must afford to a corpse differs hugely from that possessed by its living counter-parts. If one takes up a fully Aristotelian perspective, according to which an entity’s kind determines not only what it is natural for it to do but also, in the same stroke, what is good for that object, it is natural to take this to show that something cannot be an organism when it is dead (for, otherwise, one would ascribe to it the very same ends as we do to living organisms – an implausible view). At the very least, this line of thought suggests that we are pre-philosophically inclined to think that corpses are entirely different kinds of things than are living organisms. However, those who are less inclined than I am towards a teleology-heavy metaphysics are unlikely to put much stock in this line of reasoning. Therefore, rather than developing it further, I shall, in what follows, attempt to elaborate upon the notion of an animal’s characteristic features so as to give us a firmer foundation for thinking that a corpse simply is not the same kind of thing as a living animal.

2.3.2 Dead Things and Masses of Flesh

In contrast to much of the literature about animals, which focuses on their lower-level capacities to sustain their lives, I have above placed some emphasis upon what might be called their ‘higher-level’ capacities – those in virtue of which we count them as purposive (and even, in some cases, intelligent) beings, worthy of respect and special consideration. This, I think, brings to the forefront the reason that life should strike us as such an interesting phenomenon; our attention is focused upon biological kinds, for the most part, because an entity’s underlying biology explains the existence (and operations) of its sensory-motive capacities. My aim here is to argue that a corpse’s lack of biological life renders it no more interesting than any other structured mass of organic matter – something which will lead us to think that it is not any kind of organism at all.

Part of the relevance of the above is that it makes one question what legitimises the application of the sortal *ANIMAL* to any entity. One answer is, of course, physiological; an animal is

any entity whose parts are arranged in the manner characteristic of some species (or a rough approximation of this). Similarly, one might think the possession of organ systems whose evolutionary function is to sustain biological life sets organisms apart from all other organic things. These factors do, arguably, select features unique to living organisms (and indeed, if specified further, can probably distinguish the animals from many of their multicellular relatives). Nevertheless, I think that their presence does not alone suffice to mark something out as an animal. In connection with this, one might note the thought that kind terms provide one with a strong basis for a vast range of inductive generalisations; upon coming to know that some feature is common to a small (although reasonably diverse) sample of members of a single kind, one is generally justified in assuming that it is also possessed by most of the other members of that kind. Although living organisms might share a variety of physiological characteristics with their corpses, there is some sense in which these similarities are relatively shallow, as indicated by Olson in the following quotation:

The changes that go on in an animal when it dies are really quite dramatic. All of that frenetic, highly organized, and extremely complex biochemical activity that was going on throughout the organism comes to a rather sudden end, and the chemical machinery begins immediately to decay. If it looks like there is not all that much difference between a living animal and a fresh corpse, that is because the most striking changes take place at the microscopic level and below. (1997, p. 151)

This is in direct contrast to contemporary perspectives upon natural kind terms; such terms, it is thought, do not merely collect together objects with a great variety of similarities but rather apply only to those entities whose resemblances are particularly significant or deep. Further, not only do members of natural kinds have a vast number of features in common with one another, these commonalities also give one grounds for inductive predictions—determining what will happen their members in a wide variety of circumstances. In contrast, whilst corpses have very much in common with the living things which they once were, behaviourally, they have few such commonalities; a corpse is guaranteed not to react to changes in its environment (internal or external) in the same way as a living organism because, of course, it cannot

react at all. In this sense, then, it is very unlike any animal. Further, most of the empirically sustained predictions we can make about the fate of a corpse (e.g. that its soft tissues will rot away first, leaving behind its hard tissues which will soon after be scattered) not only do not hold of living organisms but are also equally true of almost any collection of once living tissues. In virtue of this, then, one might think to group corpses not with living organisms but instead with other dead tissues. This is, I think, correct to some degree. It is true that biologists' interests in living things do not, strictly speaking, carry over to corpses and that the significant differences between these things should prevent us from applying the sort ANIMAL to dead organisms. However, as I shall suggest in our next chapter, I suspect that we must make sense of a corpse's persistence conditions by reference to those of a living being, ultimately leading me to claim that a corpse is a derivative existent – individuated by a sortal under which it does not fall. Nevertheless, I hope to have given good reason for doubting that corpses exemplify the kind distinctive of their living counterparts.

Building upon the above, one should further note the intuitive thought that an organism's physical configuration, and that of its organs, is 'for something'; these features have the purpose of sustaining its life. In determining which things are living organisms, it is considerations of vitality which have metaphysical importance – not merely facts about the configuration of an organism's tissues. One might, of course, consider something to be an animal just in case it contains organ systems whose functions are to support life, whether operative at that time or not. However, I think it nevertheless important to note that we primarily take interest in the configuration of an organism's organs only insofar as we are interested in its life (and in the features which allow its life to continue). Since its organ systems are hence only of subsidiary importance to the study of animals, we should be put in mind of the following claim, asserting that there is no point to applying a sortal to an object in the absence of that which initially made it an interesting object of theoretical study:

But the whole distinction [between a living organism and its remains when decomposition has destroyed it] is parasitic upon the point of distinguishing between life and death. Mere material continuity is not sufficient. And if life or its absence gives the *point* of these distinctions, then the *principal* distinction is between being live

and being dead, and the best overall view will make existence or non-existence depend upon the principal distinction. (Wiggins 1976, p. 143)

Although I shall shortly deny that the above thought justifies us in taking an organism to cease to exist upon its death, it does, I think, support the less radical (and hence, less theoretically costly) move of taking *ANIMAL* only to apply to living entities. There is, one might say, no real reason to take a dead organism to count as an animal; it does not (and cannot) participate in the same type of activities as does a living organism. Indeed, its properties and powers are more similar to those of other lumps of non-living flesh (a natural contrast kind to *ANIMAL*) than they are to the paradigm exemplars of animality. Ultimately, indeed, the ontological significance of any considerations which individuate both living organisms and corpses can only be seen once one traces their connection to an organism's biological activities (even after they have ceased). Thus, I submit, we should think it a necessary condition of anything exemplifying the kind *ANIMAL* that it be alive. In what follows, I shall briefly add to this argument by suggesting that the conditions of a dead animal's individuality are historical and so that corpses need not be individuated by a sort that they implement after the death of their tissues. Following this, I shall summarise the key arguments of this chapter before, in the next, presenting my reasons for denying that organisms cease to exist upon their deaths.

2.3.3 The Unity of a Dead Thing

There are, I think, a multitude of considerations which tell against a dead animal being any kind of organism at all. I have above mentioned its lack of any sensory or agential capacities and its inability to regulate its life processes. An important further observation reveals that the basis for the individuality of a corpse is, unlike that of a living organism, merely historical. Not only is it the case that a corpse has the parts that it has because of its past life processes (something which is true of many of a living organism's parts also), what determines that we have only a single entity where a corpse is can sometimes reside only in the causal history of its parts. This is, I think, the most significant consideration in favour of the view that corpses do not, at least typically, instantiate the kind *ANIMAL*. To justify this conclusion, I shall note that it is possible for multiple organisms to relate to one another in much the same way as

might the parts of a single (albeit malformed) animal. This, I submit, shows that the basis for counting dead entities is, in at least some cases, not contemporary with the things being counted, suggesting that they are not instantiated by a sort which they exemplify at that time.

In defence of this position, we might begin by considering the case in which an organism is, due to genetic mutation (as opposed to the assimilation of a twin in the womb – a much less clear case), born with an additional, non-functioning head and the beginnings of its spinal column. It is, I suspect, coherent to believe that there is here only a single organism despite the presence in it of additional brain tissue which, were it undergoing further development, would instead be associated with a different organism. This situation, however, is physiologically not much different from what would result if one of two conjoined twins died, at which point we might think that the dead twin's corpse remained in existence (and distinct from its sibling organism) at least for a little while. If this is correct, then an organ's past activity might be decisive in determining whether it is an inoperative part of a living organism (as with our first case) or whether it is associated with another dead organism attached to the first. If this case fails to seem compelling, one might instead look to species of organism which undergo metamorphosis and, in the process, rebuild the parts which are centrally involved in coordinating their movement and life processes. We might, for example, imagine that rather than being broken down in the cocoon, much of a caterpillar's nervous system simply becomes assimilated (in a manner which renders it inoperable) into the body of the emerging butterfly. Even if this would soon cause its death, it is, I think, intuitive to think that we have here a single organism which contains a non-functioning nervous system, associated with no animal, alongside its own.

In effect, the above exploits the fact that one cannot tell, just by looking at the physical arrangement of a single coherent mass of organic tissue (and their configuration), how many organisms are there in existence (should the reader remain unconvinced by the, admittedly, far-fetched examples referenced above, the same point could in principle be made using surgical examples).⁷ Hence, we must, in order to individuate organisms, look to the nature of the processes occurring in them, and the causal histories of their parts. Given that a corpse's parts

⁷To connect this to what is to come in the next chapter, one might state that mere description of the physical arrangement of an organism's tissues does not always, by itself, detail how that organism's parts are metaphysically organised (in a sense relevant to its individuation).

are devoid of biological function, and the connections between them degrade very quickly, it seems to me that there is no principle to which one can appeal, contemporaneous with the corpse's existence, which individuates it. There is hence, I submit, no need to take it to fall under any individuating sort at that moment in time. I shall suggest in the following chapter that this does not give us good reason to think that there is no such thing as an individual corpse; even in the case of living organisms, one must appeal to the past history of some of an organism's parts in order to determine that they are not merely attached to it. Nevertheless, if one believes, as I do, that the application of the sortal *ANIMAL* to an entity ought, by itself, to individuate it (at least when there is some determinate answer regarding the number of animals that there are to find), I should suggest that this reveals that this sortal does not, properly speaking, apply to corpses. Since the individuality of a corpse stems from its history, we ought not to think of corpses as animals.⁸

2.4 Summary

To summarise the above, albeit under a new slant, we might begin with the thought that it is necessary, if we are to formulate biological generalisations, to determine which objects are subject to them. To do this, we must distinguish biological entities from one another, and from objects of other kinds, of which those generalisations need not be expected to hold. In the case of biology, two such suggestions immediately raise themselves; the idea of a life and that of an organic structure. The latter suggestion alone, I have argued, fails to appropriately explain the connection it draws between an entity's identity and various of its organs. Hence, it must be supplemented by reference to an organism's life, and to the activities and behaviours characteristic of organisms, if it is to give us individuating guidance. This, I think, draws it to our attention that the individual organism is an interesting unit of biological explanation primarily because organisms behave in a singular manner (albeit in a way underwritten by

