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1. PREFACE

1.1 Introduction

- This book is not a revision of the lectures. The preface (of 21 pages) describes the genesis and background of the leading ideas of the monograph, and discusses a few common misunderstandings. Little space is devoted to the more substantial shortcomings of the monograph (though Kripke stands by its major theses), though in the preface, he explains further, in particular, the concepts of modality and rigid designation. Those objections touched on are dealt with briefly as constrained by the length of the preface – hopefully not so briefly as to confirm some into thinking the objections cogent.
- The preface is not self-standing and should be read by new readers after the main text, by way of background and clarification.

1.2 Historical Background

- When (prior to 1963) Kripke was working on the model theory of modal logic ("possible worlds" semantics), it had occurred to him, in agreement with Wiggins, that the Leibnizian principle of the indiscernibility of identicals (ie. identicals have all properties in common; (x)(y)(x = y & Fx .⊃. Fy); not to be confused with the identity of indiscernibles) was as self-evident as the law of contradiction. Alleged counter-examples involving modal properties always turned out to depend on a confusion; non-genuine properties, confused scopes, coincidence between individual concepts confused with identity between individuals[1]. Ignoring the fact that x need not have necessary existence, Kripke says it's clear that identity is an *internal*[2] relation – ie. (x)(y) (x = y ⊃ □ x = y); from (x) □ (x = x) and Leibniz's law. Kripke asks what pairs (x, y) could act as counter-examples, for if the objects are distinct, the antecedent is false, while if they are the same, the consequent is true. If it's true that "a = b", then if "a" and "b" *are* rigid designators, it follows that "a = b" is *necessarily* true, while if they are *not* rigid, no such conclusion follows about the *statement* "a = b", even though the *objects* designated by "a" and "b" will be necessarily identical.
- As yet, we are not committed to any thesis about natural-language "names". We must distinguish three things:-
  i. That identical objects are necessarily identical
  ii. That true identity statements between rigid designators are necessary

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1 It's difficult to see what Kripke means without a bit more background.

2 For "Internal Relation", see *Stanford Encyclopaedia of Philosophy*, under Properties: "*The phrase 'internal relation' has been used in different ways, but it is often used as the relational analogue of an essential (monadic) property. For example, if a bears the relation R to b, then R internally relates a to b just in case a bears this relation to b in every possible circumstance in which they both exist. Relations that are not internal, that contingently link their relata (the things they relate), are external. Bill and Hillary are married, but they might not have been, so this relation between them is external. By contrast, some philosophers have suggested that the relation being a biological parent of is an internal relation. In every world in which Bill and Chelsea both exist, Bill is her father. If this is correct, then the relational property, being a child of Bill is essential to Chelsea, but being the father of Chelsea is not essential to Bill (he and Hillary might never have met, in which case they would not have had Chelsea)*".

iii. That identity statements between what we call "names" in actual language are necessary.

- Kripke claims that (i) and (ii) are self-evident theses of philosophical logic independent of natural language. They are related, but (i) is about objects, whereas (ii) is metalinguistic, roughly following from (i) using substitution of rigid designators for universal qualifiers ("roughly", because delicate distinctions about rigidity are relevant, since the analogous deduction for non-rigid designators is false).
- All that strictly follows from (ii) about "names" in natural language is that *either* they aren't rigid *or* true identities between them are necessary. Kripke thinks our intuitive notion is that names *are* rigid, but he had been led astray to the contrary belief by prevailing opinion and the fact that there are obviously contingent identities between so-called names[3]. However, without investigating natural language, it is already clear from (i) that the supposition popular amongst materialists that objects can be "contingently identical" is false[4]. Identity would be an internal relation even if natural language had no rigid designators. Kripke claims that this confused notion enabled philosophers *simultaneously* to think of certain designators as though they were (1) non-rigid *and* (2) rigid; the conflict being hidden by thinking of the corresponding objects as "contingently identical". Kripke felt little sympathy for this "dark doctrine" – uniquely identifying properties *can* coincide contingently, but *objects* cannot be contingently identical.
- In 1963-4, Kripke concluded that it *can* be demonstrated that names in ordinary language are rigid designators, and therefore that identities are necessary. Also, that any symbol in a natural or hypothetical language that is *not* a rigid designator ought not to be called a name; this applies in particular to (names as) hypothetical abbreviations of non-rigid definite descriptions. Kripke clarified matters by distinguishing between using descriptions to give meaning and to fix reference. Kripke, at this stage, rejected conventional description theory as an account of meaning, but retained it momentarily as an account of fixing a reference. See the *Second Lecture*, for the rejection of the description theory for fixing reference and defining natural kinds.
- Kripke pays tribute to the power of the then prevailing ideas, stemming from Frege and Russell[5]. He admits that the description theory of names has intuitive appeal and much internal consistency, in contrast to much philosophising.

1.3 Names & Rigid Designation

- Kripke now gives a brief (and maybe unnecessary) restatement of the familiar idea of rigid designation and the underlying intuition about names. We are asked to consider the statement:-

  (1) "Aristotle was fond of dogs"

  To understand this correctly, we need to understand *both* (a) the extensionally correct conditions under which it is in fact true *and* (b) the conditions under which it would partially correctly describe a counterfactual course of history.
- Kripke presumes that everyone agrees that there was a certain man – the philosopher we call "Aristotle" – such that (1) is true iff *he* was fond of dogs.

[3] What does he mean – that there can be many John Smiths?

[4] See Kripke's later discussions in Lecture III about the incoherence of a mind-state being only contingently identical to a brain-state.

[5] But, doesn't Kripke have Frege and Russell wrong?

Even Russell would agree that this is simply material equivalence, given that there really was an Aristotle. The thesis of rigid designation (ignoring subtleties such as possible situations in which Aristotle would not have existed) is just that the same paradigm applies to the truth conditions of (1) as applies to *counterfactual* situations. (1) describes a counterfactual situation truly iff the aforementioned man would have liked dogs had the counterfactual conditions applied (again ignoring counterfactual situations where he wouldn't have existed).

- In contrast, Russell would have analysed (1) as something like:

  (2) "The last great philosopher of antiquity was fond of dogs"

  which in turn should be analysed as:

  (3) "Exactly one person was last amongst the great philosophers of antiquity, and any such person was fond of dogs"
- Kripke notes that the *actual* truth conditions of (3) agree with those of (1) – provided Aristotle *was* the last great philosopher of antiquity – but in counterfactual situations wild divergences can occur between Russell's explanation and the rigidity thesis. In counterfactual situations where *someone else* was last great philosopher of antiquity, Russell's analysis would make *that other person's* fondness for dogs the relevant issue in deciding the correctness of (1).
- Kripke has a footnote where he says that he assumes Russell is right to say that definite descriptions can *sometimes* be interpreted non-rigidly. Other philosophers claim that definite descriptions can be interpreted rigidly, but Kripke doubts this. However, he doesn't think his principal thesis is affected, since, like Russell, it contrasts names with non-rigid descriptions. In *Contemporary Perspectives in the Philosophy of Language*, Kripke addresses the relation of rigid definite descriptions to Donnellan's referential descriptions, and discusses the relation of these to the notion of scope.
- For the rest of Kripke's *Preface*, see the Appendix.

2. LECTURE I

2.1 Introduction

- The lectures are informal and were delivered without notes. They have only been patched up in a very minor way and preserve their character as delivered.
- The connection between *naming* and *necessity* will be developed during the course of the lectures.
- Contemporary analytic philosophy uses tools involving reference and necessity, so the discussion has far-reaching consequences, for instance in the mind-body problem or the so-called *identity thesis*. This form of materialism involves intricate questions of what is necessary or contingent in property identities and such-like. Kripke will discuss these issues, together with concepts of *substance* and *natural kinds*, later in the lectures.
- Kripke will introduce a different approach to the issues – though Albritton had raised the question of natural kinds by asking whether we could *discover* whether lemons are not fruits. Also, with Geach on the essentiality of origins. His views may strike some at first sight as obviously wrong. Kripke's favourite example is of the contemporary philosophical claim that there are *contingently* empty predicates (ie. those with null extensions), and Kripke doesn't dispute this. However, the standard example is of *unicorns* – which we've discovered don't exist, but which *might* have and in certain circumstances *would* have. Kripke thinks this is false, because we can't say under what circumstance there would have been unicorns. Even if archaeologists were to discover remains satisfying the characteristics of mythological unicorns, these would not demonstrably be remains of unicorns. Kripke has defended this view elsewhere and just mentions it here as an example of his surprising opinions.

2.2 Naming

- Kripke now turns to his first topic, ***naming***. By a *name*, Kripke means a proper name but ***not*** a definite description ("the x such that φx"). He refers to names and definite descriptions collectively as ***designators***.
- Donnellan has pointed out that someone may mistakenly use a definite description to refer to someone who's not the proper referent of the description. The example given is "the man over there drinking champagne", when "the man over there" is, in fact, drinking water. Even if there's someone else in the room that does have a glass of champagne, the speaker intended to (and in some sense *did*) refer to the man with water in his glass. Kripke, however, uses the term *referent of the description* to mean the object uniquely satisfying the conditions of the description.
- Mistakes also arise in the use of names – eg. if two people mistake the identity of a third person. If one asks "what is Jones doing" and the other says "raking the leaves", then, if the distant leaf-raker is, in fact, Smith, they are both in some sense referring to Smith even though they both use "Jones" as the name of Jones. Kripke uses the "referent" of a name to mean the thing named by the name, ie., in this case, Jones rather than Smith. The schema is "the referent of 'X' is X", where 'X' is replaceable by any name or description[6].

[6] So, we should not invoke the pragmatic reference (the water-drinker)?

- Kripke thinks that Donnellan's examples are not relevant to semantics or truth-conditions, but may be to speech acts. In Kripke's sense, the referent of a name or description is the *semantic* referent – the thing named or uniquely satisfying the description. Names are not ambiguous, nor are modifications required to Russell's theory of descriptions. Speakers may *refer* to things other than the semantic referent if they have appropriate false beliefs.

2.3 Mill

- Mill wrote in *A System of Logic* that names have denotation but not connotation. Mill's example is of Dartmouth: even if the course of the river Dart were to change, we could still with propriety call Dartmouth "Dartmouth", despite it no longer being at the mouth of the Dart. "Dartmouth" *does* connote to some people, but in some way it doesn't have a "sense". It's not part of the *meaning* of the name "Dartmouth" that Dartmouth lies at the mouth of the Dart: denying this does not lead to a contradiction.
- The expression "the x such that φx" isn't always a definite description in English. Witness "The Holy Roman Empire" or "The United Nations", which are none of holy, Roman, empire or united, and so should be regarded as names. Kripke isn't concerned by doubtful cases, such as "God" – is this a name or a description?

2.4 Frege & Russell

- Both Frege and Russell thought that Mill was profoundly wrong, and gave the alternative account that names are simply abbreviated or disguised definite descriptions. Frege's view was that such a description gives the sense of the name.
- Kripke points out that this is a simplification of Russell's view because Russell doesn't think that most standard names are *names* at all, because they *do* abbreviate descriptions and have sense – something that names-proper don't. The only names for Russell are demonstratives used of objects with which the reader is *acquainted*. So, Russell does think names as normally understood (eg. "Walter Scott") have sense in that we should be able to give a definite description such that the object of the description is defined as the referent of the name. In *On Denoting*, Russell appears to hold that the notion of "sense" is illusory since he eliminates descriptions from his primitive notions[7]. So, Kripke differs from Russell in two respects (1) in using the term "names" in the normal sense, rather than Russell's "logically proper names" and (2) in regarding descriptions and their abbreviations as having sense.

2.5 Arguments against Mill

- Kripke thinks the arguments in favour of Frege and Russell, and against Mill, are powerful, though he is suspicious because names don't seem to be disguised descriptions. He gives examples of the arguments against Mill:

1. The basic problem with Mill's view is how we determine the referent of a name as used by a given speaker. If "x" is just short for "the x such that uniquely φx", then the unique φx is the referent of "x" (Kripke uses the example of "Joe Doakes" and "the man who corrupted Hadleyburg"). If there's no such descriptive content to

[7] Is this a correct interpretation of Russell?

the name, how do people use names to refer to things at all? In some situations we can point ostensively, as for Russell's doctrine of acquaintance that the so-called genuine or proper names satisfied. But, what do we do about "Walter Scott", to whom we can't point? Our reference to Walter Scott as the unique referent of the name seems to be determined by our knowledge of him. Frege and Russell seem to give the natural account of how reference is determined.

2. Another motivator is the "Hesperus" / "Phosphorus" problem, where we discover that two names have the same referent and express this fact by an identity statement. In saying "Hesperus is Phosphorus" (and is Venus), we're not saying that an object is self-identical but that the thing we saw in the evening is the same as the thing we saw in the morning. Analysis in terms of descriptions gives the real meaning of the identity statement.
3. Finally, we can ask questions of existence. In asking whether Aristotle existed, we want to know whether anything answers to the properties normally associated with the name. Kripke doesn't think we mean whether the *thing* (man) existed, because once we've *got* the thing we *know* it existed.

- While Kripke can't quite see his way through all these questions, he's certain that Russell and Frege are ***wrong***.

2.6 Quine

- Kripke mentions Quine's proposal for a reform of the language, such that in a "canonical notation" a name such as "Socrates" should be replaced by a description "the Socratizer", "Socratizes" being an invented predicate, and the description eliminated by Russell's method[8]. As this is not a substantive theory of reference for names, it is not addressed by Kripke. However, he notes that Quine would agree that similar problems to (1) – (3) above occur: namely, how is the extension of "Socratizes" determined.

2.7 Cluster Concept

- While many have abandoned the letter of Frege and Russell's theory, they've retained the spirit in the form of a "cluster concept". Kripke quotes Frege's recognition of a problem where opinions on the sense of proper names can diverge. For instance, someone who accepts the sense of "Aristotle" as "the Stagirite teacher of Alexander" will interpret the meaning of "Aristotle was born in Stagira" differently from someone who simply accepts the sense of "Aristotle" as "Plato's disciple and the teacher of Alexander". There is thus a looseness in the language, with different people giving different senses to names. Even a single person may consider that any particular fact he knows about the person named is contingent. It's not part of the meaning of "Aristotle" (part of the sense of the name "Aristotle") that he taught Alexander, for this fact is something that could be found to be false.
- The most common way out is to suggest that we usually associate a family of descriptions with a proper name, as Wittgenstein suggests in Philosophical

[8] Ie. we presumably analyse "Socrates is ugly" as "there is precisely one Socratizer, and all Socratizers are ugly". Does this relate to Mark Underwood's insistence that "The present King of France is bald" equates to "one and only one person currently kings France, and whoever currently kings France is bald".

Investigations, §79, where he asks how much of what the Bible attributes to Moses must be proved false before my equation of "Moses" with "the man who did what the Bible relates of Moses, or as any rate, a good deal of it" is proved false. Kripke states that the *locus classicus* of this view, rather more plausible as an analysis of ordinary language than Frege and Russell's, is Searle's article *Proper Names*. The referent of a name is seen not to be determined by a single description but by a cluster or family. Whatever in some sense satisfies enough or most of the family is the referent of the name. Kripke will return later to this view, which appears to retain the virtues, while escaping the defects, of the Frege-Russell theory. There are, however, two ways in which the cluster concept (or even the single description theory) can be viewed.

(1) The cluster or single description gives the meaning of the name: ie., when someone says "Walter Scott" he *means* "the man such that such and such and such and such" (*).
(2) Alternatively, while the description doesn't give the *meaning* of the name, and there is no synonymy involved, it *determines its reference*. If, on examining the account of the descriptions, we find them more appropriate to Salvador Dali, then for this person, "Walter Scott" refers to Salvador Dali rather than Walter Scott.

- Kripke thinks that some of those (eg. Paul Ziff) who deny even more strongly than he does that names have meaning still use this picture of how the referent of a name gets determined. Ziff claims that the names of things with which we are acquainted are assigned differently (by baptism or ostentation) to those of historical figures (by clusters of descriptions). For Ziff, proper names ordinarily are neither words of the language nor have any meaning at all.

2.8 Reference or Meaning?

- Kripke thinks that some of the attractiveness of the Frege-Russell theory is lost if it's used as a theory of reference rather than as a theory of meaning, as some of the solutions to the problems will evaporate if the description doesn't give the meaning of the name. Eg. For "Moses did not exist" to *mean* "no man did such and such" we need to take the theory in question as a theory of meaning of the name "Moses", not just as a theory of its reference. Kripke isn't fully clear about this, and maybe all that's immediately clear now is that if "Moses" means "the man who did such and such", then denying Moses' existence denies the existence of the man who did such and such, ie. denies that anyone did such and such. On the other hand, if "Moses" is not synonymous with any description, statements involving the name cannot be *analysed* by replacing the name by a description. This is so even if the reference is in some sense determined by a description and statements involving the name may be materially equivalent to those involving the description. Hence, we have to abandon the above analysis of singular existence statements (*), and also of identity statements, unless we can establish the procedure independently of the general theory of the meaning of names. Kripke, however, thinks it false that "Moses exists" means anything like "(*) exists", so we won't pursue this further. Kripke has an interesting footnote to the effect that determinists who claim that if Moses hadn't existed someone else would have arisen to achieve what he did cannot be refuted by a correct philosophical understanding of the meaning of "Moses existed".

2.9 Five Distinctions

- Kripke turns to a batch of terms – *analytic*, *a priori*, *necessary*, *certain* – that are taken to mean the same thing. Kant distinguished between *a priori* and *analytic*, so maybe people still do, but virtually no one distinguishes between *a priori* and *necessary*; though, Kripke ***will***.

2.9.1 Distinction 1 : "A Priori" versus "A Posteriori"

- ***Firstly***, the a priori : A prioricity is an epistemological concept, a priori truths being, according to Kant, those that can be known independently of any experience. This implies it's *possible* for such things to be known independently of experience – but by whom; God, Martians or people with minds like ours? Clarifying the question might raise all sorts of questions about the modality involved, so better to side-step the issue and avoid reference to "a priori truths" and simply ask whether a particular person knows or believes something true on the basis of a priori evidence.
- Some philosophers erroneously change the modality from "*can* be known" to "*must* be known (independently of experience)", mistakenly thinking that anything belonging to the realm of the a priori couldn't possibly be known empirically. An example is believing a computer when it tells us a number is prime – we believe it on the basis of our knowledge of the laws of physics and the construction of the machine, ie., on the basis of a posteriori evidence, despite the fact that this could be know a priori by someone performing the necessary calculations themselves.

2.9.2 Distinction 2 – "Necessary" versus "Sufficient"

- **Secondly**, necessity. This is a metaphysical rather than epistemological notion. Something false is obviously not necessarily true, but might something true have been false and the world be different than it is? If the answer is "no", then the fact about the world is necessary, else it's contingent. This is independent of knowledge, and the equation of the a priori with the necessary is a philosophical thesis rather than a definitional relation. Both concepts may be vague, but we are dealing with two different domains, the epistemological and the metaphysical. Kripke turns to the example of Goldbach's conjecture which, whether it is true or false, is presumably necessarily so (taking the classical view that mathematics is either true or false).
- If the Goldbach conjecture is *false*, then $\exists$ an even $n > 2$ such that for no two primes p_1 and p_2, $n = p_1 + p_2$. If this fact about n is true, it is verifiable by direct computation and so is necessary if arithmetical calculations are necessary. If the conjecture is *true*, then every even $n > 2$ is the sum of two primes. If this is the case, could it have been false? For it to be false, there would have to be a counter-example as in the case where the Goldbach conjecture *is* false. But, whichever value of n this should turn out to be, because we've supposed the Goldbach conjecture to be true, there must be two primes p_1 and p_2, such that $n = p_1 + p_2$. This also can be determined by direct computation. So, whatever truth value belongs to Goldbach's conjecture belongs to it necessarily.
- However, in the absence of a decisive mathematical proof deciding the question, none of us knows whether Goldbach's conjecture is true or false, so we certainly

don't have a priori knowledge of its truth or falsity. It will be alleged that we can know this in principle – but, can a finite mind search all the numbers, and how do we know there's a decisive mathematical proof? Hilbert thought that there's an intuitive proof or disproof deciding any mathematical question, but others have denied this, and yet others have thought the question unintelligible unless we replace the notion of an intuitive proof by a formal proof in a single system, which is impossible as Gödel showed. The question is non-trivial and even if the conjecture is necessary if true, it doesn't follow that anyone knows anything a priori about it or even whether they *could* know anything a priori about it. The assertion that, even if no-one ever *will* know a priori whether Goldbach's conjecture is right, yet there *is* a way which could have been used to settle the question a priori, is non-trivial.

- Hence, the terms "necessary" and "a priori" are *not* obviously synonymous when applied to statements, and an argument is required to connect them. Kripke will argue that they are not co-extensive: that both necessary a posteriori truths and probably contingent a priori truths exist. Kripke thinks people have thought the terms meant the same for the following reasons:
  (1) If something is true in all possible worlds, we ought to be able to run through these worlds in our heads and see its necessity a priori. But, this procedure is not at all obviously feasible.
  (2) Conversely, if something is known a prior, it's known without looking at the world, so must be necessary; for if it depended on some feature of the actual world, how could you know without looking? Couldn't the actual world be one of the possible worlds in which it would have been false. Kripke says that this thought depends on the thesis that there can't be a way of knowing about the actual world without looking that wouldn't be a way of knowing the same thing about every possible world. This is vague as stated, involves problems of the nature of knowledge and, in any case, is non-trivial.
- Whether or not there are counter-examples, the important thing is to see that the notions of necessity and a prioricity are *different* and that it's *non-trivial* to argue that something that can only be known a posteriori isn't necessary or that something known a priori is a necessary truth.

2.9.3 Distinction 3 – "Analytic" versus "Synthetic"

- ***Thirdly***, analytic. Kripke stipulates that an analytic statement is in some sense true in all possible worlds by virtue of its meaning. Then, it's also stipulative that an analytic statement is both a priori and necessary.

2.9.4 Distinction 4 – "Certainty"

- ***Fourthly***, certainty. This is another epistemological notion, and it's not obvious that everything that's necessary is certain. Something can at least be rationally believed a priori without being quite certain. Kripke's examples are proofs read in maths books, or calculations that may contain mistakes.

