Naming, Necessity, and Beyond[1]

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Beyond Rigidity, by Scott Soames. Oxford and New York: Oxford University Press, 2002. Pp. 379. H/b £27.50, $35.00.

1.

Kripke's landmark monograph, *Naming and Necessity* (hereafter, N&N),[2] treats semantic reference, or designation, and intension (possible-worlds semantics) independently of issues of semantic content or 'meaning'. Soames's carefully argued book purports to complete N&N's unfinished semantic agenda, or to take important steps toward doing so, by addressing issues of content head on in the light of N&N's numerous important insights. Specifically, Soames gives detailed consideration to two issues left open by N&N's direct-reference 'picture' of language: what the semantic content of a proper name is; and what it is for a general term to be a rigid designator. I find the claim of completing N&N's unfinished agenda questionable. Intentionally or not, Soames creates the misimpression that N&N stands somehow incomplete and so falls short of meeting its own objectives.[3] N&N's avoidance of semantic content is no oversight; it is a strategic tactical retreat. Issues of content are notoriously controversial. It is unrealistic, certainly in the present intellectual climate, to hope for anything approaching a consensus. N&N succeeded in mounting an overpowering case against the then orthodox Frege-Russellian theory of reference and content while keeping almost entirely to issues of reference and intensionality about which consensus could be, and for the most part was, achieved. For all its lacunae, and though it leaves many questions unanswered (and even answers a few questions incorrectly), given its objectives N&N is in any relevant sense a finished work of genius that

[1] I am grateful to Alan Berger and to the Santa Barbarians for discussion.

[2] Kripke 1972.

[3] Cf. Soames, pp. 313–4 n.3.

has stood the test of time. As such, the positions taken and arguments proffered in N&N suggest numerous lines of further research. Indeed, there exists a sizeable literature on direct reference spanning over three decades, and much of this literature may be aptly described as building directly on N&N.[4] Soames's investigation into some of N&N's loose ends is a model of sharp clarity and exactness that lies squarely in this recent and important philosophical genre.

Among the writers who have picked up where N&N left off is Kripke himself. He went on to address the contents of non-referring names, the contents of definite descriptions, and issues of substitution failure, respectively, in three superb follow-ups to N&N: *Reference and Existence: The John Locke Lectures for 1973* (unpublished); 'Speaker's Reference and Semantic Reference';[5] and 'A Puzzle about Belief'[6]—arguably the best sequels before or since The Godfather, Part II. Millianism is the controversial (though post-N&N no longer overwhelmingly unpopular) doctrine that ordinary proper names are what Russell called logically proper names, that is, the doctrine that the content of a proper name is simply its bearer, so that the content of a sentence including a name is a Russellian singular (or object-involving) proposition. In 'A Puzzle' Kripke advises that such notions as content and proposition, as they occur in Frege's Puzzle and in our understanding of locutions of propositional attitude and the like, are not sufficiently understood to support any conclusion for or against Millianism. Kripke's own view, strongly hinted at in 'A Puzzle' and in the preface to N&N (at pp. 20–1), is that our notions of content and proposition 'break down' in the much-discussed problematic cases of 'Hesperus'/'Phosphorus', 'Cicero'/ 'Tully', 'Superman'/'Clark Kent', etc. I interpret Kripke as favouring (without officially endorsing) the conclusion, which is contrary to Millianism, that 'Pierre believes that London is pretty' is neither true nor false in his example, and likewise that

> (1) Lois Lane believes that Clark Kent flies

is neither true nor false in the comic-book fiction. Ignoring Kripke's advice (as has virtually every writer on the topic, other than Kripke), Soames endorses Millianism. On this issue I stand firmly with Soames.

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[4] Worthy of special note are Donnellan 1977; Kaplan 1973; Kaplan, 'Demonstratives' and its accompanying 'Afterthoughts', in Almog, Perry, and Wettstein 1989; and Hilary Putnam, 'The Meaning of "Meaning"', in Gunderson 1975.

[5] In French, Uehling, and Wettstein, 1977, pp. 6–27.

[6] In Margalit (ed.), *Meaning and Use* (Dordrecht: D. Reidel, 1976), pp. 239–283; reprinted in Salmon and Soames 1988, pp. 102–48.

Having defended Millianism at considerable length elsewhere, I take issue in this section with the crucial move in Soames's interesting defence.

There are primarily two major hurdles in any defence of Millianism: (i) to account for apparently non-referring yet contentful proper names; and (ii) to explain away our stubbornly persistent—though according to Millianism, very much mistaken—intuition that such attributions as (1) are straightforwardly false. The latter intuition goes hand in hand with the idea that Leibniz's Law, or Substitution of Equality, fails even for proper names in contexts of propositional attitude. I am gratified that Soames endorses my own efforts with regard to completing the first task (pp. 89–95).[7] Regarding the second Soames argues that the erroneous intuition that (1) is false results from a particular kind of confusion, to wit, misidentifying the proposition semantically expressed by a sentence with any of various additional, often significantly stronger, propositions typically asserted by a speaker in uttering the sentence. Specifically, Soames contends (pp. 210–35, and *passim*) that speakers typically mistake (1) as semantically expressing the false proposition that would typically be the speaker's primary assertion in uttering (1)—perhaps the proposition semantically expressed by

> (2) Lois Lane believes that the mild-mannered, *Metropolis Daily Planet* reporter who is [spectacle wearing, wimpy, socially awkward, milquetoast, …, and] Clark Kent flies.

