

being a horse, but this does not automatically mean that one could dispense with the concept horse in the individuation of horses. Wiggins is committed, however, to the claim that individuals belong essentially to their actual kinds. He could therefore say that, even if no universals correspond to substance sortals, the latter still determine kinds (not that kinds correspond to them). The delimitation of kinds, however, is a nomological matter. But since laws are relations between instantiated universals, past, present and future, the basis of application of substance sortals will be determined by such relations. It is therefore not the case that the substance sortal 'Dodo' specifies the universal being a Dodo or the abstract kind Dodo, but rather that the relations between universals which serve as the nomological ground for 'Dodo' serve as a 'safety-net' of sorts, since the predicate is extension-involving. The onus of match will always be, in such cases, from the initial descriptive specification to the extension, whether that extension is currently exemplified or not. In order to deal with future species (or those elements high up in the periodic table), one can rely on prediction, not of the instantiation at some future time of a single new universal, but of presently unexemplified combinations of instantiated universals. If, as Mellor says, 'neutrino' applied to the same things when these were predicted and then discovered, it is hard to see how this counts against Wiggins' position as here developed (cf. SS, p.211). It applies, if at all, only to Putnam as read by Salmon. Whether one wants to construe natural kind classifications as equivalent to law-clusters or as supervenient on microphysical property-conjunctions, is a matter I shall not examine in detail. It is clear, however, that one should resist the temptation to think that, firstly, the relevant kinds are something additional in the world, and secondly, that theoretical identifications such as 'water is H_2O ' are laws. The latter could only be the case if two distinct universals were being related, which is clearly not the case if the identification is genuine. Personally, I favour a supervenience thesis to the effect that, if a and b share all their intrinsic microphysical properties, then they cannot be of distinct kinds (cf. Horgan (1982), pp.39-41). The thesis that the microphysical facts determine all the facts need not be taken in a strong reductive sense. For it is doubtful that sortals are definitionally equivalent to a description in terms of a conjunction of purely microphysical properties. It is also clear that Wigginsian extension-involving natural kind terms do not abbreviate descriptions of whatever kind. Perhaps nothing more is needed than that their application is law-governed, in the sense specified above. Before concluding this section, it should be noted that the prima facie prejudice that Wiggins' use of 'substance' in its Aristotelian sense commits him to essentialism (cf. Chapter one, Section 3), has now been defeated. The essentialism in Wiggins has another source than those Aristotelian notions which Armstrong also accepts (cf. his (1983) for Armstrong's anti-essentialism).

Section 4

Critique of Wiggins' Derivation of Essentialism

In this final section, I should like to concentrate on the essentialism which Wiggins claims to derive from his project. He explicitly proclaims his modal abstinence up to chapter four of Sameness and Substance. And it is true that neither statements nor proofs of the various D-principles invoke possible worlds or transworld identity conditions. But to claim that, therefore, these principles are not essentialistic or did not rely on modal intuitions, seems to me to be naive in the extreme. Was Aristotle not an essentialist because he did not write the Metaphysics in a possible worlds idiom? Surely one is able to assess and ascertain the essentialism in a thesis or a doctrine independently of explicit translation into such a modal idiom. And equally, surely a thesis can have essentialistic import no matter how it is formulated. Nor will a modal enrichment of language which scorns possible worlds make of one a more modest essentialist than enrichment which does not. This is not the place to discuss the new scholasticism developing around possible world's discourse. The present claim is simply that it is questionable to suppose that modality is kept at bay simply by refraining, in formalizations, from the idiom of possible worlds and the de re/de dicto distinction.

Wiggins suggests that modal enrichment is to proceed via the 'must' location in the vernacular. This implies that one is to take at face-value such facts (expressed in the vernacular) as that Byron could not swim, that he could not help but limp, etc. (This holds, of course, independently of the manner of reference, cf. Chapter two, p.43 for the truth of statement-forms such as $F_a \rightarrow N(F_b)$, where 'a' and 'b' are co-referential). Furthermore, the essentialist 'must' is seen as the limiting case of de re modality generally (where this is so widely construed as to include, for example, my obligation to pay back money borrowed). Wiggins' operator 'NEC' is said to express this undifferentiated de re 'must', a genus of sorts for its various refinements. Now, it is clear that what is required here, apart from these programmatic stipulations, is some sort of argument in order to be convinced that:

- (1) The de re necessities already present in the vernacular have ontological import;
- (2) The presence of the former justifies (or makes plausible) acceptance of de re necessities of essence.

