

# ESSENCE IN KRIPKE AND ARISTOTLE: ESSENCE AS CLASSIFICATION OR ESSENCE AS EXPLANATION?

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SUMMARY: 1. *Introduction.* 2. *Categorizations.* 3. *Approaching the essence.* 4. *An Aristotelian-Kripkean notion of essence.*

## 1. INTRODUCTION

ANYONE who wants to see a full discussion of the Aristotelian notion of essence<sup>1</sup> in the context of the methods of analytic philosophy ought to start not here, but with David Oderberg's book *Real Essentialism*.<sup>2</sup> My aim here is more modest: to relate the Aristotelian notion to the way in which Kripke first re-introduced the idea of essence into the discourse of analytical philosophy in the 1970's.<sup>3</sup> Kripke's re-introduction of the notion has had a great deal of success, but it has not been easy for metaphysicians in other traditions to make use of this success in promoting their own views of essence. This is an attempt to see what are the differences between Kripke and Aristotle, and to see whether we can so develop what Kripke says as to give us some kind of framing for the Aristotelian notion in terms that may be acceptable within an analytical context. Perhaps this is an impossible task: but the effort to do it will, I hope, at least lay out where the differences lie.

The first thing one might want to say is that Kripke's notion seems to be purely classificatory, while the Aristotelian notion aims at being explanatory. The notion is also classificatory, of course, but most Aristotelians would surely hold, as I do, that an ideally good classification would be explanatory. There is perhaps no other way to establish the superiority of one system of classification or categorization over others which might appear to us to be bizarre.

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<sup>1</sup> I mean by "the Aristotelian notion of essence" here a notion which is perhaps not to be found fully developed in Aristotle himself, but is presupposed in his work, and is to be found more developed in his heirs, for example St Thomas Aquinas and his followers.

<sup>2</sup> D. ODERBERG, *Real Essentialism*, Routledge, London 2007.

<sup>3</sup> S. KRIPKE, *Naming and Necessity*, Harvard University Press, Cambridge (Massachusetts) 1980.

It is perhaps worth discussing this question here. Even if we find reasons to reject deviant ontologies – such as Lewis’s realism about possible worlds,<sup>4</sup> or the young Russell’s fantasy that people and things are logical constructions out of events – and stick to a crude metaphysics of things, of substances or substance-like entities, as natural languages seem to presuppose – questions still arise. An important question is that of “At what level do we find substances?” Many people feel inclined to a reductionist, minimalist view that only very basic physical entities – sub-atomic particles, for instance – are substances, and that anything else is merely an *ens per accidens*, a coincidental existent, a combination of these basic substances. I shall not discuss this here. Even if we grant substantiality (or quasi-substantiality) to the familiar objects of our discourse – people, things, plants and trees, lumps of solid stuff, delimited quantities of liquid or gaseous stuff, natural objects like rivers or storms or mountains, or artifacts – there still arises a question of how we classify them.

## 2. CATEGORIZATIONS

It is easy to draw attention to actual or possible classifications that are or might be radically different from the classifications which we recognize either informally in our ordinary discourse, or more formally in our scientific discourse.

A famous example is often given by drawing attention to Borges’s (invented) classification of animals, which he pretends to have drawn from a classical Chinese encyclopedia, *The Celestial Emporium of Benevolent Knowledge*.<sup>5</sup> This allegedly classifies animals into 14 kinds: animals that belong to the Emperor; embalmed animals; trained animals; suckling pigs; mermaids; fabulous animals; stray dogs; animals included in this classification; animals that tremble as if they were mad; innumerable animals; animals drawn with a very fine camel’s hair brush; other animals; animals that have just broken a flower vase; and animals that resemble flies at a distance.<sup>6</sup>

This is, of course, a joke, though Borges undoubtedly means it as a joke that will suggest thought. But, as Geach once remarked, there is no story about language so stupid or so implausible that some philosopher somewhere will not believe it. Philosophers have seriously maintained that there are no words in Inuktitut, the language of the Inuit people of Greenland and northern Canada; that there is no subject-predicate distinction in Chinese, or, for that matter in Euskera (the language of the people normally known by outsiders as Basques); that there are 40 (or 100, or 200) different words for “snow”

<sup>4</sup> D. LEWIS, *On the Plurality of Worlds*, Blackwell, Oxford 1986, esp. ch. 3, pp. 136-90.

