

ABSTRACT
of
IDENTITY: LOGIC, ONTOLOGY, EPISTEMOLOGY
Roger Wertheimer

The identity "relation" is misconceived since the syntax of "=" is misconceived as a relative term. Actually, "=" is syncategorematic; it forms (true) sentences with a nonpredicative syntax from pairs of (coreferring) flanking names, much as "&" forms (true) conjunctive sentences from pairs of (true) flanking sentences. In the conaming structure, nothing is predicated of the subject, other than, implicitly, its being so conamed. An identity sentence has both an objectual reading as a necessity about what is named, and also a metalinguistic reading as a contingency about the names. Either way the claim about the subject referent has no extralinguistic content. The necessity of alter-identity (non-self-identity) statements is "lexical", due to contingencies of the names' reference, much like the necessity of analytic statements, due to contingencies of the predicates' sense, and unlike the necessity of logical truths (e.g., self-identities) whose truth is secured by syntax alone. Both alter-identity and analytic sentences are readable as objectual necessities and metalinguistic contingencies. Epistemically, alter-identity statements are not essentially unlike analyticities. "Greece is Hellas"/"g=h" and "Greeks are Hellenes"/" $(x)(Gx \iff Hx)$ " are equally (un)informative; so too for "Azure is cobalt"/"a=c" and "Everything azure is cobalt"/" $(x)(Ax \iff Cx)$ ". The real epistemic contrast is between proper names (terms without predicative sense) and terms with a predicative sense (names and predicates of properties). Proper names refer to concrete objects, property names refer to abstract objects. That contrast is metaphysical and thus epistemic.

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Greece is Hellas and Greeks are Hellenes. Azure is cobalt and everything (colored) azure is (colored) cobalt. Pre-Fregeans would call all these statements of identity. Frege taught us to distinguish between

Conaming [Name] [Name]

Ngh: Greece is Hellas $g=h$

Nac: Azure is cobalt $a=c$

Copredicating [Predicate] [Predicate]

PGH: Greeks are Hellenes $(x)(Gx \Leftrightarrow Hx)$

PAC: Everything azure is cobalt $(x)(Ax \Leftrightarrow Cx)$

Singular Predication [Name] [Predicate]

PcA: Como is azure Ac

PaC: Azure is a color Ca

PaL: Azure is like indigo Lai

PgD: Greece defeated Persia Dgp

With Frege the contrasts became marked but misconceived.

One ruling assumption rarely questioned has been that "'=' is an ordinary relative term."¹ The words are Quine's, the thought a commonplace. Metaphysical debate on the "relation" of identity scants dissent from them or defense of them. So the motivation for this misconstrual of the syntax of the "is" flanked by names, the so-called "*is*" of identity logicians symbolize with "=", is a matter of conjecture.

¹.Willard V. Quine, *Methods of Logic*, Henry Holt, New York, 1958, 211. This and succeeding quotations all come from the chapter, 'Identity', an impeccably reputable statement of the received view, not peculiarly Quinean.

Perhaps theorists have thought that "=" is an ordinary relative term, because Ngh expresses the same proposition as

PgI: Greece is identical with Hellas Igh

and Ngh seems elliptical for PgI, and disambiguated by it, and PgI is structured by the dyadic predicate, "I", *is identical with*.² This suggests that Ngh and PgI alike are syntactically on a par with "Greece is (totally) like Hellas" (Lgh). This reads the "is" of identity as an "is" of predication, distinguished by the peculiar property predicated, instead of its marking a syntax distinct from predication.

An alternative conception, simple and natural, is that "=" forms a nonpredicative syntactic structure.³ Our logic texts have taught that "[t]o say anything about given objects we apply the appropriate ... predicate to *names of the objects*."⁴ That teaching elides or denies the distinctive character of conaming where we "apply" to the name of an object a(nother) name, normally a different one. There, nothing is "said about" the object or *predicated* of it, except, implicitly, the "property" of being so conamed.

There is just no reason to think that Ngh ("Greece is Hellas") is an ellipsis of PgI ("Greece is identical with Hellas"), any more than PGH ("Greeks are Hellenes") is short for

PGP: Greeks have the property of being Hellenes

².Alternatively, the predicate might be read monadically: e.g., *is identical with Hellas*. This reading may be motivated by considering

PgS: *Greece is self-identical (identical with itself)*.

