

Pains and Brains

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We are all, at least before breakfast, *mental realists*. This early morning pain occurs in *me*. It thus occurs at a particular time, a specific region of space, and is part of the mundane nexus of causal relations; else, why would I rest my hope in a pain killer, a little physical pill, once *it*, that pain, strikes?

Integral to this pre-theoretic mental realism is our being both a touch dualists and a touch materialists. A prime example is the father of mental realism, René Descartes. Descartes was driven by both separatist and integrative intuitions about mind and body. On the one hand, there was for him to be no *numerical identity* between mind and body. At the same time, he insisted that it is in the very nature of both (as it is for a human arm and a full human body whose arm it is) to be integrated, to hang together. I believe that, like Descartes, we all view the connection between the mental and the physical as anything but accidental—it is structural and fundamental to the nature of both kinds of phenomena. On the other hand, strictly interconnected as they might be, the mental and the physical make distinct *kinds* of phenomena.

And yet, the most formidable defender of the reality of pain, e.g., Saul Kripke,¹ compares the connection between pains and physical reality to the historically accidental relation between Benjamin Franklin and the invention of bifocals, what I will call the *Ben Franklin/bifocals model*. Lucky Ben just happened to come up with the idea of bifocals; in turn, the bifocals merely turned out to find their first sponsor in the inventive person of Ben. In like

manner, the pertinent kind of brain state, the firing of C fibers, just happens to be associated with the experience of pain. In turn, it is sheer accident that pains hook themselves up with the brainy C fibers.

Making the relation between pains and matters real so tenuous is no way to make them—the pains—real. The reality of pains rests not only on resisting their reduction to brain states; we need to avert just as much the pendulum reaction of reifying them into ontologically independent pure qualities. It is the *purity* that threatens their *reality*. By making pains *purely* qualitative, we *iron* curtain them from the robustly real world of space, time, and efficient causal interactions; what is then to become of the hope we rested in the little pain-*kill*ing pills? It is thus our very defense of the reality of pains that sends us strictly connecting them to brains.

FOUR NATURAL DESIDERATA

Consider this specific kind of sensation, pain, and a specific kind of brain state, reputedly connected with it, the firing of C fibers (CFF). I would like to claim, with the dualist, that:

A. Numerical distinctness—pain and CFF are two distinct kinds of phenomena.

B. Essence difference—pain and CFF have a different “nature” or “essence.”

At the same time, I would like to maintain, with the materialist, that:

C. Necessary connection—pain and CFF are *necessarily* connected—there is no real possibility of the one without the other.

Stronger yet (for, as we shall see, “essence” does not mean merely “one’s modally necessary features”), I will argue for:

D. Essential connection—pain and CFF are *essentially* connected; it is part of *what* each phenomenon is to be connected with its complementary.

The foregoing quartet consists of purely metaphysical propositions, articulating natural desiderata regarding the identity, essence, and possibilities of pain and CFF. I would like to defend the quartet while being sensitive to some nonmetaphysical background assumptions, propositions of epistemology, and the theory of meaning:

Back 1. Knowledge difference—we know our pains in a different way than we know our brains.

Back 2. Meaning difference—the linguistic meanings of “pain” and “CFF” are different.

Back 3. *Conceivability (imaginability) difference*—we seem to be able to conceive (imagine) of pain without CFF, and of CFF without pain.

The background trio is not logically intrinsic to our four metaphysical propositions. But the trio figures so prominently in discussions of the metaphysics that, one way or another, it is in the back of our minds. And so, as we connect pains and brains, we had better bring the trio out in the open.

I will carry the discussion within the frame laid three decades ago by Kripke in his dialogue with the materialists who proposed the identity theory.² As mentioned, I view both Kripke and the materialists as right about their core theses and as both wrong about some more radical orbital theses. Like Kripke, I would like to defend the aforementioned desiderata **A** and **B**—the numerical distinctness and essential difference of the kinds pain and CFF. Some of his defenses of these desiderata, those impregnated with theses about linguistic designators and modal contexts, are far from watertight. Nonetheless, it is Kripke's general metaphysics, what I call below his *generative ontology* of real things and kinds, that inspires my defense of **A** and **B**. But it is also reflection on Kripke's generative-metaphysics that leads me to sustain, with the materialist and against Kripke's modal intuitions, the aforementioned desiderata **C** and **D**—the necessary and essential connection between pain and CFF.³

IMAGINATION—THE ILLUSION FACTORY

How are we to think of the form of the claim “pain is CFF”? Following the materialist's identity theory, Kripke models “pain is CFF” on classical “theoretical identifications,” e.g., “water is hydrogen hydroxide.” He elects to understand both as an identity claim, viz., of the form “A = B.” This is a choice we shall revisit but, for the moment, we follow Kripke.

Kripke's argument runs thusly. An identity “A = B,” if true, is necessarily true. By hypothesis, both “water = hydrogen hydroxide” and “pain = CFF” express necessary truths. But it seems that we can produce evidence contradicting this conclusion. To produce the counter-evidence, Kripke sometimes uses the vocabulary of “what could turn out”; sometimes the notion of “what is imaginable.” Either way, if some claim *P* could turn out (is imaginable), Kripke concludes that *P* could have *been* the case, viz. that *P* is genuinely possible. So much is Kripke. In what follows, in my own discussion, I will stick to using “imaginability” as the key notion, rather than assertions about what could turn out. And, following Kripke, I will assume *the projection step*, that whatever is genuinely (“really”) imaginable is genuinely (“really”) possible.

One more remark regards our reading of Kripke's projection principle and the related locutions “what it takes to imagine that *x* is *F* (or: *x* to be *F*)”

and the variant passive form “that x is F (x’s being F) is imaginable.” Many have taken Kripke to address here the question of *cognitive fix*: what does the imaginer have to know (believe)—have “in the head”—about x for his imagining to be *about x*, e.g., Venus? On this understanding of Kripke’s principle, I have not really imagined Venus, unless my beliefs about it respect its necessary features, e.g., that it is a planet, is made of quarks, is affected by gravity, etc. There is no imagining of (about) x unless I respect in my head all of x’s necessary features.

This is obviously not Kripke’s intent. Kripke has forcefully argued that to think about x (refer to x, talk about x, etc.) the agent need not have in the head much information, least of all necessary (essential) features of x. Kripke’s work is replete with examples of (mental) reference to x in spite of getting wrong x’s basic properties (e.g., making Venus a star, whales non-mammalian, gold a compound, etc.).

I believe Kripke’s constraint is not about the cognitive fix relation; this much is settled by my historical connections to x and not by predicates I can provide about x. Rather his focus is on the *predicative question*: given (*stipulate*, as Kripke would say) that it is x I have in mind; now, which predicates can my imagination predicate x with?

Compare the analog predicative question for perception: if it is x I perceive and I perceive it F-ing, then, that-x-is-F is actually the case. This thesis does not constrain what it is for me to perceive a given object x, say Venus. I may perceive it, yet think of it in my head in a way that flouts its actual features (e.g., I think—it is inhabited or has spiders on its surface). This wouldn’t stop my eyes from seeing *it*. But assume now it is *it*, Venus, I see; suppose next I really see it is F-ing; the principle submits—it is actually F-ing.

The same type of observation applies to the imagination. I may imagine Venus, thinking of it as a star or an asteroid, etc. It is still Venus I imagine (provided it is indeed Venus I am causally connected to, e.g., my eyes just are fixed on it now). The question is: as I close my eyes and imagine it as F, can I imagine impossible F’s of *it*? This is Kripke’s general question: given that it is this item—Venus, water, heat, pain—that I imagine, what predicates can I imagine of it? Kripke’s projection principle says: only those predicates possible of it.⁴

Now, Kripke tells us that we seem to be able to imagine that water is not hydrogen hydroxide and that pain is not CFF. By the *projection principle*, it would then be possible both that water is not hydrogen hydroxide and that pain is not CFF. This would be in direct contradiction with the aforementioned necessary identities.

Kripke’s plan is to expose the purported possibility of water not being hydrogen hydroxide as a mere *seeming*, an illusory possibility. To do this, Kripke invokes an illuminating general mechanism responsible for the production of illusions of imaginability (and possibility), a mechanism I will

call the *illusion factory*. Kripke's description of the illusion factory is very interesting in its own right, viz., as a description of the workings of the imagination. But our purpose in the present essay is the nature of pain, not the nature of the imagination. So, in what follows, I restrict my remarks about the illusion factory to those pertinent to the eventual assessment of the nature of pain.