2.9.5 Distinction 5 – Modality "de re" and "de dicto"

- ***Finally***, Kripke wants to address one more preliminary question, the distinction between belief in modality *de re* and *de dicto* (ie. between *essentialism* and a mere

advocacy of necessity). It is alleged that it's only a *statement* or *state of affairs* that is necessary or contingent; whether a *particular* necessarily or contingently has a certain property depends on the way it's described – whether an object has the same properties in all possible worlds depends not just on the object, but how it's described. Kripke gives two examples:

(1) Quine's – is the number 9 necessarily odd, odd in all possible worlds? *Nine* is necessarily odd, but we can also pick out 9 as "the number of the planets", which is not necessarily 9 (there might have been 8) and so is not necessarily odd.

(2) Was it necessary or contingent that Nixon won the 1968 US election? If we designate Nixon as "the man who won the 1968 election", then it's necessary that he won it.

- It's suggested in the literature that, while we have some intuitive notion of necessity and contingency, it's just a notion invented by a bad philosopher who didn't realise that there are several ways of referring to the same thing. Kripke thinks it *is* intuitive that a property *can* meaningfully be held to be essential or accidental to an object *independently* of its description. Kripke returns to the case of Nixon. The intuitive man, rather than the philosopher with a theory, on pointing to Nixon would say with conviction that he might have lost the election, that the winner might have been someone else. "The winner" and "the loser" don't designate the same objects in all possible worlds. "Nixon" is just the *name* of *this* man. The question whether it is necessary or contingent that *Nixon* won the election is the intuitive one whether in some counterfactual situation, *this man* would have lost. Someone thinking that the notion of a necessary or contingent property is just a philosopher's notion devoid of intuitive content is ***wrong***.
- Kripke points out in a footnote the distinction between the *meaningfulness* of the distinction between essential and accidental properties, that is, whether it just depends on how things are described, and whether there *are any* essential properties. Kripke thinks there *are*, while some idealists think that *all* properties are essential. Kripke differs from many philosophers in deeming intuitive content very heavy evidence – maybe the most conclusive – in favour of something. People who think the notion of accidental properties unintuitive have their intuitions round the wrong way.

2.10 Identity Across Possible Worlds

- A motivator for this "philosopher's" perspective is the problem of "identity across possible worlds"[9]. Imagine another possible world where no-one has all the properties of Nixon – which, if any, of the people in it is Nixon? We would seem to need a *criterion of identity*, which we can then use to tell whether Nixon in this possible world has certain properties and also whether in some possible world Nixon lost the election. However, criteria for identity are very difficult. Even in the most promising case – that of numbers – there are problems. Taking the number 9 to be what it is based on its position in the sequence of natural numbers, then if, in another possible world, the number of planets had been 8, we wouldn't in that world use the number 9 to identify their number. In the case of material

[9] Note that this really is talking about identity rather than identification, so we need to think about how Leibniz's Law fits in, given that the whole point of possible worlds is to have different properties. Is this the motivation for Lewis's counterpart theory?

objects and people, has anyone given necessary and sufficient conditions for identity across possible worlds?

- Kripke agrees that necessary and sufficient conditions for identity are very rare. Mathematics is the only case where they are given *within* a possible world, and Kripke knows of no criteria for the identity over time of material things or people. However, Kripke thinks this approach misses the point of what a possible world *is*. Kripke thinks people imagine possible worlds as like another country to which Nixon may or may not have gone, and where we observe people's *qualities* but not whether or not they are *Nixon*.
- Kripke himself may be a prominent example of a logician whose formal treatment of modal logic may encourage this picture. Nevertheless, intuitively speaking, it doesn't seem to Kripke to be the right way of thinking about possible worlds, which are too far away to be seen through a telescope. Instead, a possible world is given by the descriptive conditions we associate with it. Kripke imagines the possible world in which he didn't give today's lecture. Not everything is imagined, only those relevant to his giving the lecture, though, theoretically everything needs to be decided to give a possible world. Kripke first asks and then states that possible worlds are *stipulated*, not *discovered*. It's part of the *description* of a possible world that it contains Nixon and that he didn't win the election. Some stipulations may not be possible, but this one seems to be OK. In this possible world, the person who lost the election is Nixon, because that's part of the description of the world. We *stipulate* that, in talking about what would have happened to Nixon in some counterfactual situation, we are talking about *him*.
- We can't do this if we insist that every possible world has to be described in a purely qualitatively way – so that we can't say "suppose Nixon …", but have to say "suppose somebody (… description ….) …". We then have to ask whether such a person resembles Nixon sufficiently to be identified with him. David Lewis's counterpart theory is a blatant example of this way of thinking. This isn't the way we normally think of counterfactual situations. We just say "suppose this man had lost", and it is *given* that the possible world contains *this man*. Even though there may be problems about what intuitions about possibility come to, they are about *this man*, and need not be identified with the electoral loss of some man qualitatively described as looking like this and having certain political views. We just point to the *man*, and ask what might have happened to *him* had events been different.

2.11 Counterpart Theory

- Kripke has a longish footnote on Lewis's paper "Counterpart Theory and Quantified Modal Logic"[10], which is said to contain a formal difficulty (which Kripke describes, but which I won't go into – see. P. 45) that, along with other reasons not elaborated, leads Kripke to conclude that Lewis's philosophical views on counterparts are wrong. Lewis's view is not one of transworld identification because Lewis thinks that similarities across possible worlds determine a counterpart relation that is neither symmetric nor transitive. The counterpart is *never* identical with the thing itself, so counterfactuals don't happen to the person himself but to some counterpart. Kripke thinks that Humphrey couldn't have cared

[10] Journal of Philosophy 1968 – download it ! (Have I done so / read it?)

less should someone else, however closely resembling him, have won the election; and hence, that Lewis's views are even more bizarre than those they replace[11]. However, what's common to both sets of views is that other possible worlds are like other dimensions of a more inclusive universe which can only be given by purely qualitative descriptions, and that the identity or counterpart relation has to be established in terms of qualitative resemblance.

2.12 Necessary & Sufficient Conditions for being a Particular Sortal

- Someone might allege that the question whether Nixon could have had certain properties other than those he actually had is equivalent to the question whether the criteria of identity across possible worlds include that Nixon does not have these properties. Kripke thinks this is wrong and that there are two things going on, for the reason that the usual condition for transworld identity demands that we have purely qualitative necessary and sufficient conditions for someone being Nixon. If we can't imagine a possible world in which Nixon does not have a certain property, it's necessary that he has it or, equivalently, it is a necessary condition of someone being Nixon. Such a property might be Nixon being a human being, in any world in which Nixon exists he is a human being, or at least not an inanimate object. This is independent of any purely qualitative *sufficient* conditions for Nixonhood. There *may* be arguments in favour of *sufficient* conditions, but they are not relevant to our concern for *necessary* conditions. Even if there were a set of purely qualitative necessary and sufficient conditions for being Nixon, the approach Kripke advocates neither requires that we know them before we can ask whether Nixon might not have won the election, nor do we need to restate the question in their terms. We simply consider *Nixon* and ask what might have happened to *him*. Consequently, the two approaches are quite different.
- Consideration of the case whether Nixon might not have been an automaton is not an epistemological matter. While we might need evidence whether Nixon *was* a human being or an automaton, questions about whether he *might have been* an automaton given that he *was* a human being are <u>not</u> questions of knowledge, but questions whether things might have been otherwise.
- Consider this table. It is one question whether it is made of molecules, and how we know this – it was a momentous scientific discovery that things are made of molecules or atoms. It is an entirely different question whether it might not have been made of molecules[12] and yet remained the same object (and, intuitively, the answer to this question is "no").

2.13 Rigid Designators

- Kripke now introduces some essential terminology for his theory of names. We need the notion of "identity across possible worlds". He thinks this expression misleading because it implies (1) that the "identification" problem cannot be trivially solved by stipulation and (2) because "possible worlds", while useful in the set-theoretic model-theory of modal logic, suggests the "foreign country" picture and invites pseudo-problems; Kripke sometimes prefers "counterfactual

[11] Which views? Not Kripke's, but some description theory?
[12] Note (maybe contra Sven) that he doesn't say "these molecules".

situation". In any case, we want to know why it's necessary that 9 is greater than 7, but not necessary that the number of planets is greater than 7 – why the one shows more about essence than the other.

- So, Kripke defines a ***rigid designator*** as something that designates the same object in every possible world; *non-rigid* or *accidental* designators[13] don't do this. We don't require a rigidly designated object to *exist* in every possible world (as in that in which Nixon's parents had never met), though a rigid designator of a necessary existent[14] is called *strongly rigid*.

2.14 Names as Rigid Designators

- Kripke maintains the intuitive thesis that *names* are rigid designators. While someone other than Nixon might have been US President in 1970, so "the USP in 1970" is a non-rigid designator, but no-one other than Nixon could have been Nixon (even though in some possible worlds he might not have been *called* Nixon[15]). So, "Nixon" is a rigid, but not strongly rigid[16], designator.

2.15 Trans-world Identification

- Those who insist that to make sense of rigid designation we need antecedently to make sense of transworld identification have the cart before the horse. Transworld identification is unproblematic simply because "Nixon" is a rigid designator and we can stipulate that we are speaking of what might have happened to *him*.
- Kripke thinks that the temptation to demand purely qualitative descriptions of counterfactual situations is powered by confusion between the epistemological and the metaphysical, between the a priori and the necessary. Someone who identifies necessity with a prioricity thinks that objects are named by the properties that uniquely identify them. Consequently, he may think that it is the properties that identify an object which must identify it in all possible worlds, since they are known about a priori, and discover whether it is there. Kripke's response is two-fold:
  (1) things aren't discovered about counterfactual situations, they are stipulated and
  (2) possible worlds need not be given purely qualitatively, as though we were looking at them through a telescope.
- Kripke will claim that the properties used to identify an object in every counterfactual world have nothing to do with the properties it has in the actual world.
- Kripke asks whether the problem of transworld identification is a pseudo-problem, and comes up with the following in its favour[17]. Kripke considers that facts about collections of objects are not anything over and above the collection of all facts about the individuals that make them up. He gives examples of nations and individual persons, and tables and molecules. A description of the world

[13] Not "flaccid" then?
[14] Ie. one that exists in every possible world.
[15] I seem to remember Scott Sturgeon saying that Kripke means "*at* a possible world" rather than "*in* a possible world".
[16] Because Nixon is not a necessary existent.
[17] As a real or pseudo-problem? It's not clear to me what Kripke is arguing for – is this a reductio?

mentioning all the individuals, but not the collective, is a *complete* description of the world[18], from which the facts about the collective follow. So, for instance, given a description of a counterfactual situation about people, we can ask whether England *exists* or whether in that situation the nation (defined as the one in which Jones lives) *is* England. We can ask similar questions about whether a table would still be *this* table following certain vicissitudes to its molecular construction. In both cases we seek identity across possible worlds for certain particulars (nations, tables) in terms of other more basic particulars (people, molecules). However, if this reduction isn't possible and there is "open texture" between the two levels, we won't find hard and fast identity criteria. Even so, Kripke thinks that in concrete cases we may still be able to ask whether some agglomeration of molecules constitutes our table, though in some cases the answer may be indeterminate. The same sort of problems apply to identity over time – if the table has its parts replaced piecemeal, does it remain the same table?

- Kripke has a footnote on vagueness and intransitivity. A chain of apparent identities may lead to an apparent non-identity; as we change the table chip by chip or molecule by molecule, we end up with something that is no longer the same table, though each intervening table was the same table as its predecessor. Some sort of counterpart notion, without Lewis's philosophical underpinnings, may be useful. We could say that strict identity only applies to the particulars – the molecules – while it's the counterpart relation that applies to tables composed of them and which is vague and intransitive. Even so, Kripke thinks it utopian to imagine we'll ever be in a position to specify these basic particulars for which vagueness and intransitivity are eliminated. The danger doesn't arise in practise and talk of identity is unproblematic; no logic of vagueness has been developed.
- The concept of transworld identification discussed above differs considerably from the usual one because:
  (1) unless we believe in ultimate basic particulars, no type of description is privileged – we *may* talk in terms of molecules, but with equal propriety may talk in terms of tables, which may properly be moved from one room to the next. We can ask whether *Nixon* might have lost the election without the requirement for further subtlety.
  (2) We cannot assume it's possible to specify necessary and sufficient conditions for the sorts of bundles of molecules that go to make up this table.
  (3) The procedure uses criteria of identity of particulars in terms of other *particulars*, rather than in terms of *qualities*. I can either refer to the table or to its molecules, but if I'm asked to describe a counterfactual situation purely qualitatively, I can only ask whether ***a*** *table*, of a certain specification has various other properties. It is moot whether such a table would be ***this*** *table*, since we've lost all reference to *objects* and are left with only *qualities*.
- Are we reliant on mysterious "bare particulars" – propertyless substrata underlying properties – if we don't describe counterfactual situations in purely qualitative terms? Kripke thinks not. He thinks that Nixon is a Republican and might have been a Democrat, "not merely that he lies in back of Republicanism[19]". This goes for any other properties Nixon may possess, except that there may be some properties that are essential. Kripke denies that a particular is nothing more than a "bundle of qualities" because qualities are abstract objects,

[18] This strikes me as highly contentious.
[19] Kripke adds "whatever that means". Indeed. I'm not even sure what the *words* in quotes mean.

so bundles of them are yet more abstract, and so cannot constitute a particular. Philosophers have got caught in a false dilemma by asking whether particulars are *nothing but*, or alternatively are *behind*, the bundle of qualities. Kripke says that neither is the case. This table has the properties of being wooden (etc) and is not hidden behind them as a thing without properties; yet it is not thereby identified with the bundle, or that subset of essential properties. You don't need to ask how you'd identify this table in another possible world except by its properties, because you can point to it and when I say that *it* might have been in another room, I'm talking by definition about *it*, and don't need a telescope to identify it. While some properties are essential to an object – it can't fail to have them – these properties are not needed to identify the object in another possible world, for identification isn't needed. Even if an object is identified by its properties in the actual world (Kripke leaves this possibility open) its essential properties need not be those by which it's identified.

- Transworld identification makes some sense in relation to identifying an object in terms of its component parts, but these parts are not qualities, and it isn't an object resembling the given one that's in question. We don't identify objects across possible worlds by resemblance to the given one in the most important respects. Nixon might have eschewed politics, yet been a crypto-radical. Even when we can replace questions about an object by questions about its parts, we don't need to. We can just refer to the *object*. We don't start with worlds and ask for transworld identification of objects, but we start with identifiable objects to hand in *this* actual world. We can then ask whether certain things might have been true of them.

2.16 Frege, Russell & Wittgenstein – Meaning or Reference?

- The Frege-Russell view can be taken, as its inventors intended, as a theory of the *meaning* of names or alternatively as a theory of their *reference*. Kripke gives examples (not of proper names) – the (simplified) definition of 100° centigrade as being the boiling point of water at sea level, or of a metre being the length of a certain bar in Paris.
- Kripke quotes a (for him) puzzling remark of Wittgenstein's from *PI* §50, to the effect that the standard metre **S** is the only thing of which we cannot say either that it is or isn't a metre long, not that this gives it any extraordinary property but only recognises its peculiar role in the language game of measuring with a metre rule. Kripke thinks this **is** an "extraordinary property" and so that Wittgenstein must be wrong. It's just a stick, say 39.37 inches long, so why not a metre long? What bothers Wittgenstein (and which Kripke thinks is wrong) is that it's a standard of length and so we can't attribute a length to it. Kripke asks whether "stick **S** is one metre long at time t_0" is a necessary truth. He thinks someone who thinks everything known a priori is necessary might think that by *definition* S is one metre long at time t_0, and so this is a necessary truth. Kripke thinks this is wrong because this definition isn't used to give the *meaning* of one metre but to *fix the reference*. Wanting to mark out a certain length, our definition "marks it out by an accidental property, namely that there is a stick of that length[20]".

[20] Kripke uses the words in quotes. I'd originally written "uses the accidental property of a stick of that length", on the grounds that a stick isn't a property, but Kripke repeats the expression, so I've left it as it is, hoping for subsequent enlightenment.

Someone else's definition might use another accidental property, but in any case, it still makes sense to say that if heat had been applied to **S** at t_0 it would have been more than one metre long.

- Kripke thinks the reason we can do this, even if this is the *only* standard of length in use, is that there is an intuitive difference between the phrases
  (1) "one metre"
  and
  (2) "the length of **S** at t_0".
- (1) rigidly designates a certain length in all possible worlds, which happens to be the length of **S** at t_0 in the actual world, whereas (2) doesn't designate anything rigidly because the stick might have been longer or shorter in counterfactual situations. We can say of it, as of any other stick, that if a given quantity of heat had been applied to it, it would have expanded to such and such a length. There's no conflict between the definition and such counterfactual statements because the definition doesn't say that (1) is *synonymous* with (2), but only that the reference of (1) is determined by stipulating (1) as a rigid designator of the length which happens to be the length of **S** at t_0. Hence, it is *not* a necessary truth that **S** is one metre long at t_0. In certain circumstances **S** would not have been one metre long at t_0 and the reason there's no contradiction is that (1) is a rigid designator while (2) is not.

2.17 Contingent a Priori Truths

- What's the *epistemological* status of the statement
  (3) "**S** is one metre long at t_0"
  for someone who's fixed the metric system by reference to **S**? Kripke thinks he knows it a priori since he knows without investigation that **S** is one metre long, having used a definition that is neither of the abbreviative nor synonymous kind. However, the *metaphysical* status of (3) is contingent, provided (1) is rigid, because **S** might have had a different length at t_0. Hence, there are contingent a priori truths. However, Kripke thinks the most important immediate lesson is the distinction between definitions that fix a reference and those that give a synonym.

2.18 Using Actual-world Descriptions to Fix the Referent

- Kripke thinks the same lesson[21] applies to proper names. If a name means the same as a cluster of descriptions, it will not be a rigid designator because it will not necessarily designate the same object in all possible worlds since other objects might have had the same properties in some possible worlds[22]. Say we *define* the name:
  (4) "Aristotle"
  to mean
  (5) "the greatest man who studied with Plato",
  then in some possible worlds another person would have been Aristotle. However, if we use (5) to *fix the referent* of (4), then that man will be Aristotle in all

[21] Ie. using a description to fix a referent.

[22] Kripke adds "unless, of course, we use essential properties in our description". Will this do? I'd thought that essential properties were necessary but not sufficient for the transworld identification of an object. If being a man is an essential property of Nixon, finding a man in another possible world doesn't mean we've found Nixon. Is this just an infelicitude on Kripke's part?

possible worlds[23]. The only use of the description is to pick out the man we mean to refer to. It is not a contradiction to say that he never studied philosophy in other possible worlds.

- Kripke thinks it's plausible to imagine that the reference of a name is fixed *via* a description just as the metric system was fixed. Kripke gives the example of the reference of "Hesperus" being fixed by its apparent celestial position. However, he denies that this position is part of the *meaning* of Hesperus. Had the planet earlier and counterfactually been hit by a comet, it's apparent position would have differed at that time. We would say that Hesperus would not have occupied the same position, not that Hesperus would not have been Hesperus; the reason being that "Hesperus" rigidly designates a certain heavenly body whereas "the body in yonder position" may designate another or no body. No other body might have been "Hesperus", though another might have been *called* "Hesperus". Kripke holds that names are always rigid designators.

2.19 Frege & Russell on Names

- Frege and Russell hold the contrary theory that proper names are *not* rigid designators but are synonymous with the descriptions that replace them. Another theory is that such descriptions are used to determine a rigid reference[24]. These two theories give different answers to questions previously asked about the existence of Moses. If "Moses" *means* "the man who did such and such", then if no-one did such and such, then Moses didn't exist[25] – maybe this is an *analysis* of what it is for Moses not to exist. However, if the description is simply used to fix a reference rigidly, then we can imagine him counterfactually not doing such and such without imagining his non-existence. He might never have entered politics or religion but enjoyed himself in Pharaoh's court, and while no-one might have done the deeds Moses did, Moses would still have existed. Hence "Moses exists" means something different from "the existence and uniqueness conditions for a certain description are fulfilled". Adopting this approach loses some of the advantages of the theory, in that singular existential statements and identity statements between names require further analysis[26].

2.20 Frege on "Sense"

- Kripke criticises Frege for using the term "sense" in two senses which are (a) identified and (b) taken to be given by definite descriptions: the sense of a designator is (1) its meaning and (2) the way its reference is determined. Kripke will reject (b), but even if it were correct, he rejects (a). Frege thinks a description is either synonymous with a designator or fixes its reference (but not both). There's a parallel between the two Fregean senses of "sense" and the two common-parlance senses of "definition", and these two senses should be carefully distinguished.

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[23] Including those in which he didn't study with Plato. Rigid designators have a special "fix" on our world, which then stays rigidly connected to that object through other possible worlds.

[24] Isn't this Kripke's theory. Why the reticence?

[25] I'm worried that there's skipping between the real world and possible worlds. If Moses didn't do such and such in the *real* world, then there's nothing for our name to rigidly designate (if the "such and such" is what is used to fix the reference of "Moses").

[26] Which theory? The Frege-Russell? Yes? What has been lost. Spell this out!

- Kripke has a footnote on Frege and sense. People usually equate the Fregean "sense" with "meaning", to be distinguished from a "reference fixer". Kripke will explain later that for all but the person originally naming the object, the reference of the name is determined by a causal chain of communication rather than by description. Kripke describes the use of "sense" in modal logic. The sense of a term *t* is usually taken to be the possibly partial[27] function that assigns for each possible world H the referent of *t* in H. The function is a constant for a rigid designator[28]. This version of "sense" equates to "giving a meaning" rather than to "fixing a reference": "one meter" has a constant function as its sense, though its reference is fixed by "the length of **S**", which doesn't have a constant function as its sense. Some philosophers have claimed that descriptions are ambiguous, sometimes non-rigidly designating objects satisfying them in possible worlds and sometimes rigidly designating an object satisfying the description in *this* world. Kripke thinks this supposed ambiguity dubious, thinking it covered by Russell's notion of scope or by the considerations discussed earlier ("Donnellan's champagne case"). Even if ambiguity does exist, "the length of S" and "one metre" rigidly designate the same thing in all possible worlds and have the same functional "sense"[29, 30].

2.21 The Special Case of π

- Kripke gives another example of the distinction between fixing a reference and defining one term as meaning another. This is π, which he thinks is the *name* of a real number, rather than as short for "the ratio of the circumference of a circle to its diameter", the number necessarily having this property. However, in this case, both the name and the description are rigid designators, so the arguments given in the case of the standard metre are inapplicable.