'Self-identical' invites monadic construal. Self-identity can seem less like a relation everything has to something, and more like a universal nonrelational property. And, since "everything is identical with itself, and with nothing else" [*Ibid.*, 210], all identities seem to be (in a sense) self-identities. Nothing can be identical with anything other than itself, so alter-identities seem like substitution instances of self-identities, with a name other than the subject term replacing the reflexive in "identical with itself".

³.The 'is' of both identity and predication is a semantically empty functional expression ordering pairs of terms to form sentences.

⁴.*Ibid.*, 209.

or than

&jW: Jess is a wolf and wolves are noble

abbreviates

Pj&: Jess's being a wolf is conjoined with wolves' being noble

Instead, PGI expresses lexically, with a relational predicate, what Ngh expresses by its syntax, just as PGP and Pj& do for PGH and &jW. "(Is) identical with" is indeed a relative term, but hardly an "ordinary" one; and the "is" of identity, like the "is" of predication and the "and" of conjunction, is not a kind of term.

The sentence,

The conjunction of Jess' being a wolf and wolves' being noble implies that Jess is noble states a logical truth, not by its own logico-syntactic form, but rather by its terms naming and predicating the formal relations, $Wj \& (x)(Wx \rightarrow Nx) \rightarrow Nj$, exemplified by

If Jess is a wolf and wolves are noble, Jess is noble.

So too,

Jess is self-identical (identical with herself)

can express a logical truth despite being syntactically an extralogical truth, Ijj , like "Jess saw herself" (Sjj), because it predicates the formal relation, $j=j$, displayed in

Jess is Jess.⁵

Certainly, in an identity statement "[i]t is not the names that are affirmed to be identical"⁶ So it may be best "not to say that identity is a relation of expressions in a language."⁷

⁵.The expressability of logically true propositions by sentences of disparate logico-syntactic form is discussed more fully in my 'How Mathematics Isn't Logic', forthcoming in *Ratio*, and 'The Synonymity Antinomy', forthcoming.

⁶.*Ibid.*

⁷.*Ibid.*

But it's no better to say that "...it is the things named" that are affirmed to be identical.⁸ Identity can't be a relation between *the things named*, for an identity statement says that only one thing is being named. Locutions like "Greece and Hellas are identical" and "Greece and Hellas are one and the same thing" deny a plurality of reference while demanding the plural "are" to match their plurality of names.

It's no better to say that what is affirmed to be identical is the one thing. "Greece is identical" is nonsense, and so is "Greece and Greece are one and the same thing". If "Greece is Hellas" predicates anything objectually, it is the uniquely possessed property of being identical with Hellas, not the universally possessed property of self-identity predicated in "Greece is self-identical". Apart from the names, there is no fact of alter-identity, Greece's being Hellas, to be affirmed.⁹

Certainly, a conaming sentence bears an objectual reading as referring, not to its names, but to what they name. Just as surely, it is also commonly and properly said and read metalinguistically as a claim about its names. (We'll return to this.) In either case, conceptualizing identity as an extralinguistic, metaphysically substantial relation is unhelpful and misleading since the relation lacks extralinguistic content or entailments. Compare: Is the conjunction of two facts (like five's being prime and blood's being red) a substantive relation, itself a relational fact of the world? Or is it only "a relation of expressions in a language"? As elsewhere in philosophy, the difficulty is determining what exactly one wants to insist upon, beyond the truisms no one means to deny.

Truisms aplenty recommend this syntactic construal of "=". For starters, term meanings explain definitional truths, not logical truths. Like "Greeks are Greeks", "Greece is Greece" is true

⁸.*Ibid.*

⁹.No fact is statable without a language with which to state it, but no argument of Goodman or other idealists shows that no fact exists without a language with which to state it. It is a peculiarity of 'lexical necessities' (see below) that without their particular terms (or their etymological relatives in other languages) there is no fact to state.

whatever its iterated term means. If its form is that of "Greece is identical with Greece", its truth isn't secured by its syntax, any more than is "Greeks are Hellenes". Unless the relational term of "Igg" predicates a formal relation displayed in "g=g", the truth of "g=g" is explained by extrasyntactic contingencies.