According to Kripke, when we seem to imagine the falsehood of "water = hydrogen hydroxide," we don't really imagine that substance, *water*, not being hydrogen hydroxide. We merely *seem* to imagine water; what we *really* imagine is solely the seeming of water—something looking and feeling like water, e.g., the famed twin-earthian look-alike. Of that seeming-of-water we do really imagine *its* not being hydrogen hydroxide. What we really imagine here, viz., that the seeming of water is not hydrogen hydroxide (and thus is not water), is indeed really possible. In all, when we seem to imagine, we merely have a seeming possibility; when we really imagine, we have got on hand a real possibility.

Many have taken Kripke to suggest here the (onto-) logical precedence of imagination over possibility. Not so. It is not our imagining that *makes* a given nexus of objects and relations possible. Quite the opposite. It is because a certain nexus—call it *the original nexus*, e.g., *water's* lacking oxygen—is modally impossible that it is not really imaginable. What is imaginable is a twin nexus—call it *the proxy nexus*—that is (i) qualitatively indiscernible from the original and (ii) is in itself really possible. We then mis-describe the success in imagining the twin as success in imagining the original. Throughout it all, what is possible and impossible precedes and determines what is imaginable and unimaginable. For example, it is impossible for water to not be hydrogen hydroxide. And so our seeming imagining of the falsehood of the identity is merely that—a seeming imagining of a seeming possibility.

So much for necessary identities like "water is hydrogen hydroxide." Where does this leave "pain is CFF"? Kripke's fundamental twist is this: no similar imaginative illusion can be exposed in the case of pain. We seemingly imagine pain failing to be CFF. Perhaps, we might wonder, we have only imagined the seeming of pain and not the real McCoy—real pain? This is impossible, submits Kripke. When it comes to such experiential phenomena, seeming and being are one. Specifically, the seeming of pain (also called by Kripke the *sensation* of pain) is one and the same as real pain.

With no seeming/being gap for the phenomenon itself, there is no gap between seeming to imagine and really imagining the phenomenon; in turn, there is no gap between a seeming possibility and a real possibility. If anything is to be classed an illusion, it is the original alleged necessary identity of pain and CFF.

PROBLEMS WITH THE ILLUSION FACTORY I— THE SOURCE OF ILLUSIONS

Is Kripke's explanation of the workings of the imagination adequate? Two separate worries arise. First, we wonder whether Kripke's illusion factory provides a correct explanation of illusions of contingency. Are we really involved in the kind of mistake Kripke posits—slides to qualitative surrogates—when we claim to have imagined that Hesperus is not Phosphorous or that water is not hydrogen hydroxide? Secondly, there is the specific case of pain. Assuming for the purpose of the argument the adequacy of Kripke's illusion factory, is he right to conclude that when it comes to pain-imaginings, no illusions get generated? I begin with the first question—the general mechanism engendering our blind spots and resulting illusions.

Above, I have given a rather informal exposition of Kripke's defusing method as laid out in *Naming and Necessity* (140–44). Kripke's own style of exposition is informal. It has led to many interpretations. I mention three notable readings, in order of increasing plausibility.⁵

(i) *Illusion by reference fixer*—the identity “A = B” is associated with an epistemically equivalent sentence “the F is the G,” where “The F” and “The G” are the respective “reference fixers” of the expressions “A” and “B.” For example, “Hesperus = Phosphorous” would be associated with “the evening star is the morning star.” What we really imagine is the falsehood of “the evening star is the morning star.” This last is indeed really possible. But we have not really imagined Hesperus not being Phosphorous.

(ii) *Illusion by possible epistemic counterpart*—we confuse our specific imaginative target, e.g., Hesperus, water, etc., with a possible epistemic counterpart. We thus confuse a *singular* claim regarding this particular subject—of Hesperus, water, etc., that *it* is F—with a *general* indefinite existential possibility—“there is something looking just like Hesperus (water, etc.) and it has the property of being F.” Of course, this general possibility does not grant that we have imagined singularly *of* Hesperus, water, etc.

(iii) *Illusion by possible metalinguistic counterpart*—We confuse (a) imagining of the *actual* semantic value of “Hesperus” (viz., the planet Venus) that *it* is F with (b) imagining the possible semantic value of the sentence “Hesperus is F” under a qualitatively indiscernible set up, viz., what this very form of words expresses in a qualitatively similar “possible world.” Set in such another world, the sentence “Hesperus is Phosphorous” expresses a different singular proposition. This other singular content is possibly false (indeed, if false, it is necessarily false). But the actual content of “Hesperus = Phosphorous” is necessary as ever; in turn, *it* is not really imaginably false. All three interpretations are committed on two fronts to: (i) a *cognitive* the-

sis—it is asserted that there is some proxy item in the head of the imaginer that he did successfully imagine—and (ii) a *modal* thesis—it is asserted that there is some genuine possibility, henceforth *the proxy possibility*, e.g., that the evening star is not the morning star, that has been successfully imagined and has been mis-identified with an impossibility (e.g., that Hesperus be distinct from Phosphorous). I find both the cognitive and modal involvements of these interpretations worrisome and grist to the materialist's mill. If the theses that explain the illusion-engendering are ill-founded, Kripke's explanation is in trouble. Let us examine the two kinds of involvement.

The cognitive thesis, first. Here I am standing and looking at Venus shining in the evening sky, sipping a bit of water from a glass I hold, and enduring the last heat wave hitting Los Angeles. Perception of the world slowly gives way to exercises of the imagination: I imagine this planet not being Phosphorous (available to my memory from an earlier morning sighting), I imagine this liquid not having oxygen in it, and I imagine this heat persisting without any motion of molecules. Enters our first question, regarding the cognitive thesis: what "objects" my mind had to contemplate as it engaged in these exercises? Did I have to apprehend the identifying description "the evening star" as I imagined Venus? Did I have to contemplate the identifying description "The cause of my waterish sensation" as I imagined water? Stronger yet: did I have to consider, in imagining Venus, even the merely *indefinite* description "a star (planet) in the evening sky"? In contemplating water and heat, was my mind forced to grasp the indefinite description "some stuff feeling waterishly (hot)"? And stronger still—did I have to go through, as the third interpretation submits, any verbal encoding whatsoever? Must I have considered the *sentence* "Hesperus = Phosphorus" or "water (heat) = B" ("B" being the pertinent scientific designator)?

The answer is negative and twice over. First, there is Kripke (and Putnam's) own empirical lesson about what it takes to have a linguistically competent user of expressions like "Hesperus," "elm," "water," and "heat." Most of us do not associate with such expressions uniquely identifying descriptions; the indefinite descriptions that we may, as a matter of personal history rather than required convention, associate, are often erroneous of the referent (thus "star" of Venus; or "element" [in Aristotle's mouth] for water). So, even if we suppose that what is involved here is essentially manipulation of linguistic symbols, the alleged descriptive information may well not be in my head for it to slide into.

Secondly, I see the hunt for vestiges of meaning as obscuring the very phenomenology of imagining—no language whatsoever, be it names or descriptions, need be involved in exercising this faculty. I am given the purported objects perceptually—Venus in the sky, the water in the glass, the heat in the air. When I *perceive* any one of them, no words whatsoever are called upon. The same goes for subsequent imaginings of those very items. On the

very items I am *given* perceptually, I can operate in a variety of other mental ways: turn my head and *remember* the items, *intend* to reach and act upon them, *imagine* them other than they appeared to me, etc. None of this needs to involve manipulation of names, descriptions, and/or their purported meanings. Thus, even the minimalist option (iii) due to Stalnaker (cf. above n. 5) seems to me overly intellectualized. In all the aforementioned cases, the cognitive thesis—in the imaginer’s head, there are verbal surrogates (names or in- definite descriptions)—rests on ignoring the non-linguistic manner in which the imagination, following perception, latches on to its objects in the first place.

The cognitive thesis looks for illumination at the wrong place—rival proxies we are meant to have in the head and confuse with what our perception and imagination is focused on. The modal thesis—the proxy we imagine is itself really possible—seems to me again to look for explanation at the wrong place—modality. The problem after all is our susceptibility to illusions, mistakes in the film shooting sense of *mis-takes*, of the objectual targets of our imagination. The susceptibility to illusions is by Kripke’s own admission an *epistemological* problem—our having a *blind spot* regarding the identity of Hesperus with Phosphorous or of water’s being hydrogen hydroxide. But now, to explain how this epistemic blind spot generates an illusion, we reduce the blind spot’s source—the aposteriority of the original claim, e.g., “Hesperus is Phosphorous”—to the modal *contingency* of a proxy claim. But even if we made the proxy claim modally necessary, the original problem—aposteriori access to the object and thus blind spots—persists and allows for an illusion to be engendered.