Before I turn to what grounds the modal 'must' and the related issue of the separation of the essentialistic 'must' from the other grades of necessity, I briefly recapitulate Wiggins' position (not the criticisms made earlier) up to chapter four. My aim is to show that the thesis (D) of the Sortal Dependency of Individuation is an essentialist thesis, and thus that Wiggins' essentialism is in his premisses. In arguing for D, Wiggins contrasts its development in (Dii) with the 'tautologous' (Di), i.e., the notion that 'everything is something' (some sort of thing). The reason why (Di) as such is inadequate, is that it falls short of providing an answer to the

'What is it?' question. Any substantial continuant *x* could satisfy (Di) at a time *t* simply by falling under a phased sortal '*f*', so that an *f* may be either outlasted or predated by *x*. Take, for instance, the continuant dubbed 'Hegel' and the phased sortal 'boy'. The fact that Hegel satisfies 'boy' at *t*₁ does not determine what is to count as Hegel's persistence, for Hegel still exists when he ceases to satisfy 'boy'. Since, however, a substance (unrestricted temporally, purified of phasals) sortal determines identity, persistence and existence conditions for its instances, Wiggins argues for (Dii) by saying that *x* must fall under at least one substance sortal on pain of lacking a determinate principle of individuation. If Buchephalus, then, falls under 'horse' at *t*, it must fall under 'horse' at all times at which it exists. I do think it is plausible to construe necessity here as quantification over times, but not because of what Wiggins says. I return to this point later. To return to (Di), why, it may be asked, is it tautologous? Could something not be so indeterminate at a time so as not to be, at *t*, any kind of thing at all? So that there is no sortal under which to subsume it? Wiggins replies, in effect, that he is not concerned with such entities (cf. SS, note 2.11, p.205). The universal quantifier in (Di) and (Dii) (cf. Chapter two, p.28 for the relevant formalizations) are said to range over determinate entities only, i.e., those with clear identity and persistence conditions. Now, it may be conceded that there are indeed determinate things, things which determinately come into and go out of existence. But if the D-principles concern only such entities, they are all trivial in the way that (Di) is. The triviality of even (Dii), in this sense, was hinted at in the section on transcendental arguments. (Dii) is an analytic consequence of a conceptual scheme operating with the notion of determinate individuation (cf. Chapter two, pp.30-33). If objects can only be thought of as determinate under substance sortals, and individuation is of determinate objects, then obviously, each determinate object will satisfy a substance sortal as long as it exists. Note that this line of thought does not illicitly smuggle in the notion of less-than-determinate objects as an idea which Wiggins would reject. Wiggins in fact acknowledges the existence of 'temporally indeterminate' entities (SS, p.205) lying outside the ambit of (Dii) (e.g., lumps of cheese, bars of soap). And the opponent of Wiggins need not be browbeaten by objections that one is here talking about matter or stuff only (by means of particularizing divisions for mass nouns). There is no reason, apart from question-begging ones, to regard 'bar of soap' as significantly different from 'candle', which does not rely on particularizing division and is temporally indeterminate. Furthermore, it is an instance of an artificial kind with a determinate function (it is not, therefore, reducible to a quantity of wax, which allows of no diminution, cf. Cartwright, (1970), 'Quantities'). It might be said that a candle is not indeterminate in that it goes out of existence when it can no longer perform its function. But then the same can be said of a bar of soap. Most people throw a bar of soap away while one could still wash with it. Similarly, candles are thrown away when they could still burn. Relative to the use to which such items are put, their identity criteria are still fuzzy.