Further, if logical relations are syntactic and "=" is a dyadic predicate, it makes little sense to talk of "the logic of identity", and even less sense to say that that logic is "not reducible to the logic of quantification"¹⁰ -- unless this "predicate" is syntactically not a predicate. It makes sense to locate the logic of identity outside predicate logic because (co)naming is not a kind of predicating.

Here compare these truth conditional definitions:

Df=: "For truth of a statement of identity it is necessary only that '=' appear between names of the same object."¹¹

Df&: For truth of a statement of conjunction it is necessary only that "&" appear between true sentences.

If "&" is a nonpredicative expression imposing a syntactic structure specified by the truth condition of Df&, so is "=" a nonpredicative expression imposing a syntactic structure specified by Df=. "&" forms (true) conjunctive statements with pairs of (true) sentences; "=" forms (true) conaming statements with pairs of names (of one object).

The truth condition defining "=" specifies a distinct syntax. It entails the axiom of self-identity, $(x)[I](x=x)$, and the unique substitution rule, $(x)(y)(x=y \rightarrow (Fx \rightarrow Fy))$, that connects (co)naming and predicating. From those two principles the necessity of conaming truths, $(x)(y)(x=y \rightarrow [I](x=y))$, is *provable*. However, the defining truth condition of the syntax is what *explains* those principles and the necessity of identity, and also the referential rigidity of names. Such matters are not discovered by exploring the essence of some metaphysically substantive relation

¹⁰.*Ibid.*, 210-211.

¹¹.*Ibid.*, 209.

represented by "=".

Along with this reconstrual of identity syntax comes a reconception of the contrast between the necessities of conaming and copredicating. With Frege, analyticity -- necessary truth by predicative sense -- is understood as a derivative of predicate logic, derived by what I call *synonym intercepting* of the truths of predicate logic. Uniform term substitution preserves a logical truth's form, its necessity securing syntax. The syntactic means of securing the necessary term coextension essential to logical truth is term iteration. *Intercepting* -- nonuniform substitution of a term whose iteration is essential to the form of a logical truth -- alters logical form. Synonym intercepting secures necessary term coextension, not by syntax, but by sameness of sense of different predicates, an extrasyntactic contingency.

From Frege on, logical truths and their synonym interceptions have been contrasted epistemically with "*ref-identities*": conaming alter-identities (non-self-identities) like "Greece is Hellas". Both Kripke, who recognizes the necessity of conaming truths, and Quine who questions all kinds of necessities, think of ref-identities as "informative" in some way that synonym interceptions and logical truths are not.

Actually, synonym interceptions structurally parallel *coreferential interceptions* of logical truths, like:

Vgh: Either Greece is near or Hellas is not near Ng v ~Nh

Ref-identities constitute a species of coreferential interceptions just as *syn-identities* (like "Greeks are Hellenes") constitute a species of synonym interceptions. In (true) synonym interceptions the relevant terms are synonymous predicates. In (true) coreferential interceptions the terms are coreferring names.

The real, linguistically and philosophically crucial division is between logically necessary truth, a transnotational necessity secured by syntax, and the "*lexical necessity*" of synonym and coreferential interceptions, a necessity secured by notational contingencies.

Synonym interceptions have gotten called *logically necessary*, since (I) they are (supposedly) synonyms of logical truths, and/or (II) they are true in all possible worlds.¹² Yet, first off, while proper-Fregeans malign Kant for defining analyticity only for subject-predicate form judgments when synonym interceptions of any logical truth, whatever its syntax, have the same relevant traits,^{13,14} proper-Fregeans may be more properly faulted for overfocus on ref-identities,

¹².Putnam considers ref-identities logical necessities since they meet Condition II. Since they fail Condition I, Kripke denies their necessity is logical and deems it metaphysical. Hilary Putnam *Realism with a Human Face* (Harvard University, Cambridge, 1990), 57ff.

¹³.Actually, rather than assuming it, Kant's discussion of analyticity begins (in the 'Introduction' of *Critique of Pure Reason*) by all but explicitly denying that analyticity is confined to subject-predicate form. He starts by *pointedly* restricting his whole discussion to (affirmative) judgments of subject-predicate form, a restriction which would be pointless if he knew no other judgment forms (his 'Table of Judgments' shows otherwise) or if talk of predicate containment neatly fit them. More, his restriction is not without rationale. Explaining a notion by its paradigm applications is hardly improper. Verbal definitions are generally alter-identities with subject-predicate form, so the basic, atomic analytic judgments have that form. Further, Kant offers another criterion of analyticity (self-contradictoriness of denial), which, though deficient, is not so syntactically constrained.

