



Individual essentialism in biology

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Abstract

A few philosophers of biology have recently explicitly rejected Essential Membership, the doctrine that if an individual organism belongs to a taxon, particularly a species, it does so essentially. But philosophers of biology have not addressed the broader issue, much discussed by metaphysicians on the basis of modal intuitions, of what is essential to the organism. In this paper, I address that issue from a biological basis, arguing for the Kripkean view that an organism has a partly intrinsic, partly historical, essence. The arguments appeal to the demands of biological explanation and are analogous to arguments that I have given elsewhere that a taxon has a partly intrinsic, partly historical, essence. These conclusions about the essences of individuals and taxa yield an argument for Essential Membership. Finally, I cast doubt on LaPorte's objection to that doctrine arising from the view that a species cannot survive having a daughter.

Keywords Taxon essentialism · Individual essentialism · Essential membership · Kripke · Cladism · LaPorte

Introduction

Consider the taxa that are thought to fall under the biological categories in the Linnaean hierarchy: kingdoms, phyla, classes, orders, families, genera, species, and even subspecies (varieties). Kripke (1980) and other metaphysicians have proposed, on the basis of modal intuitions, two distinct essentialist doctrines about these taxa. The first, "*Intrinsic Taxon Essentialism*", is the doctrine that these taxa, particularly species, have essences that are, at least partly, intrinsic, underlying, and probably mostly genetic. This has long been the subject of criticism in biology and the philosophy of biology. In contrast, the second, "*Essential membership*", the doctrine that if an individual organism belongs to a taxon it does so essentially, had not

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received such criticism until Joseph LaPorte's "Essential Membership" (1997). The doctrine had, as LaPorte remarks, "largely escaped the attention of philosophers of science". He set about remedying this situation. Whereas, he charges, "essentialists have tended to be rather naïve on scientific matters", he aims to approach the issue "in the light of biological systematics" (p. 97). This approach leads him to reject *Essential Membership*. Okasha (2002) endorses LaPorte's rejection.¹ Thus, LaPorte and Okasha both urge, *from a biological basis*, a view of what is *not* essential to an individual organism. But neither they nor, so far as I can discover, any other philosopher of biology or any biologist, have seriously addressed the issue, broader than *Essential Membership*, of what *is* essential to the organism. It seems that this issue, much discussed by metaphysicians (e.g. Kripke 1980; McGinn 1976; Salmon 1979; Forbes 1986; Robertson 1998), has *entirely* escaped the attention of philosophers of biology. I propose to give it attention.

Doing so raises a worry like that of Kingsley Amis' "Lucky Jim". Jim is contemplating his opening to an article that he is desperately trying to publish. The article is on "The Economic Influence of Developments in Shipbuilding Techniques 1450–1485". His opening is: "In considering this strangely neglected topic..." Jim's worry is that the topic may be neglected *for good reason*. We should worry that the metaphysical topic of individual biological essentialism may also be neglected by philosophers of biology *for good reason*. Perhaps it is of no scientific interest. I shall attempt to show that it is of interest.

In "Resurrecting Biological Essentialism", I argued for *Intrinsic Taxon Essentialism*" (2008; the doctrine was called "Intrinsic Biological Essentialism").² I accepted without argument the consensus view that there is an historical *component* to the essence of a taxon *T*, to "*Et*", whilst arguing that there is *also* an intrinsic component; for an organism *O* to be a member of *T* it must have both components. That discussion addresses the issue of *taxon* essentialism. The present paper addresses the issue of *individual* essentialism. What it is to be *O*? What is essential to *being that very individual organism*? I shall use analogues of the arguments in "Resurrecting" to argue that *the demands of biological explanation* support the Kripkean view that *O* has an essence, "*Eo*", that is also partly intrinsic and partly historical. So my essentialism is based on biology, not simply on intuition. Armed with a view of *Et* and *Eo*, it is easy to assess *Essential Membership*: *O* is essentially a member of *T* iff its having *Eo* entails its having *Et*. I shall present a case for *Essential Membership*. Finally, I will respond to one objection that LaPorte has made to *Essential Membership*, an objection that is of considerable general interest.

Essential Membership has become topical because of a series of papers in *Biology and Philosophy*, beginning with one by Levine (2001). Levine argues, independently of LaPorte, against *Essential Membership* for taxa that are species: he

¹ I infer from the form of LaPorte's argument that he thinks that philosophers of biology up to that time had *implicitly* rejected *Essential Membership*. Since then, Griffith (1999, p. 219) and Leslie (2013, p. 139) have done so explicitly as have those mentioned in the text below: Levine (2001), Haber (2012), Witteveen (2015).

² See also Walsh (2006), Dumsday (2012), Boulter (2012), Austin (2016).

claims that any organism is only contingently a member of its species. And he finds this contingency in conflict with the common thesis in biology that any organism selected as the “type specimen” for a species is necessarily a member of that species. Levine expresses the conflict neatly: “*qua organism*, the type specimen belongs to its respective species contingently, while *qua type specimen*, it belongs necessarily” (p. 334). LaPorte (2003), Haber (2012), and Witteveen (2015) have struggled with this alleged conflict. The truth of *Essential Membership* would remove the apparent conflict.³

I discuss *Et* in “[Taxon essentialism](#)” section. I shall argue for a Kripkean view of *Eo* in “[Individual essentialism: a Kripkean view](#)” to “[Haecceitism](#)” sections. On the basis of these discussions I shall present the case for *Essential Membership* in “[Essential membership](#)” section. Finally, in “[The cladism objection](#)” section, I shall respond to LaPorte’s interesting objection.

Taxon essentialism

We need to start by clarifying two matters. First, what taxa are in question? I began by describing them as those “that are thought to fall under the biological categories in the Linnaean hierarchy”. I said “thought to fall” because I sympathize with the doubts of some about this hierarchy; see, for example, Ereshefsky (1999, 2001), Mishler (1999). These doubts are often expressed as being about whether a certain Linnaean category—for example, *genus*—“exists” or is “real”.⁴ This strikes me as a most infelicitous way of capturing the doubts. I argue that what is really being doubted is whether the category is *explanatory* (2011). But whether or not all the categories are explanatory, and hence have a proper place in biological theories, it is quite clear which taxa are thought to fall under them. *Those are the groups that concern our essentialism issues.*⁵

There is an important further point: whether or not the *categories* are explanatory, our working assumption should be that *these taxa*, thought to fall under them, *are* very largely explanatory and so “natural kinds”. Biologists, like anybody else, can identify and name any group they choose. But, when doing biology, they are obviously striving for an explanatory classification. And we should surely assume that they have very largely achieved this. Thus, we should assume that *Canis* and *Canis familiaris* are explanatory whether or not their being a *genus* and a *species*, respectively, is explanatory. We are concerned with the essentialism of these presumed

³ So too, of course, would the falsity of the thesis about type specimens. I would argue that this thesis is indeed false, arising from a rather simplistic causal theory of reference. This falsity does not yield another conflict, this time with *Essential Membership*, because although the type specimen is necessarily a member of its species it is not necessarily a member of the species for which it was selected as a type specimen.

