Classes #10-11 - Direct Reference

I. Simple Descriptivism

The wide-ranging effects of Kripke's work in *Naming and Necessity* are difficult to measure.
In addition to the central themes in philosophy of language, it has important ramifications for philosophy of mind, philosophy of science, metaphysics, epistemology, logic, and other areas of philosophy.
Our focus will be on Kripke's defense of Mill's non-connotative account of the reference of proper names against the descriptivist accounts we find in Frege, Russell, and Strawson.
(Though Russell provided a Millian account of logically proper names, sentences with what we ordinarily call proper names are, for Russell, to be analyzed as disguised descriptions.)

We already saw that Frege and Russell held different kinds of descriptivism.
Frege's version of descriptivism is that the sense (meaning) of a name is the description associated with it by the user of the name.
Russell believes that there are no senses of names, but that a correct analysis of sentences including proper names would replace the name with the description for which it is an abbreviation.
Both Frege's sense descriptivism and Russell's abbreviational descriptivism were simple versions.
Both versions are liable to a standard objection, first mentioned in the second footnote in Frege's "On Sense and Reference," which Kripke rehearses.

To understand the objection, recall that we call sentences like BU analytic because all we have to do to determine the truth of BU is examine the meaning of the term 'bachelor'.

BU Bachelors are unmarried.

We need not examine any bachelors.
Thus, we take such analytic statements to be knowable *a priori*, and, in some sense, necessarily true.
Let's say that we associate with Aristotle the description that he was Plato's most famous student.
It follows that the meaning of 'Aristotle' includes the fact that he was a student of Plato.
Then AP turns out to be an analytic truth, just like B.

AP Aristotle was a student of Plato.

If Aristotle just means or abbreviates the description, all we have to do is analyze the term 'Aristotle' to find out that he was a student of Plato.
On simple descriptivism, AP should also be knowable a priori and necessary.
But, AP is, in fact, contingent, knowable only a posteriori, and synthetic.
So, the simple descriptivism of Frege and Russell is untenable.

This objection to simple descriptivism can be put succinctly as follows.

SD1 For simple descriptivism, 'x is p' is analytic, knowable *a priori*, and necessary for any property p in the characteristic description of a subject x.
SD2 But, many characteristic properties of many objects are synthetic, knowable only *a posteriori*, and contingent.
SDC So, simple descriptivism is wrong.

II. Cluster Descriptivism

Strawson's version of descriptivism is more sophisticated, and more like the version Kripke criticizes.
It may be called cluster descriptivism (CD).
Strawson's work influenced Searle, who is the direct source of the theory that Kripke attacks.
We are not reading Searle's "Proper Names" or the most-relevant Strawson article.
They are on the website, as is Searle's response to Kripke, in "Proper Names and Intentionality."
Any of these would make good paper topics.

We are looking at a passage from Wittgenstein, who was influential on Strawson and Searle and Kripke and which Kripke quotes.
In the passage, Wittgenstein argues (if what Wittgenstein does could be called arguing) that in order for us to use a name, we have to associate that name with some kinds of characteristics, some descriptions or statements.
To use 'Moses' to refer to Moses, I have to understand some associated descriptions of Moses.
So far, that's just simple descriptivism.
But Wittgenstein also argues that there is no particular set of descriptions which I have to associate with Moses in order to refer to him successfully.

> But when I make a statement about Moses, - am I always ready to substitute some one of these descriptions for "Moses"? I shall perhaps say: By "Moses" I understand the man who did what the Bible relates of Moses, or at any rate a good deal of it. But how much? Have I decided how much must be proved false for me to give up my proposition as false? Has the name "Moses" got a fixed and unequivocal use for me in all possible cases? - Is it not the case that I have, so to speak, a whole series of props in readiness, and am ready to lean on one if another should be taken from under me and vice versa?

Wittgenstein starts the *Philosophical Investigations* by comparing language to games.
There are lots of different ways to play games and no particular characteristics that all games share.
But they share what is often called a family resemblance.
There are rules which govern different aspects of language, but one needs in addtion to rules, rules which tell us how to use those rules, and rules which tell us how to use the rules which tell us how to use language.
Considering the regress which results from positing indefinitely many layers of rules, Wittgenstein suggests that the appeals to rules for language is misguided.
Instead, we have conventions for how to act, how to use language.
These conventions are loosely constructed and liable to adjustment.
We use 'Moses' to refer to the man who led the Israelites out of Egypt.
But if it turns out that there was no such man or that that person's name was not 'Moses', we can still use that term to refer to the person, since there are a cluster of other descriptions which remain true of him.
The argument against simple descriptivism is thus blocked by Wittgenstein without his abandoning the core principles of descriptivism.