There are various ways of blocking the contingency of the purported proxies. One is to suppose that a form of hyper-determinism is true: every truth, transient as it might seem, is necessary after all. Suppose now I imagine in that set up, Hesperus’s not being Phosphorous. Would I not be epistemically in a position to indulge in this just as I actually am? Of course, I would. What allows the indulging is the *aposteriority* of the identity. This would remain intact even if all truths (including “the evening star is the morning star”) are now, by hypothesis, modally necessary.

Another, less radical way of making the proxies necessary, is to suppose a necessary relation between the “internal” element, in the mind of the imaginer, be it the name or the phenomenal description, and the external object (phenomenon). Thus, it may be argued, that names like “Hesperus” and “Phosphorous” are necessarily tied to their objectual origin—the dubbing of this planet, Venus. If so, our very words “Hesperus is Phosphorous” could not express a different proposition, being now tied to this identity claim about Venus by a necessity-of-origin relation. More intuitively yet, it may well be felt, that the sensations of water, heat, light, etc., could not have been generated by other sources than their actual basis—e.g., no water, no sensa-

tion of water (I will argue below for such a view making it of the essence of sensations of a given kind to be generated by external sources of a given kind, viz., water). But, at present, my point is not to convince one of the genuine modal necessity of our suppositions. They are for now merely *suppositions*. The point is that even with these hypotheses on board, our epistemic blind spots persist and the susceptibility to illusion continues.

I propose then a fourth, modal-free, interpretation of Kripke's mechanism for the generation of illusions. In *Naming and Necessity*, Kripke discusses how the "statement" "Cicero = Tully" is (i) not epistemically apriori though (ii) it is modally necessary (103–5). Kripke explains it all *without* propositions ("contents"), entities that do not belong in the framework of *Naming and Necessity*. Kripke alludes solely to: (i) sentences and (ii) what our qualitatively given evidence allows us to deduce about their truth values. Kripke's explanation is this: it is consistent with our qualitatively given evidential situation, that this very sentence "Cicero = Tully" is true and it's consistent that it is false. Thus the qualitative evidence in the head of the cognizer is deductively too weak to settle the sentence's actual truth value.

This proof-theoretic observation regarding *indeducibility* from qualitatively given evidence has an enlightening *semantic witness*: a model is constructible satisfying the qualitative evidence and "Cicero = Tully" and a model is constructible satisfying the evidence and refuting "Cicero = Tully." We must take notice: what is constructible here is a *model*, not a modal possibility (possible world). That is indeed the very point of our modal-free mechanism: one of the two constructible models *must* fail to represent a genuine possibility. For of "Cicero = Tully" and its denial, only one is true; hence necessarily so; the negation thereof is not possible; but it is consistent with the qualitative evidence and model—verifiable.⁶

PROBLEMS WITH THE ILLUSION FACTORY II— THE MATERIALIST REJOINER

The foregoing dissected the first question—what is the source of our blind spots? Is the key the modal contingency of some proxy content (descriptive or metalinguistic) or is it rather that no surrogate, contingent or other, need be invoked, the problem simply being the *incompleteness* of our qualitative evidence, e.g., regarding Hesperus's identity with Phosphorous?

The latter, I have suggested. Coming to our second question, these differences as to the source of imaginative illusions can be put aside. On all four interpretations, one thing stands out—contrary to Kripke, "pain = CFF" turns out as illusion-prone as "water = hydrogen hydroxide."

The point has occurred to a variety of critics in the last three decades.

Each has put it in his favorite terms, using one's elected interpretation of the source of illusions. I will put it in terms of the just laid out incompleteness-of-qualitative-evidence.

"Pain = CFF," we suppose, is a true identity. Both terms backtrack to the same phenomenon (kind). This much is discoverable by what Keith Donnellan called some time back, "the omniscient observer of history," over-seeing the history of the terms back to bestowal (just as he can settle, given his kind of [non-qualitative!] evidence, the truth value of "Cicero = Tully"). So, the sentence, as we use it, expresses a necessary truth. Now, late in the history of the terms, we, contemporary speakers, learn the two terms. The first, "pain," we acquire by direct experience. Later, we learn about brain states and their taxonomy, in particular "the firing of C fibers" (perhaps being shown magnetic resonance imaging thereof). This much constitutes the qualitatively given data base D available to us ordinary speakers. And now the question is: is D in our heads strong enough to decide the truth value of "pain = CFF"?

It is clear that D is consistent with both the truth of the sentence and with its falsehood. Kripke insists that the qualitatively given evidence is sufficient to ensure it is pain that is picked out by the word "pain" in any model respecting the evidence D; let this be (more on this below). It is still possible that "CFF" may designate, in D- respectful alternate models, other kinds of brain states (e.g., C* fibers firing) while in actuality pain and CFF would be as ever identical, and necessarily so.⁷

RETROFITTING KRIPKE'S ARGUMENT— THE WATER/PAIN ASYMMETRY

An identity sentence "A = B," taken *as a whole*, be it about water/hydrogen hydroxide or pain/CFF relationship, is always illusion prone, unless both "A" and "B" are blind spot free. What Kripke's response would be to this observation we don't know. But we do know something else by reading closely through Kripke's dialectic. Kripke uses invariably the logical form of *identity*. This gives Kripke automatically, on logical rather than essentialist grounds, the necessity of the empirical truth and thus a formal baton against the contingent-identity materialist. But Kripke's discussion at the intuitive level is not of a *symmetric* identity sentence. He compares our imagining water with our imagining pain. His point is that though we are illusion prone with water (and "water"), we are illusion-free with pain (and "pain"). In this respect, our preceding remarks, viz., that "CFF" is just as illusion prone as "hydrogen hydroxide," may seem beside Kripke's point. For Kripke may retreat from identity sentences to English subject predicate sentences. And his argument

would be that there is a fundamental asymmetry between (the purported necessity) of “Water is (made of, constituted by, consists of, etc.) hydrogen hydroxide” and “pain is (made of, constituted by, consists of, etc.) CFF”

This new reading, focusing on the water/pain side of the sentence, is surely closer to Kripke’s intent. What is more, this asymmetric reading is anyway an attractive reading of what we intend to assert with such English sentences. And so, let me raise the question: can Kripke still defend his fundamental twist by noting that water is, while pain is not, illusion prone?

TWO KRIPKEAN ASSUMPTIONS ABOUT PAIN

We need two preliminaries regarding terminology. The first concerns Kripke’s use, throughout his reasoning, of the key phrase “the sensation of pain” (sometimes also “the feeling of pain” and “the experience of pain”). On the one hand, Kripke uses the phrase in analogy—and this analogy is of course important to his dialectic—to the phrases “the sensation of water,” “the sensation of heat,” and “the sensation of light,” etc. To mark this use, let us deploy Kripke’s own technique elsewhere (in discussing indirect discourse reports like “Pierre believes that: London is pretty”), *the colon technique*—introduce a colon marker into English to flag a critical break point. Thus, we read “the sensation of: water (light, heat, pain).” This can be rendered even better in the alternative vocabularies of “the *perception* of: water (heat, light, pain);” “the *seeming* of: water (heat, light, pain);” or “the *appearance* of: water (heat, light, pain). In such uses, we remain neutral whether the sensation (perception, seeming, appearance) is one and the same as what it is a sensation, image, perception, seeming or appearance of.