<sup>5</sup> J.L. BORGES, *El idioma analítico de John Wilkins*, in *Otras Inquisiciones*, Alianza Editorial, Madrid 1976, pp. 104-5.

<sup>6</sup> My translation. Another can be found at J.L. BORGES, *Selected nonfictions*, trans. and ed. E. Weinberger, Penguin, London 1999, p. 231.

in Inuktitut;<sup>7</sup> that there are no names for females in the language of the Mapuche people of Chile. Sometimes the alleged huge differences are trivial – I have heard of an English-speaking philosopher claiming that a whole radically different way of looking at the world was revealed by the fact that in Hebrew the word for “snow” can and does take verbal inflections. This person had obviously never reflected on his own language, in which the same phenomenon occurs.

Given the fact that philosophers often believe ridiculous things about other cultures, or sometimes put forward as enormous differences what are only trivial differences, or not differences at all, I put forward only tentatively a claim sometimes made by philosophers that we do occasionally find classifications of the world made by fairly alien peoples which are in some way radically different from our own. The best known example is that of the Dyirbal, an indigenous people of Australia, who, it is said, in their language have a linguistic classification of natural phenomena which distinguishes four groups: certain animals, including human males; things you can eat; miscellaneous things; and dangerous things: e.g. bush fires, flash floods, mad dingo dogs, and human females.<sup>8</sup>

We might wonder how important this alleged fact could really be. Well, on this last, if true, how important is it? French, Italian and Spanish speakers standardly distinguish everything in the world into two groups which are called “masculine” and “feminine”. Do we really want to maintain that Spanish speakers live in a different conceptual world from French speakers because the former regard the sea as masculine, the latter as feminine? And if so what weird conceptual earthquake did Spanish speakers undergo when the grammatical gender of their word for “sea” shifted grammatical gender, from feminine to masculine, as it did in historical times?

Nevertheless, one might raise the following question. The Dyirbal classify things in the way outlined above, while we prefer to classify things in a different way. We would prefer, perhaps, to put bush fires and flash floods into one grouping, that of “natural hazards”, while mad dingo dogs and human females fall into another very wide grouping, that of “animals”. Also we would normally sub-divide this group into two – “non-human animals” and “human beings”. Is there any reason we can allege, except cultural prejudice, to prefer our classification to the Dyirbal’s?

<sup>7</sup> See G. PULLUM, *The great Eskimo vocabulary hoax*, <http://www.lel.ed.ac.uk/~gpullum/EskimoHoax.pdf>, accessed 28-X-2015; see also IDEM, *The Great Eskimo Vocabulary Hoax and Other Irreverent Essays on the Study of Language*, University of Chicago Press, Chicago 1991, pp. 159-171.

<sup>8</sup> See e.g. G. LAKOFF, *Women, Fire, and Dangerous Things*, University of Chicago Press, Chicago 1991, p. 5.

It's not a question of exhaustiveness alone: the fictional Chinese encyclopedia classification of animals is exhaustive in virtue of its category of "others". The Dyrbal classification includes a category of "miscellaneous things". Nor is it a question of the usefulness of the classification. It might be very useful to have all dangerous things in a single category – though I would question this. What we need to know about dangerous things is how to avoid them – and even the examples I have given differ notably in this regard. You avoid a bush fire by running away from it, you avoid a flash flood by running at right-angles to it. You avoid a mad dog by climbing a tree, and there is, I think, no practicable way of avoiding a human female at all.

Let me return to Chinese questions – this time, not fictional ones – to illustrate the point that usefulness is not the same as correctness or accuracy or superiority of theoretical categorization. In Britain, I gather, there are two schools that teach acupuncture. (I take it that we grant that acupuncture is of value in relieving certain kinds of pain, at least.) One school has a longer course, is more expensive, and is generally accepted (even by faculty and alumni of the other school) as turning out better acupuncturists. But the only difference between the curricula of the two schools is that the better school spends far longer in teaching the principles of classical Chinese physiology. Now I take it we can agree that classical Chinese physiology is all bunk, but it appears to be a fact that the more you come to think in terms of that physiology, the easier you find it to identify with accuracy the points at which acupunctural pressure should be exerted. Usefulness, then, is not a sufficient guide to truth.

