

ABSTRACT

IDENTITY SYNTAX

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Like '&', '=' is no term; it represents no extrasentential property. It marks an atomic, nonpredicative, declarative structure, sentences true solely by codesignation. Identity (its necessity and total reflexivity, its substitution rule, its metaphysical vacuity) is the objectual face of codesignation. The syntax demands pure reference, without predicative import for the asserted fact. 'Twain is Clemens' is about Twain, but nothing is predicated of him. Its informational value is in its 'metailed' semantic content: the fact of codesignation (that 'Twain' names Clemens) that explains what fact it asserts and why it is necessary. Critiques of concepts of rigidity and elimination of singular terms result.

IDENTITY SYNTAXⁱ

Proceedings of the Twentieth World Congress of Philosophy, Vol II: Metaphysics,

(Philosophy Documentation Center, Bowling Green, OH), 1999

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Conceptions of Identity: What is identity? What does the '=' of logic mean? Gottlob Fregeⁱⁱ and his followers frame these as a question of what identity statements are *about*, terms or their referents, and then take that to ask what referent identity is predicated of. Since terms flanking '=' must designate as they do elsewhere for 'a=b' to entail 'Fa→Fb', unarguably 'Twain=Clemens' says something, true or false, regarding that man, and no way suggests the nonsensical or necessarily false, "'Twain'='Clemens'".ⁱⁱⁱ Salutory it may be to recall such truisms when Leibniz and lesser lights have spoken incautious words suggesting the contrary, but little of substance is settled thereby. (The wonder is that anyone would read Leibniz and the like that way.) The originary questions are not what identity sentences are about, but what, if anything, is being said about it.

The prevailing conception W.V.O. Quine presents *en passant* as a textbook banality: "'=' is an ordinary relative term."^{iv} Hence: 'a=b' is a case of 'aRb'; '=b' is a predicate; 'Twain is Clemens' is an ellipsis of 'Twain is identical to Clemens', just as 'Five times five is twenty-five' is elliptical for 'Five times five is equal to twenty-five'. So, the arithmetic '=' is a case of the logical '='. Equations are identities.

An alternative, altogether natural conception is that 'identity' and 'is identical to' are like 'conjunction' and 'is conjoined to'. These are dyadic relative terms predicating and designating relations represented with '=' and '&'. But '=' and '&' are not themselves terms of any sort. They represent intrasentential relations without denoting or predicating an extrasentential relation or anything at all. They signal the joining of a pair of representational elements (terms, sentences) to form a basic declarative structure of codesignation:

Singular predication: designator $\oplus$ predicate

Wt: Twain writes

Copredication: predicate $\oplus$ predicate

$\sim(\exists x)(Wx \& \sim Sx)$: Writers scrive

Codesignation: designator $\oplus$ designator

$t=c$: Twain is Clemens

Conjunction: sentence $\oplus$ sentence

$w\&s$: Twain writes and writers scrive.

Codesignative truth is secured wholly and solely by codesignation of terms. The identity relation is defined and explained by the truth conditions of a syntactic structure.

The logico-syntactic '=' stands to the mathematical '=' much as logical addition, '&', stands to mathematical addition, '+'. The logical symbols relate syntactic elements, terms and sentences, to form a syntactic complex, a sentence. The mathematical symbols are terms referring to mathematical operations and relations between mathematical objects. Arithmetic equations are predications.

Glossary: First, though the choices should be reasoned, some terminology needs fixing by fiat, albeit with a fair bit of circularity. *Representing* is a very generic relation of symbols to things. *Terms* represent by predicating or designating. *Denoting* is a generic extensional relation of a term to objects, including designating a referent, and describing (applying to) each individual a predicate is true of. *Designators* are singular terms that (are intended to) purely refer to an individual, an object, concrete or abstract. An *object* is a designatable thing. A *property* is a predicable thing, what a predicate represents. *Predicates* are property terms: general terms and predicative correlates of names of abstract objects. Predicating a property is *describing* the objects denoted.

Conjunction: Consider the less controversial syntax of sentential conjunction, a molecular analogue of atomic identity. A conjunction (conjunctive sentence) is formed by flanking two sentences around '&' or by some equivalent. Semantic (cognitive, informational) equivalents to '&' (like '.', juxtaposition, etc.) are symbols forming a compound sentence that is true just in case its two conjuncts are true. That's all there is to it. The replication rule for conjunction, $p\&p \equiv p$, suggests that

a conjunction of facts is not a substantive relation of things, a metaphysical property of pairs of facts.