(The bracketed material indicates that there is some indeterminacy on Soames's view as to exactly which proposition is the speaker's primary assertion in uttering (1).)

It is by no means obvious, however, that the typical utterer of (1) is correctly described as thereby asserting that Lois believes anything to the effect of the such-and-such flies, and Soames provides little argument for his contention that this is so.[8] On Soames's theory, the fact that the speaker asserts the content of (1) explains the further fact that

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[7] 'Existence', in Tomberlin 1987, pp. 49–108; 'Nonexistence' (Salmon 1998). I developed the account further in 'Mythical Objects', in Campbell, O'Rourke, and Shier 2002, pp. 105–23; and 'Puzzles about Intensionality', in Jacquette 2002 pp. 73–85.

[8] Soames appears to rely on the assumption (pp. 220–21) that if (i) a speaker asserts p, (ii) both the speaker and hearer have good grounds to believe that if p then q, (iii) the speaker knows that the hearer will believe q if the hearer accepts the speaker's utterance, and (iv) the hearer realizes that the speaker knows this about the hearer, then (i)–(iv) constitute a reason to hold that the speaker thereby also asserts q in addition to asserting p. This assumption would entail that, under normal circumstances, there is reason to hold that one who asserts anything at all (for example, that the next US president will be a Democrat) thereby typically also asserts a host of trivial truisms: that $1 + 1 = 2$, that snow is white, that Tuesday follows Monday, etc.

he/she also asserts the content of (2)—the latter being the speaker's pri-mary assertion (cf. pp. 209, 213). It is unclear, however, how the speaker's (allegedly subsidiary) assertion that Lois believes Clark flies provides any explanation whatever of the (allegedly primary) assertion that Lois believes the mild-mannered reporter who is thus-and-so flies—especially if it is unclear in the first place whether the latter is asserted at all. A word of caution: a speaker's utterance of (1) does indeed justify the indirect-discourse report, ⌜The speaker asserted that (2)⌝.[9] But this observation is misleading, and by itself does not make the case. For as a great English philosopher taught us, this attribution-of-an-attribution has several readings, including one on which it expresses that the speaker asserted of the mild-mannered reporter who is Clark, *de re*, that Lois believes he flies. Most would agree that the speaker's utterance justifies this *de re* indirect-discourse report. But this reading is irrelevant.[10]

Soames's contention that an utterance of (1) typically issues an asser-tion of the content of (2), even if it is correct, does not strike to the heart of the matter. Some quite sophisticated language scholars, gruel-lingly trained to distinguish sharply between literal, semantic content and speaker assertion, deem (1), taken literally, false. Soames (and I) are committed to holding that, with all due respect, these language scholars (perhaps including some readers of this review) misunderstand the lit-eral meaning of (1). But then some special explanation for their other-wise mysterious alleged misunderstanding is required, one that does not depend on a general tendency to confuse semantic content with speaker assertion, since, by hypothesis, these speakers are ever vigilant about maintaining the distinction's integrity.[11]

Defending Millianism's commitment to substitution of co-referential names in propositional-attitude attributions, Soames says that speakers do not generally realize that an utterance of 'Lois Lane does not know

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[9] That is, 'The speaker asserted ⌢that (2)' . (Cf. pp. 212–13.)

[10] I had cautioned against mistaking speaker assertion for semantic content in 'Assertion and Incomplete Definite Descriptions', Salmon 1982; and more generally in 'The Pragmatic Fallacy', Salmon 1991. My concern in these articles was not with attributions of propositional attitude, but with utterances in which a definite description is used referentially (in Donnellan's sense, that is, with a particular object in mind), as opposed to attributively. I called attention to cases in which a speaker utters a sentence of the form 'The such-and-such is thus-and-so', asserting the literal con-tent of the words used, and *thereby simultaneously asserting* the singular proposition about the such-and-such, *de re*, that he/she/it is thus-and-so (which is different from the literal content). A belief attribution like (1) is a significantly different sort of sentence, the utterance of which would not normally be reported by ⌜The speaker asserted that (2)⌝ *on its Russellian narrow-scope reading*.

[11] Cf. *Frege's Puzzle* (Salmon 1986), at pp. 84–92, 114–15.

that Clark Kent is Superman' results in an assertion that Lois Lane does not know about Superman that he is him (pp. 230–32). This claim is inconsistent with Millianist substitution, given that 'Clark Kent' and 'Superman' co-refer, and that speakers do generally realize that the utterance results in an assertion that Lois Lane does not know that Clark Kent is Superman. The Millian needs to provide some explanation of why ordinary speakers typically believe that Lois does not know that Superman is Superman, and are prepared to assert as much (using both of his names), even knowing that this is what they are asserting.[12]

2.