Searle argues that a name must be logically connected with its characteristic description because that is the only way the name could get tied to the object.
We need to identify the object, through description or pointing, in order to name it.
But then those characteristics must be part of the description of the name.
Searle says that the name does not mean its characteristics, but that there is a loose logical connection.

Kripke presents the cluster description theory with a series of claims to which the theory is committed on p 202.
Here they are in paraphrase.

CD1	Every name 'n' is associated with a cluster of properties: the properties that x believes are true of n.
CD2	x believes that these properties pick out a unique individual.
CD3	If y has most of these properties, then y is the referent of 'n'.
CD4	If nothing has most of these properties, 'n' doesn't refer.
CD5	The sentence 'n has most of these properties' is known *a priori* by x.
CD6	The sentence 'n has most of these properties' as uttered by x expresses a necessary truth.
CDC	These properties must be chosen in such a way that there is no circularity. (The properties must not use the notion of reference.)

Note that CDC is not a conclusion, but a non-circularity condition that underlies the other six claims.
CD is not an argument, but a collection of claims underlying cluster descriptivism.

CD avoids some portion of the standard objection to descriptivism, SD.
Since being Plato's greatest student is just one of many properties in the cluster, it does not follow from CD that 'Aristotle is Plato's student' is a necessary truth.
CD thus avoids the claim that any particular property in the cluster is a necessary property.
Still, Kripke claims that the picture given by descriptivists of how references are determined, even using the more-plausible CD, is misleading.

> What I think the examples I've given show is not simply that there's some technical error here or some mistake there, but that the whole picture given by this theory of how reference is determined seems to be wrong from the fundamentals. It seems to be wrong to think that we give ourselves some properties which somehow qualitatively uniquely pick out an object and determine our reference in that manner (210).

It remains for us to examine Kripke's examples.

III. Kripke Against Descriptivism

Kripke's criticism of the cluster theory picks up on Donnellan's insight that reference may be successful under a false description of an individual.
We can successfully pick out the man in the corner drinking water, even if we describe that person as 'the man in the corner drinking a martini'.
Kripke points out that Donnellan's point holds not just for descriptions.

> Donnellan's distinction seems applicable to names as well as to descriptions. Two men glimpse someone at a distance and think they recognize him as Jones. 'What is Jones doing?' 'Raking the leaves.' If the distant leaf-raker is actually Smith, then in some sense they are *referring* to Smith, even though they both use 'Jones' *as a name of* Jones (216, fn 3).

Kripke considers a case in which what we know about a person is incorrect, so that any description we give of that person is entirely false.

In such a case, on no version of descriptivism could we successfully refer.
The cluster version allows use to be wrong about some of the properties of the object.
Aristotle could have never studied with Plato, for example, and we could still, on cluster descriptivism, refer to Aristotle even if we believed that he did.
But, by CD4, reference would fail if every characteristic we associated with Aristotle were false.

Kripke argues that what one uses to pick out the object are not essential features (senses) of the object.
Briefly:

> Against CD2, Kripke presents the Feynman case, p 206.
> Against CD3, Kripke presents the Gödel and Einstein cases, p 207-9.
> Against CD4, Kripke presents the Jonah case, p 209.
> Against CD5 and CD6, Kripke revisits the Aristotle case, p 204.

CD2 requires that the description that a speaker associates with a name be sufficient to pick out a unique individual.
But often we do not have enough information to pick out one and only one person with the information that we associate with that individual.
In the case of Feynman, many people can use his name to refer successfully, even though many of them can not tell you anything more about the man than that he was a famous physicist.
They could not, for example, distinguish him from other physicists, like Stephen Hawking.
'Famous physicist' could describe many people, and not pick out any unique individual.
Still, people use 'Feynman' to refer to Feynman.

> The man in the street, not possessing these abilities, may still use the name 'Feynman'. When asked he will say: well he's a physicist or something. He may not think that this picks out anyone uniquely. I still think he uses the name 'Feynman' as a name for Feynman (206).