Con conversationally, conjunctive utterances imply more than their conjuncts separately, due to the diverse factors explaining the uttering of the compound: each conjunct's semantic content, their sequence, the speech context, speaker and audience beliefs, entrenched idioms, etc. Those extra implications are explained without suggesting that '&' represents an extrasentential feature of reality, some language independent relation correlate of the intrasentential junction.

The conjunction, w&s, is no ellipsis of the singular predication:

Cws: Twain's writing is conjoined to writers' scrying.

Cws describes and denotes the structure w&s displays without denoting or describing. Conversationally, an utterance like Cws is normally taken to imply some extrasentential relation between the pair of asserted facts that provides reason for conjoining their expressions, or else it refers to a sentential conjunction without implying any extrasentential reality requisite for the sentence's truth.

Is identical with vs =: An object's identity with itself is akin to a fact's conjunction with itself. The codesignative, t=c, is no ellipsis of the singular predication:

Itc: Twain is identical with Clemens.

Codesignative syntax is an atomic declarative structure displayed by flanking '=' with two designators. The '=' is expendable. A coaffirming by bare juxtaposition of two designators suffices. Such sentences are true only if and because of the *fact of codesignation*:

t_c: 'Twain' designates Clemens

t_c: What 'Twain' designates is what 'Clemens' designates

t_c: Twain is named 'Clemens'.^v

All else about identity flows from this codesignative fact. Schools of red herrings have swum in that stream.

Itc shares t=c's grammatical subject term. The identity predicate, *is identical with Clemens*,

is a relative term obliquely referring to the relation displayed in the nonpredicative structure, $t=c$. Itc says that Twain is Clemens, as does the predicative, 'Twain and Clemens are one and the same individual'. These predicative sentences are true of their referent, Twain, just in case the nonpredicative $t=c$ is true. $t=c$'s truth is the objectual face of the fact of codesignation. The codesignative fact that the *same* individual is designated by each term is expressible predicatively, as $\underline{t}_c$, $\underline{t}_c$, and $\underline{t}_c$ do, without the innuendo of an identity property in: The thing 'Twain' designates is identical with the thing 'Clemens' designates. If identity predicates denote any substantive extralinguistic relation, its existence is a fugitive fact, a reality explaining nothing.

Identity is codesignation in all but name. $t=c$, Itc, and their translations, like the German:

$t=c$: Twain ist Clemens

are object level expressions of the fact of codesignation. 'Identity' doesn't *name* a syntactic relation as 'conjunction' does. Cws can refer, metalinguistically, to a conjunction of sentences, as well as, objectually, to a conjunction of facts (or propositions.) Itc's predicate applies only objectually, to Twain, not 'Twain'. Itc predicates an ontically and epistemically vacuous objectual relation explained by an informationally rich empirical fact of codesignation.

The nonpredicative structure of codesignation sentences may seem to defy the dictum that a declarative sentence is a truth-stating structure, not a mere sequence of names. Yet terms of predication show no tighter tie. The coaffirming of two names creates the claim of codesignation, much as the coaffirming of two predicates or a name and a predicate creates the claim of copredication or singular predication. Compare the linkage in sentential conjunction. By itself, any sentence can be said from within any of countless imaginable worlds and about any of countless imaginable worlds. By coaffirmation, the conjuncts are affirmed from within the same world and about the same world (including fictions imagined it.)

Factual vs Semantic Content: Itc makes reference to $t=c$'s terms and syntax in Itc's *semantic content*, not in its *factual content*. Itc, $t=c$, $t=c$, 'Sam is Mark', 'This is Twain', 'Clemens is Clemens', 'He is himself', and every other codesignating of that individual all state the same *fact of identity*,

Twain's being himself. Sentences share factual content when the same things are denoted and the same things are predicated of them, however it gets expressed.

Facts are expressed and stated in/by sentences, statements, and truths. Facts are language neutral, multi-expressible realities. Sentences, statements, and truths are in one language or another, and translatable into others. Facts are not themselves *in a language* or translatable. Consider the ungrammatical: **In English, the fact that blood is red means ...* . Facts mean, imply, explain, prove, and justify things, but they do none of that in a language.