Let us consider a couple of sets of useful categorizations that people in our society do actually employ. One is that of what are called in Britain "monumental marbles" – the sort of stone that makes a good grave-marker, according to current fashions, because it is durable and takes a high polish. Now the various kinds of stone that are lumped together under "monumental marbles" may have very different chemical and geological properties. Why do we say that the categorization of such stones by the chemist and the geologist is superior to that of the funeral-parlour director, or even to that of the stonemason?

Or take the case of "ornamental shrubs". If you are interested in filling your front yard with a blaze of colour for as much of the year as possible, you will consult catalogues, and more expert gardeners: possibly even an expert on colours or feng shui (to keep the Chinese in the picture). But there is no doubt that we regard to categorization of the botanist as being superior to that of any of these experts.

Why? I think that there are a few features which stand out. The scientist's categorization is indeed universal (maximally general), and it is also useful. But it also reaches a similar level of detail for all similar things: there is no cat-

egory of “all the rest”. It is also more explanatory, and more projectable. It is more general in that the concerns of the gravestone purchaser or vendor are limited, as are those of the garden owner or designer. It is more explanatory in that the scientist can tell you why these stones are durable and take a high polish, or why these shrubs produce flowers of these colours at these times or year. It is more projectable in that when we know what the scientist has to tell us we will be able to apply the categorization more widely, affirmatively or negatively.

To consider this last point: up until the eighteenth century everyone in the Northern hemisphere knew that swans are white. Aristotle gives “All swans are white” and “No swan is black” as examples of universally true propositions.<sup>9</sup> Yet when explorers reached Australia and found there black swans, they were at once recognised as black swans. No one said, “Look at the funny-shaped aquatic crow!” Why was this? Thomas Aquinas tells us in the *Commentary on the Physics*:<sup>10</sup> «Shapes correspond to the species of things most closely, and show them most clearly (*Figurae maxime consequuntur et demonstrant speciem rerum*)». This educated guess has been proved to be true by further scientific research: the Australian black swans do indeed belong to the same genus as Northern Hemisphere white swans. Presumably what is in Thomas’s mind here is some such principle as that shape is more closely linked to characteristic activity than is colour, and it is characteristic activity that shows the natural kind.

Indeed, we generally accept as the mark of a biological species a particular kind of characteristic activity, that of breeding within its own kind. This works very well for the realm of the living, but there does not seem to be anything similar in the case of non-living things. What activity, we might ask, is typical of gold? Many reactions, we might say, are typical of gold, but none is pre-eminent. We seek (or have sought) the underlying properties – atomic weight, number, structure – which explain *all* the different actions and reactions which we have come to consider as typical of gold.

If this is so, then we can I think draw the conclusion that science – within which our scientific classification has a role – is a very Aristotelian project. Of course it is not an empiricist project – seeking only to associate together quite disparate phenomena. It is a search for natures or essences, as shown in characteristic activities. The search may be long or short, but I think we are entitled to conclude that it has to a large extent been successful.

An objection to this is sometimes made, that for Aristotle natural kinds were everlasting. I am not sure about Aristotle – I think that all he may mean by speaking of the everlastingness of e.g. animal kinds is a contrast with individuals of those kinds. Individuals, composed of matter and form, have the seeds of their own destruction in them: they cannot last forever. Animal kinds, on

<sup>9</sup> *An. Pr.*, I, 19, 38 a 30, II, 3 56 b 19.

<sup>10</sup> *In VII Phys.*, I, 5, n. 917.

the other hand, can continue indefinitely, if not for ever. I myself don't know why any given natural kind should not continue as long as suitable conditions for it continue to be there, and the reasons why suitable conditions may cease to occur may have to be sought at a level as deep as that of the second law of thermodynamics.