⁸This view has the, perhaps unwelcome consequence that a frankensteinian collection of tissues cannot, however well they are arranged, compose a single object of the same metaphysical kind as a corpse. Although I shall not tackle this example in this thesis, I suspect that one might amend our view to say instead that there exist multiple ways to produce focally organised collections of tissue which are, in some sense, individuable by reference to the kind *ANIMAL*. It is important, however, to note that here, just as in the case of ordinary corpses, it is the causal history of Frankenstein's parts (and not their present operation) by reference to which he is to be individuated, cementing our claim that *ANIMAL* does not apply to him at the time at which he exists.

distinctive physiological adaptations). Going upstream from any particular account of the sort *ANIMAL*, we might see that corpses, despite their similarities to living organisms, aren't typically the subject matter of wide-ranging biological explanations and generalisations; they are, in fact, little more interesting than some other organic structures from which individual organisms are frequently distinguished. From this, it follows that we should not take corpses to be animals. An obvious conclusion to draw from this is that no biological organism is identical to any corpse; since the individuating concepts of biology cannot be, the above suggests, phases of any other (more fundamental) sortal concept to whose application life is ultimately irrelevant, no animal can be identical to any non-animal. In the next chapter, I shall argue that it would be premature to draw this conclusion. Although contemporary philosophical arguments often fail to show the identity of corpse and living organism, close attention to the degree of dependence of a corpse upon its living counterpart heavily suggests that they are one and the same thing.

Is Death the End?

This chapter discusses the so-called ‘termination thesis’ – the view that any living entity (although it is most usually raised in discussions of personhood) will cease to exist at the point of its biological death. It is unclear to me whether the denial or acceptance of this thesis is more natural. Nevertheless, many philosophers have voiced strong opinions in each direction, although their arguments (particularly in favour of the termination thesis) do not seem forceful to me. My aim in this chapter is to add my voice to those who reject the termination thesis. I shall not deal here with arguments in its favour (to my mind, all those which do so illegitimately move from the claim voiced above, that biological life is particularly central to the elucidation of the sortal *ANIMAL*, to the assertion that nothing can cease to fall under *ANIMAL* without ceasing to exist). Instead, I shall here develop the suggestion that the fact that a corpse maintains several of the physiological features of the living thing which it (I argue) was provides us with sufficient grounds to affirm their identity. This then delivers on my promise to show that an object might exist without falling under the sort which individuates it.

3.1 The Termination Thesis

The view that ‘we’ (human persons) are no longer ‘around’ after our deaths is ancient, going back at least to Lucretius. It is generally known as the ‘Termination Thesis’. Here, I shall focus

upon a slightly different form of this thesis, explicitly concerned with organisms rather than with the things which we are.¹ My aim in this section is not only to introduce this thesis, but also to persuade the reader that I need not consider in detail the positive arguments in its favour. Instead, I shall simply seek sufficient reason to reject it, looking particularly at the difficulties associated with individuating the corpses of ‘dead animals’.

The termination thesis, upon which the remainder of our discussion shall be focused, may be formulated as follows:

Termination: Animals cease to exist at the time at which they die.

There are, I think, three terms of art involved in this statement of the termination thesis. First, of course, we must have some understanding of what it takes for an object to be an animal. This, I take it, is sufficiently handled in our previous chapter; an animal is an entity which engages in a variety of centrally coordinated behaviours and metabolic processes (about which one can make a range of informative generalisations). We shall understand the cessation of an entity’s existence to involve it ceasing to have various things (present-tensedly) predicated of it, its lack of spatial location after a certain point in time or its non-concreteness.² This then leaves us with the notion of biological death which can, I think, be understood in two ways. First, given what I have said in the previous chapter, one might simply state that an organism dies when ANIMAL ceases to apply to it. If so, then the termination thesis should be understood simply to claim that ANIMAL is what Dummett labels a ‘presently essential’ property (1973, p. 130) – one which, if it ever applies to some entity, must apply to it at every later time in its existence.³ Alternatively, we might characterise biological death independently as

¹I, following Snowdon (2014) and Olson (2004; 2014), among others, take these to be mere notational variants upon a single question. Nevertheless, it is, perhaps, clearer to consider our question in the context of organisms whose lives don’t display the moral and psychological profiles which make human persons particularly interesting objects of study (and lead some to think that we must be something other than organisms). An additional advantage of this route lies in the fact that my argument is not intended to establish that no organisms cease to exist upon their death, but only that some do not. By excising the case which will raise the most complications, it becomes easier to focus our attention upon the generic claim that ‘organisms continue to exist as their corpses’.

²One might instead be more blunt, claiming that something ceases to exist through coming not to present-tensedly exist (or, alternatively, to exist at the present time). Each of these translations, however, commits one to the view that existence statements admit of temporal qualification (either through tense or through relativity to times). This thesis is controversial, and so I present the above alternatives, which preserve everything of importance in the termination thesis, while remaining neutral on issues surrounding the semantics of existence statements.

³This notion is slightly weaker than the more prevalent ‘substance sortal’. Whilst people often claim that it is true of any object (de re) that it necessarily falls under the substance sortal which individuates it, I wish here to avoid such claims about de re modality; despite their very real significance for any account of individuation, they

the cessation of an organism's metabolic processes (or a large enough subset of them) and ask whether the organism must cease to exist when those processes are discontinued. I have argued above that these accounts of death dovetail; something cannot be an organism if its metabolic processes have ceased. Nevertheless, it is worthwhile distinguishing them here, especially as this reveals that it is not obvious that an organism must cease to exist upon failing to fall under the sortal *ANIMAL*; if this were a matter of pure stipulation, then, I feel, it would be impossible to connect any substantive debate to our first interpretation of biological death. My aim in what follows is to show that we have good reason to identify a living organism with its corpse and should therefore reject the termination thesis.

3.1.1 The Corpse Problem

It strikes me that there is no real 'default' view upon the termination thesis, to be bolstered or unseated by philosophical considerations. One difficulty for this thesis, however, is particularly salient. It is rare for an organism's death to destroy all traces of its previous existence. Usually, in fact, what remains is a corpse—a body made from organic tissues in much the same arrangement as those of the living organism from which it came. The termination thesis entails that the corpse is distinct from that organism. One might then raise a number of questions about its individuation. To begin with, we shall consider how long the corpse has been in existence. There seem to me to be three non-arbitrary options, none of which, I shall argue, are wholly satisfactory.

First, one might view the corpse as something always coincident with, although separate from, the organism which died; it is individuated sufficiently differently that it, unlike the organism, might survive death. This, however, falls afoul of much that was said in the last chapter. There I gave reason to think that one might only individuate organisms (and hence anything always coincident with them) by reference to their biological lives. Thus, the corpse, for most of its career, may be individuated only by reference to its counterpart organism. It is, in some sense, an eternally derivative object, defined as 'the structure of a living organism',

raise complexities which need not delay us here. Hence, I aim to leave room for the proposal that I cannot survive death but that I could have existed without ever having lived. Similarly, I do not wish here to commit my opponent to the claim that anything which is once an organism must have been an organism at every previous point in its existence—another natural view whose merits are peripheral to the main thrust of our discussion.

where something's 'structure' is here thought to change its parts as it does but need not be destroyed when that thing ceases to exist. If one is willing to allow the sortal ANIMAL so much importance in the individuation of things which can outlast biological death, it is hard to see why we should then deny to organisms the privilege of enduring their death. This is, I suggest, preferable to postulating the existence of an extra object which is individuated by reference to the same set of life processes as a living organism but which, unlike the organism, has the additional ability to survive its death (even though its persistence conditions remain derived from those of its counterpart organism).

Second, one might think that the things which are corpses only come into existence at the point of an organism's death. A corpse, on this view, cannot exist anywhere that there is an organism. To my knowledge, there are two reasons to hold this view. First, one might reject the idea that two objects might be located in the same space at any time. This entails that whatever remains when an organism ceases to exist must, if it is approximately the same size and shape as that organism was, be newly created at the point of that organism's death. Alternatively, one might chalk the distinctness of these entities to the fact that their physical unity must be explained in different ways. To use a simple example, an animal might ensure the movement of glucose molecules from its bloodstream to its cells through a variety of methods (e.g. cellular absorption of water, by active transport, will decrease the concentration of glucose in the cells, thus facilitating the diffusion of glucose into them). These methods ensure the continuous turnover of its matter and, in so doing, override (or exploit) the natural tendencies of molecules to adhere to one another, and to reach a point of equilibrium through their random movement across cellular membranes. In the absence of life, however, these physical processes are no longer thus regulated, and so they act on the organism's structure in ways which they did not previously. Because of this, one might think, a corpse has a different structure from that of a living organism and so should be thought to be an entirely new being – its parts are, one might say, dynamically held together in a vastly different way than they formerly were. Against this perspective, I should only like to note that a dead organism decays rapidly, in large part because of this change in the processes which act upon its structure. The occurrence of decay should not, I think, be thought to be a way in which an organism's corpse coheres and is 'held together' (i.e. a way in which its structure is preserved) but rather a way

in which its structure is destroyed. We do not, on this way of viewing things, obtain a new structure when we let nature claim back a corpse and so there are no grounds for thinking that a corpse is a 'new thing'; rather, it is an old thing which is rapidly ceasing to exist. Hence, I think that this line of argument works better in the context of the claim that corpses do not exist, to which this chapter ultimately aims to provide an alternative. Here, however, I shall simply summarise by saying that, whatever reasons might be given for thinking that a corpse is created by the death of a living organism, it is certainly a strange discovery. I therefore think it quite reasonable to consider this to be an unnecessarily costly explanation of the existence of corpses.