Soames has much to say concerning a significant lacuna in Kripke's discussion of rigidity. On Kripke's intended definition, a term designates an object *x rigidly* if the term designates *x* with respect to every possible world in which *x* exists and does not designate anything else with respect to worlds in which *x* does not exist. Kripke evidently holds in N&N (pp. 117–44, *passim*, and especially at 134, 139–40) that certain general terms—including natural-kind terms like 'water' and 'tiger', phenomenon terms like 'heat' and 'hot', and colour terms like 'blue'—are rigid designators solely as a matter of philosophical semantics (independently of empirical, extra-linguistic facts). As a consequence, Kripke argues, identity statements involving these general terms are like identity statements involving proper names (for example, 'Clark Kent = Superman', or more cautiously, 'If Clark Kent exists, then he = Superman') in that, solely as a matter of philosophical semantics, they express necessary truths if they are true at all. But whereas it is reasonably clear what it is for a singular term to designate, Kripke does not explicitly say what it is for a *general* term to designate. General terms are standardly treated in modern logic as predicates, usually monadic predicates. There are very forceful reasons—due independently to Church and Gödel, and ultimately to Frege—for taking predicates to designate their semantic extensions.[13] But in so far as the extension of the general term 'tiger' is the class of actual tigers (or its characteristic

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[12] Cf. my 'Illogical Belief', in Tomberlin 1989, pp. 243–85.

[13] Cf. my *Reference and Essence* (Salmon 1981), at pp. 48–52. The *metaphysical extension* of a property P (in a possible world w at a time t) $=_{def}$ the class of possible objects that have P (in w at t). The *semantic extension* of a predicate Π (with respect to semantic parameters) $=_{def}$ the metaphysical extension of the property semantically expressed by Π (with respect to those same parameters). The *metaphysical intension* of a property $P =_{def}$ the function that assigns to any possible world w (and time t) the metaphysical extension of P in w (at t). The *semantic intension* of a predicate $\Pi =_{def}$ the metaphysical intension of the property semantically expressed by Π.

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function), it is clear that the term does not rigidly designate its exten-
sion, since the class of tigers in one possible world may differ from the
class of tigers in another. What, then, is it for 'tiger' to be rigid?

Soames considers the two interpretive hypotheses that he deems the
most promising, strongly favouring one of the two (pp. 249–63, 287–8,
and *passim*). On the preferred interpretation, a general term is *rigid*, by
definition, if it expresses a property (for example, being a tiger) that is
essential to anything that has it at all, that is, a property of an object
that the object could not fail to have (except perhaps by not existing).
Soames characterizes this hypothesis as 'a natural extension' to predi-
cates of N&N's definition of singular-term rigidity.[14] I deem it a non-
starter. One obvious problem with the proposal is that colour terms like
'blue' then emerge as non-rigid, contrary to Kripke's apparent labelling
of them as rigid. Also the definition does not provide any obvious can-
didate to be the rigid designatum of a predicate like 'is a tiger'. The pro-
posal might be based on a notion of *multiple designation*, whereby a
predicate 'designates' one by one each of the things individually to
which the predicate correctly *applies* semantically, that is, each of the
elements of the semantic extension.[15] A predicate for an essential prop-
erty applies to anything *x* that has the property in question with respect
to every world in which *x* exists, while a predicate for an accidental
property does not do this. But an essential-property predicate equally
applies to the other things *y* in its extension besides *x, and does so with
respect to worlds in which x does not exist.* This interpretation, therefore,
does not fit the intended definition of rigid designation.

If the predicate 'is a tiger' is to be regarded as designating the prop-
erty of being a tiger (rather than as multiply designating each individ-
ual tiger, and rather than as designating the class of actual tigers), then
it would appear that any predicate should be seen as designating the
property that it expresses. But in that case, every predicate, even 'is a
bachelor', emerges as a rigid designator, since the attribute (property or
relation) expressed by a predicate with respect to a possible world does
not vary from world to world. Nothing special about natural-kind

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[14] Cf. pp. 251–252. Soames defended this interpretive hypothesis at an international conference
on Kripke's work at the *Instituto de Investigaciones Filosóficas, Universidad Nacional Autónoma de
México*, Mexico City, October 1996, which Kripke and I both attended. The other interpretive hy-
pothesis that Soames considers is mentioned below in note 20.