The identity fact, the fact of Twain's being Clemens, the fact that Itc, 'He is Sam', and all the rest state, that imperceptible necessity doesn't presuppose the contingent, empirical codesignative fact that 'Twain' means Clemens. A fact of identity does not imply any semantic fact, or any empirical or contingent fact, or any property of anything (save self-identity, which implies no others.)

The codesignative fact, $\underline{t}_c$, is presupposed, not by the fact of identity, but by the *truth* of the sentence 'Twain is Clemens' and its synonyms. $t=c$ and Itc can be synonymous only with sentences, like $\underline{t}=c$, constructed with $\underline{t}=c$'s own terms. $\underline{t}=c$ and $\underline{t}=c$ have identical semantic content: they assert the same fact of identity, and do so by expressing and implying the same fact of codesignation. To know what a declarative sentence means is to know what (fact) it states. To know what any codesignative sentence means, what (fact) it states, is to know it is true because the presupposed codesignative fact is indeed a fact. Synonymous identity sentences tell us the same fact of codesignation that explains what identity fact they assert and why the sentences are true.

Codesignative sentences with unshared terms may be informationally equivalent in a communicational context containing the requisite referential bridge. The truth of:

$m=c$: Mark is Clemens

$e=c$: Er ist Clemens

implies the truth of, respectively:

$\underline{m}_c$: 'Mark' designates Clemens

e_c: 'Er' bedeutet Clemens

For those who suppose, respectively:

m_t: 'Mark' designates what 'Twain' designates

e_t: 'Er' bedeutet was 'Twain' bedeutet

$m=c$ and $e=c$ will imply the same as $t=c$ and/or $t=c$. So $t=c$, $m=c$, and $e=c$ may be contextually interchangeable. This speaker-relative informational relation of $t=c/t=c$ to $m=c$ and $e=c$ is not the synonymy of sentences considered as abstract objects of a common language.^{vi}

Meaning as Explanation: The semantic content of a synthetic predication explains its factual content but not its truth value. The linguistic facts explaining what statement is made don't imply that it is true, let alone explain why it is. Here truth is consequent upon an extrasentential, multi-expressible reality. So knowing the sentence's meaning is knowing only what (fact) is asserted. So semantic content may here be identified with factual content.

With codesignating, extrasentential reality's explanatory role is preempted by the intrasentential explanation of truth. The codesignative fact that explains what $t=c$ states also explains why $t=c$ is and must be true, and thus why, necessarily, Twain's being Clemens is a fact. $t=c$ is necessary, true whatever the rest of reality, for that truth flows from the linguistic facts fixing the sentence's factual content free from all extrasentential facts.

With semantic and logico-syntactic truths alike, we misunderstand what the sentence means, what (fact) it states, if we construe it as a synthetic predication whose truth waits upon extrasentential reality. You cannot grasp what a simple or complex logical sentence says without some recognition of it as a logical sentence, true solely by its syntax independent of its term meanings and every extrasentential fact. Similarly, you don't get what a codesignative sentence states without some sense of its truth flowing from the fact of codesignation.

Knowledge of a codesignative truth needs knowledge only of the codesignative fact. What is designated, and how, and how each reference was fixed and transmitted, and how our semantic beliefs are verified and justified, all that is incidental, tangential. Never mind what some persons

might infer from the codesignating truth, or whether the codesignative fact is normative, a rule of a language, mention of which belongs in a dictionary or translation manual, or whether one could understand the codesignating sentence without knowing the codesignative fact. However all that may be, the sentence is true purely because of the codesignative fact. It is understood only if its presupposition of that fact is understood. It is known only if that fact is known.^{vii}

That Twain is named 'Clemens' is an *intrasentential* fact about the relation of t=c's terms. Since designation is a relation of word to world, that intrasentential fact is also, no more or less, a fact about the world. However, it is not an *extrasentential* fact about some language independent reality expressible without use or mention of t=c's terms.

Modal Paradox: However prosaic, it may seem paradoxical that contingent, empirical, codesignative facts explain the necessary truths of codesignation. Surely, t=c would be and have been true even if t_c had been or became false.

That counterfactual is a simplification. It is true both that world literature would be poorer if Twain had died during puberty, and that young Sam Clemens became Mark Twain only when and because he adopted that name.