¹⁴.Here and throughout we turn a blind eye to another great divide. Synonymy in the root sense of *conaming* a property was of no interest to Pre-Fregeans like Locke and Kant. Their notion of truth by definition pertained to *analytic* definitions wherein a property *named* by one term is *described*, analyzed (wholly or partly) into some complex of properties, as in 'Lead is a metal', 'A body is extended', 'Every effect has a cause'. ('A *definition* is nothing else but *the showing of the meaning of one* word by several other not synonymous terms.' John Locke, *Essay on Human Understanding*, II.4.6.) The whole idea of analyticity originated as a critique of classical Essentialist Realism, for which synonymy is simply irrelevant.

However, Locke and later analyticists try to have it both ways by insisting that even in an analytic definition a definiendum is an abbreviation of its definiens. The trouble is, abbreviation is strictly an internotational relation, like synonymy, whereas an analytic definition states a transnotational relation. 'Square' has countless equivalent analytic definitions ('equilateral rectangle', 'rectangular equilateral shape', 'closed plane figure with four sides of the same length and four interior right angles', 'gleichseitig Rechteck', etc.) To none of them does 'square' bear the relation 'DOA' bears to 'dead on arrival'. 'DOA' is no abbreviation of 'arrived dead' or 'tot an Ankunft'. When the contrast of analytic definitions with abbreviations is appreciated, Locke's and Kant's analytic propositions don't seem so 'trifling' and the assault on Essentialist Realism appears feeble, for analytic definitions don't look like *nominal definitions* providing merely an alternative

for the necessity of a ref-identity is that of a coreferential interception of any logical truth.

In any case, synonymy with a logical truth is impossible for any interception, synonym and coreferential interceptions alike. This simple point has often been denied, explicitly or implicitly, due to a great nest of confusions stemming mainly from two root errors. First, propositions get conflated with sentence meanings, which precludes recognition of the multiple propositional potential of univocal sentences. Second, logical form is misconstrued as a property of propositions rather than sentences, which precludes recognition of the semantic import of iteration and of syntax in general. These matters cannot be detailed here.¹⁵ Suffice for now to trust the unblinkable intuition that "Greece is Greece"/"Greece is Hellas" and "If she's a Greek, she's a Greek"/"If she's a Greek, she's a Hellene" sure don't sound like synonymous sentence pairs. The interception's loss of term iteration and thus of syntactically secured necessity explains the nonsynonymy; whether the term is naming or predicating is immaterial. So too, whether a necessity is due to two terms predicating the same property or naming the same individual is immaterial. Any interception's truth in all possible worlds is an artifact of lexical conventions, and devoid of extralinguistic content. The necessity is lexical, explained by term coextension secured by semantic rules, not logical or metaphysical.¹⁶

name of a property, nor like *conceptual definitions* articulating our core beliefs about the property, but instead like *real definitions* demarcating the core features of a property.

¹⁵.The first matter is discussed somewhat below. The essence of the second matter is that (e.g.) the sentences, 'Jess is Jess' and 'Jess is self-identical', express the same proposition with the same truth conditions, but the sentences have different logico-syntactic forms. The second sentence is a logical truth because it expresses a proposition expressible with the first sentence, whose truth is secured solely by syntax. Which sentence displays the logical form of the proposition has no correct answer; and however answered, the notion of propositional form will be parasitic on the notion of sentential form. These matters are discussed more in my 'The Synonymity Antinomy' and 'How Mathematics Isn't Logic'.

¹⁶.Were it not that 'logical necessity' is too well entrenched I would urge 'syntactic necessity' as an apter characterization of logical truth. 'Semantic necessity', a term used by some for necessities due to synonymy, seems misleading since all these necessities are modalities of truth (a semantic

Epistemically, synonym interceptions don't essentially differ from ref-identities and other coreferential interceptions. Consider Ngh ("Greece is Hellas"), PGH ("Greeks are Hellenes"), and

PGH* People from Greece are people from Hellas

PGH* (or some cousin) and PGH are synonymous. Both are analytic while Ngh isn't, just because the former are copredications, true by predicative sense, while Ngh is a conaming using names without predicative sense. Ngh differs from PGH and PGH* syntactically, but not epistemically ("informationally"), much like the contrast of Nac ("Azure is cobalt") and PAC ("Everything (colored) azure is (colored) cobalt".) A coreferential interception may be exactly as (un)informative as a correlate synonym interception.