This is exactly where Kripke’s second use of “the sensation of pain” is not neutral. On this second reading, he reads the phrase on the model of “the city of London.” This phrase, by grammar alone, stands for the very same item as London itself is; we could drop the “of” and say using apposition “the city, London, . . .” “The sensation of,” “the feeling of,” and “the experience of” allow this identifying reading. The phrases “the image (perception, seeming, appearance)” are not so liberal. I take it below that Kripke has to argue, by substantial metaphysics rather than grammatical apposition, that though the seeming (perception) of water is not water proper, the seeming (perception) of pain is pain itself. The second preliminary also regards Kripke’s use of the term “the sensation of pain” and, more generally, the term “the sensation of x.” As I see it, Kripke identifies items from three different levels of discussion. On the first level, there is the candidate phenomenon, e.g., pain (water, heat, etc.). On the second, there is the sensa-

tion (perception) of the phenomenon, e.g., the sensation of: pain (the sensation of water, the sensation of heat, etc.). On the third level, there is the introduction of a *class* of sensations bearing a given qualitative property (the “what it’s like”), e.g., any sensation having the qualitative property P (viz. of hurting). In a similar vein, we can speak of all the sensations having the qualitative property W (the what it’s like we get while interacting with water). Notice that even if it *turns out* that this qualitatively given class is a singleton, this deserves explanation and cannot be accomplished by stipulation. Indeed, in what follows I will resist collapsing the three levels before we examine the *connections* between them. And so, to keep the discussion more neutral at the outset, let us separate, for both the water and pain cases, the following four levels:

- | | |
|---|---------------------------------------|
| (4) sensation with qualitative property P | sensation with qualitative property W |
| (3) sensation of: pain | sensation of: water |
| (2) pain | water |
| (1) CFF | hydrogen hydroxide |

Using our distinctions we can state Kripke’s claims in the form of substantial conjectures. There are first the necessary-condition theses:

- (N1) Pain occurs only if the sensation of pain occurs
- (N2) The sensation of pain occurs only if a (the) sensation with quality P occurs

Next, there are the sufficient conditions claims:

- (S1) If a (the) sensation with quality P occurs then the sensation of pain occurs
- (S2) If the sensation of pain occurs, then pain occurs

Kripke asserts the full quartet because, it seems, he simply asserts that pain = the sensation of pain = the (a) sensation with quality P. For myself, I will grant, in the present work, both (N1) and (N2) (though I have my doubts about them; see n. 14 below). What I will question are the sufficiency theses, viz., the truth of both (S1) and (S2). In turn, I will question the generalized sufficiency thesis, e.g., whether the occurrence of a (the) sensation with quality W is sufficient for the occurrence of the sensation of: water.

METAPHYSICAL METHODOLOGY: AN IDEALIST TURNABOUT

I find Kripke’s approach to pain (and more generally, sensation kinds) puzzling. Twice over. The first mystery regards the *triangulation* problem—how to connect (i) the *essence* of pain, (ii) what’s *possible* for it, (iii) what’s *imag-*

inable about it. The second mystery regards the *generation* problem—what it takes the world to generate (“for God to create”) pain (in general, a certain sensation-kind).

On both fronts, when it comes to pain, Kripke totally reverses his previous course of argumentation. Throughout *Naming and Necessity*'s third lecture (indeed as late as pages 140-44), Kripke exposes the illusions engendered, both on the front of kind-existence and the imagination-possibility linkage, by a certain methodology, one I will brand *conceptual idealism*. And then suddenly (on the top of page 144), Kripke's turnabout strikes. It strikes on both the triangulation and generation fronts. We need to look at the two U-turns in some detail.

THE TRIANGULATION TASK— ESSENCE, POSSIBILITY, IMAGINATION

Kripke's standard methodology of *necessity derivation* runs like this. He begins with *actual* truths P1, P2, . . . about a given object x, e.g., this table is made of wood, it is in the room, etc. Next comes the step of *necessitation*: for some such truths, we assert the conditional “If P, then Necessarily P.” Finally, we are now ready to apply *modus ponens* and get a necessity. In the foregoing example, we so derive “Necessarily, the table is made of wood.” We do not derive “Necessarily, the table is in the room”; indeed, we derive “The table is not necessarily, i.e., merely contingently, in the room.” A paradigm example of such necessity-derivation is provided by the identities we have been analyzing. We are given empirically that “water = hydrogen hydroxide.” We justify the necessitation conditional; we detach the conclusion that “Necessarily water = hydrogen hydroxide.” In our identity-free variant analysis of this fact, we so derive (from actuality to necessity) “water is necessarily constituted of hydrogen hydroxide.”

Four characteristic marks of the necessity-derivation mechanism need be noted:

(1) *The mechanism is imagination free*—nothing in the necessity derivation rests on hypotheses regarding what is imaginable. All the features of a given item, e.g., this table, have been classed as necessary or contingent prior to and independently of any use of the imagination.

(2) *From actuality to possibility*—Kripke's mechanism turns upon its ear the classical tradition of starting with the span of possibilities (“possible worlds”) as given in advance and classing the actual world as merely one of the possibilities—the possibility that is realized, selected by God, the best of all possibilities, etc. Kripke's mechanism rather begins with actuality and its facts.

This much is true whatever the subject matter of the fact. For example, we may recall his discussion of a *mathematical* proposition, Goldbach's conjecture. It is stressed that first and foremost the actual truth of the proposition needs to be fixed. Then, on that basis, the range of possibilities is fixed—it is only if we suppose that every even number (greater than two) is actually the sum of two primes that no even could fail to so be.

(3) *The imagination as illusion engenderer*—the imagination comes into Kripke's discussion in two ways: seeming and real imagination. The epistemologically transparent form, the one that gives us first-person authority over imagination claims, I call, following Kripke, *seeming-imaginability*. Seeming-imaginability is by nature a necessity-buster, thus an engenderer of contingencies. For example, seeming-imaginability suggests to us that it is possible that Hesperus could fail to be Phosphorous, water lack oxygen, and that this table be made of ice. In all, we see that: Kripke's above-mentioned modus ponens methodology is, by design, set to discover ("derive") more necessity than meets the eye; the seeming-imaginability engenders counter-data, and thus an illusion of contingency; on reflection, we defuse this appearance of contingency and vindicate the necessity.

Kripke has a second notion of imaginability, *real-imaginability*. It is not really imaginable that: Hesperus is not Phosphorous, water lacks oxygen, etc. For this epistemically nontransparent variant notion, the imagination is posterior to and determined by what is possible (if P is possible then P is really imaginable; not possible, not really imaginable).

When we look at the overall relation between possibility and imaginability, we can sum up things this way: either the imagination is prior to possibility but an unreliable guide to it or it is reliable all right but only because it is posterior to and determined by possibility.

(4) *Essence grounds necessity*—The foregoing is all explicitly in Kripke. The present annotation is more speculative. Focusing on the necessitation step in Kripke's *modus ponens* mechanism, we may wonder: what are the grounds for projecting as necessary some properties of the table, while classing others as merely contingent? Kripke does not speculate overtly on this matter. But his examples suggest that the key lies in pre-modal facts about *what* (kind of thing) the given item is and how it was actually *made* to be what it is, viz., the generation process, in actual history, that determined that this kind of thing will be coming into existence. Call these prior facts about the generation process bringing x into existence, *essential generative facts*. I conjecture that it is essential generative facts that ground Kripke's necessity derivation.⁸

THE GENERATION QUESTION— EVERY REAL ITEM AN ISLAND?

So much for Kripke's approach to the triangulation problem. The last observation, about the fundamentality of essential generative facts, leads into Kripke's answer to the generation problem—what does it take for the world to generate (“for God to create”) a certain kind of thing?

To understand the distinctness of Kripke's approach, I find it useful to think of it in contrast with the influential methodology of conceptual idealism that dominated the terrain before Kripke's work (and with many, the methodology still inspires the reaction to Kripke's *Naming and Necessity*).⁹

Basic to the methodology is a principle I will call *Hume's island principle*:

(HI) there are no necessary connections between distinct existences;
each such existence is an “island.”

(HI) is made by the idealist metaphysician into a characteristic mark of all matters real: though they are connected and form a causal nexus, when it comes to articulating *what* they are, their essences, each is an island—the essence is articulable by an intrinsic feature derived from *x*'s concept (definition); all *extrinsic connections are not essence-pertaining*. Indeed, this has worked itself into the very nomenclature, with essential properties called *internal* relations. According to (HI), we happen to have in actual history *this* specific alignment of existences. But we can think of a variety of re-combinations and re-alignments that preserve the internal essence of the existences making up the world as a whole. In a nutshell, (HI) states that everything is what it is independently of (i) *what* any other thing is and (ii) *that* any other thing is.

A vivid manifestation of this idea is Hume's insistence on the possibility of what I would like to call *presto objects*. Suppose God wishes to introduce into the cosmos a specific rabbit, Peter. According to Hume, all He has to do is take a breath, whisper “abracadabra,” and presto! there goes Peter, the rabbit. There is no need for God (or history) to create first animals; then make a specific *species* of rabbits evolve; then, have a specific animal of that species, Peter, emerge. At any point in the history of the cosmos and at any region of space, God can simply parachute the desired rabbit “from above.” This is why I call such out-of-the-blue items “presto objects.”