Simplification aside, that counterfactual is immaterial. Since identity is the objectual face of codesignation, the only relevant facts of designation are those regarding the designators of the identity statement that *is being* made, not those of any other actual or possible language or speech. What matters is that the sentence:

Twain would be or have been Clemens even if t_c is false

is self-stultifying. The metalogical inconsistency follows from the basic metalogical principle of self-representation: $E_x \odot E_x$ (' E_x ' means E_x).^{viii} Necessarily, 'Twain' means Twain and 'Clemens' means Clemens, so if t_c is false, 'Twain is Clemens' would be and have been false no matter what.

If a synthetic predication were necessary, no contingency could explain its truth. Such truths come from representation of an extrasentential reality, so explanans and explanandum must match modally. That match is immaterial when explanation by reference to language independent reality is

preempted by intrasentential construction of factual content. $\underline{t} \underline{c}$'s contingency is irrelevant to $t=c$'s necessity, just as the necessity of $\underline{t} \underline{t}$ ('Twain' designates what 'Twain' designates) is irrelevant to the necessity of $t=t$ (Twain is Twain). With both, codesignation syntax entails that a codesignative fact, $\underline{E}_x \underline{E}_y$, mutually entails the correlate codesignative truth, $E_x=E_y$, and its necessity. The self-identity, $t=t$, is special only because its syntax secures codesignation as well as securing truth by codesignation. Whatever the terms mean, they mean the same since they are (tokens or replicas of) the same term, and their codesignation entails truth.

Reading '=' as a term and 't=t' as an ellipsis of 'Itt' ('Twain is identical with Twain') confounds the whole idea of truth by syntax, independent of term meanings. That reading drains all interest and sense in talking about *the logic of identity* as something distinct from *predicate logic*. $t=t$ is true solely by syntax just like:

If Twain writes and writers scribe, Twain scrives.

Not so with Itt and:

The conjunction of Twain's writing and writers' scriving implies that Twain scrives.

The latter express (meta)logical truths, not because of their own syntax, but because through their terms they say that their correlates are true because of *their* form.

Metailment: We may prefer to reserve talk of *entailment* to refer to a truth transmitting syntactic or semantic relation between the factual contents of sentences. Then $t=c$ neither entails nor is entailed by $\underline{t} \underline{c}$. Let's instead say those sentences *metail* one another. Metailing is a truth preserving syntactic relation between a sentence's factual content and its semantic content.

The metailment relation is regulated by a family of principles. Some pertinent principles, like: $\underline{E}_x \odot \underline{E}_x$ (' E_x ' means what ' E_x ' means / What ' E_x ' means is what ' E_x ' means) are simply instantiations of general (object level) logical principles. The separate class of metalogical principles govern the distinctive syntax of semantic verbs like 'means'. In the sense that 'and' is not a *term*, the direct object of "'And" means and' is not a term: it doesn't objectually designate or predicate. Any linguistic expression whatsoever can be enquoted to form the term, 'The expression "..."' heading

'means'. And any expression can follow 'means', including meaningless ones, yielding sentences perhaps more nonsensical than false. With a term in this position, the sentence may be ambiguous: in "'This" means this', the second 'this' may be either an indexical term designating an extrasentential referent or a self-representational expression of its own meaning.

Different semantic verbs represent distinct syntactic relations. All are transitive. Only some like 'means' are metalogically symmetric and totally reflexive: $\underline{E}_x \underline{E}_x$. 'Refers to' is also symmetric: $\underline{E}_x @ \underline{E}_y \equiv \underline{E}_y @ \underline{E}_x \equiv \underline{E}_x @ \underline{E}_y$ ('Sam' refers to him $\equiv$ 'him' (here) refers to Sam $\equiv$ 'Sam' refers to what 'him' (here) refers to). 'Refers' and 'designates' are totally reflexive for expressions that refer (successfully or not). 'Name' and 'describe' are not symmetric: 'Twain' names, but doesn't describe Huck Finn's creator, while 'Huck Finn's creator' describes but doesn't name Twain.