⁴ For example, Ereshefsky (1998, p. 113), Eldredge and Cracraft (1980, p. 327), Sterelny and Griffith (1999, p. 197).

⁵ So it is clear that the concern is *not* with some other biological groups; for example, *predators*, *parasites*, *females*.

explanatory taxa. We need take no position on whether they are properly placed in the Linnaean hierarchy of categories.

Second, what is an “essence”? The essence of a kind is the property *in virtue of which* an object is a member of that kind, what *constitutes* its being a member, what *makes* it a member; similarly, the essence of an individual. The essence of a kind or individual is the sum of its essential properties. Some may resist any talk of an “essence”, but what matters is the property described, not the term used to describe it. Another term I shall use for it is “nature”. Those who find my terms for this property distasteful should choose another. Some may think that there *is* no such property. I think that they are very wrong but I shall not argue the matter.

Essences can be fully intrinsic; for example, the essence of being gold is having atomic number 79. Essences can be partly intrinsic and partly extrinsic and relational⁶; for example, the essence of being a pencil is partly being an instrument for writing, which an object has in virtue of its relation to human intentions, and partly having the sort of physical constitution that distinguishes it from a pen, which an object has intrinsically. Finally, essences can be fully relational and extrinsic; being Australian is probably an example because it seems that anything—Rupert Murdoch, Phar Lap (a horse), the Sydney Opera House, a bottle of Penfolds’ Grange, the expression “no worries mate”, and so on—can have the property provided it stands in the right relation to Australia.

So what is *Et*, the essence of biological taxon *T*?⁷ *Intrinsic Taxon Essentialism* is the commonsense answer, particularly about species: taxa have essences that are, at least partly, intrinsic, underlying, and probably mostly genetic. The influential philosophers, Kripke (1980), Putnam (1975), Wiggins (1980), have urged this answer. Nonetheless the consensus in biology, especially in the philosophy of biology, is that the answer is quite wrong, smacking of “Aristotelian essentialism” and reflecting a naive and uninformed view of biology that is incompatible with Darwinism. Okasha captures the consensus nicely:

⁶ Biological essentialism is often taken to be concerned *only* with what is intrinsic (e.g., Mayr 1963; 1992, p. 16; Sober 1993, p. 146; Wilson 1999b, p. 188). I think it more helpful to define essentialism in a more general way so that issues come down to the *sort* of essence that a kind has. It is then possible that a kind has an historical essence.

⁷ Michael Ghiselin (1974, 1992) and David Hull (1978, 1992) take their view that species are *individuals* and not kinds to be an antidote to intrinsic essentialism. Levine thinks that the rejection of *Essential Membership* is part and parcel of this individualism: “If species are individuals, not natural kinds or even ‘spatiotemporally unrestricted classes’, then the membership of a given organism in a given species is always only a contingent matter of fact, never a necessity. This is not an unforeseen consequence of individualism, but rather a fundamental feature of the doctrine as conceived by its authors” (2001, p. 330). Levine does not provide any evidence that this consequence really was foreseen. I agree with those like Okasha (2002, pp. 193–194) who think that individualism is a red herring to essentialism issues (2008, p. 348) and so will take species essentialism to be a kind essentialism.

Ingo Brigandt claims that “most biologists and philosophers favor the idea that species are individuals rather than natural kinds” (2009, pp. 77–78). In contrast, a recent survey of the opinions of 193 biologists from over 150 biology departments at universities in the US and the EU (Pušić et al. 2017) found that, among biologists themselves, the position of individualism is “utterly marginal”, only 2.94%.

virtually all philosophers of biology agree that...it simply is not true that the groups of organisms that working biologists treat as con-specific share a set of common morphological, physiological or genetic traits which set them off from other species. (2002, p. 196).

On this matter, according to Sarah-Jane Leslie, “there is a degree of consensus among philosophers of biology (and indeed biologists) that is almost unprecedented in philosophy at large” (2013, p. 132)

Clearly, if *Et* for a species is not intrinsic it must be relational. The consensus view is indeed that it is relational: for an organism to be a member of a certain species, it must have a certain *history*. As Kim Sterelny and Paul Griffiths put it, there is “close to a consensus in thinking that species are identified by their histories” (1999, p. 8).⁸

My embrace of *Intrinsic Taxon Essentialism* in “Resurrecting” went sharply against the consensus.⁹ Still, I went along with the consensus that there is, at least, an historical *component* to *Et*, including for taxa thought to be species. Let us call that doctrine, “*Historical Taxon Essentialism*”. I have recently argued for this doctrine (“*Historical Biological Essentialism*”, forthcoming).

I shall not, of course, repeat my arguments for *Intrinsic* and *Historical Taxon Essentialism*. Nonetheless, those arguments play a large background role in my discussion of individual essentialism in that I use *analogues* of those arguments to argue for my Kripkean position on *individual* essentialism, on *Eo*.

Two points about the subsequent argument for *Essential Membership*. (1) Suppose that *Historical* and *Intrinsic Taxon Essentialism* are both right. Then clearly for *Essential Membership* to be right also it has to be the case that, for any *O* that is a member of *T*, *Eo* must include both the historical and intrinsic components of *Et*. And clearly, if the controversial *Intrinsic Taxon Essentialism* is not right, and only the relatively uncontroversial *Historical Taxon Essentialism* is right, then *Essential Membership* requires only that *Eo* includes the historical component of *Et*.

(2) The other point concerns *Historical Taxon Essentialism* and is more tricky. Despite the fact that the doctrine is part of the consensus in biology, it is striking how little has been said about what precisely the historical essence of a taxon is. The nature of this essence is something else that has largely escaped attention. And, I argue, the little that has been said¹⁰ is not plausible (forthcoming). I urge the view that the relevant history is of organisms of *a certain intrinsic kind* evolving into organisms of *a certain other intrinsic kind*, until we reach the taxon in question. This provides, of course, another argument for the controversial *Intrinsic Taxon*

⁸ Okasha endorses this view of the consensus (2002, p. 202). For some other expressions of the consensus, see Hull (1978, 1992), p. 313; Sober 1993, pp. 148–50; Matthen 1998, p. 120; Griffiths 1999, pp. 219–222; Millikan 2000, p. 19; Ereshefsky 2001, p. 209; LaPorte 2004.