CD3 says that when we use a name, we refer to the person who has the majority of the characteristics we associate with that name.
Most people's cluster of information associated with Gödel includes primarily, if not exclusively, the fact that Gödel was the man who proved the incompleteness of arithmetic.
Kripke asks us to imagine that Gödel had stolen the proofs from a man named Schmidt.
Then the only characteristic that most people associate with 'Gödel' turns out to be false of Gödel, but true of Schmidt.
So, when we use 'Gödel', according to the descriptivist, we are actually referring to Schmidt.
Kripke urges that we still refer to Gödel when we use his name, and thus that CD3 is wrong.

> Since the man who discovered the incompleteness of arithmetic is in fact Schmidt, we, when we talk about Gödel, are in fact always referring to Schmidt. But it seems to me that we are not. We simply are not (208).

Further, in the Jonah case, Kripke argues that everything we know about Jonah is wrong.
There was a Jonah, according to Kripke's story.
But, he never went to Nineveh, or rode in the belly of a whale, or did any of the things that we associate with him.
Kripke argues that we can still refer to Jonah.

> These conditions may be true of no one whatsoever and yet the name 'Jonah' really has a referent (209).

CD4 says that we can not make a successful reference to Jonah because none of our associated descriptions are true of him.

CD5 and CD6 say that we know *a priori* that the characteristic properties associated with a name hold of that referent necessarily.
Kripke disagrees.

> It just is not, in any intuitive sense of necessity, a necessary truth that Aristotle had the properties commonly attributed to him. There is a certain theory, perhaps popular in some views of the philosophy of history...according to [which] it will be necessary, once a certain individual is born, that he is destined to perform great tasks and so it will be part of the very nature of Aristotle that he should have produced ideas which had a great influence on the western world. Whatever the merits of such a view may be as a view of history or of the nature of great men, it does not seem that it should be trivially true on the basis of a theory of proper names. It would seem that it's a contingent fact that Aristotle ever did *any* of the things commonly attributed to him today, *any* of these great achievements that we so much admire... (204).

If all of the properties we attribute to an individual are contingent, then not only is it not necessary that it have most of them, it might even lack all of them.
We could not know something to be true *a priori* if it could in fact be false.

IV. Rigid Designation

If the description theory is wrong, even in its loosest, most plausible form, then we must pick out our references by using terms without any necessary connections to their meanings or characteristic extensions.
Thus, names, for the purposes of reference, will be entirely non-connotative, in Mill's sense.
Kripke calls such reference rigid designation.
A rigid designator is a term that names the same object in all possible worlds, in all counterfactual circumstances.

To show that names are rigid designators, Kripke uses the examples of Ben Franklin and Nixon.

> BF Ben Franklin is the inventor of bifocals.

'The inventor of bifocals' in BF could refer to someone other than Ben Franklin, if someone else had invented bifocals.
But 'Ben Franklin' refers to Ben Franklin in any case.
Thus, 'the inventor of bifocals' refers non-rigidly, whereas 'Ben Franklin' refers rigidly.
'Feynman', 'Gödel', 'Jonah', and 'Aristotle' all refer rigidly, too.

The notion of rigid designation is no more contentious than the notion that we can say something coherently counterfactual about objects.
To say that I would have been happier had you brought me a cheesecake is just to say that there is

another possible world in which I exist and in which you brought me a cheesecake and in which I am happier.
Thus, 'I' rigidly designates me in the other possible world.
As Kripke says, we stipulate other possible worlds under the assumption that we can refer rigidly.

> Generally, things aren't 'found out' about a counterfactual situation, they are stipulated (201).

V. Rigid Designators and Opaque Contexts

Let's look a little more carefully at rigid designation.
NS is true in all possible worlds, since 'nine' and 'seven' rigidly designate particular numbers.

NS Nine is greater than seven.

Since 'nine' refers to the same thing in all possible worlds, and 'seven' refers to the same thing in all possible worlds, if nine is greater than seven in any world, it will be greater than seven in all worlds.

NP The number of planets is greater than seven.

In contrast, NP is true, but it might be false.
The difference between NS and NP is that 'the number of planets' is not a rigid designator.
In some possible worlds, there are fewer planets.
In other possible worlds, there are more planets.
'The number of planets' thus non-rigidly designates a different number in different possible worlds.