But whatever Aristotle may have to say on the subject, Aquinas is quite clear that animal kinds may come into existence and cease to exist. Mules, Aquinas thinks, were not part of the work of the six days of creation: they came into existence later. The fact that mules are sterile, or in the rare cases when they breed, revert to the parent species, is of course irrelevant: mules are clearly a separate equine species, different from horses or donkeys or zebras or okapis or Przewalski's horse.<sup>11</sup>

Equally well, Aquinas believes that there is at least no metaphysical or logical or perhaps even natural impossibility about biological species ceasing to exist.<sup>12</sup> On the question of the permanence or non-permanence of non-biological natural kinds, Thomas is perhaps even more willing to allow impermanence than we are. I take it that we regard the quantity of gold on earth as more or less fixed, short of sending some of it into space (as I believe we do), or of monkeying with it at the sub-atomic level (as I believe we also do). But Thomas, with a simpler physics, would surely have held that if a given quantity of gold is melted, burnt, pounded into tiny and unobservable fragments, and the remains thrown into the sea, a quantity of that gold will simply have ceased to exist and become part of the air, the undifferentiated earth, and of water. Moreover, he also believed that even in the present state of the earth, gold could be generated from undifferentiated earth by the influence of solar radiation. Thomas does not believe in the permanence of natural kinds, any more than we do.

That said, to return to my question. What makes the categorization of different animal species which we have better than that of Thomas? I would rather not give an answer at the level of DNA or the genome: that is still new science. There is no doubt that nineteenth century biologists had a much better idea of the natural kinds of animals than Thomas had, whether they were evolutionists or anti-evolutionists. But what I want to stress here is that their categorizations were an improvement on Aristotle's or Thomas's: not a radical abandonment of one conceptual scheme for another. French naturalists did not have to unlearn their classification of animals by grammatical gender into masculine and feminine before they could understand the categorizations made by English or German naturalists.

What about at the sub-biological level? Was there anything to be unlearned there? Perhaps one might say that the idea that everything was made up of

<sup>11</sup> See on this *S. Th.*, 1, q. 73, a.1, ad 3.

<sup>12</sup> See *SCG.*, L.1, c. 66, n. 5.

earth, air, fire and water needed to be unlearned. But it is interesting that there is no evidence of anyone having to make the point that these needed to be unlearned. The failures of the alchemists taught people that different kinds of earths needed to be more strongly distinguished. This again is a development, not an overthrow. There is no evidence of a paradigm shift. So I return to the point I made earlier: science is still an Aristotelian project, one that has (by now) achieved more success than Aristotle dreamed of.

### 3. APPROACHING THE ESSENCE

I conclude, then, that ideally a set of classifications ought to rest on and feed into a system of explanations, and that it is not sufficient for us to limit ourselves to observing, as Kripke does, that we do in fact make such and such classifications, based on essences which are fixed by determinations which objects necessarily have. We should look for a system of classifications that can structure a system of explanations.

What does “structuring a system of explanations” mean here? I mean that for an Aristotelian it should be legitimate to say e.g. “a cat is a cat because of the essence of cat”. Since this boils down, in plain English, to “a cat is a cat because it’s a cat” this will be ridiculed by, for example, Locke and Hume and their followers. This means that in fact such an utterance would be (and is) ridiculed by most English-speaking philosophers as totally vacuous or tautological. (Though one might notice that followers of the Quine of *Two Dogmas of Empiricism* ought to be wary of labelling any utterance as «being true in virtue of what the words mean».<sup>13</sup>)

But this utterance, “A cat is a cat because it’s a cat” is not in fact vacuous or tautological, at least by one important criterion: tautologies or vacuous utterances cannot be truly or usefully denied. The negation of a vacuous utterance or tautology is a contradiction. But empiricists in general (and, again, most English-speaking philosophers, even if they would disclaim being empiricists) in fact do deny the truth of “a cat is a cat because it’s a cat”. They give us instead some story about nominal essences or bundles of qualities or constant conjunctions to explain why it’s always true to say that a cat is a cat. Those who deny that the reason why a cat is a cat is because it’s a cat, more than any other school of philosophy, can have no right to claim that “a cat is a cat because it’s a cat” is vacuous.