The charge of triviality against (Dii) might be countered by arguing that the argument for (Dii)

is not a trivial one. It must be granted, given the plausibility of rejecting R (or relative identity), that no one entity can have more than one distinctive principle of individuation. This move in the argument for (Dii) is indeed non-trivial, but it relates to reidentification rather than individuation, as pointed out in Chapter two. When Wiggins claims, however, that a determinate entity with a distinctive principle of individuation must satisfy a single, genuine non-phasal sortal, one is less than convinced that a determinate entity *x* might not satisfy any sortal predicate at all. The major missing element in Wiggins' account is some sort of non-analytic explanation of why this is not a possibility. At this point, it might be instructive to return to one of Wiggins' test-cases for the non-triviality of (Dii). It is clear that (Di'), and hence D, is formally satisfied in the example of Lot's wife by means of the constructed sortal woman-pillar. Wiggins objects that this trivializes (Dii), and indeed it does, but perhaps that is precisely the point. Since certain sortals are 'entrenched' at the time of considering the case of Lot's wife, it will indeed seem that (Dii) is satisfied arbitrarily, and therefore that one loses one's conceptual grip on the beginnings and endings of things. But this problematic is instructive precisely because it leaves open the possibility that those sortals which at present expose woman-pillar as an arbitrary choice, were themselves 'chosen' or constructed at some earlier point in time. Once certain sortal choices have been made, of course, identity criteria are linked to these sortals and will disallow the combination of such criteria for women with criteria for pillars. The point here is simply that, if Wiggins derives some sort of essentialism from (Dii), it will be a choice-based one and not the isolation of some ahistorical essentialistic core.⁷

It should be noted that in none of the above is it my aim to deny that (Di), and even (Dii), are plausible essentialistic principles. The intention is rather to show, firstly, that Wiggins' considerations on individuation do not provide conclusive grounds for either, and secondly, that the essentialism is there from the start. Wiggins' formulations in terms of 'falling under a concept' should not mislead one to think that the combined import of (Di) and (Dii) is merely that of weak necessity, where necessity is related to falling under a concept. In this sense, using *N(w)* to express weak necessity, *N(w)(fx)* is definitionally equivalent to *(t)(Ex at t → fx at t)*. But Wiggins is committed to the de re necessity expressed by:

$(x) (E_f) (t) (Ex \text{ at } t \rightarrow N(fx) \text{ at } t).$

While it is true that Wiggins' initial formalization of (Dii) does not employ any modal operators (cf. Chapter two, p.47), this omission is a begging of the question in his favour, as far as modal abstinence in the earlier parts of Sameness and Substance goes. For the de re formalization above is the only one to capture the implication of Wiggins' claims that: (i) if *x* satisfies 'horse' at *t*, it must satisfy 'horse' at all times during its existence; and (ii) that any *x*

⁷ A similar strategy is followed by Aune (1985), in his discussion of the ship of Theseus.

is, if a horse, then essentially a horse (it cannot exchange complete principles of individuation). It cannot, therefore, be denied that essentialism of a de re variety is present in the Wigginsian project from the outset. Having settled this issue, and consequently the hollowness of Wiggins' claims of modal abstinence, I now proceed to examine the 'derivation' of essentialism in Chapter four. It will emerge, I think, that Wiggins' procedure here is flawed in itself, and that a more plausible establishment of essentialistic thesis should concentrate directly on the nomological grounding thesis implicit in (Dii).

The essentialism which is put forward in Chapter four of Sameness and Substance is said to be a modest version insofar as it is neutral with respect to such controversies as the necessity of origin. This is as it should be.^{*} As far as Wiggins is concerned, however, I think one can pose an instructive dilemma for his extension of conceivability arguments from sets to three-dimensional continuants. Either the extension fails, or otherwise Wiggins is committed to origin as an essential property of continuants. Before setting up this dilemma, a general overview of Wiggins' procedure here is in order. The aim, at its most general level, is to isolate those factors which play a constraining role in the individuation of individuals that belong to natural kinds. This role, it is said, will be analogous to the constraints implicit in explicit verbal determinations of nominal essence. It is to be expected, then, that the constraining factors for terms incapable of verbal definition will determine real essences. In order to achieve this aim,