⁹ I respond to criticisms of “Resurrecting” by Matthew Barker (2010), Marc Ereshefsky (2010) Tim Lewens (2012), Sarah-Jane Leslie (2013), and Matthew Slater (2013) in “Defending Intrinsic Biological Essentialism” (in preparation).

¹⁰ McGinn (1976, p. 135), Ruse (1987, 1992, p. 344), de Queiroz (1995, p. 224), Matthen (1998, p. 20), Griffiths (1999, p. 219), Okasha (2002, pp. 200–201), LaPorte (2004, pp. 12, 54), Leslie (2013, p. 140 n. 24).

Essentialism. So it is sure to be controversial too. So my argument for *Essential Membership* on the basis of this view will be controversial. But what alternative view of the essential history would the consensus prefer? The best I can do is to *predict* that on any plausible account of the historical component of *Et*, *Essential Membership* will hold.

I turn now to the issue of individual essentialism.

Individual essentialism: a Kripkean view

What is *Eo*, the essence of an individual biological organism *O*? I started this paper by noting that his question has entirely escaped attention in the philosophy of biology. Even LaPorte (1997), Okasha (2002), and Levine (2001), do not really address this question in their rejection of *Essential Membership*. Because they go along with the consensus view that *Et* has an historical essence, their argument against *Essential Membership* requires them to argue that *Eo* does not include the relational properties that constitute *Et*. But the argument does not require them to take a stand on what *Eo* does include and they do not do so. So they have nothing to say on what properties, relational and/or intrinsic, do constitute *Eo*. Nor do they cite any other philosophers of biology, or any biologists, as having something to say on the matter,¹¹ and I know of none who have. Yet, as a result of Kripke's answer to the question—his so-called “origin essentialism”—the question has received much attention among metaphysicians, as we shall see. I shall start my discussion with Kripke's answer.

First, we must distinguish the sort of essentialist question that concerns us from another that Kripke describes as follows: “What properties must an object retain if it is not to cease to exist, and what properties of the object can change while the object endures?” In the present context, this is the issue of whether an individual organism “could cease to belong” to a certain biological taxon (LaPorte 1997, p. 98). Kripke is not concerned with this sort of “temporal question” but rather with the following sort: “What (timeless) properties could the object not have failed to have, and what properties could it have lacked while still (timelessly) existing?” (1980, p. 114 n. 57). In the present context, this is the issue of whether an individual organism “could have failed, from its inception” to belong to a certain biological taxon (LaPorte 1997, p. 98).

Considering one particular organism, Kripke famously asked: “could the Queen...have been born of different parents from the parents from whom she actually came?” Taking her parents to be “the people whose body tissues are sources of the biological sperm and egg” that led to the Queen (1980, p. 112), Kripke answers in the negative: “anything coming from a different origin would not be this object” (p. 113). He moves on to raise a similar question about a particular table: “could *this table* been made from a completely *different* block of wood, or even of water cleverly hardened into ice...? (p. 113). Once again he answers in the negative (p.

¹¹ Nor do the papers that responded to Levine: LaPorte (2003), Haber (2012), and Witteveen (2015).

114). So he is urging “the principle that the *origin* of an object is essential to it” (p. 114 n. 57). What about the principle “that the *substance* of which it is made is essential”? Kripke accepts this principle too: the wooden table in question could not “have been made of anything other than wood” (pp. 114–115, n. 57). Finally, Kripke notes a relationship between the two principles. Supposing, as Kripke does, that it is essential to the block from which the table was made that it was a block of *wood*, then it follows from the origin principle that it is essential to the table that it is made of wood (p. 115, n. 57).¹²

According to the origin principle it is essential to the Queen that she came from certain parents and from certain gametes. Those gametes united to form a zygote. According to the origin principle it is also essential that the Queen came from that particular zygote. What we have said about the Queen applies, of course, to her parents, their parents, and so on. So the historical component of *Eo* is constituted by the actual individual people, gametes, and zygotes that make up that ancestral history, that family tree.

Kripke does not apply the substance principle to the Queen but we can do so. Just as the table must come from a block that is essentially wooden material, the Queen must come from a zygote that is essentially human material. But, in the spirit if not the letter of Kripke, we should surely go further with the substance of the Queen: what is essential to her zygote, hence to the Queen herself, is not simply that the zygote is constituted of human material of *some sort* but of *the particular sort in that zygote*. So, we have the Kripkean proposal that *Eo* is partly *O*'s origin in a certain zygote formed from certain gametes, hence from certain parents, and *Eo* is partly intrinsic properties of *O*'s zygote.¹³ So, on this Kripkean proposal, *Eo*, like *Et*, has both an historical component—the doctrine “*Historical Individual Essentialism*”—and an intrinsic one—the doctrine “*Intrinsic Individual Essentialism*”.

The support for these Kripkean views about individual essences has so far come from intuitions. This raises an important methodological question. Okasha claims that it is “widely held” that “claims about individual essence”, unlike those about “kind essence”, “are not responsible to empirical science”; they are matters “for the armchair metaphysician” to be handled by “consulting... modal intuitions” (2002, p. 193). If this were so, it would be bad news for these claims. But it is not so.

It would be bad news, first of all, because intuitions may not be shared. We shall see that those supporting *Historical Individual Essentialism* are not shared by some influential philosophers. Second, and more important, intuitions about what is essential, like intuitions about any area of reality, are empirical judgments that provide at best indirect evidence about the topic; or so I have argued (2006). These judgments need the support of more direct evidence. So it is fortunate that the Kripkean intuitions can be given empirical support, as I shall now show.

¹² Kripke claims also that “(roughly) *being a table* seems to be an essential property of the table” (p. 115 n. 57). I have argued that this cautious suggestion is mistaken (2005, p. 156).

¹³ This is only true of sexual organisms, of course.

An argument for *Intrinsic Individual Essentialism*

Let us start with an argument for *Intrinsic Individual Essentialism*. In “[Taxon essentialism](#)” section, I foreshadowed that I would argue for my positions on *Eo* using analogues of arguments I have used elsewhere for positions on *Et*. The earlier argument I shall be drawing on in this section is a two-part one for *Intrinsic Taxon Essentialism* (2008, pp. 351–355).

In the first part, I argued that biological generalizations about the phenotypic properties—morphology, physiology, and behavior—of species and other taxa have explanations that advert to intrinsic components of essences. In presenting this argument, I emphasize a distinction, made by Mayr (1961) and renamed by Kitcher (1984, 2003), between “structural” and “historical” explanations.¹⁴ The explanations that feature in my argument are structural ones about the underlying developmental mechanisms in members of a taxon that make the generalizations true. As Kitcher notes, “explanations of this type abound in biology: think of the mechanical accounts of normal (and abnormal) meiosis, of respiration and digestion, of details of physiological functioning in all kinds of plants and animals” (1984, 2003, p. 121). In contrast, historical explanations tell us how members of the taxon came to have such mechanisms. Those explanations feature in my argument for *Historical Taxon Essentialism*, an analogue of which will be used in my “[An argument for historical individual essentialism](#)” section argument for *Historical Individual Essentialism*.