Notice that since four plus five is identical to nine, we can substitute, *salva veritate*, 'four plus five' for 'nine' in NS to yield NS'.

NS' Four plus five is greater than seven.

Since the number of planets is in fact nine (ignoring Pluto's demotion) we can also substitute 'four plus five' for 'the number of planets' in NP, yielding the same sentence.
But, consider two slightly different sentences:

NNS Necessarily, nine is greater than seven.
NNP Necessarily, the number of planets is greater than seven.

If we substitute 'four plus five' for 'nine' in NNS, we continue to get a true statement.

NNS' Necessarily, four plus five is greater than seven.

But, if we substitute 'four plus five' for 'the number of planets' in NNP, we go from a true statement to a false one.

NNP' Necessarily, the number of planets is greater than seven.

The failure of substitutivity should look familiar to you.

It looks exactly like the failure from LC to LS.

LC	Lois Lane believes that Clark Kent is a reporter.
LS	Lois Lane believes that Superman is a reporter.

In other words, the modal operator 'necessarily' forms opaque contexts just like the propositional attitudes like belief.

VI. Identity, Necessity, and Frege's Puzzle

The term 'necessity' can be misleading, especially when it is confused for an epistemic notion.
Kripke takes care to use only a metaphysical notion of necessity.
On the metaphysical notion, a statement is necessary if it is not possible that it be false.
Another way to characterize metaphysical necessity is as truth in all possible worlds.
Of course, necessity and possibility are tightly linked.
In alethic modal logic, We use '□' as a necessity operator, and '◊' as a possibility operator.
Then, possibility and necessity are inter-definable.

MO1	□P iff ~◊~P
MO2	◊P iff ~□~P

Most systems of modal logic take one of the operators as basic and introduce the other by definition, either MO1 or MO2.

Notice that identity statements between rigid designators must be necessary.
Let's say that a is identical with b, where 'a' and 'b' are names (rigid designators).
Then, 'a' refers to a in any possible world, and 'b' refers to b in any possible world.

There could be worlds in which 'a' did not refer to a.
For example, there could be worlds in which Katy Perry is named 'Priscilla G. Snodgrass'.
But, she would still be Katy Perry.
The term, 'Katy Perry', used in our world, refers to Priscilla G. Snodgrass in her world.
In other worlds, 'Katy Perry' doesn't even exist.
But Kripke's claim is just that our uses of a name refer to the same thing in any possible world in which that thing exists.

So, if a is identical to b, where 'a' and b' rigidly designate, then there are no possible worlds in which a is not identical to b, nor where 'a=b' is false, if those terms refer as they do in our world.
There are possible worlds in which BF is false, because 'the inventor of bifocals' refers, in any possible world, to the actual inventor of bifocals.
In some possible worlds, Franklin was not the inventor of bifocals.
But, in all possible worlds Franklin was Franklin.
That is, BF has one rigid and one non-rigid designator, so it is not a necessary truth.
On the other hand, RM is true, in all possible worlds, even though there are some possible worlds in which I did not become a professor.

RM	Russell is Professor Marcus.

We use 'Professor Marcus' in this world to refer to me in all possible worlds.
Similarly, HP expresses a necessary truth.

HP Hesperus is Phosphorus.

That HP is necessary may seem odd.
We have made a big fuss over the problem of cognitive content, contrasting HP with the obvious, and knowable *a priori* HH.

HH Hesperus is Hesperus.

But notice that the claim that HP is a necessary truth does not entail that it has the same cognitive content as HH.
A version of Frege's puzzle arises here if we think that all necessary truths are knowable *a priori*.
Then, HP, since it is necessary, would be knowable *a priori* just like HH, and we would have difficulty explaining how what seems to be an empirical discovery is knowable *a priori*.
Further, if all *a priori* statements were analytic, then we would have the further question of how HP, which appears paradigmatically synthetic, could be analytic.

In contrast, Kripke argues that the category of necessary truths is distinct from that of statements knowable *a priori*, and from that of analytic claims.
So this version of the problem of cognitive content does not follow.
We can tell that HP is not knowable *a priori*, even if it is necessary, since we could be in the same epistemic situation as we are, with Hesperus not being identical to Phosphorus.