Naming and predicating are distinct syntactic functions of terms. Names and predicates are not semantically separate classes of words. Terms like "blue" and "five" can both predicate ("Como is blue and five miles wide") and name the property predicated ("Blue is a color", "Five is prime") without change of meaning. Such words reveal that term synonymy, sameness of predicative sense, is property coreference (in "property"'s wide sense encompassing relations and anything instantiatable.) Some predicates have no standard cognate nominal form and some property names have no standard cognate predicative form, but cognates are devisable. With upper case letters representing predicates whose nominal form is in lower case, we can state the principle: $(x)[/math>$

$(Ax \Leftrightarrow Cx) \rightarrow a=c$ ^{17,18}

'property') due to sentence sense. The real contrast is whether or not term meaning and reference are needed, in addition to syntax, to explain the necessity due to sentence meaning. 'Metaphysical necessity' seems a misnomer for the necessity of ref-identities since they have no more metaphysical content than syn-identities. Truths like 'I exist', 'I am here', 'I make statements', etc. might be called *indexical necessities*. They aren't derivable from syntactic necessities as interceptions are.

¹⁷.Symbolizing 'Greeks are Hellenes' as ' $(x)(Gx \Leftrightarrow Hx)$ ' and 'Greece is Hellas' as ' $g=h$ ' does not comply with this convention, since the nominal of 'Greeks' names the property (roughly) of being a person from Greece, and 'Greece' lacks a predicative correlate.

¹⁸.We may distinguish naming from predicating as follows, taking "T" to be the nominal of the predicate:

What a symbol names is essentially arbitrary.¹⁹ It may name many objects sharing no property other than being so named. So, any rationale behind a baptism is incidental, inessential, and problematic as evidence of its reference. So too, no *de re* knowledge of the referent is needed or enough to properly use a name. Proper use presupposes only knowledge about the name itself, about which line of the symbol's past usage as name *this* token is linked to. Normally, suffice you know it names what(ever) some prior speaker named with it.

Since astronomy, not lexicography, revealed that

Nhp: Hesperus is Phosphorus

the objectual fact has seemed to have extralinguistic substance. That's a *non sequitur*, for the very same evidence is needed for Whp and Mhp:

Whp: What is called "Hesperus" is what is called "Phosphorus"

Mhp: What is meant by "Hesperus" is what is meant by "Phosphorus"

Actually, since reference relates the linguistic to the extralinguistic, any separating of the two in the determination of a name's referent is arbitrary, if not absurd.

Fregeans have dithered over the false dilemma of whether conaming statements are objectual, about the referent, or metalinguistic, about the terms. In fact both readings are standardly used and accepted. This duality is one of a system of ways a sentence may, without any lexical or

Naming is referring to an individual by 'T',
as 'T',
as instanting the property of being named 'T'.
Predicating is referring to an individual as (a) T,
as instanting the property named 'T',
by its property of being T,
by its property named 'T'.

Thus, predicating presupposes naming, not vice-versa.

¹⁹.This applies to the primary use of a symbol as name. Given its primary use, it's no accident that it has an *autonomic* use to refer to or represent itself in sentences used to express a proposition about the expression, as when 'Greece is Hellas' is used to express the proposition that 'Greece' names what 'Hellas' names or 'Greeks are Hellenes' is used to express the proposition that 'Greeks' means what 'Hellenes' means. See below and my 'Quotation Translation', forthcoming.

syntactic ambiguity, have multiple propositional potential. The plain data get misconstrued because of a confusion of sentence meanings with propositions.²⁰ Ref-identity sentences must have this multiple propositional potential. Nhp mutually entails Whp and Mhp.²¹ Objectually read Nhp is true and necessary only because its metalinguistic reading, Mhp, happens to be true.

Frege's ambivalence on conaming matches the waffling of Locke and later philosophers on whether analytic truths are really about the world or about our language. That's because synonym and coreferential interceptions have similar dual propositional readings. "Greeks are Hellenes" is necessary, but only if read objectually as a claim about Greeks, not the word "Greeks". However,

²⁰.On multiple propositional potential without sentence ambiguity, see my 'Quotation Translation', 'Synonymy Without Analyticity', *International Philosophical Preprint Exchange*, Nov. 1994, and *The Significance of Sense* (Cornell University Press, Ithaca, 1972.)