* I think Wiggins' views in his note 4.02 (SS, p.213) are essentially correct, insofar as he makes possible world construction logically posterior to questions of intra-world identity and essence. The limitations on such construction surely presuppose satisfactory answers to the latter questions. As far as the necessity of origin is concerned, one is inclined to think that the descriptive backgrounds in the examples put forward by, e.g., Kripke (Naming and Necessity, fn.56, in which the case for the necessity of a table's being made of a specific hunk of wood is argued) and Forbes ((1985), Chapter six), are literally 'set-ups'. In arguing for the necessity of origin, these philosophers provide one with nothing but the kind of object in question (table, oak tree, human being) and its origin (a hunk of wood, an acorn, a sperm-egg pair). It is consequently hardly surprising that origin proves to be essential in the transworld identification of the relevant table or tree, for what else is there by means of which to identify it? Although I am not directly concerned with issues relating to the necessity of origin, the following two examples will serve to further substantiate my point. Consider, firstly, the issue of ready-mades in art, for example, Duchamp's Fountain. In cases such as these, one wants to say that the material object (urinal, in this instance) which realizes the work of art is not essential to its identity. Duchamp could have used a different urinal without thereby affecting the identity of Fountain. But then questions of origin are irrelevant to the transworld identification of Fountain. The point is made clearer if one considers whether there is a new object in the world when 'Fountain' applies to any given object at a specific time. It seems not, one merely has a case where an existing object acquires a new status, that of a work of art. This change of status however, constitutes a merely extrinsic property which supervenes on nothing intrinsic in the material object. It might be objected, at this stage, that the above example has not shown that origin is inessential to the urinal, i.e., to material objects in general. In reply, one may turn to an artifact which is not a work of art. (I am indebted to my supervisor for the example that follows). Consider a dress which plays a very specific role in a woman's life. She searches for it under the description 'dress I shall be married in'. Now, depending on what else is intended with the above description, it makes sense to say something like the following: 'This dress would not have creased so much if it had been made of silk rather than satin'. That is, the dress would be the same dress even if it had had a different origin, viz., the one she gets married in. It is clear that one is here operating with possible world slices of the dress. The dress made of silk would still be this dress, but then it would be uncreased. There are general questions about the constraints on such slices and the relations which must hold between them in order for them to be slices of this dress, into which I cannot enter here. Suffice it to say that in the present case, sameness of origin is not a constraint on the slices because the dress need not satisfy criteria not included in the search-guiding description. If the description was, for instance, satin-specifying, the dress could not have had a different origin from its actual one. But notice that the essentiality of origin is then explicitly stipulated, it is neither an implication of ordinary language nor a course prescribed by intuition. I do not want to claim that considerations of the above sort conclusively refute views in favour of the necessity of origin. However, it cannot be denied that they do cast doubt on the legitimacy of standard arguments in favour of that doctrine. For an incisive critique of the necessity of origin as it relates to biological organisms, see Price (1982), 'On the Non-necessity of Origin'.

Wiggins relies on certain 'principles and maxims' (SS, p.104) which serve to govern the (by now exposed as empty) 'derivation' of essentialism. These include principles dispensing with possibilia in any form (given the view that true lawlike generalizations over actual entities are a sufficient basis for de re claims about natural kind members), rejecting any essential properties of individuals qua individuals (given Wiggins' view that the notion of logically particularized essential properties is incoherent except for works of art, cf. SS, p.120 and Wiggins (1978)). By far the most important principle is to be found on p.105, and relates to what one may call the sortal anchorage of individuals. It leads directly to a quasi-psychologistic elucidation of the de re modalities, as well as to a conceptualistic criterion of what an essential property is. One is, in a sudden rush, introduced to counterfactual speculation about the members of kinds as a route to their essential properties. It is to Wiggins' credit, however, that he does not keep one in the dark for long concerning the significance of 'serious conceiving'. Using the converse of (Di), 'Anything cannot just be anything', as premiss here, Wiggins quickly claims that in any conceiving by a thinker of an individual x as ____ (using this as a placeholder for predicates of whatever kind), ____ cannot assume just any value.