In the second part, and relatedly, I argued that a taxon’s intrinsic essence explains *why* being in the taxon is explanatory.

So here is the first part of my analogous two-part argument for an intrinsic component to the essence of an *individual organism*, *O*, for *Intrinsic Individual Essentialism*. Structural explanations of the phenotypic properties of *O* advert to the intrinsic component of the organism’s essence. The properties of *O* that I have in mind are what *O* looks like, what it eats, where it lives, what it preys on and is prey to, its signals, its mating habits, and so on. Claims about these properties of *O* may not be *as* biologically interesting as generalizations about the members of a taxon but they are interesting nonetheless. Indeed, the generalizations rest on them. Thus, biologists not only claim that ivy plants grow toward the sunlight (Sober 1993, p. 6), but that a particular organism *O1* does; they not only claim that polar bears have white fur (p. 21), but that *O2* does; not only claim that Indian rhinoceri have one horn and Africa rhinoceri have two (p. 21), but that *O3* has one horn and *O4* has two; not only claim that the Australasian bittern is superbly camouflaged (Sterelny and Griffiths 1999, p. 32), but that *O5* is; not only claim that “Australasian trees...are not just drought-proof; they are fireproof as well” (p. 203), but that *O6* is.

Claims of this kind demand an explanation. *Why are they so?* Set aside historical explanations of what *led to* there being those organisms with those properties

¹⁴ Mayr named the first sort of explanation “proximate”, the second, “ultimate”. Ariew (2003), in a helpful critical discussion of the nature of this distinction, stays with “proximate” for the first sort of explanation but argues persuasively that “evolutionary” is appropriate for the latter. Still, I’m sticking with “historical”.

and seek structural explanations. We need an account of *what it is about the organisms that made* the claims true. What are the developmental mechanisms? The truth of these claims cannot be brute facts about the world and so must be explained. Explanations will make some appeal to the environment¹⁵ but they cannot appeal only to that. There has to be something about the very nature of an organism that, given its environment, determined the truth of the claim. That something is an intrinsic underlying, probably largely genetic, property, details to be discovered by biologists.¹⁶ Some intrinsic underlying property of the Indian rhino *O3* caused it, in its environment, to grow just one horn. A different such property of the African rhino *O4* caused it, in its environment, to grow two horns. The intrinsic difference explains the phenotypic difference. If we put together each intrinsic underlying property that similarly explains a similar claim about an organism, then we have the intrinsic component of its essence.

I turn next to an analogue of the second part of the earlier argument for an intrinsic component to a *taxon's* essence. Just as the generalizations about taxa reflect the fact that it is *informative* to know that an organism is a member of a certain taxon—the classifications are “information stores” (Sterelny and Griffiths 1999, p. 195)—so too do the claims about individual organisms reflect the fact that it is *informative* to know the identity of an organism. And just as being a member of a certain taxon is more than informative, it is *explanatory*, so too is being a certain organism. Matthen points out that “many biologists seem committed to the idea that something is striped *because* it is a tiger” (1998, p. 115). And so they should be: the fact that *O* is a tiger, an Indian rhino, an ivy plant, or whatever, explains a whole lot about its phenotypic properties; biological classifications are explanatory, as noted earlier (“[Taxon essentialism](#)” section) *Why are they?* Because the essential nature of a taxon, to be discovered by biologists, causes its members, in their environment, to have those phenotypic properties. Now, there may well be no sign that biologists are similarly committed to the idea that *O* is striped because it is a certain organism, say Benji, a tiger. But, by parity of reasoning, they should be. The fact that *O* is Benji explains a whole lot about its phenotypic properties, including many, like a particular face marking, that *O* has *not* simply because it is a tiger. *How does that fact explain?* Because the essential nature of Benji, to be discovered by biologists, causes him, in his environment, to have those properties. What nature? If our concern is structural, so it is with a nature that causes Benji's development into an organism with those properties, the nature must be intrinsic. So the same intrinsic nature or essence that (partly) makes something Benji (partly) explains both why he is striped and why being Benji is explanatory. Sober rightly insists that the essence of a species must explain why its members are the way they are. It must be “a causal

¹⁵ The role of the environment is very obvious with plants. Thus the height of corn in a field depends on the weather, the soil, and so on.

¹⁶ So the structural explanations on which the argument for *Intrinsic Individual Essentialism* rests, like the earlier Kitcher ones about meiosis, etc. on which the argument for *Intrinsic Taxon Essentialism* rests, are biological ones not “folk” ones. And, I emphasize, these arguments look to biologists to discover precisely what intrinsic underlying properties do explain the phenotypical properties and hence are essential. That is only appropriate.

mechanism that acts on each member of the species, making it the kind of thing that it is”; the essence must explain why the members “are the way they are” (1980, 1992, p. 250). Analogously, the intrinsic essence, of Benji is a causal mechanism that makes him the thing that he is, that explains the way he is.

In sum, just as the intrinsic nature of a taxon explains both the truth of generalizations about its members and why being in the taxon is explanatory so too the intrinsic nature of an organism explains both the truth of claims about its phenotypic properties and why being that organism is explanatory. The Kripkean intuition that there is an intrinsic component to *Eo*, *Intrinsic Individual Essentialism*, is justified.

Objection: “It is of course the case that the truth of claims about *O*’s phenotypic properties must be explained by an intrinsic, probably largely genetic, property, but why does that property have to be an *essential* property of *O*?”¹⁷

Reply: *O* has those phenotypic properties *because* it is Benji; it is because *O* is Benji that it has that particular face marking; if it were not Benji it likely would not have had that marking. So the property that *makes* something Benji, whether we call that property an “essence”, “nature”, or whatever, must *cause* Benji, in his environment, to have that marking; the essence of Benji must explain the place that Benji has in the causal nexus *just because he is Benji*. That is my Sober analogue. And the essence of Benji is whatever property, as a matter of actual fact, plays that causal role in an environment.