2.22 Searle's Cluster Theory

- Kripke now returns to the modern substitute, even endorsed by Strawson in *Individuals*, for the Frege-Russell theory, in which names, instead of being disguised descriptions, either abbreviate or have their references determined by some cluster of descriptions. Kripke had previously pointed out that there are stronger and weaker versions[31]. In the stronger version, the name is simply *defined*, synonymously, as the cluster of descriptions. Moses has to have all the properties in the cluster in all possible worlds. This is implausible. Kripke quotes an article by Searle on proper names that mostly seems very sensible – if we substituted "the teacher of Alexander" for "Aristotle" then it would be a necessary truth that the man referred to is Alexander's teacher, whereas this is a contingent fact and Aristotle might have eschewed pedagogy. However, Searle then says that it is a necessary fact that Aristotle has the "logical sum, the inclusive disjunction" of properties usually associated with him. Kripke thinks he must be using

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27 Ie. for some possible worlds there are no referents of *t*.
28 Ie. it picks out the same referent in all possible worlds where it picks anything out.
29 Do they? Something wrong here?
30 Finally, Kripke refers to Kaplan's operator "Dthat". So, …
31 Where? Earlier in this lecture. There are two versions: "stronger" = "meaning"; "weaker" = "fix reference". And where, after this note, does Kripke discuss the weaker version?

"necessary" in some aberrant sense, as this assertion is false[32]. Most of the things commonly attributed to Aristotle are things that he – *Aristotle* – might not have done at all[33]. This is not, Kripke insists, Russell's distinction of *scope*, where someone might say that the man who taught Alexander *might not have* done so, whereas it couldn't be the case that the man who taught Alexander *didn't* do so. In this situation, even if we imagine a counterfactual situation in which Aristotle didn't do *any* of the things commonly attributed to him, we would still be referring to *Aristotle*. Kripke thinks this even applies, though less certainly, to the case of the period in which he lived. Finally, while Aristotle might not have been *called* Aristotle, it could not be the case that Aristotle wasn't *Aristotle* (just as 2 x 2 might not have been called "four").

- If someone fixes the reference of "Aristotle" by the fact that he did one of the things popularly ascribed to him, then he "in some sense" knows this fact (and the truth of the disjunction) a priori, yet this fact is still contingent. Kripke sees the situation as like the metre rod. Kripke wonders whether the thesis that a prioricity implies necessity can be modified in some way, as it seems to contain an insight which might be important, and true, of epistemology. The counter-examples may be trivial and not relevant to what people mean by saying that only necessary truths can be known a priori[34]. However, Kripke has no idea how this might be done, and if it isn't done, the thesis leads to confusion about the nature of reference.
- In a footnote, Kripke admits that it's plausible that by merely fixing the system of measurement, we have not learnt some contingent new fact about the world, even though it is a contingent fact that **S** is one metre long. We shouldn't make the thesis trivial by redefining "a priori" as "known to be necessary" (rather than "known to be true") independently of experience. Kripke notes that even if we could patch up the thesis, the converse thesis[35] would still be false.

2.23 Cluster Theory – Formal Definition

- Kripke now turns to an explanation of the cluster concept theory of names. He thinks it's a "nice" theory, but like all philosophical theories is *wrong*. He denies proposing another theory in its place, because that too would be wrong. The theory he's discussing is broken down into a number of theses, with sub-theses to deal with existence and identity statements and further sub-theses if we want a theory of *meaning*. According to Kripke, the first can be made true by definition, but the others are false. In what follows, the speaker is *A*:
  - (1) To every name or designating expression "X", there corresponds a cluster of properties, namely the family of properties φ, such that *A* believes "φX".
  - (2) One of the properties, or some conjointly, are believed by *A* to pick out some individual uniquely.

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[32] Kripke adds "unless he's got some very interesting essential property commonly attributed to Aristotle". I'm not sure of Searle's "logical sum" terminology. He seems to mean that Aristotle necessarily has at least one property commonly attributed to him – hence Kripke's remark – and "disjunction" = "or".

[33] This is very important, but what has "scope" got to do with it?

[34] So, necessity is a necessary condition for a prioricity.

[35] Ie. presumably that only what can be known a priori is necessary – ie. going back to Goldbach's conjecture, which is necessarily true (if it is true) yet not known a priori (or at all).

(3) If most, or a weighted most, of the φ's are satisfied by one unique object Y, then Y is the referent of "X".

Kripke claims that (1) can be true by definition; even if some people think that not everything *A* believes about "X" has anything to do with determining the reference of "X", we can change some of the later theses to accommodate the matter. (2) doesn't say that these properties do pick out something uniquely, only that *A* believes they do. (3) asserts that *A* is correct in his beliefs.

- The referent of "X" is supposed to satisfy "enough" of the properties. *A* could be wrong about some of the things about "X", so we have to specify the weighting to be attributed to the properties. Strawson explicitly supports equal weighting for both the most trivial and the most crucial properties (Kripke says Strawson proposes pooling the properties proposed by several speakers and taking an equal-weighted vote, requiring only a sufficient plurality rather than a majority). Kripke thinks it's more plausible to weight the properties, with irrelevant ones weighted 0 in the vote.

  (4) If the vote yields no unique object, "X" doesn't refer.

  (5) The statement, "If X exists, then "X has most of the φ's" is known a priori by *A*.

  (6) The statement, "If X exists, then X has most of the φ's" expresses a necessary truth in the idiolect of the speaker.

  (6) is only required if the cluster is to be part of the meaning of the name. *A* can consider that, though Aristotle has most of the φ's, there are possible situations in which he wouldn't have.
- Some subsidiary theses are required even by those who aren't after a theory of meaning. We could have:

  (4a) it is a priori true for *A* that if not enough of the φ's are satisfied, then "X" doesn't exist.

  Only holding the view as a theory of meaning rather than reference requires that it is *necessarily* true that if not enough of the φ's are satisfied, then "X" doesn't exist. *A* will, in any case, know this a priori if he knows the proper theory of names. An analysis of identity statements follows along similar lines[36].

2.24 Cluster Theory - Critique

- Kripke now asks whether any of the theses of the theory are true. Firstly, he notes that people are often wrong in specifying the φ's that are relevant. While this is just an incidental defect, it's closely related to the arguments that Kripke will shortly give against the theory. Taking Wittgenstein's "Moses" example, Kripke asks what Wittgenstein takes the relevant properties to be, and it basically comes down to knowing a priori that if the Biblical story is substantially false, then Moses didn't exist. Kripke has already argued that these are not *necessary* properties, and that Moses might have existed without any of them.
- He now asks whether we know a priori that if Moses did exist, then he performed most or all of the acts attributed to him. He thinks a distinction is being missed – that (a) Moses might have been a complete legend or else (b) the Biblical accounts might have been substantially false, but of a real person. In the latter case, a scholar would say that Moses did exist. Kripke gives the example of the Book of Jonah, generally taken (he says) to be completely fictitious accounts of the actions

[36] So, are (4) – (6) the sub-theses for existence?

of a real person, about whom nothing is known other than that he was an Israelite prophet. His name in Hebrew wasn't even "Jonah", but his existence is independent of whether or not we know his real Hebrew name, though we cannot without circularity single him out as *Jonah*. The evidence for his historical existence comes from II Kings, though he might have existed even had we no evidence at all. Kripke notes that we can say "the Jonah of the Book of Jonah" never existed, just as we can say that "the Hitler of Nazi propaganda" never existed, without denying the existence of either person[37].

2.25 Non-Circularity Condition

- Kripke says that we could modify the example by saying that all we know of Moses is *what the Bible relates of him*. But, in that case, how do we know who the Bible is referring to? This requires another explicit condition:
  - (C) For any successful theory, the account must not be circular. The properties that are used in the vote must not themselves involve the notion of reference in a way that is ultimately impossible to eliminate.
- Kripke gives an example of an article by William Kneale on the theory of proper names, entitled *Modality, De Dicto and De Re*, in which the non-circularity condition is clearly violated. Kneale claims that Mill is wrong to claim that proper names are signs without sense because, while it may be informative to say that the most famous Greek philosopher was called Socrates, it's trifling to say that Socrates was called Socrates. His reason is that we cannot know what we mean by the first occurrence of "Socrates" unless we know that "Socrates" means "the individual called "Socrates"".
- Kripke says that here we have a theory of the reference of proper names in which "Socrates" just means "the man called "Socrates"". However, Kripke points out that things are more complicated – not everyone may (have) called Socrates "Socrates" and there may be more than one man called "Socrates". However, it may be uniquely satisfied on some occasion.
- Kneale says it's a trifling piece of information that Socrates was called "Socrates", but Kripke disagrees, because maybe the Greeks didn't call him "Socrates" (at least they pronounced the name differently). It may be trifling that Socrates is called "Socrates" by *me*.
- Kneale analyses "Socrates" as meaning "the individual called "Socrates"" because, otherwise, he can't explain how it is trifling to be told that Socrates was called "Socrates". Kripke ridicules this idea by pointing out that we could use this approach to build a theory of meaning of English words and construct a dictionary containing useful items such as "horse" means "the things called "horses"". Since this isn't a good argument, it shows that this isn't the only explanation of why it's trifling to be told that Socrates was called "Socrates". Anyone who knows the use of "is called" in English knows "X are called 'X'" expresses a truth whenever X is meaningful, even though the speaker may not know the meaning of X (eg. if X is quarks), and therefore not know what truth is expressed. But his knowledge has little to do with the meaning of the term "quarks".
- Kripke reminds us that the purpose of this example was to show that Kneale's theory of reference violates the non-circularity condition. When someone uses the

[37] I need to check out how this argument holds together and determine the relevance of the various strands.

name "Socrates", how are we to know to whom he refers? By using the description that gives the sense of the name. But Kneale claims that this description is "the man called "Socrates"" which, especially as it's so trifling, tells us nothing at all. There is not theory of reference because we're simply told that we just refer to the man to whom we refer, and we can never get off the ground.

- So, we need to satisfy the non-circularity condition and this theory obviously doesn't. Surprisingly, even Russell adopts the paradigm of "the man called such and such" as the descriptive sense of names (as in "the man called 'Walter Scott'")[38]. So, it is whatever the relation of *calling* is that determines the reference of names.

[38] See *Names* notes for a defence of Russell on this point.

3. LECTURE II

3.1 The Cluster Theory Reviewed

- Kripke reprises the theory of naming which comprises the following theses:
  - (1) To every name or designating expression "X", there corresponds a cluster of properties, namely the family of properties φ, such that *A* believes "φX".
  - (2) One of the properties, or some conjointly, are believed by *A* to pick out some individual uniquely.
  - (3) If most, or a weighted most, of the φ's are satisfied by one unique object Y, then Y is the referent of "X".
  - (4) If the vote yields no unique object, "X" doesn't refer.
  - (5) The statement, "If X exists, then "X has most of the φ's", is known a priori by *A*.
  - (6) The statement, "If X exists, then X has most of the φ's" expresses a necessary truth in the idiolect of the speaker.
  - (C) For any successful theory, the account must not be circular. The properties that are used in the vote must not themselves involve the notion of reference in a way that is ultimately impossible to eliminate.
- (C) is strictly not a thesis but required to ensure the non-circularity of (1) – (6). Kneale's theory of names was blatantly circular. Kneale used the *past* tense in saying that it is trifling to be told that Socrates *was* called "Socrates", and therefore that the name "Socrates" must simply mean "the man called "Socrates"". Using the past tense, the condition wouldn't be circular because we can decide to use the term "Socrates" to refer to whoever was called "Socrates" by the Greeks. But then it's not trifling to be told that Socrates was called "Socrates" because if this is a fact, it might be false, since the Greeks might not have called him what we call him (just as "Isaiah" isn't the correct Hebrew name of Isaiah). We could amend the thesis into something fairly trifling by saying that Socrates is the man called "Socrates" by *us*, or at least *me*, the speaker. However, Kripke doesn't think this is necessary or analytic any more than that "horse" simply *means* "the animal called "horse"". As a theory of reference of the name "Socrates" this leads immediately to a vicious circle. Saying to myself that I'll use "Glunk" to refer to the man I call "Glunk" gets me nowhere. Kripke thinks sentences like "Socrates was called 'Socrates'" are very interesting and adds that the theory only satisfies all these statements[39] because there is a way of determining the reference of "Socrates" other than as being the man called "Socrates".
- Theses (5) and (6) have converses. (5) stated that if X exists, then "X has most of the φ's" is known a priori by the speaker. The converse is also true a priori for the speaker – and necessarily so – that if any unique thing has most of the φ's in the properly weighted sense, then it is X. Hence, we can say that it is both necessary and a priori that something is X iff it uniquely has most of the φ's. This comes from theses (1) – (4), with (5) – (6) just saying that a sufficiently reflective speaker grasps this theory of names and therefore sees the truth of (5) & (6). Any objection to (5) & (6) will *not* be because the speaker is unaware of the theory and therefore of them.

[39] It's not clear to me what statements Kripke's talking about. Theses (1) – (6) ?

- Many philosophers have noted that if the cluster of properties associated with a proper name is narrowed so that only *one* has any weight and one definite description picks out the referent (such as Aristotle being the teacher of Alexander), then certain things will turn out to be necessary truths that aren't – that Aristotle taught Alexander, for instance. Searle noted that it is a contingent matter whether Aristotle ever went into pedagogy, so concluded that we must replace the paradigm of a single description by a cluster.

3.2 Examples of Problems with the Cluster Theory

- This, says Kripke, is not correct, for Searle goes on to claim (as we noted in Lecture I) that Aristotle, while he might never have taught anyone, necessarily has the logical sum (the inclusive disjunction) of the properties commonly attributed to him. Kripke claims that it just isn't the case that Aristotle necessarily has, in any normal sense of "necessary", the[40] properties commonly attributed to him. Carlyle might hold a great man's achievements to be part of the meaning of his name, and that once born it's necessary that he's destined to perform various great tasks, so that it's part of the very nature of Aristotle to produce the ideas that had so great an influence on the western world. Whatever the merits of this as a theory of history or of great men, it ought not to be trivially true on the basis of a theory of proper names! Kripke thinks it's a contingent fact that Aristotle did *any* of the great things for which he's remembered today.
- There may be *something* to this feeling of Searle's, in that one might get an illusory gut feeling that it's necessary that Hitler was evil. If Hitler had spent his days quietly in Linz, we wouldn't say that this man wasn't Hitler, because we use the name "Hitler" just as the name of this man even when describing other possible worlds, as a rigid designator. Say we decide to pick out the referent of "Hitler" as "the man who caused to be killed more Jews than anyone else in history". Then, if Hitler had never achieved power, and had never earned this discredit, then some other person who did would not thereby be Hitler[41].
- Similarly, even if we define what a metre is by reference to a standard metre stick, it remains a contingent fact that that stick is[42] one meter long, since it might have been heated or stretched. This is because we use the term "one metre" rigidly to designate a certain length. We're using an accidental property of a length[43] to designate rigidly in all possible worlds a particular length ("one metre"), just as we do with a name of a man – we pick him out by some accidental property - but then *that* name designates *that* man in all possible worlds. The property used need not be in any way necessary or essential. "One yard" was originally picked out as the length along King Henry 1st's outstretched arm from the tip of his finger to his nose. This distance is not necessarily a yard, as his arm might have been longer or shorter, but the reason isn't that "a yard" is a cluster concept. Someone who uses Henry's arm as a standard of length can still say that, counterfactually, if certain things had happened to Henry, the distance from finger to nose would not have

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40 "Any of" or "all the" ?

41 Though, according to this example, he would have been *called* "Hitler".

42 "Is"? Trivially so. Does Kripke mean "was (at the point of baptism)"?

43 I've not quoted Kripke verbatim here, but he does use "length" when it seems to me he ought to use "stick"; but maybe there's something very deep going on here that I've missed?

been exactly a yard. He need not be using a cluster concept provided he uses a certain fixed reference to be that length in all possible worlds[44].

3.3 Lewis

- The above shows how bizarre is much of the writing on "transworld identification" and "counterpart theory". People such as Lewis, in his paper *Counterpart Theory and Quantified Modal Logic*, argue that Aristotle, or his counterparts, are to be *qualitatively identified* in other possible worlds with those beings that most closely resemble Aristotle in his most important properties. Some people equate these properties with those used to identify the object in the actual world.
- This is surely wrong, for both the murderous Hitler and philosophical Aristotle might have altogether lacked these qualities most closely associated with them. There was no fate hanging over them that meant they would assuredly come to possess those properties we judge most important to them; their careers might have differed radically from their actual ones. *Important* properties need not be *essential*, unless importance is made synonymous with essence, and an object might have had properties very different both from its most striking actual and its identifying properties.

3.4 Languages

- Rigid designators apply in *our* language; clearly, in other possible worlds speakers might speak other languages. We wouldn't say that "two plus two equals four" is contingent because in some language this form of words meant that seven is even. We speak of a counterfactual situation in English even where it's part of that situation that we're all speaking German. Even in possible worlds using non-standard English, we describe it in *English* with *our* meanings and with *our* references. It's in this sense that Kripke speaks of rigid designators as having the same reference in all possible worlds. Rigid designators don't imply existence in all possible worlds; supposing Hitler hadn't been born still refers rigidly to Hitler, but counterfactually as not existing.
- Consequently, thesis (6)[45] is incorrect, but the other theses, in particular (5)[46], have nothing to do with necessity and can survive. If I use "Hesperus" to refer to a certain heavenly body in a certain position in the evening, it's not for that reason a necessary truth that this planet should ever be seen in the evening, depending as it does on contingent facts such as people being there to see it. It isn't even a necessary fact for me to give it that name, that *I* be there to see it, for I might *decide* to do this, and yet the planet not ever be visible[47]. However, it is a priori

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[44] This is a difficult concept. What about worlds in which King Henry 1 doesn't exist, or hasn't got arms? A name is "stuck onto" an individual after that individual has been identified by a particular property. Then, in other possible worlds, provided the label stuck on in *this* world stays in place, all the properties may vary. I'm not clear, with respect to length, what the label is stuck onto. Presumably either the stick, or King Henry 1.

[45] (6) The statement, "If X exists, then X has most of the φ's" expresses a necessary truth in the idiolect of the speaker. However, I don't see the problem as far as necessity is concerned, because in some possible worlds a different idiolect will be in use, so we don't have necessity.

[46] (5) The statement, "If X exists, then "X has most of the φ's" is known a priori by the speaker.

[47] In what sense, in this case, does "Hesperus" stick to Venus?

(that Venus has this position) in that this is how I've determined the referent. If I have determined that Hesperus is the thing I saw in the evening over there, then I will on this account know that if Hesperus exists at all, it's the thing I saw over there in the evening. So, at least as far as our arguments to date go, (5) survives.

- Kripke asks how the theory goes without (6). Not well, for he claims that (2)[48] – (4) suffer from a large class of counter-examples and, even were they true, (5) is usually false; and the truth of (3)[49] – (4)[50] is an empirical accident that the speaker hardly knows a priori. (2) to (5) are only true in rare cases of initial baptisms.
- Kripke claims that the theory of naming given by theses (1) – (5) is that when I want to name an object, I think of a way of describing it uniquely and then go through a mental ceremony, eg. that the reference to "Cicero" will be "the man who denounced Catiline". I'll designate rigidly the man who in fact denounced Catiline so that I can talk of possible worlds in which he didn't. Even so, I first give some condition that uniquely determines an object and then assign a name to the object determined by that condition. Maybe at a stretch we could say we adopt this procedure in calling that object over there "Hesperus". In this case, the theses are not only true but give a correct picture of determining the referent. The naming of Neptune before it was seen (because its existence was inferred from its influence on the other planets) is an even better example. At this stage it was an a priori equivalence that Neptune was the planet with this influence. Even so, the equivalence is not *necessary*, as Neptune might have been knocked out of the solar system millions of years ago and another planet might have been responsible for the perturbations, or there might have been none at all[51].
- Another example of the 5 theses working correctly is of the police naming as "Jack the Ripper" the man, whoever he was, who committed all or most of the Whitechapel murders. In these cases we're giving names by description. In a footnote, Kripke (referring back to Donnellan) notes that we can identify an object and fix the reference of a name using a description that turns out to be false of its object – as in the case of the reference of "Phosphorus" being determined as "the morning *star*", which isn't a star. Clearly the description that fixes the reference cannot be known a priori[52], though a more cautious substitute may be, and is what really fixes the reference.

3.5 Another Look at the 6 Theses of Cluster Theory

- Kripke thinks that in most cases the theses are false, so he gives them another look.

3.5.1 Thesis 1

- Thesis (1) is a simply a definition.

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[48] (2) One of the properties, or some conjointly, are believed by *A* to pick out some individual uniquely.

[49] (3) If most, or a weighted most, of the φ's are satisfied by one unique object γ, then γ is the referent of "X".

[50] (4) If the vote yields no unique object, "X" doesn't refer.

[51] It's important to remember that the naming is performed in this world, so that thereafter it makes sense to think of possible worlds in which even the event of naming itself couldn't have happened.

[52] Since it is false!

3.5.2 Thesis 2

- Thesis (2) says that one or more of the properties believed by *A* of the object pick it out uniquely. People imagine cases like the term "Cicero" denoting the man who first (publicly) denounced Catiline as picking out a unique object. Kripke notes that even Ziff, who doesn't think that names have meaning at all, thinks this is a good picture of the way reference is determined.
- So, Kripke asks whether thesis (2) is *true*. A priori, it seems that it must be true, for if the properties don't pick out someone uniquely, how will you or anyone else know who you're talking about? Usually, the properties in question are supposed to be famous deeds of the person in question. Kripke thinks it's a tribute to the education of philosophers that they've for so long held that, say, when someone refers to "Cicero" he means, and so picks out uniquely, "the man who denounced Catiline". In fact, most people thinking of Cicero, just think of some famous Roman orator, with no thought that this description picks out anyone uniquely or that one need know anything else about Cicero to have a referent for the name. Kripke thinks of Richard Feynman; one can use the name "Feynman" without knowing anything about him other than that he's "a physicist or something" and without needing to be able to distinguish his theories from those of Murray Gell-Mann. Even though the man in the street doesn't think his description picks anyone out uniquely, Kripke still thinks he uses "Feynman" as a name for Feynman.
- Even when we do have a description that picks someone out uniquely, we may still have a problem of circularity, as when we think of Cicero as the man who denounced Catiline, and Catiline as the man denounced by Cicero. In this case, not only have we violated the non-circularity condition, but we've not picked out anyone uniquely – all we've selected are a pair of individuals such that A denounced B. Since there's been more than one denunciation, we need to specify something else to provide uniqueness.
- Kripke gives another example of circularity. We describe Einstein uniquely as the man who discovered relativity; but, while most of Kripke's audience would be able to describe this theory sufficiently for it to pick Einstein out uniquely, most people just think of relativity as "Einstein's theory", leading to the most basic form of vicious circle.
- Kripke concludes that thesis (2) is false, since we don't use names in ways such that the corresponding descriptions lead to uniqueness or non-circularity. We can't prop up uniqueness by reference to encyclopaedias where theories or famous deeds are listed, because we could use the name even if we didn't know of any entries in encyclopaedias, or even if there were no such things.