²¹.The notational contingency mutually entails (or, if you like, mutually '*metails*') the lexical necessity by two routes. First, the notational fact entails coextension of the terms, which entails Nhp's necessity by the truth conditions for identity sentences, and likewise the necessity of any sentence derivable from a logical truth by intercepting the terms. Second, Mhp and Whp express contingencies when *their* (embedding) terms are read as descriptions, predicates. The sentences express lexical necessities when their terms are (not improperly) read as names rigidly designating the object that actually satisfies the descriptions, for the sentences are then metalinguistic alter-identities that mutually entail their objectual correlate.

This matter gets muddled by two routes. First, misidentifying quotational referents. Since names are essentially arbitrary, a QS sentence is contingent:

QS: '...' says (means, refers to) ____

The exceptions are QSI sentences

QSI: '...' says (etc.) ...

but only when the subject of QSI (=the intended quotational referent) is the sentence's predicate expression. QSI sentences are contingent when the subject is (e.g.) a homophonic expression from another language. Or when we're quieting a worry that some utterance used the referent nonstandardly. In such cases, the referent is being identified and individuated by its shape alone, or by its shape cum meaning in another language, or by some way other than as the words of the home language as used in the predicate. If the latter is what is named, rigidly designated, it has its current semantic content in all possible worlds; that the symbol could come to be or have been used differently is irrelevant. Second, lexical necessity gets misconceived as a species of logical necessity. Only the latter is truly unconditional. A lexical necessity is a creature of a notational coincidence, constraining neither the world nor thought, but only speech using the specific term pair. The statement can't be false, but neither is there any truth to it apart from the specific term pair.

what is said about Greeks lacks extralinguistic content since "Greeks" and "Hellenes" are simply different terms for the same property. The sentence can also be read metalinguistically as articulating this latter contingent metalinguistic presupposition of the objectual reading.²²

The epistemic contrast catching people's eyes is not between names and predicates but rather between proper names and terms with a predicative sense, which includes both property names and predicates.

Proper names and property names differ semantically, not syntactically. Proper names refer to concrete objects, property names to abstract ones. The meaning of a property name is the referent abstract individual predicated by the name's predicative form. Proper names name entities that instantiate properties but can't be instantiated, so proper names are not themselves predicatable. They have no predicative sense, so the principle, $a=c \rightarrow (x)[(Ax \leftrightarrow Cx)]$, does not

²².The metalinguistic readings of synonym interceptions like PGH ('Greeks are Hellenes')

WPH: What are called 'Greeks' are what are called 'Hellenes'

MPH: What is meant by 'Greeks' is what is meant by 'Hellenes'

parallel their counterparts for coreferential interceptions, except that the latter's M-sentences say the same as their W-sentences, for what is meant by a name is its referent, what is called by that name. What is called by a predicate is the (members of the) predicate's extension; what is meant by a predicate is the property named by the predicate's nominal form. A conaming like Ngh is necessary if true, and true if its terms corefer. A copredication like PGH is true just in case the properties are coextensive (or the subject extension is subsumed in the other term's extension.) The copredication is lexically necessary just in case the predicates are synonymous (their nominals corefer.) So, with both synonym and coreferential interceptions (including conaming sentences), the M-sentence mutually entails the W-sentence. But copredication doesn't need property identity, so a copredication's M-sentence entails its W-sentence, but need not be entailed by it. Copredications with false M-sentences and true W-sentences are true, substantive, extralinguistic claims about the copresence of properties. The claim may be necessary, not logically or lexically, but mathematically or metaphysically or perhaps by some other species of substantive necessity. Arithmetic statements of numerical/quantitative *equality* are substantive *predications*. Their syntax differs from conaming statements of identity. They differ semantically from synonym interceptions, and semantically and syntactically from logical sentences, since nonuniform synonym substitution in mathematical truths does not affect sentence syntax, sense, truth or modality.