The idea of a metalogic and metailments is natural enough, however foreign and suspect it may seem. The root metailment principle, $\underline{E}_x \underline{E}_y \equiv \underline{E}_x = \underline{E}_y$, suggests that, where 'E' is any designator, the metalogical necessity of self-designation, $\Box(\underline{E}_x \underline{E}_x)$, is a correlate of the necessity of objectual self-identity: $(x)\Box(x=x)$. Referential symmetry may be a correlate of the identity substitution rule. As applied to nonreferential self-representation, the principle, $\underline{E}_x \underline{E}_x$, is more akin in its inferential role to the tautological conditional, $p \rightarrow p$, and *modus ponens*.

Together, $t=c$, $\underline{t}_c$, Itc , form a structured triad of forms. The syntactic form of objectual ' $t=c$ ' is primitive. The metailed $\underline{t}_c$ is not asserted or entailed by $t=c$, so a self-consciousness of the semantic relation is not presupposed by $t=c$. Semantic verbs are not amongst the first words children learn. When language goes metalogical with the metailed $\underline{E}_x \underline{E}_y$ and $\underline{E}_x \underline{E}_y$, thought finds a form for representing its own matter and content, rather than its content's referents.

$t=c$ has a metalogical equivalent in $\underline{t}_c$ and a predicative equivalent in Itc . Itc 's own syntax is a simple singular predication of a dyadic relative term, but this predicate is syntactically distinctive: total reflexivity is possessable only by its kindred predicates, like 'one and the same as', 'coexistent with'. Itc expresses a reference to, and a form of consciousness of, $t=c$'s form that neither $t=c$ nor $\underline{t}_c$ expresses. Here language goes metasyntactic, referring now, not to the terms of thought, but to its

logical structure. 'Identity' is a cognitively sophisticated predicate expressing a self-consciousness of codesignative syntax. Mastery of such a term comes late, ontogenetically and phylogenetically. Surely some, I suppose many, societies know no such term.

Some metalogical principles govern subsentential expressions. Metailment is an intersentential relation regarding sentential and subsentential expressions. Many a metalinguistic muddle might lessen by looking on these as (meta)*logical* principles structuring formal, syntactic relations.

Purity and Description: Whatever (else) two terms may mean (in any of the many meanings of 'mean'), each codesignating is true by pure coreference. Designation is *pure* reference, the elemental relation of singular term to referent, free of all predicative import. Every codesignating of an individual has identical factual content since no designator asserts any properties of its referent. Designating is reference without predication.

Descriptions may refer as predicates or designators. In common speech, we may *refer to* an object with a definite description, a predicate like 'Huck Finn's creator' intended to specify (contextually) a uniquely possessed identifying property. Sentences like 'Clemens is Huck Finn's creator' can be singular predications, form Hc, or codesignations, form c=h. The predicative-designative duality is inherent in definite description structure, not the specific contents.

Hc says of Clemens that he has the property of creating Huck Finn, being Huck Finn's creator. The property attribution is what the sentence asserts, the factual content of the statement it makes. Hc entails whatever having that property entails.

Hc mutually metails c=h, but is not synonymous with it. Hc's truth explains c=h's necessity. In c=h, 'Huck Finn's creator' is an indexical designator referring to whatever it actually identifies, without predicating any property. The predicate is true of the referent but that's not the truth asserted. The identity fact asserted is consistent with any extralinguistic contingency.^{ix} So we may sensibly discuss the possibility of Huck Finn's creator's dying young, as we may talk of Mark Twain's dying young. What cannot be sensibly said is that Hc would have been true even if h c is false.

The *descriptive* fact that Clemens created Huck Finn explains the *predicative* fact that 'Huck Finn's creator' is uniquely true of and refers to Clemens. These are empirical premises of $h=c$'s semantic content explaining the designative fact that h ('Huck Finn's creator') designates Clemens. The predicative fact of Clemens being identified by 'Huck Finn's creator' is comparable to the fact of someone (e.g., Clemens) naming Clemens 'Twain'. These facts explain the truth of the designative facts stated by $\underline{t_c}$ and $\underline{h_c}$.

So too, 'Clemens is what "Twain" names' is a contingent singular predication and consequently a necessary codesignation. Thus, both $\underline{t_c}$ and $\underline{h_c}$ are both contingent copredications and necessary codesignations.

Naming vs Predicating: Many terms both name a property or abstract object and predicate it. (Many other terms do or could do this with a cognate.) Sentences like:

FP: Fool's gold is pyrite

may be read as a codesignative identity:

FPd: Fool's gold=pyrite $f=p$

or as a copredicational identity:

FPp: Whatever is fool's gold is pyrite $(x)(Fx \equiv Px)$.