[15] Soames does not explicitly suggest this. On the contrary, he says repeatedly that a natural-
kind predicate designates a natural kind (for example, pp. 276, 279). It is difficult to reconcile this
idea with Kripke's labelling of natural-kind terms as rigid designators, on Soames's proposed in-
terpretation of the latter. (My best guess is that Soames attempts to provide a reconstruction of the
notion of rigidity for general terms that is divorced from the notion of designation.)

predicates, colour predicates, etc. has been identified to demarcate them from the rest. So it is that N&N leaves us with the question: What is it for a general term to be a rigid designator?[16]

Soames eventually finds the two strategies he considers wanting. He complains (p. 248) that Kripke's original definition of rigidity is restricted to singular terms. I see no decisive evidence of this in Kripke's writings. I assume instead that the notion of designation *simpliciter* that Kripke invokes extends to general terms (as does, for example, the notion of designation invoked in the work of Carnap). I believe Kripke intended his definition of rigidity to apply to general as well as singular terms. (It is possible that N&N uses the word 'reference' for the special case of singular-term designation.) One way to proceed that is certainly more promising than both of the failed strategies would be to define a notion of designation (*simpliciter*) for both singular and general terms in such a way that, applying the intended definition of rigid designation *as is*, without modification, a natural-kind general term (and a colour general term, a natural-phenomenon general term, etc.) designates its designatum rigidly whereas some other sorts of general terms designate only non-rigidly. What object, then, should a general term like 'tiger' be said to *designate*? And which contrasting sorts of general terms designate only non-rigidly?

The first question has an obvious and natural response: The term 'tiger' designates the species, *Tiger* (*Felis tigris*). In general, a biological taxonomic general term should be seen as designating a biological taxonomic kind (a species, a genus, an order, or etc.), a chemical-element general term ('gold') should be seen as designating an element (gold), a chemical-compound general term as designating a compound (water), a colour general term as designating a colour (red), a natural-phenomenon general term as designating a natural phenomenon (heat), and so on. The semantic content of a single-word general term might then be identified with the designated kind (or the designated substance, phenomenon, etc.). So far, so good. But now the threat is faced anew that every general term will emerge as a rigid designator of some appropriately related universal or other. If 'bachelor' designates the gendered marital-status category, *Unmarried Man*, it does so rigidly. Even a common-noun *phrase*, like 'adult male human who is not married', emerges as a rigid designator.

Such is the notion of designation for general terms that I proposed in *Reference and Essence* (pp. 52–4, 69–75), and which I continue to believe is fundamentally correct. Soames objects on the grounds that 'there is

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[16] Cf. Salmon 1981, pp. 44–54.

no point in defining a notion of rigidity for predicates according to which all predicates turn out, trivially, to be rigid' (p. 251). On Soames's 'Extended Millianism' (pp. 278–9), the content of a natural-kind phrase like 'matter sample composed exclusively of molecules consisting of two hydrogen atoms and one oxygen atom' is a property, whereas the content of a single-word natural-kind term like 'water' is a natural kind (which Soames identifies with the metaphysical intension of a property). This account makes room for a distinction between descriptionality (connotativeness) and non-descriptionality for some general terms analogous to John Stuart Mill's insights concerning definite descriptions and proper names, though only among natural-kind general terms and the like. (Mill, by contrast, classified all general terms as 'connotative'.) Although Soames opposes extending this account to all general terms—presumably on the ground that doing so would render even an institutional-kind term like 'bachelor' a rigid designator—there is no obvious principled reason why single-word non-natural-kind terms should differ from single-word natural-kind terms in this respect (and single-word colour terms, single-word natural-phenomenon terms, etc.). I suspect there is no such deviation. (See note 21 and p. 486 below). Ultimately Soames decides that there is no notion of rigidity that is simultaneously analogous to singular-term rigidity, a natural extension of singular-term rigidity to general terms, and a notion on which certain general terms (especially, natural-kind terms) are rigid but many other general terms are non-rigid (p. 263). And this, he argues, paves the way for a 'demotion of the status of rigidity in Kripke's overall semantic picture' of terms singular and general (p. 264).

   On this point I sharply disagree. It is true that Kripke's thesis that proper names and certain general names alike, including natural-kind terms, are rigid designators is secondary to a more fundamental thesis: that these names are *non-descriptional*.[17] However, the corollary that they are therefore rigid is correct, and its philosophical significance should not be missed or undervalued. Soames's discussion suffers from a failure to distinguish sharply between a general term like 'tiger' and its corresponding predicate, 'is a tiger'. Even if every common count noun (whether a single word or a phrase) emerges as a rigid designator on my counter-proposal, contrary to Soames (and contrary to myself, *Reference and Essence*, p. 70, and others)[18] it does not follow that every gen-

[17] Or not descriptional in a certain way; cf. Salmon 1981, chapters 1–2, especially pp. 14–23, 32–6, 42–4, 54–6. (Cf. also Soames, pp. 264–7.)

[18] Cf. Donnellan 1973; and 'Kripke and Putnam on Natural Kind Terms', in Ginet and Shoemaker.

eral term is rigid. As Bernard Linsky noted in an unduly neglected paper, some general terms, in fact, are manifestly non-rigid.[19] This is most evident with certain English definite descriptions. Definite descriptions are typically singular terms—or alternatively (following the great philosopher-lord), quantificational expressions that go around impersonating singular terms—but some English definite descriptions, unlike ordinary singular terms, evidently function rather as if they were adjectives or, more likely, mass nouns. One example is the description 'the colour of the sky', as it occurs in the sentence

(3)   My true love's eyes are the colour of the sky.