3.5.3 Thesis 3

- Kripke now moves on to thesis (3) : namely, if most of the φ's, suitably weighted, are satisfied by a unique object Y, then Y is the referent of the name for the speaker. He thinks it's worth pursuing, despite thesis (2) being wrong and undermining the whole theory. The picture behind the theory is that only by giving some unique properties can you know who someone is and who the referent of a name is. Kripke thinks "knowing who someone is" is puzzling, but that you *do* know who Cicero is if all you know is that he's a famous Roman orator. If you know that Einstein discovered relativity, but nothing about the

theory, you know two facts (1) who Einstein is and (2) who discovered relativity. This is how we talk, despite it being a blatant violation of the non-circularity condition, so any picture that insists on this condition is wrong.

- Suppose most of the φ's are satisfied by some unique object; is this object necessarily the referent of "X" for *A*? Kripke imagines the situation where someone well-educated and who understands the incompleteness theorem refers to Gödel as the man who proved the incompleteness of arithmetic, virtually the only fact that most people know about Gödel. Is "the man who discovered the incompleteness of arithmetic" necessarily the referent of "Gödel"?
- Kripke thinks not, by imagining the counterfactual situation in which the incompleteness of arithmetic was not discovered by Gödel but by his friend, Schmidt, whose body was found in mysterious circumstances and whose manuscript Gödel supposedly published under his own name. Does the man in the street therefore refer to Schmidt when he uses the name "Gödel"? Kripke thinks he simply does not. Kripke will deal later with the response that we should describe Gödel as "the man to whom the proof of the incompleteness of arithmetic is commonly attributed".
- This may be an odd fiction, but there are true-life examples – for instance Peano's Axioms were in fact discovered by Dedekind, and Peano did acknowledge as much in a forgotten footnote. So, when referring to "Peano" by the only thing we know about him – "the man who discovered Peano's Axioms" – we are really referring to Dedekind? Certainly not, and such examples could be multiplied indefinitely.
- Kripke gives other entertaining examples – Einstein as the inventor of the atomic bomb, Columbus (rather than some Norseman or some Greek) as the discoverer of America or of the Earth's roundness respectively. So, it seems simply false that if most of the φ's are satisfied by a unique object Y, then Y is the referent of the name.
- Kripke has an interesting footnote on the response of the cluster-of-descriptions theorists. This theory would make the "Peano" and similar problems from the history of science express trivial truths rather than misconceptions. It is argued, for example, that when we say "Gödel proved the incompleteness theorem" we're referring to Gödel rather than Schmidt, but in saying that "Gödel relied on a diagonal argument at a certain step in the proof" we refer to *whoever proved the theorem*. This is as when we say "as Aristotle / Shakespeare says …", we're referring to whoever wrote the passage in question. By analogy with Donnellan, this is an *attributive* use of proper names. According to this theory, "Gödel proved the theorem …" is false[53] whereas "Gödel used a diagonal argument …" is true, and "Gödel" is ambiguous. Kripke admits that, while some counter-examples remain, and so the cluster-of-descriptions theory of names is still false, it might be applicable to a wider class of cases than Kripke thought. However, he still thinks there's no need to postulate ambiguity. Kripke thinks that someone may refer to "whoever proved the theorem" as Gödel, but that this situation is like the "Smith and Jones" case earlier, where we referred to Jones but mistakenly used the name "Smith", which is still unequivocally used as a name of Smith, not sometimes for Jones[54]. Similarly, "Aristotle" may sometimes *refer* to the actual author of the

[53] When in the counterfactual situation that Schmidt proved it (though we need to be careful, since we're supposing that the real-world situation is that Schmidt proved the theorem!

[54] So, Kripke sticks unequivocally to the semantic use, rather than allowing pragmatic use?

passage without ambiguity in the name. Kripke claims that we would withdraw our use of these names on appraisal of the facts[55]. He reminds us that no confusion ought to arise in these lectures, where "referent" is used of the thing named by a name, or uniquely satisfying a description.

3.5.4 Thesis 4

- How does Thesis (4) fare? Does the name not refer if the vote yields no unique object? This is false, as has been demonstrated previously. The vote may yield no unique object, as in the cases of Feynman or Cicero, or no object at all. One may have false beliefs that are true of no-one. Kripke elaborates his fanciful Gödel example, but Kripke also mentions Jonah and the fish, and Einstein's "invention" of the atomic bomb (no one person did this), which will do just as well.

3.5.5 Thesis 5

- And thesis (5)? – that "if X exists, then X has most of the φ's" is known a priori by *A*. Even where (3) and (4) are true, (5) is hardly known a priori. While Kripke is pretty sure the "Schmidt" (Gödel) story is a fabrication, this is not known a priori[56].

3.6 Can the Cluster Theory be Rescued?

- Kripke asks whether the theory can be rescued, and launches into another footnote on Donnellan. Can a name be associated with a "referential" use of a description? In that case we are talking about Gödel, identified as the author of the incompleteness theorem, even should he not have proved the theorem. Theses (2) – (6) could still fail, but each name would abbreviate a description, though the role of the description in naming would differ radically from that proposed by Frege-Russell. Kripke has already mentioned[57] his rejection of Donnellan's formulation of a referential definite description, but even if it is accepted, the present proposal shouldn't be. Kripke's reasons are familiar; descriptions like "the man over there drinking champagne" are withdrawn on evidence of error, and should Gödel be proved not to have discovered the incompleteness theorem, this description would be withdrawn, though he would still be called "Gödel". Consequently, the name doesn't abbreviate a description.
- Getting back to rescuing the cluster theory, Kripke thinks that one may attempt to vary the descriptions, but thinks that most attempts are open to counter-examples. In another footnote, he records a discussion with Nozick, who had pointed out that a description theory must be trivially true if any theory of the reference of names is available that doesn't mention reference in its explication. If such a theory gives conditions under which an object is to be the referent of a name, then "obviously" it uniquely satisfies these conditions. However, Kripke doesn't think any such theory exists. Even if one did exist, the kind of description employed would differ radically from that proposed by the description-theorists (Frege, Russell, Searle,

[55] I don't think this is so. We still refer to "Homer" and "Moses" even when we're convinced that group of people wrote their works. But, we do refer to Pseudo-Aristotle when distinguishing pseudepigraphal works from the real thing.

[56] But if X means "the unique individual who has most of the φ's, why isn't (5) known a priori?

[57] Where?

Strawson, etc.). As we found when discussing Kneale, descriptions using the notion of the reference of a name are available, but circular.

- Kripke gives a "description tweaking" example. Instead of picking out Gödel as "the man who proved the incompleteness theorem" we might mean "the man who *most people think* proved the incompleteness theorem". Kripke thinks this is open to two objections. (1) It is still open to counter-examples. In the Peano example, even were it the case that it became common knowledge that the Axioms were discovered by Dedekind, still a speaker might have picked up an old form of expression and still think that Peano discovered them. So, he still refers to Peano, as the discoverer of Peano's Axioms, even though most people *don't* think that Peano was their discoverer. (2) It violates the non-circularity condition. This takes some spelling out.

3.7 More on the Non-Circularity Condition

- Most of us think that Gödel proved the incompleteness theorem, and say sincerely "Gödel proved the incompleteness theorem". Does it follow from this that we believe that Gödel proved the incompleteness theorem, that we attribute this feat to this man? Kripke thinks not, for we have to be *referring to Gödel* when repeating that expression. If we used the sound "Gödel" as the name of Schmidt, we'd be referring to Schmidt. So, how do we refer to Gödel? We can't without circularity say that "by Gödel I shall mean the man who proved the incompleteness theorem". We can't get started without some independent criterion for the reference of the name, otherwise all we're saying is that "we attribute this achievement to the man to whom we attribute it".
- Kripke rejects Strawson's suggestion – in a footnote in *Individuals* – that, while the identifying description mustn't include a reference to the speaker's own reference to the object in question, it may include another's reference. One reference may borrow its credentials from another and so on until we reach one that is genuinely identifying. Strawson doesn't think this regress infinite. Kripke doesn't disagree, but doubts that we'd ever know whether our reference was genuinely identifying, or won't go round in a big circle. You may not even know from whom you heard of Gödel.
- Kripke asks again what's going on – maybe reference doesn't really take place, since we don't know the properties we use for identification are correct, nor do they pick out a unique object. The picture in the cluster-of-descriptions theory is of someone isolated from the community of speakers deciding to determine the reference for himself as "the man who proved the incompleteness theorem" and if Schmidt discovered the theorem, then you refer to Schmidt when you say "Gödel did such-and-such".

3.8 Kripke's Transmission Theory of Reference

- Kripke doesn't think this is what we do (though we might). Instead, he thinks that the a person's name is given to them at birth, and then passed around the linguistic community as people meet and talk about that person. The name spreads from link to link in the chain. Someone who hears the name, and subsequently uses it, can refer to (say) Feynman even if he can't remember from whom he heard of him, doesn't know much about him or his work, nor how to distinguish him from Gell-Mann. He relies on his membership of the linguistic community and the chain of

communication going back to Feynman himself, rather than on a private baptism of deciding how *he* will use the name.

- Kripke thinks the emphasis here differs from Strawson's suggestion, and that Strawson requires you to *know* from whom you got the reference, which Kripke does not. He also thinks that his view may lead to consequences that *diverge* from those of Strawson's footnote. Kripke imagines someone picking up the name "Cicero" from a community which uses it as a name of a Roman orator. However, our speaker misremembers and imagines he picked up the name from someone who (unbeknown to the speaker) used it as the name of a German spy. So, on Strawson's view, our speaker will use "Cicero" to refer to a spy, while on Kripke's it'll be to the Roman orator. Kripke sees the problem as Strawson, in trying to fit the chain of communication into the description theory, relies on what the speaker *thinks* was the source of his reference, and the chain breaks down or misdirects if the speaker forgets or misremembers his source. According to Kripke, it is only the actual chain of communication that counts.

3.9 Does Kripke have a Theory?

- Kripke had said that philosophical theories tend to be false, and defends himself against the charge of just having propounded one by saying that what he's said falls far short of a set of necessary and sufficient conditions for reference. Not every causal chain from me to a certain man will do to make a reference. While the term "Santa Claus" may reach back to a historical saint, most children don't use the name to refer to him[58]. So, we need further conditions for a rigorous theory of reference. Kripke claims to be too lazy to do so at the moment, but in any case wants to present a *better picture* than that presented by the received views.
- He asks whether he's been unfair to the description theory in presenting it more precisely than its proponents do, and so making it easier to refute. Maybe, if he stated *his* theory precisely in 6 – 8 theses, all *his* theses would turn out on close examination to be false. Maybe so, but what Kripke thinks his examples have shown is not that the description theory has a few technical errors or mistakes, but that the whole picture it gives of how reference is determined is fundamentally wrong. He thinks it's just wrong that we determine a reference by giving ourselves some properties which somehow qualitatively pick out a unique object. What Kripke's trying to do is give a better picture which, when filled out, might give more exact conditions for reference[59].

3.10 Necessary & Sufficient Conditions for Reference

- Kripke's uncertain whether necessary and sufficient conditions for reference will ever be achieved. Philosophical analysis of reference in other terms which makes no mention of reference is very likely to fail, though given an analysis one has to check if it's true or false. Kripke wants cautiously to give a better picture – that it's in virtue of our connection with other speakers in the community, and going back to the referent himself, that we refer to a certain man.

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[58] Note that this example featured in *Names*.

[59] I'm slightly confused about what's being said about fixing the reference and what about using it. Is this Kripke's rejection of the private baptism?

- Kripke backtracks a bit to admit that certain situations do fit the descriptions theory of a private baptism using certain properties guaranteeing uniqueness – Jack the Ripper, Hesperus and meeting someone and being told his name. He thinks it's only in the context of the description theory that one would think of forcing the latter into that mould – "the guy I'm meeting just now" being the description. It won't work if you're introduced to someone you've heard of before – "that's Einstein", but it will for the person who first gives something a name. However, in general, reference depends not just on ourselves but on such things as others in the community and how the name reached us; it's by following such a history that we get to the reference.
- More exact conditions are difficult to give, and differ between famous and ordinary things. In support, Kripke gives a couple of contrasting examples. (1) Little kids are told that Newton is famous as the first person to think there's a force pulling things to the earth. Being told that this was the sole content of Newton's discovery gives students a false belief, but one about *Newton*, even though they've never heard of him before. (2) If a teacher says[60] that George Smith (who happens to be his next door neighbour) was the first person to square the circle, do students have a false belief about the teacher's neighbour? Kripke thinks not, for the teacher isn't trying to get any beliefs about his neighbour into the heads of his students; his idea is to inculcate the belief that *someone* squared the circle and just happens to use his neighbour's name. So, it doesn't seem clear (Kripke claims not to be sure) that the students have a false belief about the neighbour, even though there's a causal chain going back to him.
- A rough statement of the theory might run as follows: an initial baptism takes place, with an object named either by ostentation or the reference fixed by a description. When the name is passed along the chain, recipients must intend to retain the reference used by the person who transmitted it to them. Applying the name Napoleon to my pet aardvark fails in this regard[61] – maybe this sort of event accounts for the divergence of the use of the name "Santa Claus" from its original designation. In the case of the aardvark, the causal or historical connection between my use of the name and the Emperor of the French will exist, but is not of the required type.
- Kripke has a footnote on baptisms[62]. "Neptune" is a good example of baptism by description, and maybe baptism by ostentation can be subsumed under the descriptive category. So, the primary application of the description theory is to cases of initial baptism, but they are also used in similar situations where the descriptions involved are not usually called names, such as "one metre". Kripke emphasises two things in connection with naming by initial baptism. (1) The description is not synonymous with the name it introduces, but fixes its reference. (2) Most cases of initial baptism are far from those that inspired the description theory, because the baptiser is usually directly acquainted with the object he names, and does so ostensively, whereas descriptions in the description theory were used for famous persons long dead, with whom no living person is acquainted and whose naming cannot, in Kripke's view, be accounted for by the description theory.

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[60] Why does the teacher do this?

[61] Another example (changed slightly) from *Names*.

[62] As used in *his* theory, not in the description theory.

- Kripke notes that the preceding outline of his theory doesn't eliminate the notion of reference; indeed, it takes as a given the notion of intending to use the same reference[63]. Additionally, the appeal to an initial baptism is explained as fixing a reference – either by ostentation or a description (ostentation may be subsumed under description). The "George Smith" case casts doubt over sufficiency of the conditions – has the teacher succeeded in passing on the reference to his neighbour to his students, for why shouldn't their belief be about any other man named "George Smith"? However, if the teacher says that Newton was hit by an apple, he has communicated a common misconception about Newton, and so has an easier task of transmitting a reference.
- In a footnote, Kripke says that, once we realise that the description used to fix the reference of a name is not synonymous with it, we see that the description theory *presupposes* the notion of naming or reference. Kripke's prescription that the description used not involve reference in a circular manner is something else entirely, and is crucial for the description theory to have any value. The description theorist assumes that each speaker uses the description in an initial baptism to determine the reference. This ceremony yields nothing if he says, say, that "by 'Cicero' I mean the man I call 'Cicero'". Kripke admits that some philosophers, including Russell, realised that some notion of ostentation or primitive reference is required as a back-up.
- Kripke reiterates his claim not to have provided a *theory* of reference[64], but only a better *picture* than the description theorists, and now turns to other matters.

3.11 Are Identity Statements Necessary?

- Are statements of identity necessary or contingent? This is a matter of some contemporary debate, though everyone agrees that descriptions *can* be used to make contingent identity statements. It is contingent that the man who invented bifocals[65] was the first US Postmaster General. Hence, the identity statement "the x such that φx and the x such that ψx are one and the same" can be a contingent fact. However, when we make identity statements between names – eg. Cicero is Tully – are these statements necessary of contingent? What about scientific identification – light with streams of photons or electromagnetic radiation between certain wavelengths; heat with molecular motion? It's commonly held that these are contingent identities – we've *found out* that heat is molecular motion, but it might not have been.
- These examples are very valuable to philosophers who hold to the *identity thesis* between material and psychological concepts – pain *just is*, say, stimulation of C-fibres. An objection to the identity thesis is that the relation between pain and bodily states is a contingent *correlation* between different things, because this relation was an empirical discovery, and so we must mean something different by "pain" than some particular state of the brain or body. They answer by saying that there are *other* contingent correlations – such as light and photons, or bifocals and the Postmaster General – hence, the physical identification of feeling pain or seeing red is just another contingent fact. There are motivations for believing the

[63] Read this more closely – I've lost the plot!

[64] On a second reading, clarify just what Kripke's (non-)theory is a (non-)theory *of*, and also clarify when he's talking about his picture and when about that of the description theorists!

[65] This was Benjamin Franklin, we later learn (in Lecture III).

identity theory, both ideological and not wanting to leave a "nomological dangler" of mysterious connections between two different kinds of thing not accounted for by the laws of physics.

- Kripke lays out his convictions: (1) theoretical identifications – "heat is molecular motion" – are necessary truths in the strongest sense, which may or may not be stronger than "physically necessary". (2) The way these identities have turned out to be necessary truths isn't the way in which mind-brain identities could turn out to be true[66] (either necessarily or contingently). Consequently, the analogy between the identities has to go, and it's hard not to conclude that the two are different[67].

3.12 Identities Between Proper Names

- Kripke first discusses the more mundane identity between proper names. There's a dispute between Quine and Marcus, who thinks that identities between names are necessary. Someone saying that Cicero is Tully, and who really uses "Cicero" and "Tully" as names ("mere tags"), is committed to holding that the equation is a necessary truth. Quine responds by saying that if we tag Venus as "Hesperus" one evening and again as "Phosphorus" one morning, our discovery that we've tagged the same planet twice is empirical, and owes nothing to proper names being descriptions. Kripke agrees that it *was* an empirical discovery that we've tagged the same planet twice. Similarly with the (probably fallacious) Everest is Gaurisanker case. Marcus responded that a good dictionary should be able to tell you that you have the same reference, that Hesperus and Phosphorus are the same, but Kripke thinks this is false. Many have thought it a consequence of the necessary identity of names, and so rejected the theory. Russell had a different conclusion, which was to reject ordinary "names" from the category of names. He didn't believe that identity between names should be a contingent matter, and so concluded that the only genuine names are demonstratives, when we can say without empirical investigation that we're naming the same thing twice when naming merely involves naming our own sense datum.
- What does Kripke make of this? He admits that we don't know *a priori* that an identity statement is true. Someone can use both "Cicero" and "Tully" to refer to Cicero, and yet not know that Cicero is Tully. However, this doesn't imply that the identity is a *contingent* truth. This shows how important is Kripke's teasing apart of the three dichotomies in the first *Lecture*!
- Kripke asks under what circumstances Hesperus would not be Phosphorus. This would *seem* to be where two *different* planets were so named, but Kripke doesn't think this *is* a situation in which Hesperus would not be Phosphorus. Obviously, Kripke is committed to their identification by saying that names are rigid designators. "Hesperus" and "Phosphorus" refer to the planet Venus in every possible world. So, in the putative possible world in which Hesperus would not be Phosphorus, Venus is still Venus. So, someone cannot have pointed to Venus twice under these two names, as then we would have Hesperus being Phosphorus. He may have pointed to Venus neither time, but let's suppose only that when he pointed to "Phosphorus" he wasn't pointing to Venus. So, in that possible world, "Phosphorus" doesn't refer to Phosphorus. Kripke points out that even in our

[66] Maybe, but where does Kripke demonstrate this?
[67] Kripke's obscure – that mental and physical events are different things?

world it was possible that at the moment we're called upon to baptise Phosphorus as "Phosphorus", Phosphorus isn't there and some other planet is *called* "Phosphorus". There are possible worlds in which neither "Hesperus" nor "Phosphorus" are the names of the things they name in our world. Even so, this isn't a situation in which Hesperus isn't Phosphorus, because there can't be such a case, given that Hesperus *is* Phosphorus[68].

- In a sense, things can turn out either way, but this doesn't imply that the way things turn out isn't necessary. The four colour problem[69] might turn out to be true, or might turn out to be false, but it's a necessary truth if it is one. The "might" here is epistemic, merely expressing our current state of uncertainty.
- However, in the Hesperus being Phosphorus case, something stronger is true. Before I know that Hesperus is Phosphorus, what I know is that I see a certain heavenly body in the morning and call it "Phosphorus" and in the evening and call it "Hesperus"[70]. It is possible that someone could have followed such a procedure in a possible world and named two different planets, but at least one of these heavenly bodies would not be Phosphorus, or it couldn't have come about that way. So, someone can be placed in some qualitatively identical epistemic situation, and name two heavenly bodies "Hesperus" and "Phosphorus" without them being identical. For all we knew in advance, "Hesperus" wasn't "Phosphorus", but it couldn't turn out any other way as to Hesperus being Phosphorus. It can only transpire that "Hesperus" isn't "Phosphorus" in a world where these names aren't used as we use them, as names for Venus, but as names for other objects. One could have had qualitatively identical evidence (at the time of naming) and yet (subsequently) concluded that "Hesperus" and "Phosphorus" named different objects. However, we, using names as we do right now, can say that if Hesperus and Phosphorus are the same, then in no possible world can they be different. We use "Hesperus" and "Phosphorus" as the names of the bodies they designate in all possible worlds, so that if they should happen to be the same object then we have to use them as names of that object. Consequently, in other possible worlds, Hesperus is Phosphorus. So, two things are true: (1) we don't know a priori that Hesperus is Phosphorus, and can only find out empirically, but (2) the reason for this is because we could have evidence qualitatively indistinguishable from that we have in our world for naming the planet(s) based on position in the sky and yet the two planets not be the same.
- Kripke closes by repeating the lesson. It is only a contingent truth that this planet is that planet because there are possible worlds in which that planet isn't even visible. However, this contingent truth has nothing to do with the supposed contingency of Hesperus being Phosphorus. It would only be identified with Hesperus being Phosphorus if we thought it a necessary truth that Hesperus should be over here in the evening and Phosphorus should be over there in the morning, but neither of these statements is true, even if that is the way we pick out the

[68] Kripke seems to be labouring the point a bit here. If we accept his account of names as rigid designators, then, in every possible world, Hesperus is Venus and Phosphorus is Venus, and since Venus is Venus in every possible world by anyone's account, Hesperus is Phosphorus in every possible world.