As in $h=c/Hc$, the terms of $f=p/(x)(Fx \equiv Px)$ switch syntax. The terms needn't be semantically ambiguous. FPd's terms predicate the property FPp's designators name (or refer to by naming a stuff.) Hc explains $h=c$, and $f=p$ explains $(x)(Fx \equiv Px)$. A singular predication metails a codesignation. A codesignation of a property metails a copredication of the property.

Names and predicates differ syntactically, not *per se* epistemically. Proper names are of unpredicable entities, concrete individuals. Property names are of predicable abstractions. The contrast is ontological, and only derivatively, if at all, epistemic. FPd and FPp are mutually inferable. So are codesignative 'Greece is Hellas' and the copredicative identity 'Greeks are Hellenes'.^x

Designating isn't normative as description is. A predicate is true of an individual. A name is

not true (or untrue) of anything. A designator calls attention to an object to permit description of it, ascription of a property to it. The description is correct or not, the ascription true or not, the name is none of that. $t=c$ doesn't entail or contradict any synthetic predications, not even a loose disjunctive complex. Nor any nonsynonymous codesignations. Names cannot be incompatible or inconsistent as predicates can. The truth of $t=c$ implies that of $t=c$ and Itc , and their translations, but not of nonsynonymous codesignations.

For $t=c$ to entail $Wt \rightarrow Wc$, the designators cannot have asserted predicative import. But $t=c$'s metailed copredicative $\underline{t} \underline{c}$ implies lots. Conversationally, $t=c$ means and implies (informationally) to someone whatever (the fact stated by) $\underline{t} \underline{c}$ means and implies to her, which depends on her related beliefs and cognitive relations with the terms and their referent. Many beliefs about a name's reference and referent are not normative or rules of a language or common knowledge among competent speakers.

Inevitably, we associate predicates with designators. Our use of proper names and property names is controlled by clouds of linguistic rules, inferential principles, and empirical beliefs about both the terms themselves and their referents. These explain the contingent designative facts, $\underline{t} \underline{c}$, $\underline{f} \underline{p}$. We can reason elaborately for the correctness of such claims, and reason elaborately from them, and reason very differently regarding another designation of the referent. Still, the designating reasoned about is itself purely referential. If its referent is real, correctness in designating is the truth of a singular description of the referent, or the truth of a codesignation.

Purity Rigidifies Reference:

Saul Kripke has said that 'true identity statements between rigid designators are necessary'.^{xi} That redundant propositional qualifier perplexes by suggesting that some true identity statements may have nonrigid designators, and some of these needn't be necessary. Yet Kripke's preferred proof of the necessity of identity, via the necessity of self-identity and its substitution rule, entail that no identity fact is contingent. All nonrigid referring is precluded by principles of codesignative syntax: $(x) \Box(x=x)$, $(x)(y)(Fx \& (x=y) \rightarrow Fy)$, $((x=y) \rightarrow \Box(x=y))$.

The proof's two premises and conclusion are implicit in truth by pure coreference. The necessity of identity and self-identity were discussed above. The substitutability of codesignators is explained by their purity. Whatever an object's properties, they aren't implicated or precluded by any designator. Every codesignator's referent has the same properties. Terms aren't codesignating if their referents differ predicatively.

Kripke's predicative conception of '=' appears to be at play in his redundant qualifier.^{xii} His proof of identity's necessity does not *explain* that property, and his predicative conception cannot explain it. An identity's necessity can only be another brute metaphysical feature of this ubiquitous property. Identity's demand for rigidity of designation is even more mysterious. How could it be that (the property of) being (identical to) Clemens is ascribable to its referent only by referring to it rigidly?! Here, 'identity statements between rigid designators' is hardly pleonastic.

If ' E_x ' and ' E_y ' refer rigidly just in case E_x 's being E_y entails its necessity, then arithmetic predicates refer as rigidly as names. A designator's rigidity results from its purity. 'Rigidity' of predicates is another matter.