> The evidence I have before I know that Hesperus is Phosphorus is that I see a certain star on [sic] a certain heavenly body in the evening and call it 'Hesperus', and in the morning and call it 'Phosphorus'...There certainly is a possible world in which a man should have seen a certain star at a certain position in the evening and called it 'Hesperus' and a certain star in the morning and called it 'Phosphorus'; and should have concluded - should have found out by empirical investigation - that he names two different stars, or two different heavenly bodies...And so it's true that given the evidence that someone has antecedent to his empirical investigation, he can be placed in a sense in exactly the same situation, that is a qualitatively identical epistemic situation, and call two heavenly bodies 'Hesperus' and 'Phosphorus', without their being identical. So in that sense we can say that it might have turned out either way. Not that it might have turned out either way as to Hesperus's being Phosphorus, that couldn't have turned out any other way, in a sense. But being put in a situation where we have exactly the same evidence, qualitatively speaking, it could have turned out that Hesperus was not Phosphorus; that is, in a counterfactual world in which 'Hesperus' and 'Phosphorus' were not used in the way that we use them, as names of this planet, but as names of some other objects, one could have had qualitatively identical evidence and concluded that 'Hesperus' and 'Phosphorus' named two different objects. But we, using the names as we do right now, can say in advance, that if Hesperus and Phosphorus are one and the same, then in no other possible world can they be different (214-5).

Kripke's argument that names are rigid designators supports his conclusion that HP is necessary but not *a priori*.
This conclusion is worth a moment's reflection.

VII. Linguistics, Epistemology, Metaphysics

Traditionally, many philosophers believed that all and only necessary claims were known *a priori*.
Contingent claims were known from experience.
Further, many philosophers supposed that the way we know *a priori* claims is by analysis, since one reasons to the truth of an analytic claim without appeal to experience.
So, it might have been thought that all necessary claims are known *a priori* because they are analytic.
And all contingent claims are known *a posteriori* because they are synthetic.
A claim is contingent when it is justified by appeal to sense experience and it brings together concepts that are not necessarily related.
In particular, Hume seems to make these two claims.
Relations of ideas are necessary, justified *a priori*, and analytic.
Matters of fact are contingent, justified empirically (by tracing ideas back to initial impressions) and synthetic.

Kripke asks us to distinguish among semantic claims (involving analyticity, syntheticity, and synonymy); epistemic claims (involving apriority and aposteriority); and metaphysical claims (involving necessity and contingency).

> It's certainly a philosophical thesis, and not a matter of obvious definitional equivalence, either that everything *a priori* is necessary or that everything necessary is *a priori*...They are dealing with two different domains, two different areas, the epistemological and the metaphysical (198).

Analyticity and syntheticity concern relations among concepts, whatever we take them to be.
The linguistic or conceptual (or even psychological) distinction between analytic and synthetic judgments is independent of the epistemological distinction between *a priori* justifications and empirical (or *a posteriori*; these are synonymous terms, as I am using them) ones.
A statement is justified empirically if we require particular sense experiences to justify our knowledge.
Our belief that snow is white is empirical, since we have to see snow to justify knowledge of its whiteness.
In contrast, our belief that 3+2=5 may be justified *a priori*, as prior to, or independent, of sense experience.
We need to see snow in order to know that snow is white.
We need experiences with no particular objects in order to know that 2 + 3 = 5.

Further, no empirical experiences will undermine *a priori* claims.
When we add two cups of water to three cups of salt, and fail to come up with five cups of anything, we don't abandon the claim that 2 + 3 = 5.
Similarly, two chickens added to three foxes doesn't produce five animals; it just yields three fat foxes and a pile of feathers.
The arithmetic claim remains true independent of its failure to apply in some cases.

So the analytic/synthetic distinction is linguistic/conceptual; and the *a priori*/empirical distinction is epistemological.
A third distinction, between necessary and contingent claims, is metaphysical.
Some claims hold necessarily, like mathematical claims.
Other claims are merely contingent, like the claim that snow is white.
Again, the traditional story, through Hume, say, was that necessary truths are known *a priori* because

they are analytic and that contingent truths are synthetic and empirical.
Kant threw a little twist into the traditional story by claiming that there are synthetic *a priori* claims, like those of mathematics.
But Frege rejects Kant's claim for arithmetic, defending the traditional view that arithmetic is analytic.
Kripke's counsel to distinguish linguistic claims from epistemological claims from metaphysical ones supports his radical allegations both that there are necessary truths that are known *a posteriori*, and that there are *a priori* but contingent truths.