As I read Kripke, he stands Hume's principle upon its ear:

(K) No distinct existences without necessary connections

Of course, (K) applies not only to material particulars, like Queen Elizabeth II or this wooden table T. It applies to *kinds* of things and twice over. First, the connection between material things to their kinds is itself essential. God cannot bring about into history Elizabeth as a table or T as a human being.

Written into the generation of historical particulars is their being of this or that kind; indeed the very nature of the generation process of Elizabeth must be that of generating items of this specific kind: human beings. Secondly, the kinds themselves are *historically real* beings. Water could not have been generated in cosmological history, by the heavens or by God, without oxygen and hydrogen. In turn, oxygen could not have preceded hydrogen in cosmological history. As for Elizabeth's kind, the species of human beings, this distinct biological species could not have come into existence were it not for the existence of water (and carbon, etc.). The kinds, like the particulars, are governed by generation processes that determine their specific identity and essence. Looking at the long chain of being, God is simply not free to insert any old item (kind) in any old place.

Kripke's lesson about generative connectedness runs deep. It tells us that items with similar DNA structure on Mars but with no generative connection to our evolution processes are not tigers. This is complemented by Kripke's insightful remark about the purported species of unicorns—given that in our causal neighborhood there were none, the emergence on Mars of any one-horned animals or, for that matter, if the myth were only gracious enough to leave a DNA description, of animals with both the look and that DNA structure, would still not amount to the existence of our, missing forever, species.¹⁰

KRIPKE ON THE PURELY QUALITATIVE ESSENCE OF SENSATIONS

I am not arguing here for the aforementioned generative ontology. I merely remind us that this is a natural and, to me, attractive, reading of Kripke's general approach to the existence of things real. And now for the mystery: when Kripke launches his discussion of pain (on page 144 of *Naming and Necessity*), the foregoing metaphysical methodology grinds to a halt. Indeed a full idealist turnabout is embarked upon.

First, on the triangulation front, Kripke reverses course and lets the imagination take the lead. I seem to be imagining pain without CFF; no gaps here, I really imagine pain without CFF; and so, it is really possible for pain to occur without CFF. But what of the essence-determination for this kind of phenomenon, pain? Might it not turn on relational generative connections to (states of) the brain and the species of sentient being undergoing the pain? What makes this kind of experience, pain, distinct from this other kind of sensation, remorse? Need it not turn on their generative basis, the kind of processes that, in the efficient causal order, brought about the pain and remorse?

According to Kripke, all that needs to be said on the front of essence is: pain's essence is exhausted by the phenomenological quality P; Remorse's essence is exhausted by the phenomenological quality R. All that God needs to do to bring that kind of sensation, pain (remorse), into the world, is instantiate P (respectively R) in some being. There are no restrictions on (i) the time, (ii) location in space, and (iii) sort of (biological) being in which the instantiation is to take place. God could have brought these sensation-kinds three seconds after the Big Bang, not in our solar system but in the Orion Belt or not at all in biological items of the kinds that have actually evolved. It is all up to Him—been generated, simply because its full essence has been instantiated.

This “purely qualitative” approach to existence-and-essence is not restricted to pain. Time and again, Kripke describes to us qualitatively similar identical situations (in effect: “twin earth,” though this title is Putnam's) in which there is no water, heat, or light, but presto! there exist in the locale the sensation of water, heat, and light. Indeed, twin earth is *given* as a locale where these sensation-kinds exist though the phenomena that *actually* generate them are totally absent.

COULD REAL SENSATIONS BE PURELY QUALITATIVE?

I find Kripke's U-turn on sensation-kinds questionable. Twice over: in the treatment of the sensation-kinds proper (the generation problem) and, in turn, in what is imaginable and possible for the sensations (the triangulation problem). In tracking Kripke's thought on the two questions, there is some logical order to be followed: the gap between seeming to imagine *x* (e.g., pain, the sensation of water) and really imagining *x* (pain, the sensation of water) has closed because, prior to any imagination-invocation, the *essence* of *x* itself, e.g., pain (the sensation of water) has been made *purely* qualitative. Since seeming-imagination, as a faculty, has transparent access to the purely qualitative, it has now been vouched reliable—it respects the full essence of the phenomenon imagined. With no gap between seeming and being in the phenomenon, there is no gap between seeming and really imagining it.

So, to dissect Kripke's steps, we need to go back to the generation question—the claim that the essence of these sensation-kinds is purely qualitative. On my diagnosis, this first step is “the original sin.”

How could a real something, of whatever kind, be *purely* qualitative? Where would that leave Kripke's fundamental generation principle, “no real item is an island,” viz., the foregoing (K), viz., no distinct existences without necessary connections?

Let me amplify on this, for we need to understand what breeds here the puzzlement. I do not puzzle over sensations having necessarily (and, at that, essentially) a phenomenological quality, in the way I, Joseph Almog, a real thing, have the property of, e.g., being human, essentially. What is puzzling is that this qualitative property would (i) exhaust the essence of the real sensation (all there would be to the *existence* of the sensation is the instantiation of this qualitative property) and (ii) that the qualitative property itself is exempted, as a real property, from Kripke's principle of "no real item is an island." Need not there be for such a quality P to exist one generative history, while for the essentially different quality R, quite a different generative basis? How could either P or R be real, exist *in* a specific stretch of history and *in* a specific region in space, yet just jump into existence by God's presto act—"Let P (or R) be instantiated"? Need not God create for either P or R, sentient species first? Need not He create for these sentient species brains? Need not He create for some of these qualities to be felt *highly* complex brains?

Some experiences are had by primitive brains and may have come into existence (as sensation-kinds or phenomena) much before the ascent of man. Some are not so primitive but still require no ascent of man, e.g., Nagel's memorable example of feeling like a Bat. Now, assume this feeling (sensation) kind has some lawful property B. Surely, B required some other generative acts of God, e.g., creating bats, though no homo sapiens were called for. But what about the quality of experiencing Remorse? Does it not require the generation of higher animals? Pain, you will have noticed, is halfway between the primitive sensations and the human-only mental phenomena. But whatever the exact threshold, pain was surely not generable by the time God had created only bacteria and amoebas and worms. For this sensation-kind to be generated, God needs to do more, much more, on other fronts, prior to bringing it, pain, into the world.

Let us for a moment bracket away the specific case of pain. There is in front of us a fundamental observation about sensation-kinds, quite apart of the delicacies of pain (to which I return below). Consider, the sensation of water, S (water), and its phenomenological quality, W. As mentioned Kripke asserts that it is possible that S (water) exists without water; and if one such presto-possibility was not enough, we have in the tell-tale of twin earth, a massive replication of such presto-possibilities. I propose that these possibilities regarding sensation-kinds are illusory.

Starting with visions of the imagination, we speak freely of a *qualitatively* given setup, with the sensation S (water) and yet no water. But recall Kripke's own exposing of such illusory-envisionings. We must first go back to actuality and prior to any qualitative visualizations, ponder the generation question: what did it take for S (water) to actually exist? Proceeding thusly, we are likely to recognize that the generative dependence of S (water) on water is essential to what this sensation is, determinative of the very spe-

cific sensation it is. And so, when we seem to imagine S (water) without water, we *merely* seem to imagine it. We really imagine a qualitative indiscernible twin, another sensation that has quality W, all right. But that is not yet the sensation *of water*. And with no water to engender it, S (water) itself is not to be had.

More generally, in imagining twin earth, we imagine a variety of qualitative twins of actual robust sensations that we do have in us only *because of* robust actual phenomena like water, heat, light. The mistake we commit is this. We abstract away from the generative history of the sensation and focus on the purely internal—qualitative—feature of the sensation, e.g., quality W, as the full essence of the sensation. But the sensation of water, just like water, is a real kind, a phenomenon in the history of the cosmos. Both phenomena come into existence via a certain generative process that is determinative of *what* has thus come to be. Water is generated by the formation of molecules with the right oxygen and hydrogen ratio. In turn, the sensation of water is engendered by the hydrogen hydroxide of the world and sentient beings reaction to it.

If the foregoing is correct, all that twin earth imagining accomplishes is not a genuine possibility (for all these natural-kind generated sensations) but a possibility involving a qualitative twin (itself essentially produced, in the imagined locus, by another physical substance, viz., no such qualitative twin sensation without XYZ).