Kripke says a predicate has 'mere "*de facto*" rigidity' when it must always be true of the same single entity.^{xiii} His example, 'the smallest prime', suggests he is thinking of descriptive uniqueness fixed partly by a determiner and the internal syntax of the description. Kripke means to be illustrating the rigidity explained, not by linguistic devices securing unique reference, but by extralogical and extralinguistic mathematical necessity. All arithmetic equality predicates (' $8x(4+3)=$ ', ' $=112/2$ ') are *de facto* rigid.

The trouble is, a predicative conception of identity cannot recognize them as predicates there, for it cannot distinguish identity from arithmetic equality. Terms flanking the '=' of 'is equal to' would have to be designators without predicative import, so ' $3^3-(6 \times 4)$ ' would have no more internal semantic structure than '3'. Equations would be vacuous codesignations, not substantive predications of mathematical relations inexplicable by facts and principles of language. ' $8x(4+3)=112/2$ ' and ' $56=LVI$ ' would be formally indistinguishable, with identical factual content.

How then can the former be a multiexpressible truth with a transnotational *mathematical* proof? The latter is like 'Twain is Clemens', beyond all mathematical proof, argument and evidence. It's a notationally specific truth provable only by empirical determination of a contingent fact of codesignation. The rigidity of reference of mathematical terms cannot be explained by descriptive uniqueness unless they are predicates in equations.^{xiv}

Kripke says names have '*de jure*' rigidity; their reference 'is *stipulated* to be a single object.' This doesn't plausibly apply to designating demonstratives, nor to indexically designating descriptions. It misleadingly describes names. Their purity rigidifies their reference. *Which* object is to be named by a symbol is stipulable. *That* the name is designating one object is not stipulable; it isn't naming otherwise.

Being is Quine: Kripke recognizes designative rigidity but not its explanation and the incompatibility with the predicative '='. Quine recognizes none of this and endeavors to 'eliminate' singular terms from the language of science. Quine aspires to replace all designators with predicates, motivated by a wish to be free from worry what to say when things go wrong and our terms don't refer to anything, so we're no longer saying anything real. That longing to guarantee that we're making sense goes very deep. There's no use denying it.

The vanity of Quine's quest is a story unto itself, with many a moral to be drawn another time. In brief, Quine imagines immunity against the contingencies of reference resides in reading a *grammatical* predicate of a codesignation, like the verb phrase, 'is Clemens', as a logical, semantic predicate. Quine's ingenuity in this is dazzling, but the wonder is that it should be such a sweat. Shouldn't the prize be there for the taking when 'is Clemens' is already a predicate? How could there be the ills Quine wants to be rid of if '=' is predicative?

Quine's pursuit has paradoxical aspects aplenty. How are scientists to say that lead is a metal by saying 'Lead is a metal' when they refuse to admit that "'metal'" designates 'metal', which means metal? Could we speak a language (not just manipulate a formal system) wherein words and names are not self-designative? Where 'This is red' cannot be read as saying that this is called 'red'? Where

'He is the philosopher' cannot mean that Aristotle is designated 'the philosopher'?

Such questions must suffice for now. Questions of another and greater import should not be foregone.

Quine speaks as well for Frege and Kripke when he limns the logic of identity whilst 'not boggling at the spectacle of a direct object in the nominative'. Why aren't we boggling at that syntactic anomaly begotten by bethinking that "=" is a relative term, thus a transitive verb.^{xv} A bit of boggling is called for. We speak a language where we mark as plainly as we can that that term is nominative, naming, designating, not a predicate. Yet our finest minds for generations have been bent on persuading us all that we have no reason for so signaling what we're doing, and assuring us that we don't really mean it.

Surely, enough is enough, already.

It is time to wonder what are we doing to ourselves by this insistent intellectual objectification of identity.

NOTES

ⁱ. This essay incorporates and refines material from my 'Identity: Logic, Ontology, Epistemology', *Philosophy*, 73, 1998, 179-93; 'How Mathematics Isn't Logic', *Ratio*, Sept., 1999; 'The Synonymy Antinomy', *Proceedings of the 20th World Congress of Philosophy*, Vol VI: Analytic Philosophy, Philosophy of Logic and Philosophy of Mathematics, 1999; 'Meaning as Explanation', *The Journal of Value Inquiry*, forthcoming; 'Distinguishing Mathematics From Logic', *The Paideia Archive*, 20th World Congress of Philosophy Website, <http://www.bu.edu/wcp/>, 1999, and 'Truth, Fact, and Rightness Reconceived', forthcoming. Various novel claims appearing here are explained more in these other essays. The nomenclature is more regimented than in earlier essays. This whole project owes much to the efforts of Bredo Johnsen and David Massie.