VIII. The Necessary *A Posteriori* and the Contingent *A Priori*

Consider the identification of heat with molecular motion.
Kripke argues that 'heat' and 'molecular motion' are rigid designators.
'Heat' is a rigid designator, since in counterfactual situations in which people, or Martians, did not feel warmth when putting their hands near fires, we would not say that they did not feel heat.
We would say that they get a different sensation from heat than the one that we get.
Even if there are no people to feel it, fire heats up the air around it.
Heat thus rigidly designates molecular motion.
Similarly, 'molecular motion' is also a rigid designator, referring to the same thing, the motion of molecules, in all possible worlds.
Thus, the identification of heat with molecular motion is necessary.
Our discovery of that fact is *a posteriori*: we discovered it empirically.
That there are people who feel heat in a certain way is contingent.
Our skin could be constructed differently, say made of asbestos.
But we should not confuse the contingent property of heat (that people feel it in a particular way) with a necessary property of heat (that it is molecular motion.)
That we discovered that heat is molecular motion is also a contingent fact.
For aeons, people had no idea that heat was molecular motion.
They did not even know what a molecule was.
But, that contingent (epistemic) fact about our knowledge is irrelevant to the (metaphysical) fact about the nature of heat.
Thus, the identification of heat and molecular motion is necessary, but known only *a posteriori*, in contrast to what everyone in the history of philosophy ever thought.

Conversely, that the standard meter bar is one meter is a contingent fact.
It could be otherwise, longer or shorter.
But, it is known *a priori* that the standard meter is one meter.
So, 'the standard meter is one meter long' is contingent, but known *a priori*.

> Someone who thinks that everything one knows *a priori* is necessary might think: 'This is the *definition* of a meter. By definition, stick *S* is one meter long at t_0. That's a necessary truth.' But there seems to me to be no reason so to conclude, even for a man who uses the stated definition of 'one meter'. For he's using this definition not to *give the meaning* of what he called the 'meter', but to *fix the reference*... There is a certain length which he wants to mark out. He marks it out by an accidental property, namely that there is a stick of that length. Someone else might mark out the same reference by another accidental property. But in any case, even though he uses this to fix the reference of his standard of length, a meter, he can still say, 'if heat had been applied to this stick *S* at t_0, then at t_0 stick *S* would not have been one meter long' (201-2).

According to Kripke, the identifications of water with H_2O and of lightning with electrical discharge are necessary, just like the identity of heat with molecular motion.
There is a contingent fact about how we experience heat, or lightning, or water.
We pick out heat, or light, according to contingent facts about how they effect us.
But, all theoretical identity statements are, in fact, necessary identities, not contingent identities, p 301-3.
The necessity of these theoretic identification statements follows from the rigid designation of their terms.

IX. Rigidity and the Philosophy of Mind

That theoretical identity statements are necessary has important ramifications for the philosophy of mind.
Many people believe that mental states are brain states, that the mind is nothing more or less than the brain.
This view is called the identity theory.
The identity theory says that mental states are actually physical states: the mind is the brain.
Particular mental states (like a toothache) are supposed by the identity theorist to be specific brain states (say the stimulation of certain C-fibers).
While the identity of mental states and brain states does not seem overly contentious, Kripke points out that such identities must be necessary, given the nature of rigid designation.

Kripke's argument against the identity theory depends on his claim that 'pain' is a rigid designator.
Nothing could be a pain if it did not hurt in the way that pains do.
Similarly, if 's' designates a brain state, it does so rigidly.
The identity of any two rigid designators must be necessary, since neither term could refer to anything other than its referent.
Since theoretical identity statements are necessary, according to Kripke, the identification of pain states with brain states must also be necessary.
But, it seems clearly possible that pain could be something other than a particular state of the brain.
If so, then the identity of the two must be contingent.
So, the necessary identification must be false.
That is, the identity can be neither necessary nor contingent.
So, pain states must not be identical to mental states.
The relationship between pain states and mental states must be weaker than identity.

KI1. The identification of mental states and brain states must be either contingent or necessary.
KI2. Since mental states and brain states refer rigidly, the identification can not be contingent.
KI3. Since it is possible that mental states are not states of the brain, the identification can not be necessary.
KIC. Thus, mental states and brain states must not be identical.

Let's return to the philosophy of language.