In sum, sensation-kinds, like other real kinds, should not be reduced to the epistemologically immediate qualitative aspect associated with them. We *access* them via this qualitative aspect; but for *them* to be there to be accessed, there must be on hand real-world phenomena—water, heat, light—*of which* they are sensations.

QUALITATIVELY GIVEN EPISTEMIC SITUATIONS— “TWIN EARTH”

In discussing, the metaphysics of modality, the ways the world (and things in it like Mr. Richard Nixon) might have been, Kripke takes to task metaphysicians who insist on giving the possibilities (“possible worlds”) in purely qualitative terms. He accuses them of looking through a “telescope” at the possible worlds. In a later addendum, he notes that even elementary schoolchildren, calculating probabilities—of two dice landing a (5,6) combination—know better, coming up with the right answer 2/36, because they give the possibilities not in purely qualitative terms, in which case there would be only 21 possibilities.¹¹

And yet, when it comes to the notion of evidential situation, Kripke

makes a full U-turn and insists on purely qualitative evidential (also “epistemic”) situations. We seem to have dusted off the forbidden telescopes. We specify the situations through the qualitative looking glass; and we make about them direct metaphysical judgments of (trans-situational) identity (recall “twin earth”)—the liquid therein is not water but the mental phenomena therein are the sensation of water and pain.

This idea of qualitatively given evidential (epistemic) situation seems to me misleading. The notion is a hybrid of (i) a *situation*, which is real all right, and (ii) an artificial restriction of our evidence regarding the situation, a restriction to a certain limited sub-language, whose predicates are of interest. We may gain a better understanding of the hybrid character involved by attending again to our model theoretic analog, the notion of a “model.” There is no such thing as a qualitatively given model. A model is a model and not another thing. What we have rather is some model M, which we may *describe* only up to a certain level, say using only a certain kind of vocabulary. This is not a model. It is a partial description of part of a model.¹²

We may use this notion of apparent-model, a qualitatively given model, as correlative to a certain *semantic* idea, coding a “negative” kind-of-truth of a given quoted sentence—a sentence that keeps expressing truths solely in virtue of limited vocabulary stipulations (e.g., of logic, analytic definitions, qualitative predicates). But, as such, both the notion of truth and the related idea of qualitatively given evaluation point (model, situation) are what Descartes would have called an *incomplete abstraction*: we abstract a certain *aspect* of the real situation and ignore the full nature of the phenomenon, in order to emphasize that certain truth values can already be assigned. This in no way suggests that any thing real—object or kind—has been latched on to. We do not have so far any real situation involving Nixon, water, the sensation of water, or pain. We have a semantical artifact for the partial settling of the truth values of a restricted class of quoted sentences.

Now, Kripke tells us that in every situation qualitatively similar to ours, the designator “pain” designates its actual designation, the phenomenon of pain. I believe two matters are run here together: the meaning of a term and the essence of a phenomenon.

Let me mention an analog case. Consider the first-person pronoun, “I.” Let us suppose some current semantic theory, e.g., David Kaplan’s, is correct about it, and its linguistic meaning is (roughly) the rule: in every context *c*, “I” refers to the agent of *c*. Now consider a context C+, qualitatively identical to the one in which I utter “I think.” It is clear that the sentence expresses a truth in C+. But it is not at all clear that what the word refers to—the agent of C+—is of the very kind (essence) that I make, viz., a human being. The meaning of “I” may be preserved; a truth may be expressed; but the nature of what is thereby referred may well be quite different.¹³

Let us go back to “pain.” Let Kripke be right about its meaning so that (i) it has the qualitative aspect, the invocation of quality P built in and (ii) this is its sole meaning. This much leaves the meaning of “pain” like that of a personal pronoun rather than like that of a kind name (be it a mass or count noun). But no matter—let this qualitative aspect be the sole meaning. So indeed, in a qualitatively identical situation, the sentence “pain hurts” expresses a truth. But we have no guarantee that it expresses the truth by picking out the very actual designation of the word, as we use it. It may well be that a different kind of phenomenon is picked out but the meaning of “pain” is not specific enough to discern the two phenomena.

In short, I suggest that we can apply Kripke’s illusion-defusion mechanism to pain, just as we applied it to water. When I claim to have imagined pain without CFF, I only seem to have imagined pain. I have latched on to the qualitative feature of pain, quality P, and thus imagined a qualitatively similar surrogate sensation. But pain it is not; for, by hypothesis, we are missing the actual generative basis for engendering real pain—CFF brain states of humans.¹⁴

A MENTAL REALIST PROPOSAL— INTEGRATING MIND AND BODY

I would like to go back to my initial promise to offer a framework that respects intuitions of neo-dualism (e.g., Kripke) and materialism: the separateness of the psycho/physical kinds (phenomena) but, at the same time, their strict interconnection.

Two forms of strict coordination may be separated. The first, weaker, form, I mention mainly because it is, like a “consistency proof,” witnessing the interesting, often ignored, possibility of necessary connection combined with essential difference. The second form I pursue because I believe it is true.

MILD INTEGRATIVE DUALISM

Mild integrative dualism proposes that pain and CFF are (i) modally necessarily connected and (ii) yet of different intrinsic essences. The possibility of the distinction rests on separating the idea of (i) modally necessary features of a thing from (ii) what the thing is, its essence.

Necessarily connected pairs of essentially different items abound throughout all categories of existence, quite independently of mind-body

connections. Thus, consider mathematical (kinds of) entities. Assume that numbers (sets) exist necessarily. Then the empty set and the set of natural numbers (whether taken themselves as sets, or as primitive numbers) necessarily coexist. Yet *what* each set is is different—the former is the unique set with no members, the latter the smallest infinite set whose members are these items—the natural numbers. Similarly, if we consider a Euclidean space, we can separate, as *kinds* of figures, triangles and squares. The two kinds necessarily coexist. Mathematics abounds with such necessarily coexisting items (kinds) that are nonetheless different kinds of items (kinds).

Such pairs of modally inseparables pervade also the causal order, provided our notion of necessity is real, as Kripke's is, and not merely combinatorial, as Hume's was. One example is of necessarily connected properties that are nonetheless of different nature. Some examples of pairs are: the properties of having location in space and the property of having some physical composition; the property of reflecting so many angstroms from one's surface and the property of having a material surface (shape); the property of having a certain specific gravity and the property of having protons and neutrons in one's composition. In specifying what each property is (consists in, is made of, etc.), different explanations will be given; nonetheless, of necessity, whatever item bears the one property bears the other and vice versa.

Such modally inseparable pairs are not restricted to *properties* of things; there are systems of *things* (e.g., pairs of things) that are inseparable. We find such modal inseparables in the small, e.g., in jointly created-annihilated pairs of elementary particles, or in the very large, e.g., binary star systems; and we find such pairs in the more familiar middle level in various "symbiotic systems." One such symbiotic system is the brain of a given animal and its body. I find the dependence as pervading all the ways these items might have been.¹⁵

The pair of kinds, pain and CFF, are such modal inseparables: they are necessarily connected throughout all instances. Nonetheless, what (kind of phenomenon) pain is is: an experience with a certain quality P; what CFF (as a neurological kind) is is: a certain kind of brain state with such and such molecular configuration. Each essence specification (i) is internal (nonrelational) and, at that (ii) specified in terms relating only to the given (mental, physical) realm—a purely qualitative essence for the kind pain, a purely compositional-molecular specification for CFF.

On this mild form of integrative dualism, we satisfy three out of our four desiderata: numerical distinctness of kinds, essence difference, and necessary connection. But with our purely internal essences, we do not abide by the fourth desideratum, the *essential* interconnection between psychological and physical phenomena.

STRONG INTEGRATIVE DUALISM

Mild integrationism is consistent and interesting. But it is too weak and twice over.

First, quite apart of the mind-body question, it offers a notion of essence that is too “restrictive.” For mild integrationism preserves a purely internal view of essence (if not of necessity). But, if we recall Kripke’s generative ontology, the moral of his principle (K) was that it is in the very nature of real items to be interconnected with other reals and in two ways: (i) be dependent on other reals for coming *into* existence, (ii) be essentially connected to other reals *in* existence to persist being in history. Mild integrationism instructs us that the nature of things, e.g., Peter, is exhausted by subsuming it under a superordinate predicate (“sortal”), viz., “. . . is a rabbit.” But this can only be half the story. For we must ask—and what makes Peter belong in *this* kind? We need to call on Peter’s relations to other reals. To be of the superordinate kind, Peter has to stand in relations to other real items, in particular to *specific* generators and their involvement in a breeding process appropriate for this kind.