Note that this move distinguishes logical from conceptual possibility, the converse of (Di) need not be accepted by someone who countenances only logical possibility and necessity. (Also, note that (Di), with all its essentialistic overtones, is being invoked here in order to derive essentialism). The restrictions on ____ depend on what entity x is (read: what kind x actually belongs to). Two very general values, which ____ cannot assume for any x of any kind, is being a different individual than it actually is, or having a different principle of individuation from its actual one. Wiggins demonstrates this procedure by means of sets. In set-theory, the axiom of extensionality is justified by construing membership as determining set-identity. There are two thoughts here; firstly, that sets are identical if they have the same members, and secondly, that any specific set is completely determined by its actual members. Wiggins conceptualizes this in terms of "a...criterial connexion between membership and set-identity". (SS, p.113, the contrast here is the absence of such a connection between actual extension and being a specific property, or actual spatiotemporal position and being this or that horse). In order to represent this sort of criterial connection in thought, nothing but de re modality will suffice: "... if $[c]$ is a class containing x and y , then $[c]$ could not have lacked x ."

(SS, p.113). This gives expression to what I shall henceforth, following Forbes ((1985), pp.96-131), call 'Membership Rigidity':

(MR) $(X) (x) (x \text{ element of } X \rightarrow N (E(X) \rightarrow x \text{ element of } X))$,
where ' X ' ranges over sets and ' x ' over individuals.

(MR) goes hand-in-hand, of course, with the axiom of extensionality, (E) :

(E) (X) (Y) [((z) (z element of X iff z element of Y)) $\rightarrow$ X = Y]

Given Wiggins' elucidation of the de re 'must' as x must be f iff it is not possible to conceive of x that it is not f, it is quite clear what is inconceivable about any given set : (i) that is not a set; and (ii) that it lacks its actual members. Note that this implies that one must construe membership as part of the principle of individuation of sets. No argument has yet been given for this view, apart from the assertion of a criterial connection. (i), on the other hand, is unproblematic if one grants Wiggins that $(fx \rightarrow N(fx))$, where 'f' is the most fundamental identification of x. I believe the Felix-argument developed earlier gives independent reasons to accept this, and I hope to render the essentialism inherent in such a claim less contentious later on. In footnote 18 (SS, p.113), Wiggins gives an informal argument for (ii). It consists of two parts, one concerned with the relation between membership and extensionality, the other with derivative identity. It is said, firstly, that the denial of the necessity of membership cannot be combined with a reasoned affirmation of extensionality (a set is nothing more than a unity constituted by its members). Secondly, if the identifying of a set (unity) therefore proceeds via the identification of its members, "...then its identity is derivative from these in a way in which the identity of a perceptibly demonstrable horse or tree is not derivative from that of any particular cells or sequence of spatio-temporal positions or sequence of paired space-time positions and material components." (SS, p.113, fn.18). It is precisely this absence of derivativeness, in the case of continuants, which renders Wiggins' extension of the argument to them problematic. Perhaps this absence is too glibly postulated. But there are serious problems with the argument concerning sets as well. It is clear, I think, that Wiggins' claim that any given set must be singled out as the possessor of such and such members, falls short of justifying (MR). Why should it follow that, if one individuates Xs (of a sort S) as things having these specific properties P, one cannot conceive of or envisage any given X as lacking P? It seems to be a non sequitur that, since one must single out a set via its members, one cannot envisage this singled-out set as having different members. Similarly, could I not conceive of some specified number which, unknown to me, is prime, not being a member of the set of primes? Note that the objection here relates to (ii) above, and to (MR), not to (i) or (E). Although the necessity appealed to relates to the singling out relation (and hence, via the conditions on determinate individuation, to substance sortals and what can and cannot be conceived of their instances), it is nevertheless quite consistent with the claim that there is only one 'correct' way to single X out, that the properties figuring in this 'correct individuation' are contingent. In order to render this conjunction inconsistent, Wiggins would have to claim that it is analytic that substance sortals express essential properties. I do not think that he wants to do this, because the spectre of triviality then reappears.