Some clarification of the intrinsic component to *Eo* is called for. Teresa Robertson and Philip Atkins express the plausible intuition of “modal tolerance of origin”: “even if an object could not have had a *completely* different origin from the one it actually had, it could have had a *slightly* different origin” (2016). They note Kripke’s claim that the Queen could not have originated from “totally” different gametes (1980, p. 113). What difference, short of total difference, might Kripke tolerate? The following remark provides insight: “I might have been deformed if the fertilized egg from which I originated had been damaged in certain ways, even though I presumably did not yet exist at that time” (p. 115, n. 57). Kripke is *not* allowing, what would be contrary to *Historical Individual Essentialism*, that he might have come from a *quantitatively* different zygote: the damaged zygote would be the very same zygote that he did come from. Rather, that zygote might have been *qualitatively* different because of damage: it might have had some genetic properties that differ from its actual ones. One wonders, of course, how much difference can be tolerated. Intuitively, if *O*’s zygote had been different in relatively minor ways—say, the nullification of the genetic structure that makes a certain disease likely—the result would still be *O*, but if it were changed massively, it would not be; and the boundary between what is minor and massive is indeterminate. And it may well be the case that this sort of tolerance fits the demands of structural explanations.

So the intrinsic component of *Eo* may tolerate some variation in the zygote at the genetic level. And, we should add, that component would tolerate any amount of

¹⁷ The objection is analogous to one, made by Peter Godfrey-Smith, against my argument for *Intrinsic Taxon Essentialism* (2008: 354). And my present reply is analogous to one I have made to that earlier objection in “Defending Intrinsic Biological Essentialism” (in preparation).

variation at the molecular level that underlies the genetic level. I think that would be Kripke's view. In any case, it is mine.

An argument for *Historical Individual Essentialism*

What about the historical component, *Historical Individual Essentialism*? The need to support Kripkean intuitions about this is particularly pressing given that some influential philosophers, Forbes (1986) and Robertson (1998), do not share them all. On my Kripkean view, three relations are essential to the Queen: (a) she must come from a certain zygote; (b) that zygote must come from certain gametes; (c) those gametes must come from certain parents. Forbes and Robertson do not resist (a) but their modal intuitions count against (b) and (c). Forbes argues as follows:

Suppose z is a human zygote that is formed by fusion of a sperm z with an egg e . Then one can conceive that scientists synthesize a zygote by building it nucleotide by nucleotide, and happen to use exactly the actual matter of z in exactly its actual z -configuration. In such a world, s and e do not exist, or so we can consistently postulate, but it is hard to deny that z exists...So z exists but does not originate from s and e , since they do not exist (1986, p. 7).

Robertson agrees and claims that others who write on the topic do too (1998, p. 732 n. 5). Clearly, I do not agree¹⁸: it seems to me that the synthesized zygote is not z precisely because it lacks the right history.¹⁹ But we need more than intuitions.

Once again I offer a two-part argument that is analogous to an earlier one about *Et*, but this time the earlier one is in "Historical Biological Essentialism" (forthcoming) and argues for an historical component of *Et*. The first part of that argument²⁰ is that historical explanations of generalizations about the phenotypic properties of members of a taxon, explanations of what led to the taxon having mechanisms that make the generalizations true, advert to the historic component of the taxon's essence. The analogous argument is that historical explanations of the phenotypic properties of an individual organism *O*, explanations of what led to there being *O* with the mechanisms that cause those properties, advert to the historical component of *O*'s essence. The historical essence of *O* explains how in its environment it came to have its phenotypic properties: it evolved that way because of its history, because of what it inherited.

In the second, related, part of the earlier argument, I argued that being a member of a certain taxon is explanatory.²¹ Why is it? Because the essential nature of a taxon, to be discovered by biologists, causes its members, in their environment, to

¹⁸ Nor does Joseph Sartorelli. In a recent article he rightly emphasizes the "importance of biological process in the constitution of continued identity through change" (2016, p. 1615).

¹⁹ This avoids what Robertson and Atkins (2016) nicely call, "The Recycling Problem": if all the matter that constitutes z were recycled into something that was qualitatively identical to z it would still not be z because it would lack the right history.

²⁰ See also Griffiths (1999, p. 219–220).

²¹ See also LaPorte (2004, p. 19).

have their phenotypic properties. What nature? I argued that if our concern is historical, so it is with a nature that led to there being that taxon with those properties, the nature must be historical. We now offer the analogous argument about why being a particular individual organism, say Benji, is explanatory. The essential nature of Benji, to be discovered by biologists, causes him, in his environment, to have his phenotypic properties. And when our concern is historical, with what led to there being Benji with those properties, the nature must be historical. For an organism to be Benji is for it to have the historical essence of Benji. Some aspect of the history of Benji, constituting that historical component of his essence, in combination with the environment, brought it about that Benji exists with his phenotypic features. The same history that (partly) makes the organism Benji causes Benji to be striped. That's why being Benji is explanatory.²²

In sum, the demands of historical and structural explanations have yielded two doctrines, *Historical Individual Essentialism*, according to which *Eo* has an historical component, and *Intrinsic Individual Essentialism*, according to which *Eo* has an intrinsic component. On my Kripkean view, the historical component is *O*'s origin in a certain zygote, the result of a certain sperm from a certain male fertilizing a certain egg from a certain female, and so on back through history. And the intrinsic component is the underlying, probably largely genetic, properties that are responsible, along with the environment, for *O* developing its phenotypic properties.

What about the Lucky-Jim worry of “Introduction” section? The topic of an organism's individual essence should not have been neglected by philosophers of science because that essence plays a causal role in structural and historical explanations of the organism's phenotypic properties. One need not call this property of an organism an “essence”, of course, but whatever one calls it the property, along with the environment, explains the phenotypic properties. So it is interesting.

One further matter needs to be considered briefly.

Haecceitism

Suppose that *O* has an identical twin *O**: *O** developed from the same zygote as *O* but the zygote split yielding two embryos and hence two organisms. So *O** shares with *O*, at least, the *qualitative* intrinsic component of *Eo* and the historical component up to the splitting. Yet clearly *O* and *O** differ and so must differ in their individual essences. What does that difference consist in? At least, they differ in their histories after the splitting. But is that *all* the difference?

Clearly the zygote *might not have split* in which case there would have been just one person and not both *O* and *O**. Could that person be *O*. Could it be *O**? If I understand the traditional metaphysical doctrine of *haecceitism* (which I may not), that doctrine gives positive answers. For, according to that doctrine, worlds can

²² *O* has its essential properties *necessarily*. But, as Kit Fine has argued persuasively, essences cannot be reduced to modalities: “the assimilation of essence to modality is fundamentally misguided” (1994, p. 3). Rather, essences are the *source* of necessities.

differ *non-qualitatively* without differing qualitatively. So in one world the person that results from the non-splitting zygote might have the intrinsic non-qualitative property of *being O* and nothing in that world has the intrinsic non-qualitative property of *being O**; whereas in another world, vice versa. I have nothing of interest to say on this issue.²³ However, so far as I can see, whatever one says can be accommodated by *Intrinsic Individual Essentialism*.