The incomplete account provided by mild integrationism may lead us to repeat, one level up, Hume’s trick with presto objects. We recall that Hume thought that we can take a given bare particular, a point—entity not belonging in any kind, laying in waiting on the fringes of history, and then—“presto” insert it into history as a rabbit or a rock or a lollipop. The form of essentialism admitted by mild integrationism revises this by constraining the “presto” introduction into history—we stipulate that the “flip object” shall be a *rabbit*. But the *making* of Peter into a rabbit is still oracular. It is not so made by an efficient process *in* history, it is simply stamped by stipulation “rabbit,” rather than “rock” or “lollipop.”

As I understand it, Kripke’s general generative ontology submits that to be a rabbit, rather than a dog, Peter had to come into existence in a specific way. The moral for real particulars is: *no kind difference without generative difference*. The same applies one level up—what brings about the difference between the kind dog is and the kind rabbit or between water and gold is the distinct kind of generation processes of the kinds (and their instances) *in* history.

The second reason I find mild integrationism too weak is specific to the mind-body problem. Mild integrationism leaves the essence of pain purely qualitative. If the above discussion of “purely qualitative” is anything to go by, there are no such properties. This much applies not only to pain but also to other sensational kinds (e.g., sensations of water, heat, light). Kripke speaks of them all as “free floating,” ungenerated and confined to a realm of pure qualia. But then what is to determine the distinct identity and essential

features of these sensation kinds? The answer must lie in their generative processes: the difference between the sensation of water and the sensation of heat lies in tracing their respective connection to water and heat; the difference between pain and remorse lies in tracing their different generation histories back to different kinds of brain conditions that engender in the first place these different sensations.

By keeping to purely internal essences, mild integrationism under describes the essences of pain and CFF. The situation is analogous to treating the essence of a human body, say my body, as a certain lump of molecules (material extension). But a human body is not a mere assemblage of matter. Descartes was quick to see here that to explain the identity of a human body and the distinctness of its kind—of its being a *human* body—we need to look at the history of that body and its generation as the body of this human being (itself informed by this human mind).¹⁶

What applies to a human body applies to specific kinds of human brain states. We cannot specify the essence of such a brain state by treating it as a mere type of configuration of molecules, leaving it open that it could be (i) a physical state of other kinds of animals or (ii) even in humans, a state that has nothing to do with mentality, indeed *this* specific kind of mentality (e.g., experiencing pain, not feeling thirst). A fundamental description of what human neurological states are must articulate that it is part of their very nature to produce specific kinds of mental experiences.

Imagine then, as Kripke invites us to, that God just creates the molecular configuration without the felt experience. Our response should be like Arnauld's retort to Descartes: the metaphor of "God creating this or that" is evocative but we should use it with care. We should not confuse our phenomenal hold on an item, with the workings of God (or the history of the cosmos). What is created by God is a full real item (kind) that has to exist among other reals, not just a *presto-perceptual* image, a *snappy front* to affect our sensory channels. To create a physical complex kind like CFF, just as to create tigers and water and heat, is not merely to create a visible front, an available presentation for perceivers, soon turned creative imaginers. It is to create something whose structural features make it possible for these molecules to interact with other molecules in the brain and molecules outside the brain.

I thus have doubts about Kripke's confidence that we are to start with our perceptual sensations of CFF and view them somehow as determinative—it is solely on their basis that he concludes, via qualitative imaginability constructions, that we have on hand CFF without pain. On my understanding, Kripke reverses (his own) cart and horse: it is not "qualitatively given" sensations, leading to imaginings, that should guide us to the essence of the phenomena. The phenomena come first and sensations thereof follow downstream. There is no understanding of the nature of a sensa-

tion of *x*, without first understanding what the nature of the phenomenon *x* is. Epistemically, we may enter the essence maze, to figure *what* *x* is, by consulting imaginative-sensational presentations, just as we do start with perceptual presentation of actuality: to know *how* *x* actually is, we start by looking at *x*. But just because I see the tip without the iceberg or see the cloud without the little water droplets, I don't rush to conclude anything about makeup. Idem for imaginings of CFF without pain felt (and other such "Zombie snapshots"). What the mind's image suggests is agitated little brainy balls and no pain felt. What nature investigation undertakes is to unfold the kind of real physical process that lies behind our perceptual presentation (via MRI snaps) of agitated little brainy balls.

What CFF ultimately is has nothing to do with pictures we form in our minds of molecular clusters, pictures that would not tell CFF from similar perceptual presentations engendered by completely different (brainy) phenomena. The nature of molecular structures like CFF lies in what genetic information they code and what processes of morphogenesis activate in them. If it is felt that these very brain states of humans could "decide" as a subsequent "career choice" to produce pain—in the way Ben Franklin made a late choice in his career to go into bifocals production—we miss the very way in which that kind of neurological state, CFF, came into existence. It is at the primal stage of generation that it is settled for the fibers, by their very underlying genetic nature, that they have the potential to make up brain states and, at that, states that engender pain.

In all, I suggest the following form of strong integrative dualism. As before, pain and CFF are necessarily connected. But when we ask what each is, we say: what Pain is is a kind of mental experience involving the P-ish feel (hurt) generated by the firing of CFF in a human being. What CFF is is a kind of human brain state involving the firing of a certain kind of structurally specified molecules that generates pain.

So much for *what* pain and CFF are. What about the *possibilities* open to each? Possibilities for an item *x*, ways *x* might have been, alter the *ways* (manners) of *x*, but keep fixed *what* *x* is, the nature of the item whose mere-ways we alter. If it is part of what pain is to be engendered by CFF, there is no way for this phenomenon to be in which it is not engendered by CFF. And if it is part of what CFF is to engender pain, then there could be no CFF occurrence without the induced pain—for CFF to occur is for the engenderer of pain to occur, even if this much is not the way our visual imagination conceptualizes (images!) the CFF.

So much concerns the essence of pain and CFF and their possibilities, the ways these kinds—with *these* natures—might have been. There remains the third factor of our triangulation problem—the imagination. We may, as I just did, view imaginability as designed to tinker with *how* things are (their ways) but only on the condition of respecting *what* they are: no imagining

of *x* may flout *x*'s essence. If so, alleged imaginings of pain without CFF and CFF without pain (and other zombie tell tale) are ill founded. Alternatively, many have suggested that we regard imaginings of *x* as having much more freedom. They are successful regardless of conformity to *x*'s essential properties. We thus give up on the imagination as reflective of the essence of things real.

For myself, because of independent views about the *imagination* (and its structural dependence on perception), I am disposed toward an essence-bound view of what predicates this faculty may apply to a target it has "in sight." But whatever is our view about this "radar"—how much *in* the targets it is sensitive to—the nature of the *targets*, the essence of pain and CFF, is long fixed before we turn on the radar.

NOTES

- 1 My debt to Saul Kripke's discussion of pain in *Naming and Necessity* (Cambridge, Mass. Harvard University Press, 1972) is obvious

An intermediate view between Kripke's accidental pains/brains correspondence and the materialist full reduction is developed in the writings of Thomas Nagel and Torin Alter. I have been influenced by both. Their positive proposals pursue a rather different line than mine. I owe thanks to conversations with Tyler Burge, John Carriero, Louis Derosset, Erin Eaker, David Kaplan, Sten Lindstrom, Tony Martin, Calvin Normore, Robert Stalnaker, Mike Thau, and Steve Yablo, also, to much earlier discussions with Keith Donnellan, Rogers Albritton, and Dominik Sklenar. I have dealt with some related issues—the interconnection of the human mind, body, and being, in the context of Descartes's doctrines—in my earlier *What Am I?* (Oxford: Oxford University Press, 2002).

In speaking of pain and its connection to the firing of C-fibers, my interest is through and through with what has been called the "type-type" correspondence, with this one exception. I do not ever use the notion of "type." I use instead the notion of "kind," in general metaphysical remarks (e.g., about water, heat, etc.) and, in turn, in the application to psycho-physical correspondences.