[69] Presumably, Kripke is writing before the solution to the problem. Better to use Goldbach.

[70] Kripke's language seems a bit careless – he wants to avoid pre-judging the issue by saying "the same" or "another", but almost implies "the same" heavenly body.

planet[71] - these are just the contingent marks whereby we pick out a planet and give it a name.

[71] Ie. Venus (rather than Hesperus or Phosphorus)?

4. LECTURE III

4.1 Summary So Far

- Kripke asks what he's achieved so far and summarises as follows. It is generally not the case that the references of names are determined by uniquely identifying properties satisfied by the referent and believed by the speaker. This is so for two reasons: (1) the properties need not be uniquely specifying and (2) even when they are, they need not be uniquely true of the actual referent but true of something else or of nothing at all. This is so where someone has erroneous beliefs about a certain person (rather than correct beliefs about another person). The reference actually seems to be determined by the speaker's membership of a community of speakers who use the name, which has been passed down by tradition from link to link.
- Even where the referent of the name is determined by a description – some uniquely identifying property – such as in cases of an initial baptism – that property is fixing a reference rather than giving a synonym, something for which the name is an abbreviation. The name is fixed by some *contingent* marks of the object, and the name denoting that object is then used to refer to it even in counterfactual situations in which it doesn't have the properties in question. Kripke notes the metre as an example of this situation.
- Kripke summarises where he got to last time on statements of identity. Some philosophers have thought that in saying that Cicero is Tully you can't be saying of the object that is both Cicero and Tully that it is self-identical. Kripke agrees that "Cicero is Tully" can be an empirical discovery, but rejects the view, even held by the early Frege, that identity is a relation between two *names* that designate the same object, rather than between the object and itself.
- This idea even occurs in J.B. Rosser's *Logic for Mathematicians*. Rosser says that x = y iff "x" and "y" are names of the same thing, remarking that we cannot mean that the object is the same as itself, which is trivial. Kripke quips that this theory would be of rare application as Malcolm is the only person named "x". But seriously, notes the "x" and "y" are not names but variables, which can occur with identity as bound variable in a closed sentence such as (x, y) (x = y $\leftrightarrow$ y = x). No names occur in this statement, which would be true even if the human race had never existed to produce the phenomenon of names.
- Kripke now shows that even if this account of identity as a relation in English between names *were* correct, it still wouldn't solve the problem for which it was introduced. He introduces an artificial relation "schmidentity" which he stipulates holds only between an object and itself. He can now ask whether Cicero is schmidentical with Tully, and the same problems arise for which we invented the "solution" that identity was a relation between names. Hence, this theory should be dropped.
- In a footnote, Kripke admits that this form of argument won't work against those who deny the logical possibility of an artificial language or concept of the proposed type. However he does offer an argument against those who've proposed that a relation is essentially two-termed, and so cannot be between a thing and itself. He points out that one can be one's own worst enemy; some relations are reflexive (like "no richer than"). So, identity and schmidentity are just the smallest reflexive relations.
- Kripke rehearses, using Hesperus and Phosphorus, his doctrine that identity statements between names, when true, are necessarily true even though possibly

unknown a priori. Possible world situations as previously imagined are not those in which Hesperus is not Phosphorus, but where one or other of the heavenly bodies is not Hesperus (even though in that world it might be *called* "Hesperus"). In a footnote, Kripke emphasises that we describe possible world situations in *our* language, not the language of the people in that possible world – hence, "Hesperus" has the reference it does in our world.

- Difficulties people find in such situations, Kripke says, arise from a confusion between (they would say an identification of) what can be known a priori and what is necessary. Certain statements – such as the identity statement – *if* true must be necessarily true, and one does know a priori by philosophical analysis that *if* such an identity statement is true, it is necessarily true[72].
- Kripke doesn't deny, in saying that "Hesperus" is "Phosphorus" is necessarily true, that there are worlds in which Venus, and therefore Hesperus and Phosphorus, don't exist at all. The question then arises whether, in such worlds, the statement "Hesperus" is "Phosphorus" is true, false or neither, but this is also the case with "Hesperus" is "Hesperus". If we take the "neither" option, is "Hesperus is Phosphorus" necessary because it is never false, or should we require a necessary truth to be *true* in all possible worlds? Kripke is leaving such matters out of consideration. He notes that we *could* retreat to conditionals, ie. taking only "if Hesperus exists, then Hesperus is Phosphorus" as necessary, but this raises problems of singular attributions of existence, which he also cannot pursue here, even though philosophers sympathetic to the description theory of naming often argue that one can *never* say of an object that it exists; a statement about the existence of an object is only a statement about whether a certain description is satisfied.

4.2 Essences and "de re" Modality

- Kripke thinks that the distinction between a prioricity and necessity is essential for understanding certain other considerations in *de re* modality, about an object having essential properties. Essence may be discovered empirically.
- He quotes an example[73] of alleged essential properties from Timothy Sprigge (*Internal and External Properties*, *Mind* 71, April 1962). Sprigge asks whether it is necessary that the Queen (ie. *this person*, not the office-holder) must have been of royal blood. He divides opinions on this score between the *internalists* (those who think there are some essential properties) and the *anti-essentialists*[74]. The latter would count it as no contradiction for it to be discovered that the Queen had been secretly adopted, and was not the child of her supposed parents; consequently, that the proposition that the Queen is of royal blood is synthetic. Sprigge seems to support this particular conclusion, but thinks the anti-essentialist argument derails when it denies that it is essential that the Queen be human. If the anti-internalist denies that it is inconceivable for the Queen always to have been a swan, then he admits that she has at least one essential property. If he accepts this dubious possibility, he's being implausible.

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[72] Kripke is teasing us slightly here into misunderstanding him. He is not saying that we know a priori that the identity is (necessarily) true, only that *if* it is true it is true necessarily.

[73] Review this article!

[74] For some reason, despite the title of his article, he doesn't refer to these as "externalists".

- Kripke thinks Sprigge is confused. Kripke agrees that there's no contradiction involved in the *announcement* that the Queen had been born of different parents than we'd supposed. Nor is there a contradiction in the Queen being an automaton or an angel in human form. These aren't the things that we couldn't possibly discover. Kripke asks what it is for *this woman* not to have been of royal blood, and agrees that this is a contingent fact that she is, because her forebears might never have come to royal power.
- Kripke tries to refine the question. It should read "could this woman have been born of parents other than her actual ones – for instance of President and Mrs. Truman? He says there's no contradiction in supposing that the person we know as the Queen is indeed their daughter, nor that their (other) daughter, suspiciously named Margaret, is the Queen's sister, flown back and forth across the Atlantic.
- Kripke now supposes that the Queen's parents are indeed the ones we normally imagine (to simplify what we mean by "parent", Kripke rules out for the sake of argument any embryonic implantation; if this had taken place, in some sense other people might have been her birth parents, though not her genetic parents). In the case where the original King and Queen *are* the present Queen's parents, can we conceive of a situation in which they are not the parents of *this woman*? While we might imagine President & Mrs. Truman having a child that resembles Elizabeth in many properties, and even becomes Queen of England in some possible world, passing herself off as the daughter of the previous King and Queen, yet such a person cannot be *this very woman* we call "Elizabeth II". The Trumans have a child with many of the properties of Elizabeth, but Elizabeth herself doesn't exist. Kripke admits that one can only become convinced of this by reflection, as he has become convinced.

4.3 The Essentiality of Origins

- Kripke tries again to convince. How could someone originating from a different sperm and egg be *this very woman*? Kripke allows that the world may diverge from a certain point, and that therefore Elizabeth may never have become queen, just as in Mark Twain's story the *Prince and the Pauper*. However, he finds it harder to imagine that she was born of different parents[75]. This sets Kripke off on his next topic – that anything coming from a different origin would not be that object.
- Kripke imagines a table. We could imagine that it's cunningly made from carved ice; but, say it is not. Then, even though we can imagine making a table out of ice that looks just like this one, it seems to Kripke that we could not imagine *this table* being made of ice (or even from a different block of wood from the one it was in fact made, even though we are ignorant of what block that was).
- Kripke adds a couple of long footnotes at this point. The first is referred to at the start of the introduction as requiring supplementation. He also refers to a paper by Salmon in *Journal of Philosophy* 1979 that he thinks arose from a misunderstanding of this highly compressed footnote[76], of which it is a criticism.
- Kripke's first long footnote deals with what he thinks is a virtually a proof of his thesis (relying on his principle of the necessity of identity for particulars, and

[75] But this seems to rule out counterfactuals such as "if Bush had been born black he wouldn't have become president" … unless we're allowed to twiddle counterfactually with his parents as well.

[76] Download and look at this paper!

ignoring worries about the vagueness of the notion of a hunk of matter) that *if a material object has its origin from a certain hunk of matter, it cannot have its origin in any other matter*. Kripke proceeds as follows. Let "B" be the name (a rigid designator) of a table, "A" the name of the piece of wood from which it was actually made, and "C" the name of *another* block of wood. We are to suppose that B is made from A, as in the actual world, but that *another* table D is simultaneously made from C, there being no relation between A and C that makes the possibility of making a table from one dependent on making a table from the other. Now, $B \neq D$ so, even if no table were made from A, and D were made by itself, D would still not be B. Kripke says the "proof" relies on the necessity of distinctness, not of identity, but thinks that the same kind of considerations that can be used to establish the latter can be used to establish the former[77]. He explains: suppose $X \neq Y$, and that X and Y are both identical to some other object Z, then $X = Z$ and $Y = Z$, so $X = Y$. Alternatively, the principle follows from the necessity of identity plus the Brouwersche[78] axiom. Kripke claims that this (whatever it might be) is equivalent to the symmetry of the accessibility relation[79] between possible worlds. In any case, he says, the argument only works if making D from C doesn't affect making B from A, and vice versa.

- Kripke's second long footnote deals with the essentiality of the *substance* of an object (in addition to its *origin*). Firstly, Kripke distinguishes two questions:
  (1) What properties must an object retain if it is not to cease to exist, and what can change while it endures.
  (2) What (timeless) properties could an object not have failed to have, and what could it lack while still (timelessly) existing.

  The former is a temporal question, so is irrelevant to Kripke's present concerns. The latter concerns necessity rather than time, and so is germane to the present enquiry. Hence, it's irrelevant here whether a table could have *changed* into ice; it's only the question whether it could have been made of ice *originally* that's relevant[80]. Kripke points out that this (second) question is related to that whether this table is necessarily made from that particular block of wood, and whether that block is necessarily wood, even wood of a particular type. He thinks that to imagine a table made of a any material other than the one it is in fact made of would require us to undertake the mind-boggling feat of going back through the entire history of the universe. He refers vaguely to suggestions from Slote and others that he finds unconvincing. Kripke mentions a few points relating to the essential properties of particulars:
  (1) Usually, when we ask whether something might happen to a certain object we imagine the universe staying the same up to a certain time and then diverging. Kripke suggests that *perhaps* this feature should be made into a general principle about essence. The time at which divergence occurs may be before

[77] What does this mean; also, I don't understand his "proof". I presume that the "proof" works because the tables and pieces of wood are completely general. So, if the table made from one block isn't the same table as that made from the other, then the second table cannot in any possible world have been made from the first block, otherwise the two tables in the thought experiment would have been identical. Hence, a table has to come from the piece of wood it did in fact come from. Or something like that.

[78] Presumably devised by Brouwer. Look up in Philosophy of Maths to see what this might be.

[79] Presumably, that it's as easy to imagine getting from W_1 to W_2 as vice versa.

[80] There's something wrong with this. Say we have a table that's made of ice before time t and of wood thereafter, then if we take an interest in it before time t we have a Q1 case, whereas if we ignore it until after time t it's a Q2 case.

the object is created. Kripke might have been born deformed if the fertilised egg from which he originated had been damaged, even though, presumably, Kripke didn't then exist.

(2) Not only origin and substance are essential properties. Kripke suggests that being a table is essential, for if the block of wood from which the table originated had been made instead into a vase, the table wouldn't have existed.

(3) Both whether (a) an object *has* a property and (b) has that property *essentially* can be *vague* – and (b) can be vague even when (a) is decided.

(4) Kripke says that counterexamples in ordinary speech exist to the original principle, but Kripke thinks they are spurious, but can't address them here.

- Kripke now embarks on a third footnote while noting that these are only *examples* of essential properties, which he doesn't want to dwell on because he wants to progress to the more general case of (a) identities between terms for substances and (b) the properties of substances and of natural kinds.

4.4 Nominal Essences

- Kripke discusses Geach's account of "Nominal essence" which differs from Kripke's account of essential properties. Geach claims that any baptism by ostentation is ambiguous, so a sortal property has to be provided at the moment of baptism to disambiguate the reference and ensure correct criteria of identity over time. Geach's example is that anyone assigning a reference to "Nixon" by pointing to him has to say that he uses "Nixon" as the name of a man, lest we think he's pointing to a nose or a time-slice. This sortal is therefore part of the meaning of the name, which has a partial sense after all even though the sense may not be sufficiently complete to define the reference as in (cluster of) description theories. Kripke thinks Geach's nominal essence has to be understood in terms of a prioricity rather than necessity, which is quite different from Kripke's proposal – which Kripke thinks is why Geach refers to nominal rather than real essences. "Nixon is a man" and the like would be a priori truths. Kripke says he needn't take a view on this position here, but does make a couple of remarks:
  1. Even if a sortal is used to disambiguate an ostensively defined reference, it need not be held to be true a priori of the object designated. Hesperus turned out to be a planet not a star, and Lot's guests after being named may have been angels.
  2. There is a big gap between premise and conclusion since few speakers learn the reference of a name by ostension, and even if the chain of transmission leads back to an ostension, why should the sortal allegedly used in the ostension be part of the sense of the name for the speaker who hears the name at n^{th} hand? He closes with a strange example of Lie Groups and "Nancy" that I didn't understand[81].

4.5 Natural Kinds

- Kripke notes that philosophers have shown interest in theoretical identifications, such as light being a stream of photons, water being H_2O, lightening an electrical discharge, and gold the element with atomic number 79.

[81] Check this out on a second reading.

- To get clear about such statements, Kripke thinks we have to understand what we mean by (say) *gold*. Kant, in introducing the distinction between analytic and synthetic judgements, claims that all analytic judgements are a priori even where the concepts are empirical. He gives the example of "gold is a yellow metal", for knowledge of which no experience is required beyond that to obtain the concept of gold as a yellow metal. Kant seems to intend that "gold" just *means* "yellow metal". This is particularly odd, so Kripke takes the charitable view that Kant means that it's *part* of the concept of gold that it's a yellow metal. Kant thinks we know this a priori and that it would be impossible to find this to be empirically false.
- Kripke wants to know whether Kant is right. Is it even correct to say that gold is necessarily a metal? It's difficult to define what a metal is – properties like malleability and ductility don't quite work. Defining metals by their valency properties may imply two sorts of definition – a phenomenological one replaced by a scientific one. Kripke rejects this view, but he can only refute it after he's developed his own views, so can't use gold as an example in this cause.
- However, Kripke continues with thought experiments. He imagines the announcement that the yellowness of the substance we take to be gold is due to some optical illusion or the actions of a demon, and that it is in fact blue. Would this announcement lead us to conclude that gold doesn't exist? Kripke thinks not. Rather, we would conclude that gold is in fact blue rather than yellow.
- The reason he gives is that we, a community of speakers, use the term "gold" for a certain *kind* of thing, there being a kind of connection between ourselves and that kind of thing, which is *thought* to have certain identifying marks. We might find out that some of these marks are false of gold, or that some other substance – such as iron pyrites (fool's gold) – has the identifying qualities of gold. This isn't another form of gold, but a completely different thing; and, to distinguish gold from it we haven't changed the *meaning* of "gold", adding some distinguishing criteria, but have simply *discovered* some distinguishing properties of gold additional to those we knew about when it was first discovered[82].

4.6 Species

- Another example given is that of tigers, taken from Ziff's *Semantic Analysis*. When asked "what is a tiger?", I may give the SOED definition "A large carnivorous quadrupedal feline, colour ..". Ziff denies, and Kripke agrees, that this is what the word "tiger" *means* in English. A three-legged tiger isn't a *contradictio in adjecto*, as would be the case if 4-leggedness was part of the meaning of "tiger". This is the sort of case where philosophers tend to reach for the cluster-concept, but Kripke thinks it no contradiction to discover that tigers *never* have 4 legs. We could imagine that it was discovered that those who originally named tigers "tigers" had only seen a 3-legged species that they'd mistaken for 4-legged. This wouldn't mean that there are in fact no tigers, but that tigers in fact have 3 legs[83].

[82] Presumably gold's high specific gravity, the measurement of which was enabled by Archimedes.

[83] There's some tension here. We currently know of and can see many 4-legged "tigers" in zoos, so even if tigers were named from a 3-legged species, these 4-legged beasts would be tigers. We'd probably say either that the animals originally discovered weren't tigers (this being a different situation from *all* gold being blue and us not wanting to admit to it not being gold), or were from a

- Kripke points out that the fact that tigers are mammals was a discovery, so that "feline" could be left out of the dictionary definition of "tiger". Does this mean that if we came across something with all the external characteristics of a tiger, but different innards (say a tiger-like reptile) that this would be counted as a tiger, and we'd say that some tigers are reptiles? Kripke thinks not. We'd say they weren't tigers because they don't belong to the same species as tigers. This isn't because the old definition of a tiger has been superseded by a new scientific one, but because even in pre-scientific days, and *before* the internal structure of tigers had been investigated, people had the idea of species or natural kinds. Without knowing *what* the internal structure of tigers is, we suppose that things differing internally enough are not the same kind of thing. We can say in advance that we use the term "tiger" to denote a species, and anything not of this species, even if it *looks* like a tiger, isn't a tiger.
- Just as something may have *all* the properties by which tigers were originally identified, and yet not be a tiger, so we can have something being a tiger yet possess *none* of these properties! All these properties may turn out to be optical illusions or other errors. Hence "tiger" is not a cluster-concept for which most, though maybe not all, properties used to identify the kind must be satisfied. These properties are neither necessary nor sufficient for membership of the kind.
- Kripke muses on whether tigers do in fact form a kind – we expect from past experience that animals living and mating together and looking alike will form a kind. Depending on what we find out, we may find more than one kind of tiger.

4.7 Are there Degrees of Necessity?

- Kripke now refers to Putnam's article *It Ain't Necessarily So*[84], which follows similar, though independent lines to Kripke's own. Putnam claims that statements about species are "less necessary" than those about unmarried bachelors. If what we call "cats" turned out not to be animals, we wouldn't say there are no cats but only that cats have turned out not to be animals. A cat is "that kind of thing", identified by paradigmatic instances rather than by any qualitative dictionary definition. Putnam thinks that statements like "all cats are animals" are less necessary than those like "all bachelors are unmarried". Kripke agrees that such statements are not analytic, and hence not known a priori[85] - whether a particular species is an animal is a matter for empirical investigation, and it may be that by "necessary" Putnam has this epistemological sense in mind. However, we are left with whether they are necessary in Kripke's non-epistemological sense, which is the question to which Kripke now turns.
- Kripke has a footnote where he sees the difference between himself and Putnam as that Putnam does not base his considerations on the apparatus of necessary versus a priori truths that Kripke invokes. Putnam, in earlier work, was closer to the cluster-concept theory, accepting its application to proper names.
- Kripke has another footnote on the analytic / a priori distinction noted above. Kripke supposes that an analytic truth is one that depends on meanings in the strict sense, and is therefore necessary as well as known a priori. However, contrary to

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3-legged species. We wouldn't say that tigers are 3-legged unless all or most beasts we call tigers turned out on closer inspection to be 3-legged.

[84] Read this !

[85] Review how much Kripke thinks the parallelism of the three divisions comes apart.

this idea, if statements whose a priori truth is known by the fixing of a reference are counted as analytic, then some analytic statements are contingent. Kripke puts the ambiguity in the notion of analyticity down to ambiguities in the usual uses of terms such as "definition" and "sense". Kripke doesn't address the issue here, but thinks that most of the problems alleged against the analytic-synthetic distinction, and especially those involving natural phenomena and natural kinds, can be dealt with using the apparatus of fixing a reference that Kripke promotes. He notes that Kant's "Gold is a yellow metal" is not analytic in any sense, is not known a priori and whatever necessity it has is established by scientific investigation.

4.8 Non-epistemological Necessity

- Kripke now turns to necessity in the non-epistemological sense[86]. Is it necessary or contingent that gold is a metal or that it has atomic number 79? We could certainly find out we are mistaken, as the whole atomic theory on which the latter view is based could turn out to be false. So, in that sense, gold *could* turn out not to have atomic number 79.
- However, given that gold *does* have atomic number 79, could something be gold without this property? Kripke imagines that scientists have investigated gold and found that it's part of its very nature to have atomic number 79. As far as the actual world is concerned, if we found some substance – fool's gold say – without this property we'd say that it wasn't gold. However, Kripke now considers other possible worlds, a counterfactual situation in which a substance superficially similar to gold, but lacking its atomic structure, is found in all the locations where gold is normally found. We wouldn't say of this situation that gold wasn't an element (because this counterfeit substance was, say, iron pyrites), but rather that another substance, not gold, had been found in the same situations and with the same external properties as gold. We would *not* say that this substance would still be gold, and that gold would just be lacking the property of having atomic number 79. We'd say it was something else, whatever the people in that possible world called the substance – it's what *we* call it that matters[87]. So, Kripke thinks there cannot be possible situations in which gold isn't an element, other than in the epistemic sense of "possible"[88]. In counterfactual situations in which all the mines are filled with a substance looking just like gold, but lacking its atomic structure, they would not be filled with gold but with something else.
- If this analysis is right, then scientific discoveries about what a substances *is* are not contingent truths, but necessary ones in the strictest possible sense. The point isn't that they are scientific laws, because we can imagine worlds in which they would fail. It's just that if we imagine a substance in any possible world that lacks the properties that make gold what it is, then that substance isn't gold. It's part of present scientific theory that it's of the nature of gold to have atomic number 79, so it is *necessary* that gold has atomic number 79. Any properties that follow from

[86] There's something peculiar about necessity (a metaphysical concept) having an epistemological sense!

[87] This is an obvious but very important point.