X. The Causal Theory of Reference

The problem before us was whether we refer directly, or through a description.
On the direct reference side, we have Mill; the referential half of Donnellan; Kripke; and Russell, for

logically proper names.
On the descriptions side, we have Frege; Russell, for most sentences; Searle; and the attributive half of Donnellan.

The arguments for descriptions include Frege's solutions to his three puzzles, and Russell's analysis of denoting phrases, motivated by the falsity of 'the king of France is bald' and 'the king of France is not bald'.
Kripke suggests that 'Jack the Ripper' might be a case in which descriptivism is plausible.
But the descriptivist picture is generally misleading.

Simple descriptivism fell to the standard objection (SD, or the Aristotle problem).
Adopting the cluster theory blocked SD, to some degree.
But, Kripke showed that there remained grave problems with description theory.
The role of the subject of many sentences is just to refer, not to describe.

Kripke's arguments provide evidence of deficiencies in description theory.
But they do not necessarily defeat the theory.
One piece of information that people ordinarily do know about a person when they successfully refer to that person is that the person is commonly known by that name within a population.
This observation led some philosophers to develop a meta-linguistic descriptivism.
Kent Bach argues that the sense of a name, say 'Brad Pitt', is KB.

KB	The bearer of 'Brad Pitt'

Jerrold Katz argues that the sense of 'Brad Pitt' is JK.

JK	The thing which is a bearer of 'Brad Pitt'

Both KB and JK are meta-linguistic analyses of senses of names, since the sense of the name is not expressed within the language in question.
We do not, for example, replace 'Brad Pitt' with its description.
We will not pursue meta-linguistic descriptivism, but it would make a good paper topic, especially concerning how these approaches deal with the problem of names without bearers.

The central motivation for descriptivism in any version is the belief that we need it in order to make sense of reference.
How else could people pick up a name in the first place?

Kripke, and some followers of Kripke like Gareth Evans (whose article "The Causal Theory of Names" is worth reading) developed a causal theory of reference to answer the charge that only descriptivism could account for reference.
The causal theory of reference (CTR) supports, to some degree, Kripke's work on rigidity by providing an account of how we can learn names without ascribing senses to names.
CTR, though, is technically an independent account of an independent question.
Descriptivism and rigidity are claims about the meanings (or semantic values) of names.
CTR is a theory about how we learn names.
The first are semantic claims, and the second is epistemological.
Kripke sketches CTR briefly.

> An initial 'baptism' takes place. Here the object may be named by ostension, or the reference of the name may be fixed by a description. When the name is 'passed from link to link', the receiver of the name must, I think, intend when he learns it to use it with the same reference as the man from whom he heard it... (211; see also 209-10).

The picture that CTR provides involves two elements.
An object is named through an initial baptism.
We can baptize through ostension, by pointing at an object.
Or, we can baptize by describing an object.
For instance, I can say that the next apple I see I will call Henry.

After baptism, a causal chain connects referrers to the initial object.
I dub the apple Henry, then you hear me, and tell others, and eventually everyone calls the apply Henry.
Thus, we might say that a use of a name refers to an object iff there has been an appropriate causal chain from the initial baptism, through all users of the name, which ends in the particular use in question.

Among the difficulties with CTR are problems with kinks in the causal chain.
The name 'Madagascar' used to refer to part of the mainland of Africa.
Through mis-communication, involving, I believe, Marco Polo, it has come to denote an island off of the mainland.
There was a baptism (presumably) and then a causal chain, but current uses now refer to something other than the original place.
The notion of a causal chain is also contentious.
But, as CTR is not an essential part of the 'Fido'-Fido theory we are now considering, we will not pursue these worries.
What is important to take from the discussion of CTR is the role of the community in naming.
We will return to this role in Putnam's division-of-linguistic-labor hypothesis.

XI. Problems with Direct Reference

Frege's sense descriptivism was motivated by three problems with the 'Fido'-Fido, direct reference theory.
Direct reference theories have difficulty with Frege's puzzle (the problem of cognitive content), what happens in opaque contexts, and the possibility of vacuous reference (Santa Claus), including the problem of negative existentials (Pegasus).
The re-emergence of the 'Fido'-Fido theory has led to a lot of work on Frege's puzzle.
Contemporary, direct-reference treatments of Frege's puzzle would make another good topic for a paper.