I want to say: the sentence is not vacuous, but it is highly uninformative. It says something that we all knew already. Crudely speaking, we all knew it already because the unspoken metaphysics enshrined in our language is a meta-

<sup>13</sup> W.V.O. QUINE, *Two Dogmas of Empiricism*, «The Philosophical Review», 60 (1951), pp. 20-43. Reprinted in his 1953 *From a Logical Point of View*, Harvard University Press, Cambridge (Massachusetts) 1953.

physics of real essence. We will be dissatisfied with “a cat is a cat because it’s a cat” as an answer to “why is a cat a cat?” to the extent that we already accept it as obviously true (though not true “by definition”), and thus uninformative. What we have the right to demand from the metaphysician, and later from the natural scientist, is some account of what being a cat consists in: and in fact we have slowly come to grasp such accounts. In the same way, Molière’s rather lame joke about the “*virtus dormitiva*” is funny only because the newly qualified doctor is allowed to impress us by telling us what we already knew – that opium has a power to put people to sleep – in suitably serious medical language – that is, in Molière’s context, in Latin. What we expect of a good doctor or pharmacologist is an account of what this power consists in or rests on, or an account of how it is exercised. But medical people still play this trick on us, and we seldom have the perspicacity of Molière to recognize the trick.<sup>14</sup>

The sentence “a cat is a cat because it’s a cat” is not vacuous, because of the presence in it of the connective “because”. I have written elsewhere of the mistake, commonly made in the English-speaking philosophical world, of equating the connective “because” with the truth-functional connective “if and only if”.<sup>15</sup> It is true that “a cat is a cat if and only if it’s a cat” is tautological or vacuous, if any sentence is: but “a cat is a cat because it’s a cat” is not.

I claim, then, that “a cat is a cat because it’s a cat”, then, gives us an uninformative answer, something which we already knew. But it does provide a framework, scaffolding, or blueprint (I have never been able to decide which metaphor is best) on which to build a fuller, informative, scientific answer. At present the fuller answer will include something about the DNA, perhaps.

#### 4. AN ARISTOTELIAN-KRIPKEAN NOTION OF ESSENCE

Thus I would like to start with something like an Aristotelian formula about essence, as defining our goal.

<sup>14</sup> I understand that for at least a good number of years no full account could be given of the way in which very many of the drugs that are used to treat e.g. depression actually work: doctors prescribed them because they were known to be effective. That is, they had been observed to have a “*virtus contradepressiva*”, the mechanism of which was not fully understood. (see <https://en.wikipedia.org/wiki/Antidepressant> 5-XI-2015) Similarly, in my grandfathers’ time, soldiers suffering from what they themselves called “trench fever” found themselves diagnosed with the rather more medical sounding “P.U.O.”, or “pyrexia of unknown origin”. It was not until late in the war, I understand, that the nature and mechanism of the infection that caused trench fever were discovered. (see <http://www.firstworldwar.com/atoz/trenchfever.htm> 5-XI-2015).

<sup>15</sup> «Secondo una descrizione’: la relatività della spiegazione della causalità, dell’intenzionalità e dell’etica in G.E.M. Anscombe [‘Under a description’: relativity of explanation in causality, intentionality and ethics in G.E.M. Anscombe]» (J.A. MERCADO (ed.), *Elizabeth Anscombe e il rinnovamento della psicologia morale*, Armando, Roma 2010).

Formula A (Aristotelian formulation): Essence is that in virtue of which a substance of a given kind is a substance of that kind.

That is, the notion has to fit the formula “a is an F in virtue of the essence of F”, or “a is an F because it’s an F”. This formula is, as I have claimed, *uninformative* but not *vacuous*.

One can see at once that this formulation is very different from anything that we could glean from Kripke. I think it is fairly accurate to characterize Kripke’s notion of essence as the following:<sup>16</sup>

K<sub>1</sub> (Kripkean formulation): Essence is that which is expressed by predicates that are true of an individual in every possible world.