[88] Oh dear. What does he mean by "epistemic sense"? I think this all depends on when we find out that gold is an element. Before we discover this property – when we don't know that gold is an element – it might turn out that it isn't one; but, once we do know it's an element then it is essentially an element. Unless … it turns out that our knowledge was an illusion and it wasn't an element all along!

the atomic structure of gold are also necessary properties, even though they were not known a priori and are not part of the meaning of "gold"[89].

- Is it a necessary or contingent truth, to use Putnam's example, that cats are animals? Kripke thinks it is necessary. We are to imagine a counterfactual situation in which all these animals are replaced by little demons in cat-like form. Kripke thinks these would not be cats. There is a repetition of Kripke's fine distinction. We could have found out that cats are in fact little demons, but having found out that they are animals, they are necessarily animals and any demons in other worlds masquerading as cats aren't cats, but "fool's cats".

4.9 Essence Again

- Kripke relates what he's said above to the concept of essence. He imagines two identical-looking objects, one of which (X) has a certain empirically discovered molecular structure and another which is an ethereal entelechy[90] (Y). If we imagine Y occupying the place of X, would Y *be* X? Kripke thinks not. Various things might have happened to X, including its destruction prior to the present time, but what we can't imagine, he thinks, is that *X* ("this" … pointing to it) should have existed and yet not have been composed of molecules. He repeats thoughts similar to those expressed earlier – X might not have been composed of molecules, but once we know[91] that it is composed of molecules, we see that it is part of X's essential nature to be made of molecules and it cannot imagine that X could have failed to be so composed.
- Consequently, according to Kripke's programme, terms for natural kinds[92] are much closer to proper names than is normally supposed. The term "common name" is appropriate for predicates marking out species or natural kinds such as "cow" or "tiger". However, Kripke's considerations apply also to mass terms for natural kinds such as "gold" or "water". Kripke compares his view with Mill's[93] – who counts as names not only proper names but also definite descriptions and predicates like "cow". Mill divides names into "singular" and "general". Singular names connote[94] if they are definite descriptions but not if they are proper names; general names always connote. So, for Mill, a predicate such as "human being" is defined as the conjunction of properties (rationality, animality & certain physical features) that give necessary and sufficient conditions for humanity. Frege & Russell thought that Mill was wrong about singular names but right about general names, while more recent philosophers have concurred, with the proviso that

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89 So are not analytic truths. I think Kripke has gone wrong here, though he seems consistent. We've found out that things of a certain atomic structure must have certain properties, given the laws of physics as we know them. We might have got them wrong, or they might have been different, but this is another matter entirely.

90 Not that it's important for the argument, but what is an entelechy? Seem to remember it from Leibniz. Yes! See Woolhouse on the early Leibniz – "The human body is a body because its material is ensouled or animated, organised by an *entelechy* or form" (my words).

91 The relation of epistemic and metaphysical considerations again. Presumably, it doesn't have to be composed of *these* molecules (or maybe it has to include some "cluster" of them!

92 Try to connect or contrast this with Gemes' view that there are no such things as natural kinds. Also, with Griffiths on folk-essentialism.

93 Kripke discusses Mill's views in *A System of Logic* early in the *First Lecture*. Review Kripke's ideas in this context and use the study guide to find the reference to Mill. Review *Names* notes.

94 Look up the distinction between connotation and denotation. Also, tighten up understanding of Mill on singular and general names.

properties are replaced by clusters, only some of which properties need to be satisfied in particular cases. Kripke takes the completely opposite view that Mill was more-or-less right about singular names, but wrong about general names. He thinks that, *maybe*, some general names (such as "fat" or "foolish") express properties but that those such as "cow" don't, except in the trivial sense of "being a cow". Contra Mill, "cow" is *not* short for the conjunction of properties in a dictionary definition. Kripke thinks that science *can* discover empirically that certain properties are *necessary* of cows, another question.

- Kripke has a footnote on the question of pure properties, which he calls Fregean intensions. He thinks that it's difficult to find examples, but that yellowness, in the above context of the discussion of gold, may do. However, he thinks even this has a referential element for in Kripke's view it is picked out and rigidly designated as that external physical property of the object which we sense by the *visual impression of yellowness*. So, in this sense, yellowness resembles the natural kind terms; though, the phenomenological quality of the sensation itself, he says, can be in some pure sense be regarded as a *quale*[95].

4.10 Examples

4.10.1 Water as H_2O

- Kripke considers water being H_2O, and considers that any substance not having this molecular structure (despite the fact that this had to be discovered) would *not* be water, but "fool's water", even though it was superficially indistinguishable. In contrast, if this substance can take a different form with different external properties (such as the polywater allegedly discovered in the USSR) it *would* be water.

4.10.2 Light

- Kripke also considers heat and light as "molecular motion" and "a stream of photons" respectively. These are what they *are*, despite the phenomenological impressions in us whereby they were first identified. He asks whether, in the situation in which all human beings were blind, whether light would cease to exist, and concludes that it would not. Light would exist, but people wouldn't see it. The visual impression light produces in us is a good example of fixing a reference. We fix what light is by the fact that it is whatever is out there in the world that affects our eyes in a certain way. However, in the counterfactual situation in which everyone was blind, we wouldn't say that light didn't exist because nothing could effect their eyes, but rather that some defect in us prevented it from helping us to see.
- Kripke imagines blind creatures that have the same qualitative "visual" experience from sound waves that we do from light. Would we say that in such a possible world, sound was light – that wave motions in the air were light? Kripke thinks that, given our concept of light we'd describe the situation differently. We'd say that these creatures, even if they were called "people" and occupied this planet, were sensitive not to light but to sound waves, in exactly the same way as we are to light. So, once we've found out what light *is*, then when we talk about other

[95] Kripke admits that he is vague here, but claims it doesn't matter. What does he mean?

possible worlds, "light" refers to *this* phenomenon in *this* world, and not as a phrase *synonymous* with "whatever in any world gives the us visual impressions and helps us to see". Light might not have helped us to see, and what had helped us to see might not have been light. The way we identified light (merely) fixed a reference.

4.10.3 Heat

- Kripke considers *heat*. The reference of the name "heat" has been fixed by the sensation it gives us. Kripke thinks it's peculiar of our language that we don't have a special name for this sensation other than the sensation of heat. He adds that if someone else detected heat by some sort of instrument, but couldn't feel it, we might want to say that the concept of heat isn't the same even though the referent is the same. Nevertheless, the term "heat" doesn't *mean* "whatever gives people these sensations" because (a) people might not have been sensitive to heat, and yet heat still have existed in the external world and (b) if light rays gave some beings the sensation of heat we have, it would be light, and not heat, that was giving people the sensations we call the sensation of heat[96]. We can imagine a world in which it was discovered that heat was not molecular motion, but (given that heat is molecular motion) any counterfactual example of something else giving the *sensation* of heat would be just that, and not a situation in which that something else *was* heat.

4.10.4 Lightening

- The same applies to lightening, in Kripke's view; anything that gives the same phenomenological experience as lightening, but without involving electrical discharge, would not be lightening but something that deceives us into thinking there's lightening.

4.10.5 Summary

- By way of summary and review, Kripke asks what's going on in the typical situation under consideration – say "heat is molecular motion". There is a certain referent which is fixed, in this and all possible worlds, by one of its contingent properties – in this sort of case that it can produce such-and-such a sensation in us. Since it's contingent that there are people on this planet, it's contingent that heat produces the sensations it does. So, one doesn't know a priori what sort of phenomenon – described in terms of physical theory – should produce this phenomenal experience, though eventually it was discovered that it was molecular motion. Once discovered, this gives us an essential property of this phenomenon, which in all possible worlds will be molecular motion – and, says Kripke, which could not have failed to be molecular motion because that's what heat *is*[97]. The

[96] Oh dear! What about secondary qualities essentially having a subjective element? What about "red". Isn't there a distinction between heat as molecular motion and heat as experienced? Just as there is a distinction between red as a wavelength of light and the experience of redness. Does this connect with "red Mary" and knowledge of qualia?

[97] What if it was discovered that it's not the molecular motion but some other property that causes the sensation in us? Would we say that one of the two phenomena (molecular motion and sensation) wasn't heat? Or would we say that "heat" is ambiguous?

property of initial identification is only a contingent property. The same phenomenon could have failed to feel like heat if our neural structures had been different. Kripke thinks, though, that it might be part of the very nature of human beings that they have a neural structure that is sensitive to heat, and so the phenomenal feeling of heat for human beings *could* turn out to be necessary, though he's ignoring this possibility for present purposes.

- In a footnote, Kripke picks up the point that some people argue that though we can't argue that sound waves would have been heat if they had felt like heat, yet we can argue that some other phenomenon not yet discovered, and distinct from molecular motion, might be another form of heat distinct from "our" heat. Kripke says that such views (even though he's unwilling to accept them) would make little difference to the substance of these lectures, because all someone holding such views need do is replace "heat" by "our heat", and similarly for other phenomena such as light, gold etc.

4.11 Recapitulation

- Before concluding his lectures with the application of his views to the mind-brain identity thesis, he recapitulates the story so far, adding a point or two.

4.11.1 Singular and General Terms (Mill)

- Kripke concludes that certain general terms – those for natural kinds – have a greater affinity with proper names than is generally realised. The conclusion holds for *count* nouns like "cat", *mass* terms like "gold" or certain terms for natural phenomena like "light" or corresponding adjectives like "red".
- Kripke had noted that for Mill, some singular names (definite descriptions) have both denotation and connotation whereas proper names only have denotation; also, that general names have connotation, with terms such as "cow" being defined by certain properties that pick out their extension. The tradition of definition by genus and differentia is of a piece with this conception. If Kant did indeed *define* "gold" as "yellow metal", it may be this tradition that led him to it, with "metal" the genus and "yellow" the differentia (the differentia can't include "being gold" without circularity).
- Frege & Russell disputed Mill's account of singular names, but agreed with him on general names. Hence all names – singular and general – are said to have connotation – Fregean *sense*. More recent theorists have followed Frege & Russell, but replaced *conjunctions* of properties with *clusters*, only *enough* of which need apply. Kripke's view *reverses* that of Frege & Russell, *endorsing* Mill's view of *singular* terms, but *rejecting* his view of *general* terms.

4.11.2 Species Terms and Proper Names

- In the case of species terms and proper names, Kripke's view asserts that we need to remember the contrast between (a) the a priori, but maybe contingent, properties carried with the term that were given by the way its reference was fixed and (b) the analytic, and hence necessary, properties a term may carry, given by its meaning. Additionally, for species terms and proper names, the fixing of the reference doesn't provide a synonym for the term. The way the reference is fixed goes as follows. (i) For proper names, either by an initial baptism – by ostentation

or a description – or otherwise by passing the name along the links of a chain. (ii) Much the same for general terms such as gold, imagined hypothetically and artificially as having its reference fixed by an ostensive baptism – by some such "definition" as "almost all of the items over there".

- Kripke wants to note several features of the latter baptism:
  (a) We assume that the items are gold, and know a priori that most of the items are not fool's gold. Given this, each of the items is essentially (necessarily) gold; yet, gold might have existed, yet these items not have existed. So, the identity in the definition doesn't represent a completely necessary truth.
  (b) The definition does represent an a priori truth in *fixing the reference* – in the same sense, and with the same provisos, as "One metre is the length of *S*". Kripke thinks that it is the general situation for natural kinds (eg. animal, vegetable & chemical) to get their references fixed in this way; the substance is defined as the kind instantiated by (almost all of) a given sample.
  (c) The "almost all" allows for some fool's gold in the sample, and provided there are not many deviant items, they will be rejected as not gold. However, our reactions may vary if it turns out that there is not only one substance or kind (allowing for a few deviants) in the original sample. We may, inter alia, declare there to be two kinds of gold, or drop the kind "gold".
  (d) There are other reasons why the new kind may prove illusory. Suppose the items (a set called *I*) are thought to belong to a new kind *K*, but are later found to belong to an existing kind *L*. They were originally excluded from *L* due to their supposed possession of a property *C* which turned out to be illusory. In this case we would say that kind *K* doesn't exist, though if kind *L* hadn't been discovered, we would say that kind *K* did exist, but that we'd been mistaken in associating it with property *C*.
  (e) The original notion of gold is vague to the extent that "same kind" is vague, though this doesn't ordinarily matter.
- Finally, the reference for <u>natural perceptible phenomena</u> is picked out simply as "Heat is that which is sensed by sensation *S*". Again, the identity which fixes the reference is a priori but not necessary, in that heat might have existed without us. "Heat", like "gold", is a rigid designator whose reference is fixed by its definition. Kripke doesn't attempt an exhaustive characterisation, but notes that other natural phenomena such as electricity, are originally identified as the causes of certain concrete experimental effects.

4.11.3 <u>Properties and Natural Kinds</u>

- Kripke now notes that the properties predicated of the original sample of a natural kind are used to draw other examples into the net, where "properties" can include membership of larger kinds (such as animality or felinity for tigers). These properties need not hold a priori of the kind – indeed they can be shown by later investigation not even to have held for the original sample or were generalisations peculiar to it – optical illusions or peculiar but not necessary properties (as, for instance, we might have white as well as yellow gold). Alternatively, an object may possess all the properties originally predicated of the kind, yet not be of it – eg. an animal may look like a tiger, yet not be one. While these are exceptions, they do arise. Sometimes the initial sample may fail to have the characteristics of a species, and be repudiated as in the *I-K-L* example above, but this situation is abnormal.

- A priori, we can only say that whether the characteristics originally associated with the kind apply universally, are sufficient for membership, or apply at all is an empirical matter. Kripke notes that joint sufficiency is unlikely to be *necessary*, though it may be *true*: any animal looking like a tiger is (for practical purposes) a tiger, even though it is metaphysically possible for there to be simulacra of tigers that aren't tigers. However, if it is true that these identifying properties are universally applicable, this may be a *necessary* truth, just as "cats are animals" has turned out to be necessarily true. We know of many such statements that, if they are true, they are *necessarily* true.

4.11.4 Science & Natural Kinds

- Scientific investigation discovers properties of natural kinds (eg. gold iff it has atomic number of 79) that are better than those in the original set. In this example, the "iff" should be taken as *strict* necessity. Kripke claims that science attempts to find the *nature*, and hence philosophical *essence*, of the kind by investigating structural traits. Natural phenomena are similar, with "heat is molecular energy" being necessary but not a priori. The sort of identity used in science seems associated with *necessity* rather than with a prioricity or analyticity. In contrast, the philosophical notion of *attribute* seems to require coextensiveness[98] that is all three – a priori and analytic, as well as necessary.
- Kripke points out that, on his view, discovery of the essence of a species does not constitute a change of meaning and that the possibility of such discoveries was "part of the original enterprise". When scientists discovered that whales aren't fish, this didn't mean that their "concept of fishhood" differed from the layman's, but simply corrects the layman by showing that "whales are mammals, not fish" is a necessary truth, though neither a priori nor analytic.

4.11.5 Transmission of the Name of a Natural Kind

- Independently of the above scientific investigations, the original sample gets augmented by the discovery of new items. (Kripke admits that his examples are artificial – gold was no doubt discovered by many sets of people independently, so it's unclear what the "original sample" was. However, he denies that this materially affects his case). The species-name is passed from link to link so that even those who have never seen gold can use the term; their reference is determined not by items (of gold) but by a causal-historical chain.
- Kripke makes some attempt to explain this theory, though less of one than he did for proper names. In the case where a proper name is passed from link to link, the way the reference of the name (was) fixed is thought of little relevance. It doesn't matter how the various speakers fix the reference provided they give the name the same reference. Kripke thinks the situation is similar for species names, though admits that the temptation to think that the metallurgist has a different concept of gold from the person who has never seen it is stronger[99]. This is particularly the case with sensed phenomena – does the blind man have a different concept of

[98] What does he mean? I know what the extension of a property is – everything that has it. It would be nice to have an example of the difference, on Kripke's account, between an attribute and an essential property.

[99] This is a fact, not a temptation. What's the impact on Kripke's theory? Are people's *concepts* important?

"light" to the sighted man, even though both use the name as a rigid designator for the very same phenomenon? Kripke notes that "concept" is used here in a non-technical sense. Kripke thinks that the *necessity* of the seemingly crucial method whereby we identify light is *illusory*.

4.11.6 Primary & Secondary Qualities

- Kripke also thinks that the above observation and remarks on property-identity[100] are essential to understanding the traditional disputes about primary and secondary properties, and has a long footnote on the topic – as follows. Firstly, he says that "yellowness" isn't a dispositional property, as some philosophers have thought, though it is related to one. Other philosophers have had a gut feeling that "yellowness" is a manifest property, as much "out there" as hardness or spherical shape.
- According to Kripke's thesis, the correct account is that the reference of "yellowness" is fixed by the description "that manifest property of objects that causes them to be seen as yellow". "Yellow" does not mean "tends to produce such and such a sensation", because for all sorts of contingent reasons, yellow objects might have done no such thing. Attempts to patch up such a definition of yellow by adding "under circumstances *C*", according to Kripke, will either lead to circularity (with *C* involving yellowness) or will make the alleged definition into a scientific discovery rather than a synonymy.
- Kripke thinks that our adoption of the "fixes the reference" view leaves it up to the scientist to identify the property so marked out in whatever more fundamental physical terms he might wish. Additionally, Kripke thinks the view of some philosophers – that we wouldn't have in the language terms like "sensation of yellow" unless they were identifiable in terms of external observable phenomena such as yellowness, and associated human behaviour – irrelevant to the issue (he say "independent of any view argued in the text").

4.11.7 Objections to the Necessary a Posteriori

- Kripke now returns to theoretical identities which are, according to Kripke, identities involving two rigid designators and consequently examples of the necessary a posteriori. This notion may still seem puzzling despite Kripke's distinction between necessity and a prioricity, and Kripke waxes lyrical about the sort of knock-down argument people try on. People point out that Kripke has admitted that gold might have turned out not to have had atomic number 79 (and other examples) so what can he mean by saying that such eventualities are impossible? If the world might have *turned out* otherwise, it might have *been* otherwise. What is entailed by a possibility must itself be possible.
- Nor can we say that "might have" is merely epistemic, as in "Fermat's Last Theorem[101] might turn out to be true or might turn out to be false" or "arithmetic might have turned out complete" – expressing our (former) ignorance. Kripke points out that it was mathematically impossible for the answer to turn out other than it did, but this isn't the case for our favourite examples of essence or of identity between rigid designators – it really *was* possible for gold not to have had

[100] I've lost the plot slightly here! On a second reading, determine which remarks he's referring to.
[101] Kripke was writing before FLT was proved. Goldbach's conjecture would be more contemporary.

atomic number 79. The contrast with the mathematical case would not be alleviated even if there were mathematical truths which it is impossible to know a priori.

4.11.8 Kripke's Response to the Above Objections

- Kripke thinks anyone who's cottoned on to what he's been talking about can answer these objections for himself, but adds a relevant clarification of his previous argument. The objector is correct in saying that "it could have turned out that *P*" entails that "*P* could have been the case". So, what does the intuition that this table might have turned out not to have been made of molecules amount to? Kripke thinks that all this implies is that there might have been *a table* here, looking just like this one, but with a radically different constitution. I, or some other conscious being, could be qualitatively in the same epistemic situation as I am in fact in about a table that is (say) made of ice. The situation is similar to the one that inspired the counterpart theorists[102], and Kripke is speaking loosely in saying that the table could have turned out radically differently. *This* table couldn't have had an origin different from that it in fact had, but in a situation qualitatively identical epistemically, another table made of ice could have been in the room in the place of this one. So, something like counterpart theory applies to this situation, but only because we're not interested in *this particular table*, but only what might have been the case concerning *a table* given certain evidence. It is just because *this table* cannot have been made of ice that we must turn to qualitative descriptions and counterparts. Kripke claims that it is perverse to apply these notions to *de re* modalities[103].
- So, the general answer to the objector goes as follows:
  (1) Any necessary truth, whether a priori or a posteriori, could not have turned out otherwise.
  (2) In the case of some necessary a posteriori truths, we can say that under appropriate qualitatively identical evidential conditions an appropriate corresponding qualitative statement might have been false.
  (3) Instead of the loose statement that gold might have been a compound, we must say that it is logically possible that there should have been a compound with all the properties originally attributed to gold.
  (4) Instead of the inaccurate statement that Hesperus might not have been Phosphorus, we should say that two distinct bodies might have occupied the positions in the evening and morning of Hesperus-Phosphorus-Venus.
  (5) The reason that (Goldbach's conjecture) gives a different impression is that, in the absence of a proof either way, it is possible for a *mathematical conjecture* to be either true or false.
- In a footnote, Kripke expatiates briefly on the "looseness of language" issue. Saying that "gold might not have been an element" is correct in the epistemic sense that the evidence doesn't warrant a priori (Cartesian) certainty that gold is an element. Kripke is also correct in saying that it was discovered a posteriori that gold is an element. But, if he were to say that "gold might have turned out not to

[102] Eg. David Lewis; Kripke introduces this approach in the first lecture.
[103] On a second reading, get clearer about what this means. It has to do with essentialism and is contrasted with de dicto modality.

be an element" this seems to be meant *metaphysically*, and so should be corrected as above.

4.11.9 Qualitative Contingent Statements

- Finally, Kripke describes the paradigm for the corresponding qualitative contingent statement[104]. We must describe both the prior evidence and the statement qualitatively so that they are only contingently related. Kripke describes the paradigm for the identity case of two rigid designators, "R_1" and "R_2" where "$R_1 = R_2$" is necessary if true. The references of "R_1" and "R_2" may well be fixed by non-rigid designators "D_1" and "D_2", which, in the Hesperus-Phosphorus case have the form "the heavenly body at such-and-such a position at such-and-such a time". While "$R_1 = R_2$" is necessary, "$D_1 = D_2$" may be contingent, leading to the erroneous view that "$R_1 = R_2$" might have turned out otherwise.