I think it is clear, at this stage, that Wiggins' attempt to establish any given set's actual members as an essential property of it in terms of what one can and cannot conceive of that

set, is flawed. His conceptualistic criterion for an essential property as what must be co-satisfiable with the entity in question's ultimate sortal identification is questionable, to say the least (cf. SS, p.116). Note that the justification for this criterion is itself related to conceivability: "The whole justification of our criterion for essential properties is the claim that there can be no envisaging this or that particular thing as having a different principle of individuation ... from its actual principle." (SS, p. 122). It is not at all clear that this claim entails the one about essential properties. Perhaps there are no such properties in a given sortal identification, apart from the sortal concept itself under which the entity is re-identified. This is precisely what is problematic about Wiggins' extension of his argument from abstract to three-dimensional objects. If it is asked what it is impossible to conceive of say, the continuant Caesar, Wiggins answers that it is Caesar's not being a man (human being): "For if anything plays here the part that we found the concept class to play in the earlier argument, then the concept man plays it." (SS, p.117). Now, independently of whether (E) above entails (MR) (or vice versa, as Wiggins seems to believe), one needs to know what is the analogue of (MR) for the sortal identification human being. What substituent of ____ is such that one cannot conceive of a specific human being as not co-satisfiable with it? No answer is given by Wiggins. And here is the lacuna in his extension, for in the set case it was said that having different members from its actual ones was not co-conceivable with set. In the human being case, nothing similar is asserted. Wiggins might reply that this disanalogy arises simply because of the absence of a criterial connection in the latter case. However, I have attempted to show above that it is a non sequitur to assert that a singled-out set cannot be envisaged as having different members simply because one must individuate it via its actual members. Furthermore, if essentialism about sets rests on construing the nature of any set's membership as a component of its principle of individuation, should the extension of this view to material objects not count its actual space-time worm as essential? (cf. Forbes, (1985), p.147, fn.11). I am willing to remain agnostic about this. Not, however, about the need to either qualify the claim that man plays the same role as set, or to come up with an analogue of (MR). Someone like Forbes is of course quite happy to fill this gap by an appeal to the necessity of origin. He proposes the following essentialist schema as an analogue of (MR):

(K) $(x)(y) (\text{Propagule } (x,y) \rightarrow N(E) (y) \rightarrow \text{Propagule } (x,y)).$

('Propagule' is used as a term for any organically antecedent entities, e.g., acorns, zygotes. The position needs obvious modification for artifacts. I have stated both (K) and (MR) in a weaker form than Forbes, who claims that they are necessary truths, cf. his (1985), p.109 and p.133).

Whatever one's own position concerning the necessity of origin, it is clear that Wiggins rejects it. Once again, his grounds are related to the possibility of conceiving of say, Caesar, that he

had a different origin. On page 116, footnote 22 of SS, Wiggins construes Kripke's necessity of origin view as reneging on his own method as one which avoids the problem of entitlement. In counterfactual speculation, Kripkean rigid names avoid the need for a thinker to establish her entitlement to identify the individual concerned as, say, Caesar. Although one could grant the Kripkean that the speculator must be able to rebut the charge that she has lost the very subject of the speculation, such rebuttal need not appeal to origin. Can one not speculate, about the man whom Brutus murdered in 44 B.C., how things would have gone with him if Brutus' father had been his father? What is required is only some specification of which human being one means by Julius Caesar (consistent with the speculation at issue). Wiggins is right, I think, that this "...does not favour any particular specification of who Julius Caesar is." (SS, p.117). Someone who accepts (K) and (MR) might of course have alternative arguments for them. Forbes' own view is that such principles are necessary in order to ground transworld identities, hence necessary for modal discourse per se. Insofar as his position rests on the view that identity is supervenient on such non-qualitative facts as origin, I find it hard to accept. In any case, the problematic internal to Wiggins' derivation of essentialism remains. The extension of set-essentialism to continuants is disanalogous because of the absence of something like (K). And Wiggins will not accept (K) in any form. I have throughout this essay referred to my dissatisfaction with Wiggins' reliance on conceivability to establish essentialistic theses. I think that the above examination of his views in practice has revealed their inadequacy in this respect. I shall therefore take it as established that appeals to conceivability are, on their own, inadequate means in doing metaphysics, and proceed to examine the aposteriori essentialism Wiggins discusses in section six of chapter four.