hold for them.²³

While lacking an objectual predicative use or sense, proper names have a metalinguistic one. Everyone named "Samuel Clemens" is *ipso facto* a Samuel Clemens and a Samuel and a Clemens, and the most famous of them is a Mark Twain. Preceded by a determiner (e.g., "the", "every"), a proper name symbol is a "*metaname*", a term predicating the property of being a concrete individual named (called, referred to as/by) its (the term's) symbol. "Clemens", as metaname, predicates the property of being a concrete individual bearing the proper name "Clemens". Neither as proper name nor as metaname does "Clemens" name that property. "(Being) an individual named 'Clemens'" names and predicates the property. Metaname aside, any association of a proper name with a predicative sense (as with descriptive names like "Buena Vista") is adventitious, not dispositive of its reference. Unlike coreferring property names, coreferring names of a concrete individual are not synonyms (not even if their metanames happen to be coextensive, an uncommon coincidence.)^{24,25}

²³.We may say that proper names have no meaning or that their meaning is their reference, and we might leave unsettled whether their reference is their referent (the object referred to) or their referring (their relation to the referent.)

²⁴.In addition to its metaname use, a proper name may sire diverse derivative terms for which being so named is logically inessential for possession of the property predicated. Mark Twain was a Clemens in the sense of belonging to a Clemens lineage, without being a Twain in the genealogical sense, but only in the metaname sense. If he fathered a bastard adopted at birth by another family, the child could be a Clemens genetically but not metalinguistically.

Property names may be read metalinguistically (PGH may be read as MGH), but they lack a distinct use as metanames comparable to that of proper names. This may be because, unlike proper names, property names (or their cognates) have a predicative use which admits both objectual and metalinguistic readings.

²⁵.Some qualms concerning Quine. (I) Quine says: 'Statements of identity... are needed... because language includes a redundancy of names' and because of 'its use of multiple variables of quantification (or their pronominal analogues...)' (*Ibid*, 211.) Yet the great mass of coreferring singular terms are hardly redundancies. Most commonly the terminological multiplicity and consequent use of ref-identities arise from our identifying objects from epistemically unconnected perspectives. In any case, the need is for a syntactic structure, a need unfulfillable by a term.

Commonly we do have a concept of a name's referent -- in the most common, nontechnical sense of "concept": some set of (core) beliefs about it, a set of predicates associated with it.²⁶ Different concepts of the same object may be associated with different names, and speakers may differ in their concepts associated with a name. Both such differences are more common with proper names than property names for two reasons.

First, concrete individuals essentially differ from abstract ones metaphysically, and hence epistemically. The epistemic contrast commonly gets exaggerated despite Socrates' teaching us that we are prone to as profound nescience about the referents of our property names as of our proper names. Still, generally, we can't or don't lack epistemic access to the aspects of a property like a shade or a shape in the way we may to the aspects of a person or a planet. And we, each with her own unique spatio-temporal situation, couldn't share common concepts and understanding of Earth's concrete particulars, not as we share a common experience of the properties of general

(II) Metanaming engenders a peculiar paradox. Judas needn't have been a betrayer; and maybe we're wrong and he really wasn't. Judas is contingently, if at all, a Judas [=betrayer]. But necessarily Judas is a Judas, someone named 'Judas'. This necessity is not *de re*; it might be *de dicto*: that man needn't have been named 'Judas' or at any time referred to as 'Judas'. Still, '[]J' is true, given the convention that 'J' is the term predicating the property of being referred to as 'j'. Thus:

[]Hh: [](*Hellas is a Hellas*)
 [](g=h): [](*Greece is Hellas*)

Ergo []Hg: [](*Greece is a Hellas*).

While 'Greece is a Hellas' is certainly true, and the argument for its necessity appears sound, that conclusion seems incredible. The puzzle presents some nice questions for Quine. Is his concoction 'is-Hellas' an intelligible description, a possible predicate? Can it mean other than 'is identical with Hellas'? Is being Hellas a property? distinct from the property of being identical with Hellas? Is either property distinct from that of being named 'Hellas'? Are names eliminable from logic and science, leaving only predicates and variables of quantification -- or isn't it rather that predicates presuppose names (of properties, if nothing else)?

²⁶.On this usage, to say that the subject concept of 'A body is extended' contains the predicate concept is to say only that among our core beliefs about bodies is the belief that they are extended.

concern to us all. So, generally proper name identities differ epistemically from property name identities.