As a third alternative, one might think that corpses are a type of biological structure entirely different from living organisms, but yet hold that the latter are always associated with such structures. On this view, wherever there is an organism, there is also another thing of the same kind as a corpse.⁴ I shall call such an entity a 'corpus' in what follows. Corpuses are individuated in an entirely different manner from living organisms, and so we may expect them to exist for a different amount of time than do the organisms with which they are associated – potentially coming into and going out of existence as the organism goes about its day to day life.⁵ Against this view, I worry that no theoretically satisfying account of corpuses will be forthcoming. To see this, we might begin by asking whether a corpus can survive any change in its parts. If such an entity cannot even lose its parts, then it follows that very few corpses last for very long, since decay involves the loss of their matter to the outside world. Thus, when we watch an organism's remains decompose, we in fact see a succession of entities come into, and then go out of, existence. This is, I think, unacceptable; if one believes that something is left behind after an organism's death, it seems, at first sight, to be a relatively long-lasting (albeit unstable) biological structure. Thus, I think that we should instead accept that a corpus might lose some of its matter without thereby ceasing to exist. This admission, however, raises additional individuation problems. To see this, imagine first that we think that a corpus might only lose parts but never gain any. This should lead us to question what

⁴This approach has a long pedigree, stretching back even to Locke (1975, ch. 27). More recently, however, it has quite rightly gone out of fashion.

⁵Indeed, on this view, two conjoined organisms might also share a single corpus – one should not here commit to the view that corpuses must be exactly spatially coincident with their counterpart organisms.

happens to an organism's corpus when it gains a new part. If corpses can't gain parts, then its corpus does not do so. Nevertheless, given that an organism's corpus (if it is to correspond at all to what we ordinarily think of as a corpse) must, at the point of death, have the very same parts as that organism, we should therefore accept that there also comes into existence a new corpus of which the previous one is only a part. This is, again, I think a surprising conclusion, and one which is best avoided. Indeed, there exist very few objects which we think can lose but not gain parts in this manner. Hence, we may instead wish to pursue the thought that corpses can sometimes increase in size. Although I shall not substantiate this claim here, I doubt very much that any account of such entities could be given without reference to the compositional unity of a living organism (at least without, in some situations, leading us to say extremely strange things). This notion of a corpus is, I feel, a philosopher's fiction, simply invented to find us something to identify with an organism's dead body, no matter how unnatural that object should be. It will therefore be set aside in what follows.

The above reveals that it is difficult to distinguish a corpse from its counterpart living organism in a satisfactory manner. Given this, one might instead be tempted to deny that there are such composite individuals; instead, we might think that a so-called corpse is simply a collection of organic molecules arranged in a remarkably complex manner. Although I do not doubt that much could be said in favour of this view, it is important to note that it is primarily motivated by our lack of a satisfactory alternative. Since, then, this view is extremely revisionary, I shall not here consider positive arguments in its favour. Instead, in what is to follow, I hope to demonstrate that an adequate account can be given of a corpse's compositional unity if we ascribe to it much the same characterisation as we do to a living organism (leading me to identify the two).

3.2 Ayers and Historic Dependence

We might conclude from the above that the proponent of the termination thesis must give us positive reason to think that no animal is identical to any corpse. In the remainder of this chapter, I aim to develop a line of thought, originating with Michael Ayers, which suggests that no such account will be forthcoming. On Ayers' view, we should understand the matter

which composes an organism to be unified in such a way that it might continue to compose that entity after its biological death. I begin here by unpacking this suggestion. Following this, following sections will examine and find lacking three reasons for thinking corpses to be different things from living organisms.

In commenting upon Locke's claim that we might distinguish a living organism, whose identity consists *in nothing but a participation of the same continued life, by constantly fleeting particles of matter, in succession vitally united to the same organized body* (1975, ch. 27, §6), from the mere mass of matter which is its body, Ayers presents the following claim:

The continued unity of a plant or animal after death obviously cannot be attributed to its continuing life, but even before death the conditions of its physical coherence at any time were laid down by previous, rather than current, life-processes. An animal or plant is not unified or given physical definition by a mysterious, instantly active life-force. There is no such force as so *constitutes* the unity of the thing that, when the force is switched off, the unity instantly and necessarily evaporates. (1991a, p. 224)

This is, I think, an insightful comment. In unpacking its truth, one should begin by noting that Ayers bookends this claim with the following two assertions, with which he takes it to be intimately linked:

To apply a predicate like 'horse' or 'man' to an object is not to pick out something other than the independently identifiable, materially concrete, discrete thing before one, but is to classify that thing itself: to attribute to it membership of a natural class in virtue of its origin and structure. (ibid)

The sense in which life is the 'principle of unity' of a living thing is one which presupposes that 'unity' can be understood in other terms. These terms are supplied by our inescapable recognition of material coherence and discreteness. (ibid)

These quotations might initially suggest that Ayers takes there to be a single account of any object's compositional unity, couched in the notion of a physically discrete object whose parts move together. On this understanding of his views, an organism's life-processes might cause

its parts to come together but need not be referenced at all in order to determine which things are among its parts; instead, we may consider anything that is sufficiently rigidly attached to that entity to be one of its parts. Ayers, however, immediately departs from this reading in claiming that stones and plastic hip-joints cannot become part of living organisms, no matter how firmly they become embedded within them (ibid, pp. 224–225). Indeed, he further countenances the possibility that conjoined twins are, despite being rigidly attached to one another, two individuals rather than one. We cannot then understand his view to rest upon the idea that life processes are never of ontological, or compositional, significance; such processes, it would seem, are intimately involved in distinguishing an organism's parts from those things which are merely attached to it (or which, as in the case of a stone embedded within an oak, it has grown around). Instead, our account of an organism's compositional features must, as does our account of its individuation, make reference to its life processes.

One must similarly be careful not to overstate the claim that "*the conditions of [a living organism's] physical coherence at any time were laid down by previous, rather than current, life-processes*" (ibid, p. 224). It is easy to interpret this as a denial that a dead organism's parts relate to one another in a different manner than do the parts of a living organism. Thus understood, it is, I think, easy to understand why a corpse should be thought identical to its living counterpart; death does not significantly alter the explanation we give of the continued unity of an organism's body (in each case, we reference only what has previously occurred within that organism), and so we might easily take it to retain its structure through death. This, however, is both inconsistent with Ayers' claim that an object's "*material unity is itself a function of [the object's] jointly operating parts*" (ibid, p 87) and patently false. Whilst living organisms coordinate the activities of their parts in order to keep themselves from returning to a state of thermodynamic equilibrium, a corpse's cells often cannibalise one another or, through enzymic activity, digest themselves. Hence, as mentioned above, a corpse's parts do not sustain its material coherence (understood as a "*a dynamic, lasting relation, not a momentary state*" (ibid)) but rather, absent outside influence, cause it to slowly erode. We should, therefore, accept that a living organism's tissues are held together in a somewhat different manner than those of a corpse and look elsewhere for the truth in Ayers' comments.

I have above suggested that Ayers means neither to give an entirely general account of

the considerations which determine whether or not one thing is among another's parts nor to claim that a corpse's parts are related to one another in much the same way as those of a living organism; each of these things appears inconsistent with other elements of his views. How then might we understand his claim that a living thing's material unity does not instantly dissipate upon its death? The point, I suspect, lies in the contrast between two interpretations of the notion of 'material unity'. When we ask how an organism's parts are unified, we might mean simply to ask how they are, at that time, attached to one another and how they interact with one another. In answering this question, one must note not only that an organism's body is not instantly destroyed by its death (showing that its living parts are, at any time, tied together by more than its life-processes) but also that a great number of an its parts (e.g. its hair, nails and peripheral skin tissues) might, at any point, lack biological activity and so be "*excluded from the 'common life' [of the organism's tissues]*" (ibid, p. 225). I take Ayers to conclude from this that, whilst an organism's parts must always remain attached to one another, there are few, if any, further restrictions upon the relations in which they may stand to one another whilst remaining among its parts.⁶ In this sense then, the organism's "*unity is open to explanation in each case in more primitive terms*" and is not constituted by its life processes (ibid, p. 224). Since an organism's parts do not instantaneously separate from one another upon its death but instead remain united in a similar way to those parts of its body in which biological activity was previously absent, Ayers concludes, we should not say that the organism's continued unity, understood in this weaker sense, relies upon its life processes. Hence, he concludes, death is not the end of the physically unified object which is the living organism.

Complementary to the above is an alternative interpretation of the organism's material unity, corresponding to the question 'what determines what are among its parts?' To this, I take it, Ayers is willing to accept that an organism's life-processes are relevant. Here, he

⁶The notion of 'attachment' employed here requires some revision to actually make sense of the parthood relations enjoyed by the organism. As Hoffman and Rosenkrantz point out (1997, pp. 99–100), many of an organism's parts are not rigidly attached to one another (thus, for example, one's red blood cells are free to move in the bloodstream independently of one another). One cannot, therefore, claim that 'attachment' unites an organism's parts at any time. Instead, a looser notion must be used, which recognises that an organism's blood cells remain among its parts after their generation because they are 'contained' by its tissues (which are rigidly attached to one another) in such a way as to move with it. Whatever revisions are necessary here, I very much doubt that one will ultimately need to explain the continued unity of a thing's parts in terms of any relations unique to the parts of living organisms; instead, perfectly ordinary notions of suspension, containment, origin and attachment will suffice to fully characterise the relations between the items already recognised to be among an organism's parts.

references the idea of an object's "*historic causal connection with the [organism's] life*" (ibid, p. 225), stating that tissues grafted onto an entity might "*become a part of the individual by coming to participate in [its] common life*" (ibid). I interpret this to mean that Ayers accepts that there might be stringent conditions upon the 'assimilation' of new matter into an organism, such that nothing might come to be part of a living organism without first participating in its life. However, subsequent to this, it is sufficient for something to remain part of that organism that it stay attached to it; it need not further remain caught up with the organism's life. Hence, even if an organism may only assimilate new material whilst it remains alive, it is, I think, unproblematic to hold that its parts might remain unified in the first of the senses here disambiguated (and so continue to compose it) after its life-processes have finally (and irreversibly) stopped. Once we are put in mind of this, it becomes evident that the change in the interactions between an organism's parts at the point of its death gives us little reason to consider it to cease to exist; they retain, for some time, enough structural integrity to underwrite the organism's continued existence, albeit as a rapidly decaying corpse.