Soames sees the definite description in the predicate of (3) as a singular term rather than a general term (p. 261).[20] Yet the copula 'are' here cannot be the pluralization of the 'is' of identity, since the colour blue is a single universal whereas the speaker's lover's eyes are two particulars, and hence not both identical to a single thing. One might argue that the 'are' in (3) is a third kind of 'is', over and above the 'is' of identity and the 'is' of predication: the *'is' of possession.* (Soames is evidently committed to positing such an alternative sense.) This rather strained account raises the question of why 'to have' should come to masquerade as 'to be'. It is considerably more plausible that the 'are' in (3) is the very same copula that occurs in

(4)   My true love's eyes are blue

to wit, our old and dear friend, the 'is' of predication (in its pluralized conjugation). Let us formally represent the copula in 'is blue' as a pred-

[19] Linsky 1984. See also John Heintz, *Subjects and Predicables* (The Hague: Mouton, 1973), at p. 88. Although my account differs significantly in certain details from Linsky's (cf. note 22 below), I have benefited from his observations. In particular, as Linsky notes, it is highly likely that the notion of an adjectival/mass-nominal definite description (a 'definite ascription') underlies Kripke's labelling of certain contrasting general terms as *rigid designators.* (See note 24 below concerning Kripke's reaction to this alternative to Soames's preferred account.)

[20] More accurately, he sees the description as a quantifier phrase, which he 'assimilates to the broader class of singular terms' (p. 316 n.17). Soames neither sees the description in (3) as a general term nor assimilates it to one.

I presented my objections to Soames's proposed interpretation of N&N, as well as this counter-proposal regarding designation, in the discussion following Soames's paper at the 1996 *Universidad Nacional Autónoma de México* conference on Kripke. (See note 14 above.) There is some discussion in Soames that was evidently prompted by my objections and counter-proposal, but in which he considers instead a significantly different proposal (one which I reject), according to which a general term ('predicate') is to be labelled *rigid,* or *non-rigid,* according as some relevantly associated *singular* term is rigid or not (pp. 364 n.9, 260–2, 289–92, 307–11). Soames objects that on the counter-proposal he considers, every general term ('predicate') is rigid. This contradicts the very point of (3), as it is intended. (Soames does not consider the prospect that the description 'the colour of the sky' functions as a general term rather than a singular term.)

icate-forming operator on adjective phrases and mass nouns, '*is*{ }',
and let us represent the 'is a' in 'is a tiger' as a similar predicate-forming
operator on count nouns, '*is-a*{ }', so that the predicate 'is blue' is for-
malized as '*is*{blue}' and the predicate 'is a tiger' as '*is-a*{tiger}'. The
'adjectival' (or mass-nominal) description 'the colour of the sky' may
then be formally rendered as a kind of second-order definite descrip-
tion:

$$(\imath F)[\textit{is-a}^2\{\text{colour}\}(F) \land \textit{is}\{F\}(\text{the sky})],$$

where 'F' is a variable ranging over appropriate universals. (The super-
script '2' indicates that the resulting predicate is second order.[21])
Indeed, so understood, (4) is a straightforward logical consequence of
(3) taken together with the empirical premiss,

(5) Blue is the colour of the sky.

This inference is best seen as a special instance of Leibniz's Law, or Sub-
stitution of Equality. In the words of a great English poet, it is easy if
you try. According to (5), the colour blue is identical with the colour of
the sky. Since the speaker's true love's eyes are the colour of the sky, it
follows by Substitution that those same eyes are blue. All you need
(besides love) is to see the copula in (5) for what it surely is: an 'is' of
identity, attached to adjectives/mass-nouns instead of singular terms,
and forming a sentence that is true if and only if the general terms
flanking the 'is' are co-designative—the same 'is' of identity that
occurs, for example, in 'Nauseous and panicky is what I (saliently)
become when I receive a notice from the Internal Revenue Service'.

Formalization of the inference might help to make the point:

(3′) $(x)[\textit{is-a}\{\text{eye of my true love}\}(x) \rightarrow \textit{is}\{(\imath F)[\textit{is-a}^2\{\text{colour}\}(F) \land \textit{is}\{F\}(\text{the sky})]\ \}(x)]$

(5′) blue $=^2 (\imath F)[\textit{is-a}^2\{\text{colour}\}(F) \land \textit{is}\{F\}(\text{the sky})]$

∴ (4′) $(x)[\textit{is-a}\{\text{eye of my true love}\}(x) \rightarrow \textit{is}\{\text{blue}\}(x)]$

(Then again, it might not.) The copula in (5) is evidently the same 'is'
of identity that occurs in the conclusion of 'There are exactly three vol-
umes of Russell and Whitehead's *Principia Mathematica*; therefore,