However, the categories of abstract and concrete encompass great diversity, and they interact, with names spawning new predicates and predicates generating new names. So the epistemic contrasts between abstract and concrete individuals come in degrees, and can disappear, especially when a property is tightly tied to a concrete particular, as with the property predicated by "Greek" and the concrete particular named "Greece". There the epistemic differences may vanish, much as they do with terms both conaming and copredicating a property, as with "azure" and "cobalt".

Another aspect of the epistemic contrast of proper names and property terms is that naming needs no rationale,²⁷ but predicating does, for a predicate applies to an object only because the object has the property named by the predicate's nominal form. Property possession explains and is explained by a network of facts, an explanatory and evidentiary network. Some understanding of this is demanded for understanding a predicate and thus its nominal. Generally, understanding a property term is enmeshed with extralinguistic beliefs in ways inessential for proper use of a proper name.

A proper name's lack of predicative sense enables a coreferential interception of proper names to effectively communicate a substantive predicative discovery. Although Nhp ("Hesperus is Phosphorus"), a lexical necessity, neither entails nor is entailed by the empirical contingency that the "star" seen in the morning is the "star" seen in the evening, to learn either was to learn the other because the proper names had those disparate associated predicate sets. A ref-identity of property

²⁷.The *referential* property of being named '...' is peculiarly contingent, radically random. Nonreferential properties enmesh with the world's explanatory order: whether an individual has or lacks some nonreferential property is regularly predictable from its other nonreferential properties. But referential properties are essentially not essentially related to nonreferential properties. Any individual, whatever its other properties, could in principle be referred to, and referred to by any name, any iterable symbol: it could have or lack any referential property.

names can't so readily come as a substantive discovery, since property coreference is predicate synonymy. The mode of empirical discovery that water is hydrogen dioxide would be remarkable if the fact were a metaphysical, logical or lexical necessity. As things are, neither chemistry nor linguistics supports a reading of the discovery as a property ref-identity with form, $w=h$, rather than a contingent, synthetic, *a posteriori* copredication of the form, $(x)(Wx \Leftrightarrow Hx)$.^{28,29}

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²⁸.Only neoessentialists have any interest in reading 'Water is hydrogen dioxide' as a property identity. That misreads the standard usage of the terms. (Due to the discovery, 'H-two-O' has developed a derivative usage as an alternative name for water; the neoessentialist can't intend that idiom.) Consider: Water can be polluted, carbonated, fluoridated, softened, etc. Can such be said of H₂O? Astronomers discovered that the object named 'Hesperus' is the object named 'Phosphorus'. Did chemists discover that the property (substance, stuff) named 'water' is the property (substance, stuff) named 'H₂O'? Or did they discover that the molecular structure of water is H₂O?

Generally, there's good reason to expect that a concept developed by the natural sciences won't refer to the very same property as a pre-scientific concept, since our pre-scientific categories subservise and are shaped by diverse practical interests and purposes that get detached from the purely cognitive aims of scientific categorization. (Cf. my 'Applying Ethical Theory', in D. Rosenthal and F. Shehadi, eds., *Applied Ethics and Ethical Theory*, University of Utah Press, Salt Lake City, 1988, 229-55.)

The misconception here infects Putnam's thesis that the H₂O-less *twater* of Twin Earth can't be water. While the Ancients may have been wrong to think that the four basic elements are earth, air, fire, and water, their supposition is itself one of many bits of evidence that our concepts of earth, air, fire and water are quite comparable. Consider: Would the atmosphere of our Moon, Mars or Twin Earth be unnaturally or improperly called 'air' just because its molecular composition is not the same proportion of oxygen, nitrogen, CO₂, etc. as 'normal' Earth air? Would the land stuff of our Moon, Mars or Twin Earth be unnaturally or improperly called 'earth' just because its molecular composition isn't like that on Earth? Would the conflagrations on Twin Earth that are, in all other respects, just like fires on Earth, be unnaturally or improperly called 'fire' just because they aren't oxidations? Why suppose the answer any different for Twin Earth's hydrogen dioxideless *twater*?

This criticism of Putnam's neoessentialism (that 'Water is H₂O' is a necessary truth with form 'w=h') is no criticism of his semantic externalism (that the sense and reference of terms is fixed partly by facts independent of speakers' beliefs.)

²⁹.This essay owes much to the efforts of Bredo Johnsen and David Massie.