To conclude, I have above set out an Ayersian view, which I shall subsequently call the 'historic dependence account' according to which the unity of an organism's parts does not instantly dissipate upon its death. In so doing, I have warded off two misinterpretations of Ayers' views. The first of these overstates Ayers' claim that the 'unity' of an organism's parts is independent of its life, suggesting that he takes a bare notion of 'material coherence' to fully determine which things are its parts. That many of Ayers' statements are inconsistent with this view strongly mitigates against it. The second, on the other hand, allows that the relations constitutive of an organism's unity might be unique to living things but claims that they continue, entirely unchanged, upon its death. This is obviously false. Instead, I have suggested that Ayers holds that an organism's life processes are highly relevant to its assimilation of new parts (since it standardly alters its composition by integrating new materials into the 'common life' of its parts) but thinks that, beyond this initial constraint, something need only remain attached to the organism's body in order to remain among its parts. Death certainly prevents (or at least slows down) an organism's assimilation of new material. On its own, however, this gives us no reason to think that it ceases to exist; rather, the organism loses the ability to maintain its unity, which subsequently breaks down as the corpse decays.

In the remainder of this chapter, I aim to take on a number of objections to this thesis, due mainly to Hershenov and to Olson. In showing these to be misplaced, I hope to sharpen the thesis under consideration, allowing me to conclude with a fuller statement of this view.

3.3 Objections to the Historic Dependence Account

In this section, I consider three objections to our suggestion that an organism does not cease to exist when it dies. I shall begin by taking on the claim that this view provides us with insufficient guidance as to the persistence conditions of a corpse, arguing that we can understand a corpse's persistence conditions simply by reference to the organisation of the living thing which it was. This has, I argue, the advantage of giving a wholly general account of what it takes for an organism to remain in existence throughout its life, as well as after its death. Subsequently, I shall take on the claim, made by Hershenov, that, unlike in the case of living organisms, there is no principled way to make sense of the compositional unity we ascribe to dead bodies. Hershenov maintains that we cannot provide a satisfactory account of the ways in which corpses, but not living organisms, can change (and other ways in which only the latter change)—a claim which I aim to unseat in what follows. Hershenov additionally asserts that, even if one does draw such a view out of the historic dependence account, it is implausible to hold, as one must, that the persistence conditions of a corpse are parasitic upon those of a living body. Since I shall argue exactly this, I shall not here discuss this latter claim—taking the overall plausibility of the views I later present to count against it. In the final subsection of our discussion, I turn to briefly detail why I think we ought to believe organisms to exist beyond their deaths, even though they then lack those features central to the application of their individuating sort.

3.3.1 No Principled Guidance

When considering the notion of a dead, but once living, body, the complaint which one most often hears is that no account can be given of the changes which such an entity could survive. In contrast to this, one might claim, the view that an organism ceases to exist when it dies gives us a fairly clear perspective on the organism's destruction. Even if it is often impossible

to determine exactly when an organism's life is over, the notion of 'death' gives us a clear grasp of exactly what is necessary for an organism's continued existence. In contrast, it is not immediately evident that we have any insight into the features required for a corpse to remain in existence, or even how we could better our understanding of this. In this subsection, I aim to take on exactly this criticism, showing that there is, in fact, a principled way to specify the conditions under which a corpse will cease to exist. One need only, I shall suggest, look back to the life which it once had.

To begin, we might consider the following quotation from Olson, which is paradigmatic of the accusation considered here:

A second problem for the historic-dependence account is that it tells us so little about what it takes for an organism to persist when it's dead. The problem is not merely that it appeals to conditions whose obtaining is a matter of degree without specifying that degree: that it doesn't say, even vaguely, what proportion of the original particles suffices, or how similar their arrangement must remain to the original one. More serious is that it gives no information about what happens to a corpse in a range of important cases ... what happens if the corpse is cut precisely in half? Does it go with one of the halves? If so, which one? Does it matter where the cut is made? ... There are many different and incompatible ways of proceeding, and I see no principled way of deciding among them. The reason is that I have no idea what happens to a corpse if a hand falls off, or it is cut in half, or the like. Nor, to my knowledge, does anyone else (2013, p. 93)

To see how to dispel this objection, we might make note of the grounds upon which it is based. In essence, the difficulties raised by Olson reflect the fact that the historic dependence account, as elaborated above, only tells us how an organism might lose or gain parts. Consequently, it, as yet, gives us no insight into what changes will destroy that entity or how we may distinguish it from other objects which also have a historical connection with it (as might come to exist were our corpse to be split into several pieces). Once we have recognised this inadequacy in our presentation of the account above, it is easy to see that it is an entirely general problem, applying even to changes which the organism undergoes in the course of

its life; indeed, this is precisely what the previous chapter recognised in noting that the mere idea of biological life may not always be sufficient for the individuation of organisms. Hence, I propose that we answer such problems by asking what would happen to a living organism were it to undergo similar changes. After defending this suggestion, I shall suggest that the similarities between the individuation of dead and living organisms cement the claims of the former to be structurally analogous to the latter – highlighting the truth in Ayers' observation that an organism's structural unity does not dissipate at the point of death.

Olson above suggested that there is no principled way to determine what would happen to a corpse if we were to slice it precisely in half. In answer to this accusation, I think that we need only to consider what happens to a living organism when it undergoes parallel changes. To further elaborate, we might imagine that each half of the mutilated organism's body is quickly sealed and placed on some kind of life support, which keeps most of its tissues from dying. When it is entirely clear what happens to the organism, we might ask why the same answer should not describe our butchery of an organism's corpse. Here, I can think of only one response. It is, I think, standard to approach such bisection cases by asking whether one half is appreciably better equipped, after being removed from its counterpart, to sustain its own existence. If so, one continues, that half should be identified with the original organism after it undergoes bisection. Thus, for example, Olson claims that one may identify an organism with its severed head because the head (in virtue of retaining the organism's brainstem) retains the capacity to co-ordinate the organism's life processes whilst its torso simply contains a number of organs which will, absent the controlling influence of the brainstem, fail to coordinate their activities (1997, pp. 132–133). In contrast, not only does a corpse not have any life processes to regulate, its tissues also rapidly decay, to such a point that they are entirely unable to sustain biological activity. Thus, one might claim, such considerations are inapplicable to cases in which corpses are cut into pieces.

In response to this argument, it is, I think, important to note that we attribute to a severed head the capacity to sustain its life only because it retains structures which ordinarily play a critical role in the coordination of its biological activities and not because those structures successfully continue to regulate the activities of the organism's remaining parts; a severed head, unless it is placed on external life support, will quickly die and, in the process of doing

so, lose its capacity to coordinate the activities of the parts which it retains. In light of this, we might ask what significance we should place upon the fact that those structures retain the ability to function normally (if connected appropriately to replacement organs). I should here suggest that we ought not to think that this is of considerable importance; we are, for example, perfectly willing to allow that a person whose brainstem has undergone significant damage (and so cannot function normally) might continue to exist if we find an alternative way to coordinate the activities of her vital organs. Continuing this thought, we might understand a living organism to be 'focally organised' around those of its systems which are most intimately involved in the coordination of its activities (allowing that which tissues these are might change in the course of an organism's growth and development, as happens, for example, in the metamorphosis of a caterpillar into a butterfly). It is, we might say, the retention of these tissues which establishes itself as central to the organism's continued existence even while it is alive, complicated only by the fact that it might change its organisation by assimilating new material and growing new organ systems (as, for example, occurs during the development of a fetus' central nervous system). It seems to me unproblematic to extend this suggestion to the individuation of corpses, which retain much of their internal structure until they are in a relatively advanced state of decay (at which point I suspect one should deny that they still exist, citing as evidence the fact that a decaying corpse is liable to fall apart upon being moved and so can no longer be thought to be a single coherent entity). Hence we might simply state that a corpse remains in existence just in case it retains 'enough' of the tissues around which it is focally organised (where this is determined by questioning whether the organism, as it was at the point of its death, would remain in existence were it to retain exactly those tissues).⁷ This account then aligns our judgements about animal identity with those about corpses. It also explains how this could be more than an ad hoc manoeuvre by putting a commonsensical gloss upon the idea that an organism's tissues are (both before and after its death) organised in a way which is relevant both to its unity and to its persistence.

⁷Alternatively, we might claim that a corpse must retain more of its central tissues than may a living organism (including, in the case of the higher animals, almost all of its central nervous system). This approach, which I prefer, is justified by the thought that a living organism is, through its life-processes, able to undergo structural rearrangements which a corpse cannot when tissue is removed from it. A living organism's loss of regulatory tissue, we might say, causes it to relate to its body in a dramatically different way than it did previously – something which does not occur when a corpse is taken apart. Nevertheless, for the sake of simplicity, I shall not implement this preferred account in what follows.

I therefore reject Olson's claim that no workable and theoretically motivated account can be given of the constraints upon a corpse's persistence.

Whilst the above cannot be taken to give the final word about an organism's persistence after death, I hope at least to have shown that it is less clear than Olson presumes that no principled account can be given of a corpse's persistence through change. I take it that we need only look to the way in which a living organism's tissues are structured in order to determine how much material a corpse might lose through decay or other accident. A corpse is, structurally speaking, very similar to a living organism even though death deprives it of the ability to actively change its structure – assimilating new material or changing the organisation (and relative importance of its parts). We should hence understand its persistence conditions accordingly, saying that it remains in existence for just as long as it retains the structures which previously were central to the coordination of its activity.

3.3.2 Changing Part-Whole Relationships

I have above suggested that we understand the relationship between a corpse and its parts to derive from that of the living organism which it once was. A living organism, we might say, assimilates material from its surroundings and, through doing so, maintains and alters its internal structure (which, I have suggested, is, metaphysically even if not physically, centered upon certain of its parts). Anything which it absorbs remains part of it for as long as it continues to be appropriately attached to it. Once the organism dies, however, many of the processes by which it assimilates new tissues stop, and so the organism's existence becomes tied to its maintenance of (significant aspects of) the structure which it had at the point of its death. On the face of it, this view appears to give a precise and theoretically motivated account of an organism's persistence conditions, whether alive or dead. This claim, however, is disputed by Hershenov, who argues that one cannot convincingly consider a corpse's parts to be unified in the same way as those of a living organism. Indeed, he takes his argument further to show that there is no coherent way to understand the relationship between a corpse and its parts and so concludes that there are no corpses. In this section I shall, following a line pressed by LaPorte, respond to Hershenov, showing that the idea of a corpse is not the

conceptual mess which he takes it to be.