I suppose that it is obvious that Kripke’s formula is wider than the Aristotelian formula: to make them fit together, we will have to narrow down what Kripke says. There will always be some kind of a historical or exegetical reason for the restriction: if we want to use Kripke in understanding the Aristotelians, we will have to make this or that restriction. I would submit that even if we were only to do this, we will have made it easier for analytic philosophers to understand Aristotelians, and for Aristotelians to understand analytic philosophers, even if, in the end, all they understand is what they disagree about. But even this, I submit, would be some kind of progress. But my aim is slightly more ambitious than that: I hope to be able to suggest reasons why a philosopher, of any stripe, should be willing to make the necessary restrictions in order to come up a notion of essence that might actually be metaphysically important.

The first step is simple: we need to rule out possible-world talk as metaphorical. Kripke would agree with this,<sup>17</sup> and unless we are Lewisian realists about possible worlds, there need be little argument about this step. Hence we would reach:

K<sub>2</sub>: Essence is that which is expressed by predicates that are necessarily true of an individual.

But this formula is still much too wide to be of use in a metaphysical investigation. There are many predicates which are necessarily true of an individual which we should be unwilling to include in our notion of essence. It is necessarily true of me (as Kripke would point out) that I am not an alligator. In fact, there are presumably an infinite number of predicates that are necessarily true of me, that are pure negations. Any notion of essence which makes it include infinite predicates is clearly of no use. We have to rule out merely negative predicates.

<sup>16</sup> This account derives from Lecture 1 of Kripke’s *Naming and Necessity*.

<sup>17</sup> See S. KRIPKE, *Naming and Necessity*, especially p. 44.

But perhaps we need not stop there. If we are interested in reaching the essence of a substance, we need to restrict ourselves to what really exists. Numbers, which do not really exist, have predicates necessarily true of them: but is the notion of essence usefully extended to numbers? For the matter, the dead have predicates necessarily true of them, but is there an essence of one who is dead, *qua* dead?

The simplest step we can take here is to restrict our notion of essence to what is expressed by predicates, necessarily true of an individual, which express realities. The notion of “reality” I am using here I have dealt with elsewhere,<sup>18</sup> but its origin is to be found in the account given by Geach in *God and the Soul*<sup>19</sup> and the section on *esse* in his essay on Aquinas in *Three Philosophers*.<sup>20</sup> This restriction enables us to lose merely negative, merely privative and merely intentionally-relative predicates from our notion of essence, thus restricting the breadth of our notion of essence, and also, not coincidentally, restricting ourselves to real individuals – not numbers or the dead. This is because of course only real individuals can have predicates that express realities true of them, let alone necessarily true of them. Thus we will rule out the non-real, and thus restrict the notion of essence to real individuals, that is, real beings, beings with real existence or *esse*. The historical or exegetic reason here is clear: we are aiming at giving an account of the essences of substances, and substances are paradigmatic or focal cases of the real, as Aristotle says.<sup>21</sup> But there are theoretical gains, too, even if Aristotle is wrong. The order of explanation goes from the real to the non-real: it is not because I am necessarily not an alligator that I am a human being, but rather because I am a human being that I am not an alligator, or a frog, or a toad, or any kind of amphibian or aquatic reptile. That I am not an alligator is a logical conclusion from the fact that I have a human essence, not a part of it.

One might generalize the claim being made here, and say that the non-real cannot explain the real. This might appear too sweeping: is it not possible to explain a shipwreck, as Aristotle does, by the absence of the helmsman, that is, by a privation? That is to say, by a non-reality? But we would need to distinguish here. The absence of the helmsman, an unreality, is indeed involved in

<sup>18</sup> C.F.J. MARTIN, *Thomas Aquinas: God and Explanations*, Edinburgh University Press, Edinburgh 1997, pp. 56-66.

<sup>19</sup> “Form and Existence” and “What Actually Exists” in P.T. GEACH, *God and The Soul*, Routledge and Kegan Paul, London 1969, pp. 42-64 and 65-74. Geach prefers the label “actual existence” to “real existence”. I prefer (tentatively) my label, because I need the label “actual” for talking about modality, and this notion of existence is undoubtedly the kind of existence possessed by things, *res*.

<sup>20</sup> G.E.M. ANSCOMBE, P.T. GEACH, *Three Philosophers*, Blackwell, Oxford 1961, pp. 88-94.