ⁱⁱ. 'Ueber Sinn und Bedeutung' *Zeitschrift für Philosophie und philosophische Kritik*, 100 (1892), pp. 25-50.

ⁱⁱⁱ. The only sentences of form, ' $E_x = E_y$ ', that can be true are necessarily true, those of form ' $E_x = E_x$ '. None is grammatical unless elliptical for: the expression ' E_x ' = the expression ' E_y '. Quotation marks signal that the enquoted matter is embedded in the sentence like a color patch, appositively adjunctive to a referring expression, usually a definite description. The quotation is not itself a referring expression, or any kind of term, although it may contain such and it may simultaneously function as it would extraquotationally, as in: Sam said the reports were 'exaggerated'. See my 'Quotation Apposition', *The Philosophical Quarterly*, July, 1999. Quote marks are eye clutter, not eye candy, well eliminated when their service as disambiguators is superfluous. Such is the policy here. Symbols like, $t=c$, *Itc*, *Cws*, will be used as abbreviations of sentences, or names of them as need be.

^{iv}. Willard V.O. Quine, *Methods of Logic* (Henry Holt, New York, 1958), 211.

^v. With all quotations indexed to the current language, these three sentences are equivalent, but not synonymous. The ' ' is a symbol for 'designates'. Underlining is a correlate of quote marks indicating that the symbolized expression is displayed.

^{vi}. Since the factual vs semantic content contrast cuts across the categories of sentence-type, utterance-token, and statement, little is risked by letting truth be predicated of sentences. Meanwhile, talk of propositions is avoided since conceptions of propositional content have fluctuated between factual content and semantic content.

^{vii}. Understanding comes in kinds and degrees, so requirements for understanding are problematic. A speaker needs beliefs about her terms, their line of usage, the type they token. She needs no knowledge or *de re* belief about a term's denotation, not *per se*. Her key semantic beliefs about a term may be merely that someone uttered it and she uses it as they do, to say (designate or predicate) whatever they do. But she can't much mimic another's meanings without beliefs about what they might be. And if no one harbors *de re* beliefs about a referent, there's no meaning for anyone to mean. So, the reference of our terms is tied, directly or indirectly, to beliefs about their referents.

^{viii}. '©' is for 'means' taken comprehensively: designating, predicating, and other cases of linguistic meaning. ' ' is for 'means' denoting only nondesignative meaning. ' ' is disjoint with ' '/'designates'. '®' is for 'refers to'. 'E' placeholders for any linguistic expression.

^{ix}. It is consistent with any state of our knowledge. Consequently, a definite description may also become a name of what speakers attribute the property to, mistakenly or not. This and many other complications are being ignored here.

^x. Belief in either justifies belief in the other. Ignorance of these predicative synonymies is no more linguistic or conceptual incompetence than is ignorance of the codesignations. Our understanding of common names seems unlike our knowledge of the reference of proper names, but the epistemic differences disappear as the properties become more tightly related to a concrete individual. Such ties may be immediate and direct, as with 'Greeks' to Greece, or more like the relation of our 'water' to our Earth, and Hilary Putnam's 'twater' to his Twin Earth ('Meaning and Reference', *The Journal of Philosophy*, 70,

1973, 699-711.) What look like large epistemic disparities between proper names and predicates are largely due to metaphysical and empirical contrasts in our epistemic relations to the concreta and abstractions we commonly name. If someone had regularly heard 'azure' ostensibly predicated only under one lighting and background condition and 'cobalt' only under another, she might understandably miss their codenotation without linguistic or conceptual incompetence.

^{xi}.*Naming and Necessity*, Harvard: Cambridge, 1972, p. 4.

^{xii}.Kripke, I believe, somewhere calls identity 'the smallest reflexive relation'.

^{xiii}.*Ibid.*, p. 21n.

^{xiv}.Quine deals dismissively with mathematicians like Whitehead who suppose that $2+3$ and $3+2$ are equal but not identical. *Word and Object*, Harvard: Cambridge, 1972, p.116.

^{xv}.*Ibid.*, p.115.