I have said what I take *Historical Individual Essentialism* and *Intrinsic Individual Essentialism* to be committed to. These two theses, understood in this Kripkean way, are my account of *Eo*. So far as I know, the biology literature does not present a rival account.

We are ready now to turn to the issue of *Essential Membership*.

Essential membership

Intrinsic components: Now if the controversial *Intrinsic Taxon Essentialism* is false then the intrinsic component of *Eo* is irrelevant to *Essential Membership*. For, if no intrinsic property of *O* is essential to *O*'s being a member of taxon *T*, then *O*'s having an intrinsic property essentially must be irrelevant to its essential membership. But if *Intrinsic Taxon Essentialism* is true, then *Essential Membership* requires that *O*'s having the intrinsic component of *Eo* entails *O*'s having the intrinsic component part of *Et*. If *Et* and *Eo* have the intrinsic components described above, then this entailment holds.

The entailment holds because the intrinsic component of *Eo* features in the structural explanation of the phenotypic properties of *O* (“[An argument for intrinsic individual essentialism](#)” section), and that of *Et* features in the structural explanation of phenotypic properties that are *common* to members of *T*. Thus, among all the properties of *O* caused by the underlying intrinsic component of its essence *Eo*, together with its environment, are the set of properties that are, according to the generalizations about the phenotypic properties of members of *T*, common to those members in the environment they share with *O*. But the underlying properties of members of *T* that, together with that shared environment, cause those members to have that set of common properties constitute the intrinsic component of *Et*. So *O*'s having *Eo* entails *O*'s having that intrinsic component of *Et*. Consider the tiger Benji, for example. Set aside Benji's peculiarities and consider his property of being striped, a property typical of tigers in his environment. A part of the underlying intrinsic component of the individual essence of Benji explains why *he* has the property of being striped. That part of the underlying intrinsic component of the essence of tigers also explains why *tigers* have that property of being striped.²⁴ The “sum” of all such parts of Benji's essence, is the intrinsic component of the essence of tigers.

²³ However: (i) I prefer negative answers to the questions: the person could not be determinately *O* or determinately not *O**; rather, the person would be *either O or O** but there would be no determinate matter of fact which; (ii) I clearly reject “extreme *haecceitism*” according to which *haecceities* are the *only* essential properties of individuals.

²⁴ This is a bit too simple; see “Defending Intrinsic Biological Essentialism” (in preparation) for discussion.

So if the controversial *Intrinsic Taxon Essentialism* is true, then *Essential Membership* will be true provided that *O*'s having the historical component of *Eo* entails *O*'s having the historical component of *Et*. And, of course, if that controversial doctrine is not true, the fate of *Essential Membership* depends entirely on this proviso about historical components. So, let us turn to the historical components.

Historical components: Whether or not an organism must have the historical component of all of its taxa, particularly of its species, obviously depends on what those components are. There is a problem about this, as noted in "[Taxon essentialism](#)" section, because biologists and philosophers of biology have had strikingly little to say about what precisely these historical essences are, and what they have said is not plausible.

When we think of the history of, say, England or the wheel, we think of a series of particular events involving actual entities. This leads to the thought that the relevant history of a taxon is a history of a mass of particular reproductive events involving *actual* organisms in a lineage. But this surely can't be what anyone believes. No actual organism is essential to a species, as Levine (2001, p. 333) and Laporte (2003, p. 584) rightly point out. So what sort of history *is* essential? I argue against some suggestions in the literature and urge instead that the essential history is of organisms of *a certain intrinsic kind* evolving into organisms of *a certain other intrinsic kind*, until we reach the taxon in question (forthcoming). Note that this hypothesis bears the explanatory burden of an essence, as any plausible hypothesis must: the panda evolved to have thumbs partly because the intrinsic nature of its ancestor produced sesamoid bones. Still, my hypothesis presupposes the controversial *Intrinsic Taxon Essentialism* and so it is sure to be controversial too.

Nonetheless, let us go with this hypothesis about the historical component of *Et* for a moment. On my Kripkean view, the historical component of *Eo* is *O*'s origin in a certain zygote, the result of a certain sperm from a certain male fertilizing a certain egg from a certain female. And this component includes *O*'s parents and constitutive zygotes, sperm, and eggs, and so on back through *O*'s family tree ("[An argument for historical individual essentialism](#)" section). Now if *O* is a member of *T*, this historical component of *Eo* will, on my account, exemplify the historical component of *Et*. For, that component of *Et* consists in *T* having the intrinsic component, *P*, of *Et* as a result of having evolved from another taxon, *T**, with a certain different intrinsic component, *Q*. We have just seen that *O* has the intrinsic component of *Et* and hence *P*. And *O* has *P* because of a history that includes ancestors that had *Q*. Similarly, for the part of the historical component of *T* that includes the evolution of *T** from *T***, and so on back to the beginning of the tree of life.

Given our earlier discussion of the intrinsic components, this would establish *Essential Membership* but for the following concern. This argument for *Essential Membership* depends on my hypothesis about the historical component of *Et*, likely to be controversial. But then it remains to be seen whether a plausible alternative to this view can be produced. For an alternative to be plausible, note, it has to carry the explanatory burden. Meanwhile, the best I can do is to *predict* that on any such alternative, it will be a consequence of our account of the historical component of *Eo* that, if *O* is a member of *T*, *O* must have that historical component of *Et*: *Essential Membership* will hold. I am confident about this prediction because of the very

richness of the historical component of *Eo*: so much of the history of *T* is to be found in the individual essence of each of its members.

Finally, I turn to an objection to *Essential Membership*. Both LaPorte (1997) and Levine (2001) have several objections to *Essential Membership* for species and LaPorte has some to *Essential Membership* for higher taxa. I can address only one of these here, one by LaPorte about species.

The cladism objection

The objection I shall consider is of particular interest because it illustrates the large, and in my view mistaken (2008), role that “species concepts” have played in discussions of biological essentialism. The objection arises from a common feature of the popular cladistic concept (“CC”). According to CC, a species “is a lineage of organisms between two speciation events, or between speciation event and one extinction event” (LaPorte 1997, p. 102). The feature that causes the trouble was proposed by Hennig (1966) and is described by LaPorte as follows:

a species goes extinct whenever it sends forth a new side species. This is so even if the lineage undergoes no change after sending the side branch, so that earlier members are indistinguishable from later ones (1997, p. 103).

In brief, a species *cannot* survive a split. Suppose then that *O* is actually a member of *A* and *A* is a species on this version of CC. Then *had* a daughter *B* split off from *A* before *O*, but without any effect on *O*’s ancestors, *O* would not have been a member of *A* but rather of a successor species *C*. That is, even though this split would have had no effect at all on *O*’s history or intrinsic properties, it would have had the consequence that *O* would not have been in *A* but rather in *C*. So *O* is not essentially a member of *A* and *Essential Membership* for taxa that are species is false.