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[21] Using this formal device one may even form non-rigid count-noun general terms, for example,

$(\imath F)[\textit{is-a}^2\{\text{gendered marital-status category}\}(F) \land \textit{is-a}\{F\}(\text{Hugh Hefner})].$

This application of the device to count nouns does not obviously correspond to any legitimate con-
struction of English, but neither is there any obvious reason why such a construction could not be
appended to English. (Sentences like (3) might be taken as evidence that English already has some
characteristics of a second-order formal language.)

three is the number of volumes of *Principia Mathematica*'. Soames contends instead (pp. 364 n.9, 289–290) that the syllable/vocable 'blue' represents a pair of English homonyms: one a general term (blue$_1$), the other a singular term (blue$_2$) that is parasitic on the general term. This perspective yields a markedly different rendering of the inference:

$(x)[x$ is an eye of my true love $\rightarrow$ $Is(x, (\imath y)[y$ is a colour $\wedge$ $Is($the sky, $y)])]$

blue$_2 = (\imath y)[y$ is a colour $\wedge$ $Is($the sky, $y)]$

$\therefore$ $(x)[x$ is an eye of my true love $\rightarrow x$ is blue$_1]$,

where the dyadic predicate '*Is*' occurring in the premisses represents the alleged '*is*' *of possession*. This argument, however, is invalid as it stands. The argument (and also the parallel invalid argument obtained by interchanging the major premiss and conclusion) may be validated by supplementing the premisses with a rather striking Carnapian 'meaning postulate' (perhaps as a tacit premiss):

$(x)[x$ is blue$_1 \leftrightarrow Is(x,$ blue$_2)]$.

But how plausible is it that both of the words 'is' and 'blue' making up the English predicate are ambiguous (quite independently of a third meaning, the 'is' of identity), and in such a way that, solely as a matter of English semantics, the predicate applies under one meaning exactly when it applies under the other as well? To quote Kripke (slightly out of context): 'It is very much the lazy man's approach to philosophy to posit ambiguities when in trouble … [The] ease of the move should counsel a policy of caution: Do not posit an ambiguity … unless there are really compelling theoretical or intuitive grounds to suppose that an ambiguity really is present' ('Speaker's Reference and Semantic Reference', p. 19).

Given that 'blue' designates the colour blue, that the definite description 'the colour of the sky' designates the colour of the sky, and the empirical fact that the sky is blue, the terms 'blue' and 'the colour of the sky' are co-designative.[22] (No surprises here.) But whereas the former is

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[22] Though the description 'the colour of the sky' designates blue, the corresponding predicate 'is the colour of the sky' semantically expresses the property of having the same colour as the sky, as opposed to the more specific property of being blue (in colour). The two properties share the same metaphysical extension—*to wit*, the class of all blue things—but they differ in metaphysical extension in some counter-factual worlds, and so differ in metaphysical intension. It is important to notice also that whereas 'the colour of the sky' is a non-rigid general term, the gerund phrase 'being the colour of the sky' evidently rigidly designates a particular property—that of having the same colour as the sky.

surely rigid, the latter designates red with respect to some worlds, making (5) contingent. t(Again, no surprise.) If the 'is' in (5) is indeed an 'is' of identity to be placed between general terms, then Kripke's claim is vindicated that identity statements in which rigid general terms occur are, unlike (5) but like identity statements involving proper names, necessary if true at all. Examples are close at hand: 'Furze is gorse'; 'Gold is *Au*'; 'Water is H$_2$O'. As already noted, even some descriptional general terms, like 'adult male human who is not married', are rigid designators. Still, non-rigid general terms are everywhere. These include such definite descriptions as 'the species that serves as mascot for Princeton University', 'the liquid compound that covers most of the Earth', 'the most valuable of elemental metals', 'the colour of the sky' and so on. Some definite descriptions are rigid, for example, 'the even prime integer'. In N&N, Kripke calls such descriptions *rigid de facto*, in contrast to proper names, which are termed *rigid de jure* (p. 21 n.). There is a question whether the rigidity of 'bachelor' is *de jure* or *de facto*. (Cf. p. 482 above.) The word 'tiger' is presumably rigid *de jure*, something like a logically proper name of the species. By contrast, the description 'the gendered marital-status category *K* such that necessarily, someone is of *K* iff: he is an adult ∧ he is male ∧ he is human ∧ he is unmarried' is rigid *de facto*. Perhaps an English common noun phrase (*sans* article/determiner) is typically synonymous with a general-term description of the particular form: *the Φ-kind/category K such that necessarily, something is of K iff it is such-and-such ∧ it is thus-and-so ∧ …* This would explain exactly how common noun phrases—and hence also single words that are definably synonymous with such phrases (if such there be)—are descriptional, while simultaneously explaining why they are