4.12 The Mind-Brain Identity Theory

- At last Kripke gets to his final theme[105], the identity thesis. He starts by reviewing the various identity theses on offer: (1) of a person with his body, (2) of a particular sensation with a particular brain-state, (3) types of mental states with types of physical states. Each of these identities allows Cartesians and others to raise analytical problems that cannot be side-stepped by appeals to the alleged confusion of identity with synonymy. Kripke notes, rather sarcastically, that one can hold one but not another of these identity theories, and mentions Nagel and Davidson as supporting token-token identity theories[106] while rejecting type-type. He hasn't time to discuss these options in detail and will focus on type-type identity theories – though his brief remarks on token-token[107] identity will be relevant to them – but doubts that such philosophers would call themselves "materialists". He notes Davidson's thesis that it is impossible to correlate psychological and physical properties[108].
- Kripke notes that Descartes had argued that the mind (or person) is distinct from the body because it can exist without it, but thinks he would have been better arguing from the fact that the body can exist without the mind, as is presumably the case for corpses. Kripke has a long footnote on this; if this consideration is accepted, so must the distinctness of mind and body, and we are referred to David Wiggins's *On Being At The Same Place At The Same Time*[109]. We might similarly argue that the statue[110] is not identical to the hunk of matter of which it is composed, but this attracts the rejoinder that it is nothing over and above this, and one might try the same approach with mind and body. Kripke thinks problems analogous to those in the text would still appear. The thesis entails that necessarily a person only exists iff his body exists with a certain structure, and Kripke thinks

[104] I'm slightly lost here. Review later.
[105] I've left in a number of footnotes that require further thought after looking at "materialism" in philosophy of mind.
[106] Ie. Case (2).
[107] Rather confusingly, Kripke starts off discussing token-token theories and leaves the longer discussion of type-type theories until later.
[108] Is this anomalous monism? Check it out.
[109] I have a copy of this – read it!
[110] Address Gibbard's paper in the light of this!

it would be subject to modal difficulties similar to those besetting the ordinary identity thesis; and, he says, the same would apply to suggested analogues[111] replacing the identification of physical states with mental states. Kripke also has no time for the functional state view of psychological concepts; in any case, he thinks it hasn't been expressed clearly and has little inclination to accept it.

- So, returning to the rejection of Cartesianism, Kripke says that it's plainly inadmissible to accept the Cartesian premise while rejecting the conclusion. Let "Descartes" and "B" be rigid designators for, respectively, Descartes (the person) and his body; then, if the supposed identity theory is true, the identity of Descartes with B would be necessary and neither Descartes not B could exist without the other[112]. Some (it seems) have suggested that the case is analogous to that of the first Postmaster General with the inventor of bifocals, but Kripke rejects the analogy because, though it is true that the identity obtains even though there could have been a first Postmaster General even though bifocals had never been invented. The reason is that "inventor of bifocals" is not a rigid designator[113] – Franklin could still have existed in a world where no-one invented bifocals. Hence, the analogy collapses and, to reject the Cartesian conclusion, we must undertake the non-trivial task of rejecting the Cartesian premise[114].

4.13 Token-Token Identity Theories

- Let "A" represent a particular pain sensation and "B" the particular brain state an identity theorist wants to identify with it. It would seem at least logically possible for B to have existed without A – Jones being in the required brain-state without feeling any pain[115]. Kripke thinks the identity theorist cannot just admit the possibility and cheerfully carry on, since consistency and the principle of necessity of identity of rigid designators forbid it. The identity of A and B, if true, has to be necessary. Kripke denies that someone can successfully argue that "being a pain" is a merely contingent property of A, so the presence of B without pain doesn't imply the presence of B without A. Kripke thinks no case of essence more obvious than that "being a pain" is a necessary property of each pain. In any case, the identity theorist taking this line would also have to argue for the contingency for A of "being a sensation", because it is conceivable for B to pertain without any sensation to identify it with. Kripke asks us to consider any sensation we may have had; is it really conceivable for that very sensation could have existed without being a sensation, just as a certain inventor (Franklin) might have existed without being an inventor?
- Kripke thinks this strategy is adopted by many identity theorists. They think the supposed identity of mental state with brain state is to be analysed analogously to the identity of Benjamin Franklin with the inventor of bifocals; just as some contingent activity of Franklin's made him the inventor of bifocals, so some

[111] What are these?

[112] This is a problem, because it's clear that B can exist without Descartes, ie. after Descartes' death. I suspect that an identity theorist could argue that Descartes' body after death is not identical to his body before death (it is broken, for a start). This is all highly dubious. There's something fishy about using arguments from the philosophy of language to prove anything substantial about the world.

[113] Kripke doesn't mention "the first Postmaster General", which doesn't seem to be a rigid designator either, for the same reasons.

[114] What is this premise, and does Kripke attempt to attack it? Is that what the next bullet is about?

[115] This is presumably analogous to the "zombies" thought experiment.

contingent property of a brain state makes it a pain. The materialist doesn't want to seem to posit irreducible non-physical properties, so wants to state the property of being in pain in physical, or at least "topic-neutral" language. Typically, the analysis of "being in pain" as a property of a physical state is in terms of the causal role of the state. Characteristic stimuli cause it, and it causes characteristic behaviour. He refers to Davidson's *Materialist Theory of Mind*, discussed by Thomas Nagel in the *Philosophical Review*, and also to David Lewis's *An Argument for the Identity Theory*[116]. Kripke finds such arguments faulty on specific grounds as well as modal ones, but only observes here that the causal role of the physical state is regarded as a contingent property, and therefore it is contingent that it is mental at all, let alone something as specific as pain. Kripke finds this absurd, for it implies that *the very pain I have now* could have existed without being a mental state at all[117].

- Kripke now turns to the converse, Cartesian, problem – that we might have a pain without the corresponding[118] brain state, and notes that *being a brain state* – of a specific type – is an essential property of B, which would not have existed without the particular configuration of brain cells that constitute its presence. Hence, someone who argues that A cannot exist without B must say that it couldn't have done so without a *quite specific* configuration of molecules. If A = B, then this identity is necessary and they must share all essential properties. So, an identity theorist cannot simply accept the Cartesian intuitions that A can exist without B, and vice versa – that mental properties are contingent to B and physical properties contingent to A – but must explain how these intuitions are illusory. Kripke admits the task may not be impossible – for things that appear contingent sometimes turn out to be necessary – but is not a trivial task, as Kripke will show.

4.14 Type-Type Identity Theories

- Finally, Kripke discusses type-type identity theories, exemplified by the identification of pain with C-fibre stimulation. This identification is supposed to resemble the identification of heat with molecular motion and water with H_2O, and Kripke singles out the former supposed analogy for attention. While he notes that the usual view has it that the identification of both pairs of types – heat with molecular motion and pain with C-fibre stimulation – are *contingent*, he reminds us that both "heat" and "molecular motion" are rigid designators, so the identity of the corresponding phenomena is *necessary*. But what about "pain" and "C-fibre stimulation"? Kripke thinks it's clear from previous discussion that "pain" is a rigid designator of the type or phenomenon it designates – if something is a pain, it is essentially so, and he thinks it absurd that pain could have been some phenomenon other than the one it actually is[119]. Kripke supposes, for the sake of argument, that "C-fibres" is a rigid designator, so "C-fibre stimulation" will be rigid also. In fact, he admits that he knows nothing about C-fibres other than that

[116] Review these papers!
[117] The identification of pain with bodily damage would seem to allow this possibility.
[118] The argument isn't that we might have pains without any brain-state, as Descartes argued, but that we might not have the specific brain state with which this pain state is allegedly identical. I suspect vagueness has a part to play here – how dependent a pain is on the specific brain-state presumably relates to the identity of *pains* – when is one pain identical to another.
[119] If what pain *is* is a warning of actual or impending bodily damage, it could have taken all sorts of forms – warning sirens and such like.

their stimulation is supposed (by the identity theorists?) to be correlated with pain. However, if "C-fibres" is not a rigid designator, he can replace it with one that is, or suppose it to be a rigid designator in the present context. Either way, the equation of pain with C-fibre stimulation is seen to be *necessary*.

- Kripke has yet another long footnote to the effect that some intelligent people have stupidly misunderstood his use of the expressions "correlated with" and "corresponding to" as begging the question against the identity thesis. Kripke points out that the identity thesis claims that pains and brain states are *identical*, not just *correlated*, the latter being accepted by both identity theorists and dualists. Kripke claims that the dualist thinks of the correlation as irreflexive, whereas the identity theorist thinks of it simply as a special case of the identity relation, and that such terms can be used without prejudice to whoever is correct. However, Kripke does admit ("thus …") that the entire discussion presupposes[120] the anti-materialist position he sets out to prove, but that he assumes for the sake of the argument that scientific discoveries have not yet refuted materialism.

4.15 Analogies: C-fibres / Molecular Motion versus Pain / Heat

- The analogy between pain / C-fibres and heat / molecular motion has not yet failed, but is just the opposite of what is usually thought – both identities are necessary, if true, rather than contingent. The identity theorist must therefore defend the surprising and counter-intuitive view that there is no situation in which a pain is not a C-fibre stimulation, nor vice versa. Kripke asks whether our intuition is not at fault here, as it is if we suppose that water is not necessarily H_2O? If the identity theorist can demonstrate this, then he has shown that it is the Cartesian intuitions – the Cartesian *premises* – that are at fault, though superficially plausible, while the Cartesian *argument* is sound.
- Kripke doesn't think the identity theorist will succeed in this endeavour, which in any case isn't analogous to the usual sort of scientific identification, eg. of heat and molecular motion. The strategy used to handle cases of the apparent contingency of the necessary a posteriori was to argue that, although the statement itself is necessary, someone could be in the same epistemic situation as the original, but one where the *qualitatively* analogous statement could be false. In the case of identities between two rigid designators, a simpler strategy will do. We consider how the references of the designators are determined; if these coincide only contingently, it is this which gives the identity the illusion of contingency. This is simple for the case of heat and molecular motion. Someone who erroneously claims that heat might have turned out not to be molecular motion is correct in what he says in that someone could have sensed a phenomenon in the same way we sense heat (by feeling the sensation (S) "the sensation of heat"), even though that phenomenon was not molecular motion[121]. Additionally, the planet might have been inhabited by beings that didn't get S in the presence of molecular motion, but in the presence of something else. Such beings would be, in

[120] Ie. "is from the standpoint of"? This, and the rest of the sentence, reads rather oddly in context.

[121] I'm suspicious of this (maybe I've said this before). Heat *as sensed* doesn't seem to be identical to molecular motion for the same reasons Locke gave – samples of matter with the same molecular motion can feel hot to one hand and cold to the other. It's heat in the thermodynamic and objective "temperature" sense that's identical with molecular motion. Maybe this is just what Kripke's saying. The reference is *fixed* by sense, but it might not have been.

some qualitative[122] sense, in the same epistemic situation as us, and could use a rigid designator for the phenomenon that causes S, even "heat", yet it would not be molecular motion, and *therefore not heat*, that for them causes S.

- So, asks Kripke, is there an analogous argument to explain away the feeling that the identification of pain with C-fibre firing, assuming this to be a scientific discovery, could have turned out otherwise? Kripke thinks not, because, in the case of heat and molecular motion, what seemed really possible was that molecular motion might have existed while not being felt as heat; ie. without producing S. Is it analogously possible that C-fibre stimulation could have existed without being felt as pain? No – the difference is that "pain" and "the sensation of pain" are, says Kripke, the same thing – without the sensation of pain, there is no pain[123]. If C-fibre stimulation can exist in the absence of pain, then this contradicts the identity thesis (and the same is true for any other identification of physical and mental states). Kripke identifies the identity-theorist's problems as arising from his not merely arguing that physical states *produce* mental states, but by *identifying* them, so that one cannot exist without the other. For molecular motion and heat, there is the *sensation of heat* that stands between the external phenomenon and the observer[124]. This intermediary is impossible in the case of mental-physical identification, where the physical is identified with the internal phenomenon itself. Someone can be in the same epistemic situation as in the case of heat, and feel S when there is no heat; and may lack S in the presence of heat. However, there is no analogous situation for mental phenomena. To be in the same epistemic situation as one would be if in pain *is* to be in pain[125], just as to be in the situation as not in pain is *not* to be in pain. So, the apparent contingency of the relation between the mental state and the corresponding brain state cannot be explained by qualitative analogy with the case of heat.
- So, the trouble with qualitatively identical epistemic situations for the identity-theorist is that such states just *are* the situations in question. The same point can be made with respect to what fixes the reference of the rigid designator. The reference of "heat" was fixed by the accidental property of heat producing in us the sensation S. So, another property could have been picked out by S, without it being heat and therefore molecular motion. Pain, however, isn't picked out by one of its accidental properties, but by the property of being pain itself – its immediate phenomenological quality. Thus, unlike heat, pain is not only rigidly designated by "pain", but the reference of the designator is fixed by an essential quality of the referent. Hence, it isn't possible to say that, though pain is necessarily identical with a certain physical state, it is still possible to pick out another phenomenon in the way we pick out pain without it being correlated to that physical state. Any phenomenon picked out in exactly the way we pick out pain *is* pain.

[122] Kripke keeps using this expression, not always referenced in my "translation" – presumably it refers to "qualia"?

[123] There's nothing else to fix the designation of "pain" other than "the feeling of pain". I'm not convinced. We think of other animals or even other humans as being in pain, even though we can't feel (or even imagine) their pain.

[124] Hence, the temptation to equate pain with bodily damage, so that we can have pain without the sensation of pain. However, bodily damage is only (if at all) the cause of pain, which is a brain process.

[125] Hence the importance of the argument that pains cannot be illusory – a phantom-limb pain is still a pain.

4.16 Another Analogy – "What God had to Do"

- Kripke thinks we can make this point more vivid without reference to the apparatus of rigid designators developed in these lectures. All God, in creating the world, has to do to ensure the identity between heat and molecular motion obtains is to create heat – that is the molecular motion – itself. If the air molecules are sufficiently agitated, it will be hot even though there are no observers to see it, just as he created light (streams of photons) before there were humans to see it. It is illusory that God had any work to do in making heat identical to molecular motion, even though this seems like a substantive scientific fact. What he did have to do was make heat feel hot – ie. for molecular motion to be *felt* as heat! For this, sentient beings capable of feeling S are required, and only after this can there be beings who learn the a posteriori truth that "heat is molecular motion" as we do.
- For the case of stimulation of C-fibres, all God need do is create beings with C-fibres capable of being stimulated, it being irrelevant whether or not they are conscious. But, additionally it seems, to make C-fibre stimulation correspond to pain, he must make them feel the C-fibres stimulation as *pain*, rather than as a tickle. If this *is* within God's power, then the relation of pain to C-fibre stimulation cannot involve identity, for the stimulation could exist without the pain, and, since both "pain" and "C-fibre stimulation" are rigid designators, this fact implies non-identity. God had work to do after creating the man himself in order to create the inventor of bifocals, for the man might not have invented anything. However, if the phenomenon of pain exists at all, no further work is required to make it into pain.

4.17 Identity Between Brain and Mind can't be Contingent

- Kripke summarises. The correspondence between brain states and mental states seems to involve obvious contingency, but identity cannot hold contingently. So, if the identity thesis were correct, the contingency couldn't hold between the mental and physical states. However, the contingency cannot lie (as in heat and molecular motion) between the phenomenon itself and the way it appears, because in the case of mental phenomena there is no appearance beyond the phenomena themselves.
- Kripke has been emphasising the possibility of the physical state (C-fibre stimulation) without the corresponding mental state (pain), but the reverse possibility also causes problems that cannot be resolved by analogies with heat and molecular motion.
- Finally, Kripke admits that he hasn't considered the counter-arguments in as much detail for cases other than type-type identity, though he thinks the token-token identity theorist will face similar problems and be unable to appeal to analogues. That the standard defences are not available to (any) identity theorist doesn't mean that no defence is possible. However, Kripke thinks that his arguments tell heavily against the usual forms of materialism. A materialist must hold that a physical description of the world is a *complete* description, and that any mental facts are ontologically dependent on physical facts by following from them of necessity. Kripke thinks this is intuitively not the case, and that no identity theorist has made a convincing case that it is.
- Kripke ends with a final footnote to the effect he finds the mind-body problem "wide open and extremely confusing", but that in any case his rejection of the

identity theory does not dispose him towards Cartesian dualism, but rather that the approach in these lectures pulls in the opposite direction. He admits that identity theorists have positive arguments for their view, some of which are highly compelling and for which he currently has no answer, though he finds some of them weak or arising from ideological prejudice. With respect to Cartesian dualism, Kripke's view that a person necessarily comes from the zygote he does seems to implicitly reject Cartesianism; for, why should any self-subsistent spiritual entity or soul have any necessary connection with such a zygote? His view on sperms and eggs doesn't prejudge the issue of dualism. Rather, the fact that we can't imagine people coming from zygotes other than those they in fact do seems to show we have no clear conception of a soul or self. In any case, Descartes' conception of the self has been rendered dubious ever since Hume's critique.

5. ADDENDA

- Kripke amplifies various topics raised in the text in response to questions[126].

5.1 Unicorns

- There are two theses that Kripke needs to explain the strange views on this subject expressed in the *First Lecture*. These are: (1) a *metaphysical* thesis – that no counterfactual situation is correctly described as there being unicorns; and (2) an *epistemological* thesis – that an archaeological discovery that there were animals with features like those of unicorns would not constitute proof that there *were* unicorns.
- Firstly (1). Tigers are an actual species, but unicorns are a mythical species. Tigers cannot be defined simply in terms of their appearance, for a different species – ie. not tigers – might have the same external appearance, but a different internal structure. Since there is no actual species of unicorns, we don't know what their internal structure might be, and so wouldn't know which of various superficially identical hypothetical species with different internal structures would have *been* unicorns. Presupposing that the mythical unicorns were supposed to be a species, but that the myth provides insufficient information about their internal structure, we cannot say of any actual or possible species that it would have been the species of unicorns.
- Secondly, and more easily, (2). We cannot tell from a story of a substance with the physical appearance of gold whether it's gold or fool's gold that's being talked about; that is, unless we have (as in the case of proper names) a historical connection of the story with a certain substance. When the connection is traced it may take us back to gold, fool's gold or something else. Similarly[127], mere discovery of animals with the properties attributed to mythical unicorns wouldn't show that these were the animals the myth was about[128], because it might be mere coincidence that animals actually existed with the same appearance[129]. We would need to find a historical connection showing that the myth was about *these* animals.
- Kripke thinks the same is true of fictional characters – the mere existence of a real detective with exploits like Sherlock Holmes wouldn't show that Conan Doyle was writing about *him*. It is theoretically possible, though fantastically unlikely, that Doyle was writing pure fiction and the resemblance to the actual man was pure co-incidence, as in the usual disclaimers. Kripke holds the metaphysical view that, since there is no Sherlock Holmes, one cannot say of any possible person that he *would have been* Holmes had he existed. Several distinct possible or actual

[126] Add references to these sections in the earlier text.

[127] There seems to be an odd anti-parallelism here between stories and things.

[128] This seems unreasonably sceptical. Once a tradition has decided that something is mythical, no amount of evidence can then re-instate that thing as real. Say angels really do exist, but current scientific opinion has it that they are mythical beings, then "angel" is a rigid designator for a mythical being (having, ex hypothesi, once been a rigid designator for a real being). So if we come to believe in the existence of those same angels, we cannot any longer use the name "angels" of them, or take the name "angels" in any sacred text to refer to them. The same goes for "Abraham". Seems suspect to me. Is this where Kripke's argument leads? See also the issue with Santa Claus.

[129] This , however, seems true – maybe some random sci-fi thriller will score a direct hit, but the reference of the action in the thriller is to fictional entities, not to the putative real ones. Kripke goes on to say as much.

people (Kripke cites Darwin or Jack the Ripper[130]) might have performed the *exploits* of Holmes, but of none could it be said that he would have *been* Holmes had he done so; for, if so, which one[131]?

- Kripke admits to having changed his mind since writing in 1963 that "Holmes does not exist, but in other states of affairs, he would have existed". This quote gives the erroneous impression that a fictional name names a particular possible-but-not-actual individual. However, Kripke stands by the substantive point of the quote – that (1) in other possible worlds some actually existing individuals may be absent while new individuals may appear and (2) if in an open formula A(x), the free variable x is assigned a given individual as value, a problem arises as to whether a truth value is to be assigned to the formula in worlds in which that individual doesn't exist. This is independent of any linguistic theory of the status of fictional names.
- Kripke suspects that the "cryptic brevity" of these remarks will make them even less persuasive, but expects to elaborate in a forthcoming work on the problems of existential statements, empty names, and fictional entities.

5.2 "Can" To "Must"

- This refers back to the *First Lecture*, where Kripke had pointed out that it is not the case that what *can* be known a priori *must* be known a priori[132]. Stroud had pointed out that Kant makes a similar mistake, saying that experience teaches that a thing is so-and-so, but not that it cannot be otherwise. So, if we have a proposition in thought only that is considered necessary, this is an a priori judgement – and necessity and strict universality are sure criteria of a priori knowledge. Kripke interprets Kant as thinking that propositions known to be necessary can *only* be known a priori. No, says Kripke, for one can learn a mathematical truth a posteriori by consulting a computer or asking a mathematician. Kant can't argue that experience can tell us whether a mathematical statement is true, but not that it is necessary, for we know a priori from the peculiar nature of mathematics that any mathematical statement such as Goldbach's conjecture, if true, is *necessarily* true.
- All examples of the necessary a posteriori advanced in the Lectures have the special character attributed to mathematical statements. They cannot be contingently true, so any empirical knowledge of their truth is empirical knowledge of their necessity. This applies in particular to cases of identity statements and essence and *may* supply a clue to the general characterisation of a posteriori knowledge of necessary truths.
- Kripke thinks that if the only objection to Kant were of consulting a computer to learn mathematical truths, he could respond by saying (a) every necessary truth is knowable a priori or, more weakly, (b) every necessary truth, if known at all, is knowable a priori. Kripke thinks these both involve the *obscure* notion of the *possibility* of a priori knowledge, but even once clarified (as a priori knowledge of a standard human sort) Kripke's Lectures argue against both, holding that some statements properly held to be empirical can be, and be known to be, necessary.

[130] Presumably because alive at the right time?

[131] This seems rather feeble – but maybe the thought of necessity comes in. If both Darwin and Jack the Ripper would have been Holmes, then both necessarily would be Holmes, and therefore would necessarily be one another, an uncomfortable thought. Or something like that?

[132] As was the case, say, for certain recently proved but previously conjectural mathematical theorems.

- Kripke retracts his incautious attribution to Kant of the notion of a priori truth as truth which *can* be known independently of experience. Kant only refers to a priori knowledge of particular statements, hence avoiding this extra modality[133]. When Kant uses "necessary" for a type of proposition and "a priori" for a mode of knowledge, he cannot be accused along with contemporaries of treating these terms as synonyms. The opening pages of the *Critique* make it clear that Kant thinks it a substantive thesis - obvious, though important – that knowledge that something is necessary must be a priori knowledge.