I have above suggested that we might develop a single uniform account of the compositional unity of both a living organism and its corpse. Hershenov develops a range of objections to this idea, intended to suggest that our intuitions about the parts a corpse might have, unlike those relating to living organisms, lack any true theoretical unity. Given this, he suggests that we abandon the notion of a corpse entirely, taking there to be no such things. This argument is made through consideration of two ways in which a corpse is more dependent upon its parts than is a living organism, highlighted in the following two quotations:

While people do not think anything strange about a living body replacing its matter or adding to it, most are very reluctant to admit that a dead body can survive the replacement of its matter or can double its size (2005, p. 51)

Moreover, if the organism existed three weeks after fertilization without most of those organs, tissues and skeleton, why are they necessary to the persistence of the dead organism? It is the life processes that are important, not the structures that at one time make them possible. And surely those structures cannot be important to one's identity if they no longer even possess the capacity to support a revived organism (*ibid*, p. 54–55)

Although Hershenov presents these as two separate 'symmetry' arguments, each of which shows that the proponent of our approach is committed to ascribing disjunctive persistence conditions to the entities which at one time are living but later persist as corpses (stating that it is central to their survival that they retain their parts whilst they are alive but not whilst they are dead), we may fruitfully consider the second quotation to simply illustrate a particular comparison in the context of which it seems particularly strange to consider a corpse to be unable to change its parts. It convincingly illustrates that one cannot unify the persistence conditions of corpses and living organisms by requiring them to maintain a constant internal structure (since an organism might change its structural organisation as it develops) or even the capacity to support life-processes (since a corpse rapidly decays to a point at which it can no longer be resurrected). Given this, how can we deny that corpses persist in a fundamentally

different manner than living organisms (being much more rigidly tied to their parts) and so avoid ascribing to them disjunctive persistence conditions?

In response to this, we might take the lead from a response by LaPorte, in which he suggests that Hershenov fails to account for the importance of the fact that corpses may no longer assimilate new material. LaPorte observes that it is plausible to think that no body, whether alive or dead, might incorporate new matter except by assimilating it (2009, p. 797). Once we have noted this general condition upon an organism's part-whole relationship, and recognised also that most of an organism's matter is assimilated through coming to be engaged in its biological activity, there remains little mystery to the suggestion that a corpse is much less able than a living organism to change its material constitution; this simply follows from the fact that its ability to assimilate new matter is markedly reduced. In this, LaPorte follows the thought which I have above identified in Ayers that we might think the conditions under which some matter remains part of an entity to be far less restrictive than those under which it initially comes to be part of that thing. LaPorte's account of a living organism's ability to change its internal structure is, I think, much less developed. Here he states only that an organism must maintain much of the structure which it has upon the point of its death (*ibid.*, pp. 799–800). This, however, does not explain why the organism's existence might be tied to those features upon its death but not whilst it is still alive. Thus, LaPorte's reply fails to respond fully to Hershenov's claim that one must, in order to support our intuitive judgements about the persistence of corpses and of living beings, ascribe to them very different persistence conditions. Before considering Hershenov's replies to LaPorte's critique, I shall therefore draw out a more pleasing response from the views I have presented above.

I above stated that we might consider an organism's body to be focally arranged around those aspects of its internal structure which (ordinarily) coordinate its life processes, and consequently play a particularly central role in its life. An organism remains in existence, whether alive or dead, if it maintains those aspects of its internal structure, and ceases to exist if they become sufficiently damaged.⁸ This is, I suggested, a common constraint upon the persistence

⁸I above glossed over an account of what it takes for an organism's core tissues to be 'sufficiently damaged' to destroy it. It strikes me that one might well simply tie the organism's continued existence to that of the tissues around which it is focally organised, at least if one recognises that they need not continue to be able to sustain an organism's life in order to remain in existence (either while the organism remains alive or after it has died). Whilst I am unable to give a fleshed out account of the conditions under which we should think these tissues to be destroyed, I suspect

of both living and dead organisms. A living organism, however, has the capacity to significantly alter its internal structure. Thus, for example, as a fetus develops, its structure becomes increasingly complex, developing a series of organs which regulate its internal environment and a nervous system to which those organs are subordinated. In so doing, it becomes increasingly dependent for its continued existence upon a small number of its tissues. This capacity to alter its internal organisation, even to the point of excising and replacing faulty cellular structures, explains why a living organism might be more able to survive changes to its structure than a corpse. It also rests upon general principles, applicable to both living and dead organisms. Thus, I take it, Hershenov's criticism falls short; a corpse must sustain its internal structure in order to remain in existence for much the same reason as a living organism cannot survive the rapid replacement of many of its organs – its existence is tied closely to the organised tissue structure which, if functioning correctly, plays a central role in coordinating its life processes.

From the above, I conclude that there is little reason to think that a corpse stands in a different relationship to its parts than does a living being. Rather, each entity must retain a great amount of its structure in order to exist. The difference between these entities can be wholly explained by the fact that the life processes of a living organism allow it to assimilate new material and to alter the manner in which its parts are organised. In contrast, once dead, an organism loses the ability to do this, and so its existence becomes much more rigidly tied to the physical structures which it had upon its death. In response to this, Hershenov notes that "*most people think dead bodies produce new parts posthumously through bloat, decay and isolated cellular activity*" (2009, p. 805). To this, he adds the observation that we might reconstruct one and the same corpse after an autopsy, sewing its parts back together. This, Hershenov claims, provides further evidence in favour of the complaint that corpses are governed by wholly different part-whole relations (and hence persistence conditions) than are living entities. These differences, he argues, represent "*unprincipled limitations*" upon the ways in which a dead body might gain new parts (it is, one might think, inexplicable why a corpse may gain a new

that there is little need for me to do so; it is, I suspect, generally quite evident at what point the coherence of an organ breaks down through decomposition. Cases in which pieces are cut off a coherent tissue structure are more difficult to deal with but, I think, this simply connects with a general difficulty, with which I shall not deal here, associated with any account of the persistence of macroscopic objects.

part through decomposition but not by having a replacement of one of its old parts sewed onto it). If Hershenov is correct, we should therefore recognise that our view of a corpse's compositional unity reflects a gerrymandered collection of folk intuitions, which we should ultimately dismiss.

In response to Hershenov's point, I should begin by stating that I am inclined to say very similar things about living organisms as about corpses. If my tissues begin to saponify or to bloat, I see no reason why we should think the resulting products are not part of me. I am simply an organism whose tissues are degrading whilst I remain alive. This, for example, seems to me to be the most appealing treatment of gangrenous or necrotic tissues in the body. Similarly, if I lose a large chunk of flesh in an accident but, thinking quickly, a surgeon sews it back onto me, so as to keep me from bleeding out before I can receive proper medical attention, it strikes me that the chunk of flesh would remain part of me, even if the operation left it somewhat dissociated from my life processes (and, indeed, in the course of dying rapidly). At any rate, it is unclear to me that any other judgement strikes us as intuitive here. Thus, it is far from evident that intuition does tell us that corpses and living organisms have different part-whole relations from one another. Even if these pre-theoretic intuitions need revision to give a more unified account of what it takes for something to become (or resume being) part of a living organism, little prevents us from similarly revising our views of dead bodies. Hershenov's response to LaPorte makes much of the fact that people ordinarily judge corpses to be able to lose and gain parts in certain kinds of changes, the restrictions on which are, he thinks, unmotivated. If people ordinarily think the same to be true of living bodies (as I have suggested they do), then it would appear that we do not have a contrast between living and dead bodies which differentiates the compositional unity of the former from that of the latter. Hence, I suggest, we should leave Hershenov's argument to the side. Corpses neither have disjunctive persistence conditions nor significantly different means of acquiring and losing parts than do living organisms. There are no significant compositional differences between these two types of entity.

To conclude then, I have above considered the charge that one cannot build a uniform account of both living organisms and their corpses and suggested that it is misguided. A corpse may gain and lose material in exactly the same manner as may a living organism (i.e.

through assimilation, reattachment and degradation of its existing parts). Thus, it has exactly the same persistence conditions as does the animal which it once was (each must, in order to remain in existence, maintain a significant amount of its organic structure). The only difference of note between these entities is that a living organism is more able to assimilate new material than is a dead one. As a result, an organism might, in the course of its development, alter the organisation of its tissues, changing the systems which regulate its key life processes. By doing this, it, unlike a corpse, might change the tissues upon which it most relies for its existence. This, however, does not reflect a difference between the persistence conditions associated with each entity but rather simply reveals the importance of life for an account of an organism's (and hence also a corpse's) compositional structure. In virtue of this, I take it that we may ignore the brunt of Hershenov's criticism of the notion of a corpse.

3.3.3 Life as a Key Individuating Factor

I hope above to have suggested that we can coherently extend our recognition of living organisms so as to identify them after their deaths. There is, I think, absolutely no incoherence in this suggestion. Nevertheless, one might still find it problematic, asking what positive reason we have for taking it seriously. Given the close conceptual connection between biological organisms and their lives, why should we not take the end of life to also be the end of the biological organism? In this section, I wish to briefly consider and dismiss this suggestion, filled out by reference to the considerations that earlier led us to claim that dead organisms are not even bad exemplars of any biological kind.

To sharpen this objection, we should reconsider the following observation of Olson's:

The changes that go on in an animal when it dies are really quite dramatic. All of that frenetic, highly organized, and extremely complex biochemical activity that was going on throughout the organism comes to a rather sudden end, and the chemical machinery begins immediately to decay. If it looks like there is not all that much difference between a living animal and a fresh corpse, that is because the most striking changes take place at the microscopic level and below. (1997, p. 151)

Here, Olson notes that there is a dramatic difference between dead and living organisms. Whilst matter 'flows' through the former, the latter merely awaits a long, slow process of decomposition. Given the relative violence of death, it seems to provide a much less arbitrary cut-off for the organism's life than does any later point in its decay. Since we must, when death and subsequent decay occurs, think that the organism involved ceases to exist at some point in time, why not identify this with the most obvious change in its characteristics – its death? To strengthen this criticism, we might also add to it the following comment of Wiggins, also crucial to the case we made above:

But the whole distinction [between a living organism and its remains when decomposition has destroyed it] is parasitic upon the point of distinguishing between life and death. Mere material continuity is not sufficient. And if life or its absence gives the *point* of these distinctions, then the *principal* distinction is between being live and being dead, and the best overall view will make existence or non-existence depend upon the principal distinction. (1976, p. 143)

Wiggins makes a point here which is subtle and worthy of close attention. In essence, he notes that we, in claiming that an organism's corpse must retain certain aspects of its structure in order to remain in existence, have recognised that life has a special ontological significance, central to our individuation of things that have, at one time or another, been organisms. Given that we must appeal to an organism's life in order to determine whether or not a corpse remains in existence after it has been cut into pieces, there is some pressure upon us to consider life to have even more significance than this, being necessary for any organism's continued existence. Why should we draw back from this in developing our final view of the persistence conditions of living organisms?