2. See *Naming and Necessity*, lecture III, especially 144–55.
3. Thus, through and through, I question Kripke's assimilation of the CFF/Pain correspondence to the Ben Franklin/bifocals model. A note on the latter. Kripke originally mentions (*Naming and Necessity*, 146) the connection while confronting the materialist—does it make sense to say that the occurrence of pain is related to our feeling in the contingent way in which Ben is connected to inventing bifocals? No, says Kripke, this is self-evidently absurd. Indeed. But my present worry is that Kripke has us leap from the frying pan into the fire. For he goes on to assume that the brain basis of the occurrence of pain, CFF, is connected, in both directions, as casually with pain, as Ben is connected to inventing bifocals. Our task below is to avoid the casualness of the Ben/bifocals model twice over—in connecting pain with (i) its sensation by us and (ii) its physical basis.
4. Of course, so runs Kripke's focus in the parallel case of de-re modality. The question here is not the cognitive fix worry, viz., what does it take to have Venus as the *subject* of modal predications? This last is answered by: It is *stipulated* to be the pertinent object (or referred to by my name or [wide scope] description). The question is rather the predicative query: given that it, Venus, is the pertinent subject, what *predicates* are possible of it? Our present question is a variant question, viz., what predicates are imaginable of it? I

thank Erin Eaker, and years earlier, Keith Donnellan, for stressing the importance of separating for Kripke the predicative and cognitive fix questions

- 5 Plausibility should not connote popularity, the first, most implausible, reading, has had many followers in recent philosophy of mind among friends of so-called "two-dimensionism" Insider's criticism of such implausibilities are given in Robert Stalnaker's very clear "On Considering a Possible World as Actual" (to appear in the *Proceedings of the Aristotelian Society*) Stalnaker himself seems friendly to the most plausible option (iii) below As will become clear immediately below, I think that even this option is both too cognitively and modally involved (but probably closer to Kripke's own original intentions than my own reformist reading)
- 6 A general phenomenon lurks here in the wings the consistent negations of sentences expressing necessary truths are satisfiable in models that do not represent genuine possibilities This applies to many cases of (independent) mathematical sentences, e.g., (the formal coding of) "Peano Arithmetic is inconsistent" Call this sentence S S's negation is true and necessarily so But S is formally consistent and satisfiable I have discussed in some detail the general difference between meta-logical (consistency witnessing) models and object level genuine possibilities in *What Am I?*

There is here a further important connection between the mental and the mathematical cases, a connection already noted by Arnauld in his discussion of Descartes, and commented on in the above-mentioned book Faced with a proposition regarding some mathematical kind of item, M (e.g., right triangles, the cardinal number of the power set of the integers), a mathematician (e.g., Descartes, Gödel) may exclaim that he imagined (conceived) M without some property P (or even positively conceived it with non-P) Is this any guarantee that that P is not of M's essence? Is the complete essence of M (and below pain) transparently available to our expert thinker? I believe the answer is negative for both M and pain This nontransparency would of course not impeach our thinker of *incoherence* as long as what he conceived of M is consistent (and witnessed in a related model) I return to this analogy to mathematical cases below

The modal-free reading is emphasized in Kripke's later "A Puzzle about Belief," where any allusion to modal possibility and possible worlds is dropped I quote in full

But the clearest objection which shows that the others should be given their proper weight, is this the view under consideration does not in fact account for the phenomena it seeks to explain As I have said elsewhere [Kripke refers here to *Naming and Necessity*, JA], individuals who "define" "Cicero" as "The Catiline denouncer," "the author of *De Fato*," etc., are relatively rare their prevalence in the philosophical literature is the product of the excessive classical learning of some philosophers Common men who clearly use "Cicero" as a name of Cicero may be able to give no better answer to "Who was Cicero?" than "a famous Roman orator," and they would probably say the same (if anything!) for "Tully" (actually, most people never heard the name "Tully") Similarly, many people who heard of both Feynman and Gell Mann would identify each as "a leading contemporary theoretical physicist" Such people do not assign "senses" of the usual type to the names that uniquely identify the referent (even though they use the names with a determinate reference) But to the extent that the *indefinite* descriptions attached or associated can be called "senses," the "senses" assigned to "Cicero" and "Tully," or to "Feynman" and "Gell Mann" are *identical* Yet clearly speakers of this type can ask "Were Cicero and Tully one Roman orator or two different ones?" or "Are Feynman and Gell Mann two different physicists or one?" without knowing the answer to either question by inspecting "senses" alone ("A Puzzle about Belief," in *Meaning and Use*, ed Margalit [Dordrecht Reidel, 1978])

- 7 It is clear how the point holds on the other three interpretations, e.g., (i) the proxy sentence "the sensation of feeling P is/ly is the kind of brain state looking thus and such on

the MRI” is modally contingent, (ii) it is possible that there be an epistemic counterpart, a kind of brain state, e.g., C* fibers firing, qualitatively like but numerically distinct from CFF and such that C*FF feels painfully, and (iii) it is possible, in a qualitatively identical world, that “pain = CFF” express a distinct singular proposition, e.g., that pain is C*FF

8. I have expanded on the criticality of generative processes to kind identity and essence in “The What and the How II,” *Nous* (1996) and in “Nothing, Something and Infinity,” *Journal of Philosophy* (1999) I return to this theme in the discussion below, both in connection to sensation kinds in general (e.g., the sensation of water) and the sensation of pain in particular
9. A prime example is D. Lewis’s metaphysical work both about the existence (span) of possible worlds but also the actual existence of individuals and kinds thereof. See, e.g., *On the Plurality of Worlds*, (Oxford: Basil Blackwell, 1986)
10. *Naming and Necessity*, 23–24 and 156–58. For discussion, see the papers mentioned in 8 above
11. *Naming and Necessity*, 43–47, and the new preface, 16–20
12. Interesting model theoretic analogues to such partial descriptions of models using only limited vocabulary have been pursued in the logical literature, e.g., the “surface models” of Hintikka or game theoretic descriptions restricting the means of expression (e.g., as in the work of Fraisse, Ehrenfeucht, and Henkin). Upon addition of expressive power, the construction may be shown contradictory. Thus the partial segment provides the mere appearance of a model. We may recall at this point our earlier discussion of the aposteriority of “Cicero = Tully” (or “water is hydrogen hydroxide”). It was suggested that this did not involve the genuine possible falsehood of some surrogate proposition. All that was invoked was rather the consistency (and thus satisfiability in a model) of the qualitatively given data with both the truth and falsehood of the target sentence. Such models, consistent with the purely qualitative data, did not represent genuine possibilities. Similarly for twin earth—it is a model, for the evaluation of sentences, consistent with the purely qualitative data. This does not guarantee the representation of a genuine possibility.
13. I believe Descartes was very much aware of this distinction in analyzing the truth of “I think.” It is one thing to observe that the sentence keeps expressing truths under variations of the external circumstances, it is quite another to leap to the conclusion that the kind of item thus referred to is the same. Descartes did not so leap. Having established the invariant truth of ‘I think’ across such qualitatively given situations, he asks: but what am I? What is this I that thinks?
14. I am here focused on the metaphysics—the essence—of pain, not the semantics of ‘pain’ and our alleged special knowledge of the truth of sentences like “I am in pain.” Let me note that while the discussion granted Kripke his favorite semantics and epistemology of “(I am in) pain,” I actually have doubts about both.

According to Kripke, real pain and its seeming are one. Thus whenever pain occurs in me, it seems to me that it does, and whenever it seems to occur, it really does. Both predictions seem questionable.

First, attention and focus affect my awareness of the pain that occurs in me. My own favorite example is athletic activity. As any injured runner will recognize, one may feel a seriously distracting pain, e.g., back pain while walking calmly. Next, one insists, against one’s doctor’s advice (“you will only make your pain much worse”), to engage in one’s daily dose of running. During the run, especially if it is intense, no experiencing of pain occurs, though the stress on the relevant muscles is obviously more intense than during the walk. As one completes the exercise, slowly, a strong feeling of pain recurs. We could of course say that the pain did not go on existing in my body because I did not go on noticing it. But it seems much more enlightening to say the pain went on in my body, just as before, perhaps even more intensely, but I didn’t feel it because my mind turned away from it. It however persisted, even if unattended, and that is of course why it was there to be sensed when my focus turned back to it.

The prediction strikes me also as problematic in the opposite direction—not every seeming of pain is veridical. But let me not engage this complex epistemological issue in the present metaphysics-bound essay.

15. The fantasy-indulgent personal identity literature with its living brainless bodies and living bodiless brains is just that—a fantasy—not a description of real ways these items might have been.
16. I expand on Descartes's generative view of the essence of a human body (and its effect on what it is to be a human being) in *What Am I?*