5.3 Non-circularity Condition

- :Kripke thinks that some people have misunderstood what he was on about in the *First Lecture*, as though he said that saying that "Jonah is the man referred to by that name in the Bible" necessarily violates the non-circularity condition. He claims that it doesn't, provided the description theorist can give an account of the Biblical authors' reference which is independent of our own. Kripke, in discussing Strawson, had acknowledged that a speaker may pass the buck to another in a non-circular manner, provided the latter's description does not ultimately involve the reference made by the former.
- So, Kripke can say "let "Glumph" be the thing Jones calls "Glumph", provided Jones doesn't say "let "Glumph" be the thing Kripke calls "Glumph". There's a *different* objection to *non*-circular buck-passing references like the "Glumph" one – that the speaker cannot be sure from whom he picked up his reference. Additionally, a layman may say "let Gödel be the man the experts say proved the incompleteness theorem" without knowing that the experts have now attributed the proof to Schmidt. Determinations of the referent may give the wrong result, and the speaker cannot say a priori that they don't, as he needs to from Thesis 5[134]. Attempting to avoid such errors by using one's *own* reference as the paradigm ("X is what I currently call "X") *is* circular, unless I have already determined the reference in some other way, in which case *that* is the determining condition.
- The buck-passing speaker often risks both error and circularity, as he doesn't know that he won't receive the buck back again. Kripke claims as a blatant example "Let Gödel be the man generally credited in community C with having proved the incompleteness theorem", if this is used *throughout* C. An individual speaker may err if C has been appraised of the Gödel-Schmidt fraud but he hasn't; and the determination will be circular if even a large majority of the speakers in C use it to determine their reference.
- A different way of determining the reference would be the rather complicated formula that follows. "Let "Glumph" be the man called "Glumph" by the people from whom I got it, provided my present determination of the reference follows the rules[135] laid out in *Naming and Necessity* and whatever other conditions need to be satisfied". This would be a trivial fulfilment of the description theory in terms of the present view if only the present view wasn't somewhat loose and didn't already involve the notion of the speaker's own reference[136] - because he intends to agree in reference with those from whom he picked up the name. Even

[133] I'm not quite clear on the point of this whole Addendum.
[134] (5) The statement, "If X exists, then "X has most of the φ's" is known a priori by *A*.
[135] Presumably the theses laid out in Kripke's formulation of the description theory?
[136] Kripke refers back to (his) Footnote 38. I don't understand what he's on about here.

if both problems are solved, the resulting description isn't, as description-theorists intend – of the type occurring to the speaker who asks "who is Napoleon". It would occur only to those speakers who've mastered a complex theory of reference, and it'd be the theory, rather than the description, which provides the true picture of how the reference is determined.

5.4 Initial "Baptism"

- the appeal to an initial sample oversimplifies the case; there need not always be an identifiable initial baptism. Kripke thinks, however, that such considerations don't radically alter the picture, though admits that cases lacking an initial baptism are rarer in the case of proper names than for species.

5.5 Santa Claus

- Gareth Evans had pointed out that there can be shifts of reference of a name not only from real to fictional entities, but from one real one to another. Evans's example was Marco Polo's erroneous ascription of "Madagascar" to an island when the name was "native" for an inland part of Africa[137]. The widespread current use of the name for an island overrides the original native use. David Lewis has pointed out that the same would apply had the original native use been for a mythical locality. So, names can shift their reference between any two of the four cells on the real x imaginary transition matrix, with present intention overriding the original intention to preserve the original reference during transmission.
- Kripke says this deserves extended discussion, but thinks it explicable in terms of his lectures' emphasis on the social nature of the use of proper names to communicate with other users of the common language. This ordinarily constrains the speaker to transmit a name as transmitted to him, but the present case shows contemporary intention overrides the distant link[138]. Kripke thinks the references in *Lecture Two* to George Smith (the teacher's neighbour supposed to have squared the circle) or to Newton (with the wrong attributes) are examples of the same phenomenon. He admits that further work and an improved apparatus are required, in particular to clarify the distinction between a present intention to use a name for an object from a mere present belief that the object is the only one having a certain property.

5.6 Acknowledgements

- Kripke acknowledges that his historical acquisition picture of naming is similar to Keith Donnellan's, and to the views of Charles Chastain, though these have a greater admixture of the description theory. David Kaplan has extended his account of "Dthat" into a logic of demonstratives and argues that Kripke's paper can be given a formal representation.

[137] See *Names* notes.

[138] This is all very well, but somewhere along the line, the link must have been broken. Effectively, Marco Polo baptised Madagascar with another token of a name that already had a reference.

5.7 Necessity

- Kripke thinks the *Third Lecture* has shown that what is often thought of as mere *physical* necessity is necessity *tout court*.

6. APPENDIX – KRIPKE'S RESPONSE TO HIS CRITICS[139]

- Kripke addresses some key misunderstandings of his doctrines.

6.1 Non-Unique Names

- Some people have thought that the mere fact that two people can have the same name refutes the rigidity thesis. Kripke has indeed simplified matters by speaking in the text as though each name has a unique bearer, but doubts this is a significant oversimplification. He thinks most, if not all, theoretical issues about the semantics of names – and in particular that of rigidity – would remain even had we conventionally adopted unique names.
- Given language as it is, we could speak of names as having a unique referent by adopting a practice analogous to calling homonyms distinct words, so that use of the same phonetic sounds to name distinct objects count as distinct names. Unfortunately, this, though useful for theoretical purposes, doesn't agree with common usage (other than in the phone book).
- Kripke has a footnote pointing to the need for subtlety. From Kripke's perspective, two totally distinct historical chains that accidentally assign the same phonetic name to the same man should count as two distinct names, despite the identity of referent, which may be unknown to the speaker or may be a recent discovery. Similarly, Kripke thinks a description theorist would think the same of two distinct descriptions, despite identity of phonetics and referent. However, distinctness of referent is at least a *sufficient* condition for distinctness of names. Kripke isn't advocating this usage, though he is sympathetic, thinking that whatever convention is adopted, rigidity has nothing to do with the question of phonetically identical names.
- The main point is that the philosophical treatment of homonymous names is irrelevant to the question of rigidity. As a speaker of his own idiolect, Kripke calls only one person "Aristotle" despite knowledge that others use this name for the person he refers to as "Onassis". (1)[140] has no unambiguous truth conditions for those who use "Aristotle" to name more than one object. Kripke had assumed a particular interpretation of the name, as have description theorists for simplicity spoken as though names had unique references. The context usually disambiguates. So, *given* the fixed understanding of (1), the question of rigidity reduces to whether the correctness of (1), thus understood, is determined in each counterfactual situation by whether, if that situation had obtained, a certain single person would have liked dogs. Kripke says "yes", but Russell seems to be committed to saying "no", even where what (1) expresses is contextually fixed. The question is unaffected by other[141] readings of (1) – we can ask our counterfactual question in each case.
- To recapitulate, (1) must be taken as expressing a single proposition if its truth conditions, even with respect to the actual world, are not to be indeterminate. Ambiguous words must be read determinately, indexicals assigned determinate references, syntactical ambiguities resolved and it be fixed whether "Aristotle" names a philosopher or a shipping magnate. Russell can only analyse (1) given

[139] This corresponds to pp. 7 – 21 of Kripke's *Preface*.
[140] "Aristotle was fond of dogs"
[141] Ie. "Other "Aristotles"".

such presuppositions, and no-one has faulted him on that score. Kripke's objection to Russell is thus that, whichever interpretation of (1) is taken – and Kripke presupposes Russell's practice of invariably interpreting names non-rigidly – Russell's view would have it fail the rigidity test. That is, that there is a single individual and a single property such that, with respect to every counterfactual situation, the truth conditions of the proposition are the possession of the property by that individual in that situation[142]. It is irrelevant whether more than one proposition is expressed by (1), only whether each of them performs as Kripke suggests. We don't need detailed answers to how our linguistic practise allows for phonetically identical names for this to be clear. Some philosophers assimilate proper names to demonstratives, their reference varying in the same way from utterance to utterance. This makes no difference since, for a proposition to be expressed, the reference of any demonstratives must be given. Kripke, supported by Kaplan, thinks, of course, that "this", "I", "you" and so on are all rigid, though their references vary with the context of the utterance.

6.2 The Relation of Rigidity to Scope

- Another misunderstanding is of Kripke's too brief treatment of the relation of rigidity to scope. It is often claimed that Kripke's intuitions could be satisfied by reading names in various sentences as non-rigid designators with wide scopes, analogous to wide scope descriptions. Kripke had recognised that *some* of his intuitions could be explained as results of scope ambiguity rather than rigidity, but thinks it wrong that *all* intuitions can be explained in this way. Kripke refers to – but does not quote or elaborate on[143] – various passages ignored by the critics. He does, however, discuss the question of scope in the light of his explanation of rigidity.
- It has been alleged that the doctrine of rigidity simply is the doctrine that it is conventional in a natural language that a name, in the context of any sentence, should be read with a large scope including all modal operators. Kripke thinks this is a technical error in modal logic, as follows. (1) and (2)[144] are simple sentences, and since neither contains modal or other operators, there is no room for scope distinctions, and no scope convention about (3) affects *them*. Yet, the notion of rigidity applies sensibly to both, with "Aristotle" in (1) being rigid, but "the last great philosopher of antiquity" in (2) not. No doctrine about scope conventions in modal contexts touches this situation; rigid designation is a doctrine about truth conditions in counterfactual situations that covers propositions expressed by *all* sentences, even *simple* ones.
- Kripke notes that the thesis that names are rigid in simple sentences *is* equivalent (allowing for non-existence) to the thesis that if a modal operator governs a simple sentence containing a name, the two readings with large and small scopes are

[142] This is a little difficult to understand in its general form. By way of explication, in the example (1), the individual is Aristotle, the property is "liking dogs", the proposition is "Aristotle likes dogs", and is true or false as Aristotle does or doesn't like dogs in that particular situation and possible world.

[143] What's this about? Kripke refers to footnote 25 on p. 62 and to pp. 48 – 49.

[144] (1) "Aristotle was fond of dogs".
(2) "The last great philosopher of antiquity was fond of dogs".
(3) "Exactly one person was last amongst the great philosophers of antiquity, and any such person was fond of dogs".

equivalent[145]. This isn't the same as the doctrine that only the larger scope is allowed, the equivalence only making sense if both readings are permissible.

- In another footnote, Kripke says of the simple sentences (1) & (2) that they are *tensed*, and can therefore be interpreted in formal languages with tense operators, and scope questions can arise from these operators. Kripke notes that these are not modal operators, but that we can avoid the question altogether by taking the copula ("was") as tenseless.
- Kripke also mentions Dummett's *Frege*[146], but alleges that many of his other ideas on the relation of rigidity to scope are technically erroneous; for instance, claiming that Kripke holds that descriptions are never rigid and equating this view with the claim that, in a modal context, the scope of a definite description must always be taken to exclude the modal operator. Kripke cannot comment on this here – or on Dummett's erroneous comments on linguistic intuition.
- Kripke thinks the above considerations show that those wanting to *reduce* rigidity to scope considerations are simply in error, and explains one weakness of the more understandable desire to use scope to *replace* rigidity. The doctrine of rigidity supposes that a picture purporting to represent (1) must purport to depict Aristotle himself as fond of dogs. No representation of a counterfactual situation involving any other individual, even possessing all the properties of Aristotle, will do. Kripke thinks that this obviously represents our intuitions concerning (1) – which are about the truth conditions in counterfactual situations of propositions expressed by a *simple* sentence, and no wide-scope interpretations of certain modal contexts will take its place.
- Kripke attempts to illuminate matters with another example not so reliant on counterfactual situations. Kripke had argued in the *Lectures*[147] that the truth conditions of "It might have been the case that Aristotle was fond of dogs" conformed to the rigidity theory. It would be irrelevant if shown that someone other than Aristotle might have been both fond of dogs and the greatest philosopher of antiquity, and similarly if we use any other non-rigid definite description to identify Aristotle. Similarly, while "it might have been the case that Aristotle was not a philosopher" expresses a truth, "it might have been the case that the greatest philosopher of antiquity was not a philosopher" expresses a falsehood[148], contra Russell's theory. Kripke claims that the last sentence in quotes would have expressed a truth if the description, contrary to Kripke's intent, were read with wide scope[149]. So, Kripke imagines (jokingly) that the problem might arise from an unaccountable tendency to give "Aristotle" a wide scope reading while only allowing a narrow scope reading to the description. Sentences with both names and descriptions would be subject to both readings. Kripke's point, however, was that the contrast would (still?) hold (even?) if all sentences involved were explicitly constructed with small scope – and suggests this might be

[145] We need an example to know what this means.

[146] Dummett rejected this part of Kripke [See *Names* handout]; find out when Dummett's Frege was written, to see who's responding to whom.

[147] A search of my text reveals no reference to Aristotle and dogs, other than in the introduction. Maybe Kripke is just referring to the *form* of the argument?

[148] Check this out in Dummett's formulation (in *Names* handout) and see if it works here.

[149] What does this mean? Presumably the description – "the greatest philosopher of antiquity" – to be read with wide scope allows it to refer to non-philosophers? Maybe if there were no philosophers in antiquity? Don't we then end up with Russell's "the present King of France is bald" situation?

achieved by inserting a colon alter "that"[150]. Those holding the contrary view to Kripke have tended to overlook his examples illustrating that the situation with names is not parallel to that with large scope descriptions. They must hold that language and thought are powerless to keep the distinction straight, which is what accounts for the difficulty. How did we make the distinction if we didn't make it? Kripke thinks we can disentangle the "that" clause to make us clearer which reading we're giving by reformulating as:-

(4) "What (1) expresses might have been the case".

6.3 Why did Russell et al Oppose the Rigidity of Names?

- If this doesn't remove scope ambiguities, Kripke asks what would. He thinks the formulation more natural in dialogue form: "Aristotle was fond of dogs" … "no he wasn't, but he might have been". Kripke claims that our understanding of (4) conforms to the theory of rigidity; no situation but that in which anyone but Aristotle himself was fond of dogs can be relevant.
- Since the examples above and in the *Lectures* give evidence for our intuition of the rigidity of names, how did Russell and others propose theories plainly at odds with them? Kripke thinks (a) because Russell didn't consider modal questions and the question of the rigidity of names was rarely considered after him and (b) Russell thought that various philosophical arguments necessitated a descriptive theory of names and an eliminative theory of descriptions[151]. Without actually mentioning the issue of rigidity, Russell agreed that his theories were incompatible with our naïve reactions but powerful philosophical arguments compelled him to adopt his theory. Kripke's response consisted in the "identity and schmidentity" thought experiment. He imagined a hypothetical formal language in which a rigid designator "a" is introduced by the formula "Let "a" rigidly denote the unique object that actually has the property F when talking about any actual or counterfactual situation". In this case, the person would, in virtue of this linguistic act, know that Fa, even though "Fa" expresses a contingent truth (provided F is not an essential property of the unique object in possession of it). This shows (a) epistemic questions should be separated from those of necessity and contingency, (b) that fixing a reference isn't the same as giving a synonym, and more importantly, (c) this shows that the evidence usually provided to show that names are synonymous with descriptions can be rationalised by this hypothetical model, which satisfies our intuitions of rigidity. Kripke later realised that speakers don't ordinarily even fix references by identifying descriptions of the usual type.

6.4 Possible Worlds

- Kripke now usefully discusses possible worlds. He first of all notes that much recent confusion about rigidity might have been avoided had discussions been conducted rigorously in a formal language of "possible worlds semantics". Space has precluded this here, though readers thoroughly familiar with intensional semantics should be able to construct the rough outline for themselves.

[150] I don't understand how this makes a difference.

[151] At which stage in Russell's career was this true? Return to this after reviewing Russell. Presumably one ought also to read Stephen Neale's *Descriptions*?

- In the Lectures, Kripke has argued against those who consider possible worlds as like (a) different planets or (b) our own surroundings in a different dimension or (c) that lead to spurious problems of transworld identification. Kripke thinks that confusion might be avoided were "worlds" terminology replaced by "possible state or history of the world" or "counterfactual situation", or by simple use of modal talk – "It is possible that ...". Kripke thinks his frequent use of the concept protects him from the misunderstanding that he rejects possible worlds altogether or even that he considers them a mere formal device. His view can be clarified by considering a high-school example – that of rolling two ordinary dice, A and B. Only one of the 36 possibilities reflects how the dice will actually come out, and we learnt at school to calculate the probabilities.
- Kripke draws a number of lessons from this simple example. Such probability calculations refer to miniature "possible worlds", provided we fictively ignore everything about the world other than the two dice and what they show (and assume both exist). Only one of these worlds is the actual world, but the others are of interest in determining how probable the actual outcome was or will be. In the case where our assumption that the dice *do* fall is satisfied, the "actual world" is the state of the dice as actually realised. Another more concrete entity is the Lesniewskian-Goodmanian physical entity that is the sum of the two dice – "the dice" thought of as a single object. When we talk of the 36 possibilities, we have no reason to posit 35 *other* entities existing in never-never land, nor ask whether these entities are composed of phantom counterparts of the actual dice, or are somehow these dice themselves in another dimension. All 36 possibilities are abstract states of the dice, not complex physical entities. We don't need to ask questions of "trans-state identity" – of how we know which die is A – because the state (A-6, B-5) is given and thereby distinguished from (A-5, B-6). Kripke chuckles that the demand for some "criterion of trans-state identity" is so confused that no schoolchild would be so perversely philosophical as to make it. The possibilities aren't given qualitatively (as in: one die 6, the other 5) as then there would have been only 21 possibilities rather than 36[152]. The states aren't phantom dice-pairs viewed from afar, of which we can ask meaningful epistemological questions such as "which die is that". We don't need to imagine that A and B are qualitatively distinguishable, say, by colour to enable us to distinguish states – indeed the numerical face shown is thought of as the only property of each die. Finally, in not describing the states purely qualitatively, we make no obscure metaphysical commitment to dice as "bare particulars", whatever that might mean.
- Kripke admits that there are problems with "possible worlds" over and above the tightly-controlled mini-worlds of probability theory, since they are total ways the world might have been - states or histories of the *entire* world. The philosopher of possible worlds must take care that his technical apparatus doesn't cause him to ask meaningless questions unmotivated by the original intuitions that gave the apparatus its point. We have no need to, and cannot, describe a complete counterfactual course of events. It is sufficient to state how, in relevant ways, the counterfactual situation differs from the actual facts – we should think of the counterfactual situation as a mini-state restricted to features of the world relevant to the problem at hand, something that involves less idealisation for either

[152] 6 pairs + half of the other 30. Are there, however, genuine physical situations in which the distinguishability or not of the "dice" is important – as in Bose-Einstein vs Fermi-Dirac statistics in Quantum Mechanics? Isn't it the case that fundamental particles cannot be rigidly designated, though some act as though they could while others don't, and so the probability distributions differ?

considering *entire* world histories or for *all* possibilities[153]. There's nothing wrong, for philosophical or technical purposes, in taking possible worlds as abstract entities – a sample space just is such a space of possible worlds. However, we must avoid philosophical temptations. There is no need for possible worlds to be given qualitatively; the fact that we often consider larger and more complex worlds than those of dice gives no reason to suppose that there is any genuine problem of transworld identification. Kripke claims that the actual world – the actual state or history of the world – should not be confused with "the enormous scattered object that surrounds us" which, while it might also be called the actual world, is not the relevant object here. Consequently, possible, but not actual, worlds are not phantom duplicates of the world in the latter sense. Again, Kripke thinks confusion might have been avoided if "possible histories or states of the world", or "counterfactual situations" had been used instead of "possible worlds", or had philosophers stuck to the practices of schoolchildren or probabilists.

- In a footnote, Kripke discusses the priority of possible worlds and modal logic. He doesn't consider possible worlds as providing a reductive analysis or explanation, from either a metaphysical or epistemological perspective, of modal operators. In the development of our thought, modal expressions came first – possible worlds, though rooted in ways the world might have been, come at a greater level of abstraction. Someone failing to understand possibility won't understand possible worlds either. Philosophically, we've no need to suppose one form of discourse prior to the other. The original motivation for possible worlds was to clarify modal logic by allowing it to use the model techniques that clarified extensional logic[154], and for clarifying certain other concepts (though Kripke doesn't say which). Kripke thinks restricting ourselves to relevant mini-worlds has no impact on rigidity and the other essential issues.

6.5 Substitutability of Proper Names?

- Kripke deals with one last confusion – that some have thought that he taught the universal substitutability of proper names. For example, (a) that a sentence with "Cicero" expresses the same proposition as the corresponding one with "Tully", (b) that belief in one implies belief in the other, or (c) that they are equivalent for all semantic purposes. Russell held such a view for "logically proper names" and it seems congenial to Mill's theory of naming, where only the reference of the name contributes to what is expressed. However, Kripke doubts whether even Mill intended to go this far – he does not take "Cicero is Tully" as equivalent to "Cicero is Cicero", but that "Cicero" and "Tully" are co-designative; in addition, Mill may also see a meta-linguistic component in all assertions involving names. Kripke claims that his view that "Hesperus is Phosphorus" can raise empirical issues, whereas "Hesperus is Hesperus" cannot, shows that he doesn't treat these *sentences*[155] as completely interchangeable. Also, that the method of fixing the reference is relevant to our epistemic attitude to the sentence.
- However, he thinks that there are certain outstanding issues on the apparatus of propositions, which may break down in this area, which he has side-stepped, and on which he has no firm doctrine. The questions include what propositions are

[153] I wasn't quite clear what Kripke was saying here. But, review Lewis.
[154] Ie. Quantification over possible worlds clarifies modal operators?
[155] Why does he highlight sentences? As though he might treat the names as completely interchangeable?

expressed by such sentences, whether such propositions are objects of knowledge or belief and how to treat names in epistemic contexts. He thinks there may be more than one notion of "proposition", depending on the demands we make of it. See his paper *A Puzzle About Belief*. He notes that the doctrine of rigidity does "of course" imply that co-designative names are interchangeable in modal contexts[156].

6.6 Rigidity and Non-Existence

- Kripke closes with a footnote explaining some outstanding difficulties between rigidity and delicate questions of non-existence, which he has ignored. In the *Lectures*, he ignores distinctions between *de jure* rigidity (where in either actual or counterfactual situations the reference of the designator is *stipulated* to be a single object) and *de facto* rigidity (where the description "the x such that Fx" just happens to use a predicate F that in each possible world is true of the same unique object – as "the smallest prime"). His thesis concerns *de jure* rigidity, but in the *Lectures* he's content with the weaker form. Rigidity *de jure* ensures a proper name rigidly designates its referent even in counterfactual situations where the referent wouldn't have existed. This deserves further discussion, but not here.

[156] What does this mean? "It's possible that X believes that 'Y=Z'"?