My answer to this shall be very brief and, for the most part consist in a recapitulation of what has been said above. It is natural to think that organisms, just like fountains (an example favoured by Olson), are made of matter structured in such a way as to sustain a specific type of activity. As we noted above, an organism's remains do not instantly lose their structure or dissipate when it dies; rather, they remain in existence and gradually degrade. Given this, we must say something about what seems (to the naked eye at least) to be a coherent, structured

mass of matter (or alternatively, deny that all physically coherent structures are individual entities – a suggestion with radical ontological consequences). Whilst a corpse's lack of biological activity might easily justify us in refraining from considering it to be an organism, the changes which it undergoes (since they do not destroy its material body) are insufficiently dramatic to motivate the claim that no corpses exist, even supposing that sense can be made of this claim. I have attempted to show above that a coherent account can be given of corpses which draws inspiration from what, in any event, we must say about living organisms (and, in doing so, avoids the worries I raised for accounts which take corpses to be ontologically very different from living organisms). Given their significant structural similarities to living organisms, why should we withdraw from holding that a living organism's remains, rather like the ice in a frozen fountain, constitute the very same object as once existed, living and breathing, for so long as they retain enough of its structure? Whatever pressure there is to suppose that an organism ceases to exist upon its death, this must be weighed against the awkwardness of giving an alternative account of the material object which remains after an organism dies – its corpse. I suspect that, on balance, it is most appealing to think that an organism might outlast its death and therefore reject Wiggins' and Olson's suggestion that we should take an organism's continued existence to depend upon the application to it of the principal distinction between living entities and all other things.

3.4 Summary

Given that something cannot remain an organism after its death, should we also consider death to remove it from the face of the earth? This view, known as the 'termination thesis', faces the special problem of accounting for corpses. What are they, if not the organisms which existed just a short while ago? I have here argued, taking heed of a suggestion from Ayers, that we should not distinguish a corpse from the living organism which it once was; the structural continuities between these two things are too great for us to think that one is not the other. This, I have suggested, does not deprive us of a principled (and intuitively appealing) way of answering questions about what happens to a corpse over a wide range of circumstances. Nor, I claimed, does it necessitate that we accept a disjunctive view of an organism's persistence.

I promised before that I should be able to formulate more fully the view which I here defend at the end of our discussion. This view, we might now summarise by means of the following principles:

Assimilation: An organism might gain new parts through a variety of processes. Most saliently, new particles become part of it through being absorbed into its body and caught up in its life-processes. However, one might also wish to hold that an organism might increase in size through the reattachment of what was once a part of it or through the degradation of its tissues.

Retention: Anything which is among an organism's parts need only remain rigidly attached to it (or contained within it) in order to remain part of it. It need not, for example, continue to be caught up in its life processes (as evidenced by the fact that horns, hairs and necrotic tissues remain among an organism's parts despite being excluded from its biological activities).

Structural Persistence: In order for an organism (or a corpse) to remain in existence, it must retain those aspects of its physical structure around which it is focally organised. These parts need not retain the capacity to sustain its life in order to remain in existence (and so underwrite the organism's continued existence).

Not only do these principles apply equally both to living and to dead entities (giving theoretical support to many judgements which I take to be intuitive), they also strike me to provide the best overall view of the persistence conditions of an organism, allowing us to distinguish the continuation of its life (which requires it to retain a significant amount of its internal structure) from that of life processes which once belonged to it (occurring, for example, in tissues removed from it and kept alive). Thus, I conclude that we should believe that animals continue to exist after their deaths, albeit as things which are no longer organisms.

Derivative Existents

We began this thesis with the thought that we must, in order to explain how any object's identity is fixed, reference a characterising sort. This allows us to do two things. First, such characterisations allow us to determinately ascribe properties to their objects and to make sense of the constraints which we intuitively recognise upon the coinstantiation of various properties. This may lead us to discover constraints upon the cardinality of any domain beyond those which follow from the logical properties of the identity predicate. Secondly, sorts play a privileged role in determining the types of changes which an individual continuant might endure without ceasing to exist. In virtue of this, they determine the temporal extent of their careers. It is, I think, extremely appealing to take sorts to play both of these individuating roles. However, elaborating further upon this schematic outline of a theory of individuation is a task of substantive metaphysics (and a difficult one at that). This thesis has presented a case against one interpretation of the notion that sorts characterise objects and, in doing so, determine which additional features (relevant to their implementation) are to set them apart from all other things. The sortal instantiation thesis claims that an object's existence is grounded in its implementation of its characterising sort. This, I suggested at the end of the first chapter of this thesis, obliges us to state that an object must, at any time at which it exists, instantiate the kind which (at that time) characterises it. It is this consequence which I have here argued to be false, thus motivating the rejection of the sortal instantiation thesis.

Our rejection of the sortal instantiation thesis stems from an examination of living organ-

isms, and of the changes which they might undergo before they finally cease to exist. It is, I have suggested, impossible to properly individuate living organisms (and to track them through the various changes which they might undergo in the course of their existence) without making some reference to their biological activities. Not only are such activities characteristic of living organisms, they must often be referenced in order to determine just what material structure an animal has (and hence to make sense of its individuality). Hence, I argued, we should not consider a corpse to be an instance of the same kind as a living organism. Nevertheless, it has been crucial to our account of an organism's corpse that it has much the same persistence conditions (and internal organisation) as a living organism. Therefore, I conclude, it remains characterised by the sort *ANIMAL* despite no longer falling under it.

Unless one develops an alternative account of the types of things which corpses are (and of the changes which they might undergo) or claims that no such objects exist, one must therefore reject the sortal instantiation thesis. The latter of these options is, I think, unpalatable, and has mainly been motivated by the claim that no principled account can be given of the persistence conditions of corpses. Against this option, I hope to have presented a theoretically unified (and intuitively plausible) account of the persistence of corpses, based entirely upon an account that we must, in any case, apply to the persistence of living organisms (at least if we are to capture the intuitive thought that an organism may, at many points in its existence, have a number of parts which are not caught up in low-level biological activity). I therefore take this option to be extremely unpalatable. Equally, given the centrality of an organism's life to its individuation, I doubt very much that any satisfactory alternative account of the nature of dead organisms can be devised. Hence, I submit, corpses are individuated by reference to a kind of which they are no longer an instance (and by features which they once bore). We must therefore reject the sortal instantiation thesis, claiming that it introduces constraints upon the changes which entities might undergo where there are, in fact, none.

Not only does the above argument compatible with the core grain of truth in the sortal instantiation thesis – the claim that objects are characterised (and hence individuated) by reference to kinds – it, in fact, relies upon this thought in its account of the nature of corpses. Hence, it strikes me that we lose nothing of individuating significance by rejecting the sortal instantiation thesis, and moving to a less restrictive account of identity. With this in place,

I hope now to briefly outline some advantages of accepting an ontological account which recognises both paradigmatic cases of individuation (in which an object exemplifies its characterising sort) and derivative cases (in which it does not).

4.1 The Ontological Application of Uninstantiated Characterising Sorts

One might, I fear, respond dismissively to the above by distinguishing weaker and stronger senses in which an object might instantiate a kind property (or, alternatively, by counting all individuals individuated by reference to the kind *ANIMAL* as members of another, more extensive characterising kind). In what follows, I therefore hope to show that there are strong theoretical reasons to maintain that the sortal instantiation thesis is false, and so that organisms might be characterised (and hence individuated) by kinds under which they no longer fall. First, as mentioned above, it seems intuitive to think that there is a sense in which corpses are not well-individuated. Such objects seem to be individuated primarily by reference to phases of their existence which have now ended. This, I think, suggests that we should think there to be a key individuating difference between living and dead organisms, captured by the suggestion that the latter are merely 'derivative' individuals, associated with a kind under which they no longer fall. The acceptance of such derivative existents, I suggest, reveals to us both how we might draw together two apparently contrasting perspectives upon individuation and also provides us with an inviting context within which to consider the possibility of substantial change. Hence, I suggest, there is great theoretical advantage to holding that objects may be characterised by kinds to which they no longer belong (and correspondingly to distinguishing 'derivative' from 'paradigmatic' individuals).

4.1.1 Derivative Existence

To begin, we shall revisit the point submitted above, that one must, in order to know what it would take for a corpse to remain in existence (and sometimes even to distinguish it from other corpses or from living organisms to which it is attached), look back to the life which it no longer leads. This is significantly different from the ordinary case of individuation, in which an object's internal characteristics (derived from the kind to which it belongs) may

easily suffice by themselves to individuate it. In this sense, then, the individuation of dead bodies is dependent upon characteristics which are presently external to them. This alone reveals to us that one cannot explicate the individuating role of a sort in isolation from the features which are characteristic of the entities which fall under it—a consideration which mitigates against the weaker reading of property instantiation suggested above.