Now we should accept immediately that *if* any of the taxa that concern us here is a species *according to a CC that includes Hennig’s troublesome feature*, then *Essential Membership* does not hold for it.²⁵ So, to that extent, but only to that extent, *Essential Membership* would have to be qualified. But *are* any of our taxa of that sort? This is not easy to answer. Attempting to answer it is of considerable independent interest because of the influence of Hennig’s view.²⁶

²⁵ But note that this view of species does not count against *Essential Membership* for genera. Thus, suppose that species *A* is a member of genus *T*. Then, had *A* split before *O*, *O* would not have been a member of *A* but it still would have been a member of *T*.

²⁶ Hennig’s view is that speciation is the splitting of an old species into two new species. So, such a split is *sufficient* for a species to end; that is our troublesome feature. But such a split is also *necessary* for a species (that has descendants) to end: there can be no anagenesis; in that respect, a species is “open-ended”. This has been taken to be at odds with *Intrinsic Taxon Essentialism* (Sterelny and Griffiths 1999). Initially I agreed that it was (2008, p. 369) but changed my mind later (2010, p. 238 n. 40). In any case, we should ask the question: “Are any actual taxa we take to be species open-ended in this way?” An argument like the one to follow suggests not.

(1) We need to start our answer by considering the nature and status of CC. As a species concept, CC is a theory of what it is for a taxon to be a species (rather than, say, a subspecies or genus). This theory has *lots* of company. According to Marc Ereshefsky, there are around two dozen species concepts and “at least seven well-accepted ones” (1998, p. 103). According to LaPorte these concepts “tend to fall into three camps: the interbreeding approach, the ecological approach, and the cladistic approach” (1997, p. 101), our CC. As Kitcher remarks, the species problem is “one of the thorniest issues in theoretical biology” (2003, p. xii). One notable response to this controversy has been to reject the view that there is *just one* good species concept, to reject “species monism”, and to urge “species pluralism”, the view that there are *many* (Kitcher 1984, 2003; Ereshefsky 1998). In brief, it is uncontroversial that species concepts are controversial.

One bit of the controversy is particularly pertinent because it concerns the very feature of CC that threatens *Essential Membership*, the feature that a species cannot survive having a daughter. I have noted that CC is frequently understood as having this feature, but it is certainly not always so understood. Wiley (1981) rejected this feature and it is “contentious...in evolutionary theory (Pedroso 2012, p. 186). Peter Godfrey-Smith points out that the feature “can be avoided by saying that if one of the new branches is much larger and the other is a small ‘budding,’ something that probably often happens in nature, then the old species has lived on in the larger branch” (2014, p. 105).

It helps to understand the controversy over species concepts to consider what motivates the species pluralists. According to Kitcher many concepts “can be motivated by their utility for pursuing a particular type of biological inquiry” (1984, 2003, p. 118). Kyle Stanford puts the point thus: “certain explanatory demands are *inextricably bound* to certain species concepts” (1995, p. 72). And there are many different, but equally legitimate, types of biological inquiry and explanatory demands: “we have independent and legitimate explanatory interests in biology which require distinct concepts of species” (p. 76). The key message that we should take from the pluralists is that a species concept is motivated by the explanatory role of being a species according to the concept: a taxon should be in the species category specified by the concept because it plays a certain causal role *in virtue of* being in that category. And the controversy arises because there is uncertainty and disagreement over what explanatory role, or roles, is supposed to be played by being in a species category. Indeed, perhaps it plays none.

(2) A species concept, including CC, is clearly meant to be normative, saying how biologists *ought* to classify taxa as species, given the explanatory role of being in a species category. But I take it that a concept is also supposed to be descriptive, saying how biologists *do* classify taxa as species, for the most part at least. And only if CC, *with the troublesome feature*, is descriptive could it bear immediately on the doctrine *Essential Membership*, for that doctrine is about *actual* taxa. Do we have any good reason to suppose that that troublesome and controversial feature *is* descriptive of biological practice? Do biologists actually have that feature in mind when they classify a taxon as a species? Kim Sterelny thinks that they often do not: “Some, perhaps most, evolutionary biologists take speciation to occur only when there have been intrinsic changes” (1999, p. 130). So for many evolutionary biologists having a daughter is *not sufficient* for speciation. And what

about *non*-evolutionary biologists concerned with structural rather than historical explanations?

Classification in biology has a life of its own. Biologists in areas only tangentially connected to evolutionary theory, such as ecologists, ethnobotanists, or ethologists, need to classify organisms, as do foresters, conservationists, gatekeepers, and herbalists...for many, perhaps even most groups of organisms, evolutionary considerations are of little or no use for classificatory purposes. (Dupré 2002, p. 82)

Given the controversy described in (1), there has to be doubt whether *any* given species concept is *normatively* true or even, should pluralism be correct, part of the truth. Even if a concept is normatively true, or part of the truth, we have just seen that there has to be further doubt whether it is *descriptively* so and hence potentially relevant to *Essential Membership*. But suppose a concept *is* descriptively true or part of the truth, *how* might it bear on *Essential Membership*? This is difficult. It is crucial to remember that a species concept offers a solution to the *category* problem by telling us what is essential *for a taxon T to be a species*. Yet what is relevant to *Essential Membership* is a solution to the *taxon* problem, the problem of saying what is essential *for an organism to be a member of T*. So how can a species concept bear on *Essential Membership* even if it is true?

(3) Suppose that biologists *take T* to be a species. So *T* is a taxon covered by *Essential Membership*. Suppose next that, according to some given species concept *SC*, *T* is *in fact* a species. How could its being so bear on what is essential for an organism to be a member of *T*? Only if *SC* played a determining causal role in the way biological taxonomists classify organisms as members of *T*. *SC* has to be descriptive *in that respect*. How could it be? There seem to be two requirements on its being so: (i) taxonomists must embrace that very *SC* in classifying *T* as a species; (ii) this embrace must partly determine what counts as being a member of *T*. These are demanding requirements. First, one wonders whether the typical taxonomist embraces any particular species concept. Given the level of controversy over these concepts, one suspects that many taxonomists suspend judgment on this vexed matter. Second, taxonomists who do embrace a concept may embrace one of the many ones other than *SC*; or they may vary among themselves in the concepts they embrace.²⁷ Third, even if taxonomists did all have *SC* in mind as they identify and name *T* it is far from clear what if any role that would play in determining the extension of *T*. Indeed, it is far from clear what mental states *in general* play a role in determining extensions. It seems to me quite likely that the extension of *T* is determined independently of any theorizing that biologists may engage in about

²⁷ The earlier cited survey of the opinions of 193 biologists (note 6) claims that these opinions provide “strong evidence against monism, since they clearly indicate that there is more than one species concept in use in contemporary biology....A further blow to monism is...[that] 80% of our participants think it false that there is one species concept applicable to all fields in biology...[and] more than a half of our participants think that monism is not even a desirable position in biology.” (Pušić et al. 2017, pp. 20–21).

the nature of species.²⁸ Rather than playing a role in determining the extension of *T*, these concepts may simply be theories of *T* the extension of which has already been determined.