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In 'Bob and Carol and Ted and Alice' David Kaplan says, 'almost all single words other than particles seem to me to be rigid designators' (p. 518 n.31). He once suggested to me (in conversation) that whereas the common noun 'tiger' rigidly designates the species, the corresponding predicate 'is a tiger' rigidly designates the property of being a tiger. Cf. his 'Afterthoughts' to 'Demonstratives', in *Themes from Kaplan*, at pp. 580–581 n.30. On this view, whereas 'the colour of the sky' may be a non-rigid general term, its corresponding predicate 'is the colour of the sky' is rigid—all the more reason to distinguish sharply between a general term and its correspondingpredicate. Linsky holds, by contrast, that 'is the colour of the sky' (non-rigidly) designates the property of being blue, rather than (rigidly) designating the property of having the same colour as the sky (*op. cit.*, p. 270). I prefer to regard the predicate 'is the colour of the sky' as designating its extension (non-rigidly, of course) while expressing the property of having the same colour as the sky, as the predicate's semantic content. On this view the copula/operators formalized above may be taken as designating (with respect to a possible world and time) the function that assigns to any universal its metaphysical extension (in that world at that time)—making each copula/operator roughly analogous to the functor 'the metaphysical extension of'.

nevertheless uniformly rigid. A modification of this form would be required for noun phrases employing adjectives like 'suspected', 'alleged', etc. (Cf. note 21 above.)

The word 'bachelor' seems to me, on the other hand, rather like a logically proper name, rather than a description, of the gendered marital-status category, *Unmarried Man*. If that is how it does function, then its rigidity is *de jure* and, contrary to the common view, it is not strictly synonymous with the corresponding description, even though it is closely tied to the description—as the name 'Hesperus' is closely tied to some description of the form 'the first heavenly body visible at dusk from location *l* at time *t*'.

It was once maintained by many that a general term like 'blue' is synonymous with a description like 'the colour of the sky', that 'water' is synonymous with a description, such as perhaps 'the colourless, odourless, potable, thirst-quenching liquid that fills oceans, lakes, and streams', and that 'pain' is synonymous with a description of the form 'the physiological state that occupies such-and-such causal/functional role'. Some consequences of these views are that 'The sky is blue' and 'The oceans are filled with water' express necessary, a priori truths, whereas 'Water is H_2O' and 'Pain is the stimulation of *C*-fibres' expresses contingent identities. Today we know better—many of us anyway—thanks in large measure to N&N's lasting insight that 'blue' and 'water' and 'pain' are, and the allegedly synonymous adjectival descriptions are not, rigid designators in the original sense of that term.[23] The relevant notion of general-term rigidity results directly from recognizing expressions like 'blue', 'water', 'the colour of the sky', and 'the liquid that sustains terrestrial life' as general terms designating appropriate universals (colours, substances, etc.), and then applying Kripke's definition of rigidity without modification—with the result that some general terms are rigid, some not. This notion is analogous to singular-term rigidity in every way that matters.[24]

[23] Cf. Lewis, 'Mad Pain and Martian Pain', in Lewis 1983, pp. 122–132; and Soames, pp. 364–365*n*12.

[24] Responding to my comments during the discussion of Soames's presentation at the 1996 *Universidad Nacional Autónoma de México* conference (see notes 14, 20 above), Kripke said that this proposed interpretation of N&N on general-term rigidity is basically correct. Soames reports that in November 1997, when he presented what is essentially the same interpretation proposed in the book with Kripke in attendance, Kripke this time expressed sympathy with Soames's assessment that there is no notion of rigidity for general terms relevantly analogous to singular-term rigidity (p. 366 n.22). I am puzzled by the apparent inconsistency between Kripke's response in Mexico City and his reported response only one year later. My confidence is unshaken, however, that the counter-proposal correctly indicates an extremely close analogy between singular and general terms, and with it a general notion of rigidity applicable to some (but not all) terms of either sort.

3.

Is the rigidity of the chemical-compound general term 'H_2O' simply a matter philosophical semantics proper, or does it also depend on extra-linguistic metaphysical matters? The answer depends on the semantic content of 'H_2O'. If the term is, as I have suggested elsewhere, a general-term version of a proper name whose reference is fixed through a scientific convention concerning chemical-compound terms,[25] then it is rigid *de jure* and the necessity of 'Water is H_2O' depends only on philosophical semantics (rigidity of 'H_2O') taken in conjunction with the empirical fact that water is the compound of two parts hydrogen, one part oxygen. N&N's suggestion that the statement's being non-contingent is solely a matter of philosophical semantics may thus be vindicated.

Supposing instead that, as many would see it—including Soames (pp. 287, 291, and especially 308–9, 371 n.20)—'H_2O' is synonymous with some description, perhaps 'the chemical compound of two parts hydrogen, one part oxygen', and hence unlike a proper name, then the issue is more complicated. In that case, the chemical term is rigid, and the identity statement is necessary, only if water has it as an essential property that it is a compound of two parts hydrogen, one part oxygen. The issue then turns on whether the fact that any chemical compound has its elemental composition essentially is an analytic truth, or is validly derivable from the direct-reference theory taken together with empirical observations, or is instead a piece of metaphysics proper.