The above has a further philosophical upshot. It is common to think that each individual substance contains within itself the grounds for its individuality (and hence for its differentiation from every other thing) – this at least seems a natural interpretation of the claim that material substances are “*the only logically independent individuals possessing independent existence*” (Ayers 1991b, p. 70). From our discussion of corpses, however, it follows that there exist some objects whose individuation is dependent upon properties which do not, at the time of their individuation, belong to them. These we might call ‘derivative objects’ as their introduction into our ontology is parasitic on the possibility of singling out other things (the paradigmatic members of their individuating kinds) which are significantly different from them. This is, of course, not a new conclusion. Aristotle illustrates the very same thought in the following paragraph, in which he considers what happens to a living organism’s functional parts once they are removed from it:

What a thing is is always determined by its function: a thing really is itself when it can perform its function; an eye, for instance, when it can see. When a thing cannot do so it is that thing only in name, like a dead eye or one made of stone (390^a10–12)

The above, however, extends Aristotle’s discussion by revealing that there might exist derivative objects whose existence is less obviously dependent upon other objects than is an organ’s; a corpse, for example, seems to be an individual substance which simply lacks the life associated with its living counterpart. Indeed, further, our suggestion that living organisms sometimes endure their deaths might be taken to show that substances may become less well individuated than they previously were as a result of undergoing change. Such entities’ persistence conditions become, I argued, determined by considerations which are, in a very real sense, external to them. This is, I think, an interesting and worthwhile ontological conclusion

to investigate (although I shall not do so here), especially insofar as it allows us to recognise objects intermediate between mere aggregations of matter and full-blooded individual continuants and hence to do justice to the intuitive thought that an object's destruction (and the associated breakdown in its individuality) might be gradual, allowing it to 'fade' out of existence as its characteristics become further and further removed from those of the thing which it once was (and it consequently becomes less and less easily individuated by its characterising sort).

Our rejection of the sortal instantiation thesis thus leads us immediately to distinguish from one another various ways in which an object can be individuated. Interestingly, it suggests that there exist mind-independent objects which are not individuated or characterised by the way that they in fact are, but rather by a template which exists in nature and applies to them only in an attenuated manner. Not only will this have significance for the two debates yet to be presented, it also seems to me to warrant close attention on its own merits. I therefore submit that we would do well to mark the distinction between derivative and paradigmatic individuals in our theories of individuation.

4.1.2 Processive and Compositional Substance Ontologies

Another interesting topic, bordering on our discussion above, concerns different views of the nature of entities, and consequently of the features which individuate them. Here, we may usefully introduce two different views. Those with particular interests in living entities and the philosophy of biology are often inclined to think that the significant distinction between 'mere' local aggregates of material and individual substances rests in the fact that the latter engage in a distinctive kind of self-organising activity, from which results their characteristic physical structure and patterns of growth. To the proponents of this approach, one's efforts to individuate objects must be directed towards understanding the distinctive kinds of activity which ground their existence. In contrast, to the proponent of an alternative 'compositional' view, an object's activity is of little ontological significance; its material structure and propensity to cohere in the face of outside interference (as well as the fact that it spatially excludes all other objects) is already sufficiently impressive to determinately fix its identity. On this view,

the processive ontology suffers from two principal defects. First, it may often be unclear how it could distinguish individual objects from one another; processes are not, one might think, internally well-individuated continuants but rather secondary entities, dependent for their existence upon their participants – individual substances whose existence is ontologically prior to their activities. Second, and relatedly, this view suffers from a type of ontological snobbery, being unable to say very much about entities whose existence is less clearly caught up with any capacities for self-directed activity, such as stones and mountains. Consequently, it fails properly to identify the persistence conditions of ordinary material objects which, due to their foundational ontological role (ignored entirely by the processive view), might survive many changes in the processes in which they are engaged and yet continue to play an active causal role in the world.

The above discussion, I hope, highlights the excesses of each view. Even self-organising life-processes are, I hope to have suggested, insufficiently well individuated to be tied closely to the existence of individual organisms without further reference to the material structures caught up in them. Further, it seems to me that the fact that substances are associated with such structures does play a crucial role in our intuition that they are the source of stable (and unified) causal powers which have a great impact upon happenings in the world. At the same time though, I have argued that it is impossible to, metaphysically speaking, get any insight into how an object's physical structure might sustain its identity (or even into that structure's composition) unless we look into the connections between that structure and the object's typical mode of activity.¹ Further, it seems to me that one might ward off the charge of ontological snobbery by accepting that objects might sometimes be individuated by reference to processes in which they no longer engage. Although I shall not develop this suspicion here, it seems to me likely that one might sometimes individuate inanimate objects by reference to the processes by which objects of their kinds are typically formed, taking their persistence to stem from their subsequent maintenance of the physical structures with which they initially came into being. I hence conclude that processive and compositional perspectives upon material

¹Indeed, even though I liberally made reference above to the tissues around which an organism is organised without fully describing how they might be individuated, I should point out here, in line with the materials developed in the last chapter, that may often be the activities (and causal histories) of an organism's parts, rather than their physical configuration, which determines whether they compose one or many such systems.

substances must interact if either is ever to offer us an informative individuating perspective. Under this approach, these perspectives emerge not as competing accounts of individuation but rather as interdependent elements of a single ontological view.

I have suggested that material substances must sometimes be individuated by reference to activities in which they do not engage. This thought accepts that an object's structural features cannot, in isolation from its activities, individuate it. Indeed, more crucially, it suggests that we may gain no insight into the metaphysically significant aspects of an entity's physical structure without reference to some such activities or processes. However, it does not follow from this that we may individuate material substances without reference to their material structure; the processive view cannot give a satisfactory perspective upon an entity's persistence unless it incorporates the compositionalist's concern with material structure. By firmly distinguishing between the conditions under which a sort is instantiated and those in which it may individuate objects, the ideas presented above give clarity to the suggestion that we should reject the contrast between compositional and processive ontologies and instead make use of the strengths of each.

4.1.3 Substantial Change

A final popular thesis which borders on our discussion is the claim that each object must, whenever it exists, be individuated by a single substance sortal. On this view, an object's characterising kind cannot change at any point in its existence, even if it may cease to instantiate it. Nothing I have said above counts against this claim. Nevertheless, I hope to suggest below that we may, once we've accepted that there might exist objects which are individuated in a derivative manner, more easily see a way around this thesis than we might otherwise. Hence, yet again, I submit that maintaining a clear distinction between a sort's individuating role and its instantiation enables us a perspective upon ontological discussions which might otherwise be ignored.

The claim that no object can change its individuating sort might be backed up by the suggestion that one could not have good grounds for considering a single entity to exist both before and after a change which altered entirely its criteria of identity. Those attempting to

conceive of such change seem, at first, to be faced with a dilemma. First, if we conceive of substantial change along the lines of ordinary alterations to an object's properties, in which one sortal ceases to individuate an entity and is instantly replaced by another, then (even if the point at which this change occurs is metaphysically indeterminate) it is unclear why we should consider objects to be able to change in kind; on this view, an object's persistence conditions (and the activities which individuate it – by reference to which one might ordinarily seek to resolve questions about its identity) alter instantaneously, leaving us with few materials by which to stave off the suggestion that this involves the rapid replacement of one entity by another of a different kind. The prospects for the alternative claim that a single object might simultaneously fall under more than one individuating sort, however, seem to be only slightly less dim; such a view would ascribe to a single object the metaphysical structure associated with more than one type of activity and, in light of this, may often be unable to adjudicate between competing judgements about what happens to that object when it undergoes a given change (such as when it loses the structures associated with the sort under which it initially came into existence). To avoid this latter claim, one must think that neither object's sort fully determines its persistence conditions, and so find it *"lacking a principle of identity and persistence made fully determinate ... by a [single] sortal concept"* (Wiggins 2001, p. 67) – a possibility which might initially be thought to call into question our claim that each object can be given a metaphysically privileged characterisation which, by itself, fixes its identity.

The above ideas, however, allow us to accommodate the possibility of substantial change without denying that an object's persistence conditions are solely determined by its characterising sort. We have above elaborated upon the thought that an object might survive a change which causes its kind-characteristic activity to come to an end and suggested that such an object ceases to be entirely well-individuated – its individuality is, we have said, supported by features which it does not at that time bear. In light of this, we might take substantial changes to comprise an intermediate stage in which the object involved falls under no sort determinately but instead must at once be considered (due to its structural features, and the changes which it undergoes) to be an ex-member of one kind and an emerging member of another; its characterisation should hence be thought to explicitly reference the fact that it is in a transitional state. On this picture, then, individuating responsibility might be gradually 'trans-

ferred' between the kinds under which an object falls, both allowing it to survive substantial change and accommodating our intuition that it becomes, in some way, entirely unclear what it is that we have before us (or even whether we do, in fact, have a single well-individuated entity) as an object undergoes metamorphosis. This allows us to maintain that an object's generative kind does, at least in ordinary circumstances, give it entirely determinate persistence conditions whilst maintaining that one might sometimes keep sight of a single entity as it undergoes a change in kind – thus avoiding Wiggins' worries about substantial change.

We do not often speak as though substantial change is possible. Nevertheless, it is, I think, interesting to question why this is the case. I doubt very much that the response will be the Wigginsian claim that it is simply impossible to consider an entity's identity to be sustained through an alteration to the activities and features characteristic of it. Further, I suspect that the idea of substantial change might be of great help in considering the developmental processes of entities which undergo significant change between different 'stages' of their lives, especially when (as with butterflies) this involves an intermediary stage in which an organism's structure is radically rearranged or (like coral) the differences between the beginning and end stages of an organism's life are so great as to rule out the possibility that they have any capacities or behavioural activities in common. The ideas presented above further seem well-placed to accommodate the intuition that an entity's individuality might be, to some extent, compromised by metamorphosis. Rejecting the claim that an object must, at every time, fall under its characterising sort helps us get these arguments in view, and thus should strike one as a useful and interesting metaphysical perspective upon identity.

4.2 Conclusion

In the above, I have presented and argued against an overstatement of the thought that we must, in order to determine the truth of any identity statement, characterise the object which it concerns by referencing some kind which characterises it. Such kinds, I have suggested, generate objects and, in virtue of doing so, fix all facts about their identities. I have suggested that its overstatement rests in the thought that an object must, whenever it exists, implement its characterising sort. This fails to appreciate that we might track an object without difficulty

even through changes which render it devoid of most of the features characteristic of the members of that kind. In previous chapters, I developed the argument that a corpse is not a dead animal but nevertheless remains the very same entity as the organism from which it came in order to illustrate this point. Since one may only develop a satisfactory understanding of a dead animal (and hence individuate it) by reference to the life which it once led, it follows from this that we should reject the sortal instantiation thesis.