<sup>21</sup> *Metaphysics*, book Z, 1028b 3-9: «The question... ‘What is being’ is the question ‘What is substance’». The translation is that of Anscombe G.E.M. ANSCOMBE, P.T. GEACH, *Three Philosophers*, Blackwell, Oxford 1961, p. 19.

the explanation of the shipwreck *in the context of* a whole lot of other realities: that the ship was at sea, that there was a rock ahead, that the wind was blowing. Without those realities, it is no explanation at all. Moreover, one could not list all the negations and privations that could be cited in this way: for example, that silver-footed Thetis, the sea-nymph, was not taking the ship under her special care.<sup>22</sup> In the context of a sea-voyage in the rationalist fourth century, Aristotle has the right to expect a helmsman to be present, but does not have the right to expect the protection of the nymphs of Homeric times. In the context of the reality of such a sea-voyage, the absence of a helmsman is explanatory, but not outside that context. If the explanation were given for the ship's having sunk at its moorings in port, the absence of the helmsman would be a very inadequate explanation indeed, and Aristotle might justly suspect, were such an explanation offered, that he was somehow involved in the kind of maritime insurance fraud which we know to have occurred in the Athens of his time.<sup>23</sup>

Another query might arise over the instantiation of mathematical entities in geometrical forms. Does not the formula for the silver ratio explain why, if you tear a piece of DIN A4 paper in half, you get two pieces of DIN A5 paper, which have the same proportions as the original DIN A4 sheet, and, indeed, as all pieces of DIN sized paper? Here, again, the explanation involves a non-reality – a mathematical formula – but is not the whole of the explanation. The whole of the explanation would include a lot of realities, including, indeed, intentional realities: that the suggestion for sizing and marketing paper in this way was at one time devised and applied, and eventually adopted throughout Europe and elsewhere. If this restriction is admitted, we reach a new formula:

K3: Essence is that reality or those realities that are expressed by predicates that are necessarily true of an individual.

At this stage it might also be appropriate to rule out artificial things, which Kripke gives as examples of things having essences, but which Aristotle does not regard as having essences. Aristotle's frequent examples using artificial things are to be understood as parallels, or analogies. We can, of course, talk of the "quasi essences" of artificial things, but in fact we don't make any special comment about artificial things. If we accept the account of real existents given by Aristotle in *Metaphysics* Book Delta, chapter 5, we can observe, first,

<sup>22</sup> What goes for Thetis goes also for Glauce, Thaleia, Cymodoce, Nesaea, Speio, Thoe, Halie, Cymothoe, Actaea, Limnoreia, Melite, Iaera, Amphithoe, Agave, Doto, Proto, Pherousa, Dynamene, Dexamene, Amphinone, Callianeira, Doris, Pynope, Galatea, Nemertes, Apeudes, Callianassa, Clymene, Ianeira, Ianassa, Maera, Orithyia, Amatheia, and other Nereids listed by Homer in *Iliad* Bk xviii.

<sup>23</sup> Compare the apparently well-known case of the prosecution of Hegestratos and Xenothemis for this crime.

that artificial things are coincidental<sup>24</sup> existents, not existents in their own right. Since all coincidental existents are made up of more than one existent in its own right, we can concentrate on existents in their own right, and be confident that we will get round to studying the essences of everything. Some have thought that there is always an intentional or artificial element in our classification of coincidental existents, but I tend to disagree: rivers and hurricanes are by Aristotle's standards coincidental existents, but they really exist in what seems to me a wholly mind-independent way. When we get to study them we can, if we wish, talk of their essences or "quasi essences", as we see fit: but anyone who accepts any idea of priority among existents, as Aristotle does, will surely accept the methodology of concentrating on the primary existents first. There is, then, a methodological reason for the next restriction we might wish to apply, to reach a new formula.

K4: Essence is that reality or those realities that are necessarily true of an existent in its own right.