Soames argues, in effect, that the necessity of 'Water is H_2O' is derivable from philosophical semantics taken together only with logic and the empirical observation that water is composed of two parts hydrogen, one part oxygen. If Soames's argument is correct, he succeeds in demonstrating by means of a certain kind of formal mechanism that essentialism (in this case, essentialism concerning a chemical compound) is a consequence of the theory of direct reference taken together with empirical facts. As I reconstruct Soames's mechanism, it employs a modal, ostensive definition of 'water' (that is, pure water, but in a broad sense that includes ice and vapour), as a piece of philosophical semantics (p. 273–4):

(6) Necessarily, something is *water* iff it is an instance of the same substance of which this [pointing to a particular paradigmatic sample] is actually an instance.

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[25] Cf. my 'How to Measure the Standard Metre', Salmon 1987/1988, at 197 n.5. Note the oddity of '$(\exists x)(\exists y)$ [x = the most abundant element $\wedge$ y = the even prime integer $\wedge$ water = x_yO]'.

(The modal nature of this ostensive definition reflects the fact that 'water' rigidly designates the substance of the paradigmatic sample.)

Soames defines a *substance* as 'the intension [function from possible worlds to extensions] determined by a property of an individual, or sample of matter, *x* that specifies how *x* is constituted out of basic physical constituents of some sort or other' (pp. 273, 277), that is, 'the unique physically constitutive kind' of which *x* is an instance (pp. 274, 310). This, Soames contends, yields the following as an analytic truth:

(7) Some matter *x* is an instance of the same substance in a possible world w_1 as some matter *y* is in possible world w_2 iff *x* has the same basic physical constitution in w_1 that *y* has in w_2.

Given further the empirical observation that the sample used in the ostensive definition is basically physically composed of molecules consisting of two hydrogen atoms and one oxygen atom, the desired result is supposed to follow:

Necessarily, some matter is water iff it is composed of two parts hydrogen, one part oxygen.

This is essentially the mechanism that Hilary Putnam invented, as reconstructed and elucidated by Keith Donnellan, for deriving the necessity of water being H_2O from the theory of reference taken together with empirical facts. I investigated this mechanism in detail in *Reference and Essence* (Part II), focusing on the crucial role of (7), and I stand by the assessment reached there. Premiss (7)—which supplements the theory of reference, as reflected in (6), and the empirical fact that water is two parts hydrogen, one part oxygen to yield the necessity of the latter—is tantamount to a general essentialist claim about substances. Roughly, it states the following: *For any substance S and any basic physical constitution C, if it is so much as possible that some instance of S have C, then it is an essential property of S that all and only its instances have C.* It remains unclear whether (7) is thus a trivial truism or a metaphysically substantive thesis concerning substances. Soames sees (7) as a logical truth, since he defines a substance to *be* (the metaphysical intension of) a basic physical constitution. But it is unclear whether this definition accords with our ordinary notion of a substance. It is not obviously a priori, for example, that a substance even has a basic physical constitution. For all one knows a priori, any sample of water, no matter how small, may be divisible into still smaller samples of the same stuff. Also, can a physical constitution be correctly said, for example, to *cover most of the surface of the Earth* (to be *viscous*, to

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have a fruity taste, to be *in a liquid state at room temperature,* to be *in scarce supply,* to be *valued at $100 per ounce as of yesterday's market close*, etc.)? How exactly is the phrase 'basic physical constitution' to be understood?

Evidently not in the natural sense of the very molecules that make up a sample of matter (or the very atoms, or sub-atomic components), for no water sample disjoint from the paradigmatic sample employed in the ostensive definition is composed of the very same molecules as the paradigmatic sample. By 'basic physical constitution' Soames evidently does not mean the very molecules of a sample, but rather the *kinds* of matter that make it up and the manner of composition (so that disjoint water samples can be said to have the 'same basic physical constitution'). But this comes perilously close to a circular definition of 'substance' as (the metaphysical intension of) the property of a sample of being composed of particular *substances* in a particular ratio (that is, the property of being composed of n parts S_1, m parts S_2, …, l parts S_k—for some numbers n, m, …, l, and *for some substances S_1, S_2, …, S_k*). Perhaps Soames means something disjunctive, whereby a *substance*, by definition, is either a chemical element or a chemical compound (or some mixture of compounds, or …). But this makes the notion of a substance reliant to a large degree on modern chemistry, and hence far more theory-laden than the original introduction of the word 'water' could have been, given the general scientific ignorance of the day.[26] If the term 'H_2O' is a mass-nominal description (rather than, as my own view would have it, a logically proper general name), then it remains to be shown that the necessity of 'Water is H_2O' is solely a matter of philosophical semantics taken together only with the empirical observation that, as a matter of non-modal fact, water is two parts hydrogen, one part oxygen. Maybe it is not.

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[26] Cf. Salmon 1981, p. 257. Soames intends his account to be applicable to the introduction of 'water' 'long before the development of chemical theories of complex molecular structure' (p. 274).

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