We are confronting the deep and difficult matter of reference fixing. We must take note here of the revolution in the theory of reference started by Kripke (1980), particularly the devastating “ignorance and error” arguments against description theories. So we should be reluctant to suppose that, when people introduce ‘*T*’ to name a taxon, its reference is determined by some description that they associate with the term. Rather we should look for the reference of ‘*T*’ being determined by some sort of causal “grounding” in specimens of *T*. Something that goes on in those groundings, including mental states of the grounders, determines how the reference of ‘*T*’ is projected from that specimen to all other *T*. But *what* does this job? Any specimen is a member of *many* kinds. In virtue of what is the reference projected from the specimen *qua* member of one of those kinds rather than *qua* member of another? At this point we don’t know how to solve this “qua-problem”; see Devitt and Sterelny 1999, Chapter 5.

(4) So, even if a certain species concept was descriptive of the way biologists classify taxa as species, I think we have reason to doubt that this concept would be relevant to the issue of what is essential for an organism to be a member of a given taxon thought to be a species. Consideration of taxon reclassification adds to this doubt. It is common in biology for some taxon *T* thought to be a species to be reclassified as a subspecies. The British red grouse is an example. It is now regarded as one of nineteen subspecies of *Lagopus lagopus* that are scattered over many countries. I am here following the standard way of describing this sort of reclassification in biology. Thus, *Wikipedia* describes the change as follows: “The distinctive British subspecies *L. l. scoticus* (red grouse) was once considered a separate true British species but is now classified as a sub-species.” The clear “identity assumption” here is that *one and the same taxon*, the British red grouse, used to be classified as a species and is now classified as a subspecies. How could this identity assumption be reconciled with the view that the extension of the taxon is partly determined by whether or not the taxon is a species according to a certain species concept?

The original classification as a species, and the reclassification as a subspecies, must each have arisen, of course, from taxonomists applying a species concept, even if only an implicit one. Now either the species concepts applied in classification and reclassification are the same or different. Consider each possibility in turn.

First, suppose that the species concepts applied are the same. So, if the concept really partly determined the extension of the taxon, then the taxonomists who reclassify the taxon should think that the taxon lacks any members. So, contrary what we have thought for decades, there are not, and never were, any British red grouse! For there to be any such grouse the taxon would have to fit the concept’s description of

²⁸ Contrast this with what Haber has to say about how a researcher uses a type specimen to fix the extension of a taxon: “codes of nomenclature are silent on the criteria of belonging to a taxon, i.e., it is left to individual researchers to decide what species concept to apply to determine the taxonomic boundaries about a type specimen.” (2012, p. 769 n.3).

a species and the taxonomists have just concluded that this group of birds does not. The taxonomists obviously still think that all those birds *exist* but, contrary to the identity assumption, they should not think that any of those birds *are British Red grouse*. I take it as rather obvious that they do still think of those birds as British Red grouse, despite the reclassification.

So if there is hope for the reconciliation of the identity assumption with the alleged extension-determining role of the species concepts it must be found in situations where the concepts applied in classification and reclassification are different. Indeed, reconciliation *is* possible in such a situation. For, taxonomists in the reclassification can accept that the taxon still fits the original concept's description, so can accept that there really are British red grouse. What they now think, as a result of the concept change, is that that very group of grouse do not constitute a species.

We should surely assume that in taxon reclassification taxonomists are not forced to conclude that a group of organisms thought to form a certain taxon do not in fact do so. Rather they conclude, simply, that that very taxon of actual organisms is not, as previously thought, say, a species. If this is so, and species concepts really do partly determine a taxon's extension, then our discussion shows that reclassification from species to subspecies is *possible* only where taxonomists change their species concept. That is very implausible. Indeed, it seems plausible that taxonomists often reclassify without any change in their species concepts simply as a result of more information about taxa. For example, it is plausible to suppose that the reclassification of the British red grouse came about simply from studying it and the other eighteen subspecies. *So, we have evidence here that whether or not the taxonomists who identified and named the taxon thought of it as a species according to a certain species concept has no effect on its nature and hence no bearing on what is essential to being a member of a taxon.*

It is time to sum up this discussion of *Essential Membership*. Laporte rejects *Essential Membership* for species claiming that "it is doubtful that *any* account according to which species are historical entities (lineages), results in organisms essentially belonging to their respective species" (1997, p. 104). In contrast, I argued in "[Essential membership](#)" section that *Essential Membership* is true and in this section I have looked critically at Laporte's objection to that doctrine based on a version of CC with the troublesome feature that a species cannot survive having a daughter. I started by conceding that *if* any of the taxa that concern us here is a species *according to a CC that includes this feature*, then *Essential Membership* does not hold for those taxa. And it has to be allowed that there *may* be such taxa among those commonly thought to be species (but not among others). However, I have adduced four reasons for thinking that it is unlikely that there are. First, any species concept is controversial and the troublesome feature of CC is particularly controversial. Second even if CC with that feature is true, or part of the truth, as a normative doctrine, it could bear on *Essential Membership* only if it describes how biologists actually classify taxa as species. Third, even if it is descriptive, what it describes may not play any role in determining the membership of taxa thought of as species. Fourth, the common practice of reclassifying a species as a subspecies is at odds with the view that there are taxa that have their membership determined by any species concept.

Conclusion

A few philosophers of biology have recently rejected *Essential Membership*, the doctrine that if an individual organism belongs to a taxon, particularly a species, it does so essentially. But philosophers of biology have not addressed the broader issue, much discussed by metaphysicians, of what *is* essential to the organism. In this paper, I have addressed this issue from a biological basis. I have argued for the Kripkean view that an organism has a partly intrinsic underlying essence, *Intrinsic Individual Essentialism*, and a partly historical one, *Historical Individual Essentialism*. The arguments appeal to the explanatory concerns of biology and are analogous to arguments that I have given elsewhere for similar views about taxa, *Intrinsic Taxon Essentialism* (2008) and *Historical Taxon Essentialism* (forthcoming). These conclusions about the essences of individuals and taxa yielded an argument for *Essential Membership*. Finally, I have cast doubt on LaPorte's objection to that doctrine arising from the view that a species cannot survive having a daughter. I hope to have set to rest the Lucky-Jim worry: the topic of an organism's individual essence is worthy of interest.

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