Wiggins accepts the Leibnizean position that the essences (forms) argued for on the grounds of the possibility of determinate individuation do not explain anything. He is content to allow this explanatory void for those predicates which are presupposed in there being anything articulated to explain at all (cf. SS, p.119, fn.27). Note that although he states that there are essential properties corresponding to such (sortal) predicates, this should not be taken so literally as to imply that a property of, say, horseness corresponds to 'horse'. It was pointed out earlier that the acceptance of genuine laws allows one to forego this kind of essentialist realism (cf. p.54, this chapter). Things are otherwise, Wiggins claims, with certain aposteriori discoveries relating to natural kinds. He proceeds by means of two assumptions. Firstly, that the sense (contribution to truth-conditions) of every natural kind term is fixed "...by reference to some hypothesized generic constitution,..." (SS, p.118). Secondly, that what is definitive of such a constitution will be a scientific matter. (It is obvious that conceivability can play no role, if this is the case). Notice that the first assumption seems to imply that natural kind classification cannot be innocent of the thought of real essences. This is a controversial claim, which I do not want to debate now. It is clear, however, that the claim follows from the Kripke-Putnam line on natural kind term semantics. The emphasis consequently shifts to 'necessities of constitution', as Strawson (1981) calls them

of constitution', as Strawson (1981) calls them in his review of SS (the issue of necessities of thing-kinds having been settled). Wiggins then has a brief, but quite shocking to those with anti-essentialist sensibilities, argument to a far from innocuous conclusion. Taking 'man' as a natural kind term ('human being' is better, but I follow Wiggins here) and some genetic feature G as partially definitive of the hypothesized generic constitution, Wiggins argues for the de re necessity that any specific man has G as an essential property. Using 'M' for 'man', the argument can be represented as follows:

- (1) $(x) N(Mx \rightarrow Gx)$
- (2) $(x) (Mx \rightarrow N(Mx))$
- (3) $(x) (Mx \rightarrow N(Gx))$

The necessitation of the consequent in (3) depends on the modal principle $N(p \rightarrow q) \rightarrow (Np \rightarrow Nq)$. I have no qualms about this principle, so it can be accepted in this context. Concerning (1), it too is unproblematic for anyone who accepts that the discovery of laws goes hand in hand with the discovery of natural properties or universals. Both G and the natural kind man depend on the same actual laws for their existence, and the higher-order contingency of the laws of nature holding at present does not preclude the claim that no possible identification of a man could be an identification of something which was not G. (This manner of stating the issue should not mislead one to think that there are somehow two distinct sets of states of affairs here, some involving G and some man, cf. p.133, this chapter). There are, however, some problems connected to (1), to which I shall return. I have already granted Wiggins (2), on the basis of the Felix-argument. It is quite clear that (2) is the pivotal premiss in the above argument. In order to go from $N(Ma \rightarrow Ga)$ (by universal instantiation on (1)) to $(x)(x = a \rightarrow N(Gx))$, nothing but (2) will do. Wiggins is, I think, entitled to (2).

It should be reiterated, once again, that Wiggins is here moving on a different level than that concerned with the modalities connected to substance sortals per se. If K (e.g., man) is a natural kind, then qua substance sortal, it is the 'what it is to be' of an individual x. But construed as a natural kind, there will also be some structural or generic property P which is the 'what it is to be' of K as such. This approach to Lockean real essence freed from epistemological confusions leads quite naturally and dangerously to viewing P as an essential property of K (as some sort of non-individual, higher-order object). I have already rejected this approach in the discussion concerning Putnam.