In this chapter, I hope to have shown that our rejection of the sortal instantiation thesis might lead us to distinguish entities which are ‘well-individuated’ from those whose existence is, in some sense, derivative—depending upon a sortal which they do not exemplify. Not only is this claim of intrinsic philosophical interest, it also, I submit, has important theoretical implications. Thus, for example, we might, by accepting this suggestion, incorporate the insights of both processive and compositional perspectives upon material substances into a single account of their individuation. Further, and more interestingly, it begins to direct our attention towards the thesis that objects might be individuated by different sorts at different times in their existence. Although I suspect that we should reject this latter claim, I think that it does a gross disservice to the resources of our individuating worldview (and indeed to the complexities of nature) simply to insist, as might the proponent of the sortal instantiation thesis, that the idea of substantial change is merely incoherent. We should, therefore, happily reject the sortal instantiation thesis; this ontological view is, I submit, entirely ill-prepared to cope with a variety of individuating challenges to which we frequently respond without significant difficulty.

Bibliography

- Aristotle. 1984a. 'Categories'. In J. Barnes, ed. *The Complete Works of Aristotle*. Princeton, New Jersey: Princeton University Press.
- 1984b. 'Meteorology'. In J. Barnes, ed. *The Complete Works of Aristotle*. Princeton, New Jersey: Princeton University Press.
- 1984c. 'On Generation and Corruption'. In J. Barnes, ed. *The Complete Works of Aristotle*. Princeton, New Jersey: Princeton University Press.
- 1984d. 'Metaphysics'. In J. Barnes, ed. *The Complete Works of Aristotle*. Princeton, New Jersey: Princeton University Press.
- Ayers, M. 1974. 'Individuals without Sortals'. *Canadian Journal of Philosophy* 4: 113–148.
- 1991a. *Locke: Epistemology and Ontology*. London: Routledge.
- 1991b. 'Substance: Prolegomena to a Realist Theory of Identity'. *The Journal of Philosophy* 88: 69–90.
- 1997. 'Is Physical Object a Sortal Concept? A Reply to Xu'. *Mind & Language* 12: 393–405.
- 2005. 'Ordinary Objects, Ordinary Language, and Identity'. *The Monist* 88: 534–570.
- Baillie, J. 1990. 'Identity, Survival and Sortal Concepts'. *The Philosophical Quarterly* 40: 183–194.
- Belshaw, C. 2011. 'Animals, Identity and Persistence'. *Australasian Journal of Philosophy* 89: 401–419.
- Boyd, R. 1999a. 'Homeostasis, Species, and Higher Taxa'. In R. A. Wilson, ed. *Species*. Cambridge, MA: The MIT Press.
- 1999b. 'Kinds, Complexity and Multiple Realization'. *Philosophical Studies* 95: 67–98.
- Brewer, B. 2015. 'Exclusive Individuals'. *Proceedings of the Aristotelian Society Supplementary Volumes* 89: 125–142.
- Casati, R. 2004. 'Is the Object Concept Formal?' *Dialectica* 58: 383–394.
- Caulton, A. and Butterfield, J. 2012. 'On Kinds of Indiscernibility in Logic and Metaphysics'. *British Journal for the Philosophy of Science* 63: 27–84.
- Clarke, E. 2011. 'The Problem of Biological Individuality'. *Biological Theory* 5: 312–325.
- Clarke, E. and Okasha, S. 2013. 'Species and Organisms: What Are the Problems?': in F. Bouchard and P. Huneman, eds. *From Groups to Individuals*. Cambridge, MA: The MIT Press.
- Cohen, S. M. 1984. 'Aristotle and Individuation'. *Canadian Journal of Philosophy Supplementary Volume X*: 41–65.
- Dasgupta, S. 2009. 'Individuals: An Essay in Revisionary Metaphysics'. *Philosophical Studies* 145: 35–67.
- 2011. 'The Bare Necessities'. *Philosophical Perspectives* 25: 115–160.
- 2015. 'Quality and Structure'. In E. Barnes, ed. *Current Controversies in Metaphysics*. London: Routledge.
- Dawkins, R. 1976. *The Selfish Gene*. Oxford: Oxford University Press.
- Doepke, F. 1992. 'Identity and Natural Kinds'. *The Philosophical Quarterly* 42: 89–94.
- Dummett, M. 1973. *Frege: Philosophy of Language*. London: Duckworth.

- Elder, C. L. 2004. *Real Natures and Familiar Objects*. Cambridge, MA: The MIT Press.
- 2011. *Familiar Objects and their Shadows*. Cambridge: Cambridge University Press.
- Enç, B. 1986. 'Essentialism without Individual Essences: Causation, Kinds, Supervenience, and Restricted Identities'. *Midwest Studies in Philosophy* 11: 403–426.
- Feldman, F. 1992. *Confrontations with the Reaper*. Oxford: Oxford University Press.
- Ferner, A. M. 2014. 'Metaphysics and biology: a critique of David Wiggins' account of personal identity'. Birkbeck, University of London.
- Forbes, G. 1987. 'Is there a Problem about Persistence?' *Proceedings of the Aristotelian Society Supplementary Volumes* 61: 137–155.
- Hershenov, D. 2005. 'Do Dead Bodies Pose a Problem for Biological Approaches to Personal Identity?' *Mind* 114: 31–59.
- 2009. 'Organisms and their Bodies: Response to LaPorte'. *Mind* 118: 803–809.
- Hirsch, E. 1976. 'Physical Identity'. *Philosophical Review* 85: 357–389.
- 1982. *The Concept of Identity*. Oxford: Oxford University Press.
- Hoffman, J. and Rosenkrantz, G. S. 1997. *Substance*. London: Routledge.
- 1998. 'On the Unity of Compound Things: Living And Non-Living'. *Ratio* 11: 289–315.
- Johnston, M. 1987. 'Is there a Problem about Persistence?' *Proceedings of the Aristotelian Society Supplementary Volumes* 61: 106–135.
- LaPorte, J. 2004. *Natural Kinds and Conceptual Change*. Cambridge: Cambridge University Press.
- 2009. 'On Two Reasons for Denying that Bodies Can Outlast Life'. *Mind* 118: 795–801.
- Lewis, D. 1986. *On the Plurality of Worlds*. Oxford: Blackwell.
- Locke, J. 1975. *An Essay Concerning Human Understanding*. Oxford: Oxford University Press.
- Mackie, D. 1999. 'Personal Identity and Dead People'. *Philosophical Studies* 95: 219–242.
- Madden, R. unpublished. 'The Persistence of Animate Organisms'. UCL, accessible online at <https://sites.google.com/site/neddamyror/The%20Persistence%20of%20Animate%20Organisms.pdf>.
- Millikan, R. G. 1999. 'Historical Kinds and the "Special Sciences"'. *Philosophical Studies* 95: 45–65.
- Nelson, J. 1972. 'Logically Necessary and Sufficient Conditions for Identity through Time'. *American Philosophical Quarterly* 9: 177–185.
- Nicholson, D. J. 2014. 'The Return of the Organism as a Fundamental Explanatory Concept in Biology'. *Philosophy Compass* 9: 347–359.
- Oderburg, D. S. 2007. *Real Essentialism*. London: Routledge.
- Olson, E. 1997. *The Human Animal*. Oxford: Oxford University Press.
- 2004. 'Animalism and the Corpse Problem'. *Australasian Journal of Philosophy* 82: 265–274.
- 2007. *What Are We?* Oxford: Oxford University Press.
- 2013. 'The Person and the Corpse'. In B. Bradley, F. Feldman, and J. Johansson, eds. *The Oxford Handbook of Philosophy and Death*. Oxford: Oxford University Press.
- Price, M. 1977. 'Identity Through Time'. *The Journal of Philosophy* 74: 201–217.
- Quine, W. V. 1950. 'Identity, Ostension, and Hypostasis'. *The Journal of Philosophy* 61: 621–633.
- Savellos, E. E. 1988. 'Contingent Metamorphosis and Substance Sortals'. *The Philosophical Quarterly* 38: 339–342.
- 1992. 'Criteria of Identity and the Individuation of Natural-Kind Events'. *Philosophy and Phenomenological Research* 52: 807–831.
- Scholl, B. J. 2007. 'Object Persistence in Philosophy and Psychology'. *Mind & Language* 22: 563–591.
- Shoemaker, S. 1979. 'Identity, Properties, and Causality'. *Midwest Studies in Philosophy* 4: 321–342.
- Snowdon, P. 2014. *Persons, Animals, Ourselves*. Oxford: Oxford University Press.

- Steward, H. 2015. 'What is a Continuant?' *Proceedings of the Aristotelian Society Supplementary Volumes* 89: 109–123.
- Strawson, P. F. 1959. *Individuals*. London: Methuen.
- 1992. *Analysis and Metaphysics*. Oxford: Oxford University Press.
- van Inwagen, P. 1990. *Material Beings*. Ithaca, New York: Cornell University Press.
- Wiggins, D. 1963. 'The Individuation of Things and Places'. *Proceedings of the Aristotelian Society Supplementary Volumes* 37: 177–216.
- 1969. 'Reply to Mr Chandler'. *Analysis* 29: 175–176.
- 1971. *Identity and Spatio-Temporal Continuity*. Oxford: Basil Blackwell.
- 1976. 'Locke, Butler and the Stream of Consciousness: and Men as a Natural Kind'. *Philosophy* 51: 131–158.
- 1997. 'Sortal Concepts: A Reply to Xu'. *Mind & Language* 12: 413–421.
- 1999. 'Substance'. In A. C. Grayling, ed. *Philosophy 1: A Guide Through the Subject*. Oxford: Oxford University Press.
- 2001. *Sameness and Substance Renewed*. Cambridge: Cambridge University Press.
- 2012b. 'Identity, Individuation and Substance'. *European Journal of Philosophy* 20: 1–25.
- Wilson, J. 1999. *Biological Individuality*. Cambridge: Cambridge University Press.
- 2000. 'Ontological Butchery: Organism Concepts and Biological Generalizations'. *Philosophy of Science* 67: S301–S311.
- Wittgenstein, L. 1961. *Tractatus Logico-Philosophicus*. London: Routledge & Kegan Paul.
- Xu, F. 1997. 'From Lot's wife to a pillar of salt: Evidence that physical object is a sortal concept'. *Mind & Language* 12: 365–392.