«Existents in their own right»,<sup>25</sup> of course, according to Aristotle's doctrine, include accidents. Aristotle would probably not want to say that accidents have their own essence – although you can make predications of an accident which fall into the category of substance, e.g. "Red is a colour". This expresses, accurately enough, the *ti esti* of red. I don't think we need give this importance. On the methodological grounds we just used, if we affirm the priority in existence of existents in their own right over coincidental existents, we can limit our primary attention to substances, affirming their priority in existence over accidents. Since everyone admits that accidents depend for their individuation and existence on the substances in which they inhere, we can just leave on one side the question of whether there are "accidental essences" and try to reach our conclusion. Hence we can reach a new formula:

K5: Essence is that reality or those realities that are expressed by predicates that are necessarily true of a substance.

This step is not quite enough. We need, I think, to rule out the essence of individuals *qua* individuals. It is certainly part of Socrates's essence that he is the son of Sophroniscus and Phaenarete, but who cares? The aim of science must be general, surely, whether we take an Aristotelian or a contemporary view of science. A question certainly arises about whether it is part of the essence of every individual human being that he / she should be the son / daughter of his / her parents: but that sort of question is precisely the sort of question which metaphysics is supposed to deal with. We do not need to answer it in

<sup>24</sup> I use this useful translation of *entia per accidens*, which I find in C. KIRWAN, *Translation and commentary on books of Aristotle's Metaphysics*, Clarendon, Oxford 1971.

<sup>25</sup> "Existents in their own right", with KIRWAN, *op. cit.* I use to translate *entia per se*.

our rough delimitation of the metaphysical notions that we intend to use – indeed, it is surely an advantage of our account of essence that it leaves such questions open. Hence we reach a final formula:

K6: Essence is that reality or those realities that are expressed by predicates that are necessarily true of a substance in so far as it is a substance of a given kind.

We should not forget that we were looking for a notion of essence which we could usefully and interestingly plug into our original claim, about the notion of essence in general, that a cat is a cat because it's a cat. I submit that the formula we have just reached, by a reasoned step-by-step restriction of the Kripkean notion, can be used in this way. If we do this we get what we could call an expression of an Aristotelian-Kripkean notion of essence.

A-K: Essence – i.e. that in virtue of which a substance of a given kind is a substance of that kind – is that reality or those realities that are expressed by predicates that are necessarily true of a substance in so far as it is a substance of a given kind.

This is to say that e.g. that Socrates is a human being in virtue of that reality or those realities that are expressed by predicates that are necessarily true of Socrates in so far as he is a human being, or that Ludo is a cat in virtue of that reality or those realities that are expressed by predicates that are necessarily true of Ludo in so far as he is a cat.

This is still uninformative, but less obviously so than “Socrates is a human being because he's a human being” or “Ludo is a cat because he's a cat”. It opens up for us a whole range of questions: typically, “what realities are these?” It seems likely to me that we will need to go on to say that they consist very often of powers – i.e. what the substance can do, rather than what it may actually be doing at any moment. And I would accept Kenny's argument that any power has to rest on a vehicle, and that thus there will be a lot to investigate in the actual real properties on which those powers rest.<sup>26</sup>

It's also worth noting that even at this early point we have room for significant disagreement. For example, Kripke thinks that there is a *necessitas originis* for species, as well as for individuals.<sup>27</sup> I think I'd disagree, and would prefer to accept the view of the geneticists that the genetic structure of a tiger is more important. But all this would lead into a discussion of the futility of discussing explanations in terms of necessary and sufficient conditions. Is it enough for me to claim that I have reached a delimitation of the Aristotelian notion of essence which is logically almost as tight and exact as Kripke's original notion, but which also gives us room and direction for genuine investigation in science, the philosophy of science, and the philosophy of nature?

<sup>26</sup> See A. KENNY, *The Metaphysics of Mind*, Oxford University Press, Oxford 1997, pp. 71-74.

<sup>27</sup> The view is shared by evolutionary biologists.

*ABSTRACT: The classificatory Kripkean notion of essence is narrowed down until it matches an explanatory Aristotelian notion of essence. The difference between classificatory and explanatory notions of essence is clarified, and each step of the narrowing process is justified on grounds related to the philosophy of science.*

*KEYWORDS: Kripke, Aristotle, essence, explanation, classification.*