The line which I shall adopt relates to the nomological basis of natural kind classifications and causal dependence. It was said earlier that two objects cannot differ in kind-membership if they share all their intrinsic microphysical properties. The idea of such a specification of properties is highly idealized and utopian, even if it is an alluring theoretical possibility. The

reductionism involved at this level was seen to be rather crudely stated. I think a more promising approach follows if one concentrates on properties less perfectly natural than the microphysical ones, for example genetic features such as G. Now, taking seriously Wiggins' claim that "... it is by indirect reference to G that (in the last analysis) anything counts as a man,..." (SS, p.118), (1) above is best construed as $(x) N (Gx \rightarrow Mx)$. This expresses the thought that kind-classifications are supervenient. But note that $(x) N (Gx \rightarrow Mx)$ is not itself to be seen as a law. This would only be the case if 'man' also corresponded to a single property, so that $(x) N (Gx \text{ iff } Mx)$ would express nomic necessitation in virtue of the second-order state of affairs $N(G,M)$. It was shown earlier that such a view is both undesirable and incorrect, if attributed to Wiggins. It should be remembered that G was specified as only partially definitive of the relevant generic constitution, so that a more accurate representation would involve a specification of the laws relating other subvenient constitutive properties. Using G^* to abbreviate such a description, one has $(x) N (G^*x \rightarrow Mx)$ as the final version of (1) above. It removes the need to construe laws as generalizations over (macroscopic) kinds and to talk of abstract kinds which have essential properties. Changing all the Gs in the argument to G^* , it may be said that any individual man must satisfy those laws definitive of its generic constitution. This is what $(Mx \rightarrow N (G^*x))$ most plausibly expresses. De re necessities (the Wigginsian 'must') are not only not distinctive of individuals (haecceities), but grounded completely in laws construed as relations between natural properties.

Although it has not been my intention to do anything more than tease out what is most plausible in Wiggins' essentialism, I shall briefly expand on what I take to be the most advisable course to follow in a general theory of modality. In this I follow the spirit, if not the detail, of Prior's work on tense logic.⁹ It is best, I think, to simply construe de re necessity in terms of the claim that all things that ever have the property in question, always have it. This excludes what Dummett calls 'presently essential properties', i.e., those properties which a thing cannot cease to have once it has acquired them.¹⁰ For example, once Julius Caesar has crossed the Rubicon, having crossed the Rubicon is a presently essential property of him. This grade of necessity can be expressed using Prior's operator 'G' (henceforth always). But unless one is a believer in complete determinism, it was hardly written in the stars that Caesar should do this, or that Aristotle should teach Alexander. In order to represent essential properties in the sense I am suggesting, the G-operator should be combined with Prior's H-operator (heretofore always). One then has $N(Fx)$ as equivalent to:

⁹ Cf. Prior (1967), Past, Present and Future, and (1977), Worlds, Times and Selves. Also, Rescher and Urquhart (1971), Temporal Logic.

¹⁰ Dummett (1973), Frege : Philosophy of Language, p.130 "A presently essential property is one which the object, having acquired, cannot cease to have: for it is ruled out in principle that we should ever subsequently correctly identify an object recognized as then lacking the property with one, of the given sort, recognized as formerly possessing it."

$Fx \ \& \ (t) \ (n < t, \ \& \ Fx \text{ at } t) \ \& \ (t) \ (t < n, \ \& \ Fx \text{ at } t),$

where 'n' expresses 'now'. Insofar as it is possible that an object could satisfy the above schema without $N(Fx)$ being true of it, it is clear that the postulated equivalence will not do without the stipulation of an additional requirement. This may be done in either of two ways. One could stipulate that only properties which are at all times during the object's existence presently essential ones, are permissible substituends for 'F'. This would exclude $N(Fx)$ being true of a chair which just happens to be red as long as it exists. 'Red' expresses a property which is always presently accidental to the chair. A more promising line utilizes the notion of laws of nature, so that for $N(Fx)$ to be true of x means that, if x exists at t and is not F at t, a law of nature is being violated. Properties such as G^* (or even G) are good candidates for this role. Again, the case of the chair is excluded.

This concludes my examination of the Wigginsian project. The importance of a project of this kind is, I think, indisputable. I have tried to isolate some of the internal tensions in Wiggins' work and to develop certain aspects thereof. The metaphysics underlying individuation is given scant attention by Wiggins himself, and I have therefore concentrated on issues relating to universals, kinds and laws in the final chapter. I have also claimed that Wiggins does not establish the impossibility of individuation in the absence of sortals. In fact, it is far from evident that his views on identity require the thesis of the sortal dependency of individuation.

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