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ROSS BRADY AND RICHARD ROUTLEY

DON'T CARE WAS MADE TO CARE

We believe that the deep structure of natural languages, and hence of the languages in which philosophical problems are characteristically formulated, will have to be based on an enriched significance logic which has a third value — nonsense or non-significance — and not on a classical two-valued logic which only has truth and falsity as its values. Such logics will be required not just in providing a semantics for natural language but also, for what is even more important, in the assessment of informal reasoning and in determining the scope of valid argument. But our view that there is a need for nonsense as a value has been challenged, most recently by Haack¹ who thinks that a variation on Quine's position can be sustained, that central examples of non-significant sentences are 'Don't Cares' which can be brought within the scope of classical logic by some fairly arbitrary assignments of truth-values to them. Though we shall concentrate on Haack's case against nonsense as a further value, our criticism has more than merely local interest, for many of the defective moves that Haack makes in defence of classical logic have wide currency.

I

A common view, which Haack espouses (see p. 74), is that cases of non-significant pairs of the form '*S* is *P*' and '*S* is not *P*', e.g. 'The number 7 dislikes dancing' and 'The number 7 does not dislike dancing', can be treated as 'Don't Cares', and one of the classical truth values {*t*, *f*} arbitrarily assigned to one sentence and the other value to the other sentence. According to Haack,

no interest whatever attaches to *which* value we assign to which sentence. What is of interest is that a distinct one of [the pair {*t*, *f*}], is assigned to each] and the justification is consistency and simpli-

¹ R. J. Haack: 'No Need for Nonsense': this journal, 49 (1971) pp. 71-7. Page references in the text are to this article. Overlapping criticisms may be found in E. Erwin: *The Concept of Meaninglessness* (1970).

city. It enables us, at least here, to work within classical two-valued logic.

But that there *is* considerable philosophical interest in the value assignment made is shown by such examples as 'God is in his heaven', 'The mind is in the body', 'The Absolute exists' and 'The class of men is not a man' where, so it is often said, we have nonsense masquerading as sense.² Such examples reveal that Haack is not going to escape unchallenged with the claim that we can make arbitrary truth-value assignments to non-significant sentences. For it *matters* philosophically what values such sentences are assigned. So there should be some putatively non-significant sentences, philosophically interesting ones, that Haack cares about.

In fact Haack should care about assignments in some cases where he has said that he does not care. For instance, if we assign the value truth to 'The number 7 dislikes dancing' and also to 'The number 7 likes dancing', and use the two-valued inference from 'The number 7 dislikes dancing' to 'The number 7 does not like dancing', then both 'The number 7 likes dancing' and 'The number 7 does not like dancing' would be assigned the value truth—which contradicts Haack's method of assigning values.

Haack faces similar difficulties with compound predicates. If 'The number 9 is phlegmatic and prime' is assigned the value truth, then, since it entails 'The number 9 is prime', 'The number 9 is prime' must be assigned the value truth. But 'The number 9 is prime' is false. In the light of these examples, Haack can at best retreat to a position where he would claim that a consistent assignment of values can be made, but that not all his assignments (to positive sentences) are arbitrary because, in particular, valid two-valued inferences must preserve truth.

In short, because of the logical interconnections of sentences, many arbitrary assignments of truth-values will lead to inconsistency or other logical trouble. To ensure consistency, for example, criteria have to be supplied, firstly, for separating out 'Don't Care' cases from cases like 'The Absolute is real' where most of us do care, and, secondly, for assigning—no longer so arbitrarily—truth-values to remaining 'Don't Cares'. The onus of providing such criteria is on those who would eliminate nonsense. But so far, this assignment problem has not been solved; no appropriate criteria have been provided, by Haack or others; and even were they provided their consistency would have to be shown. (Haack appears to share the popular, but quite unwarranted, view that a position is proved consistent once one or two objections or even all objections so far sighted, have been knocked down: see his procedure, p. 74, ending 'We conclude that (B2) itself is a consistent position'.) Moreover, even if (demonstrably) consistent criteria were provided for the Don't Care theory of significance, the adequacy of the theory would

² The point is elaborated in L. Goddard: 'Nonsignificance', this journal, 48 (1970), p. 10.

not thereby be established. Consistency, even in combination with simplicity of some sort, is an inadequate justification for a theory, unless it measures up to the logical and linguistic data.³ But the logical and linguistic data appear to us to support a three-valued significance logic.

But suppose that someone, Haack say, does devise a systematic assignment which enables him to map all initially non-significant sentences, none of which he cares about, consistently to truth-values from $\{t, f\}$. Then, however, one can readily inflate Haack's two-valued account to a three-valued one by setting up the following three values, for arbitrarily selected sentence ' p ':

- (i) Haack cares about p and ' p ' is true.⁴
- (ii) Haack care about p and ' p ' is false.
- (iii) Haack does not care about p .

This logic would be tantamount to a three-valued significance logic where the value (i) is truth, the value (ii) is falsity and the value (iii) is non-significance. Moreover this 'Don't Care' logic would have more logical power than two-valued logic because it distinguishes the sentences Haack cares about, whereas the two-valued one does not. In this case Haack does not really avoid a three-valued significance logic: 'Don't Care' logic does much the same work.

On the only systematic criterion so far suggested, that elaborated by Drange among others, and used by Lambert, (*prima facie*) non-significant sentences that are (simple) positive ascriptions are false, while such sentences that are negative ascriptions are true. It is readily shown that this view, the falsidical view, initially the most plausible two-valued mapping, is, as so far elaborated, inconsistent.⁵ Thus the onus is on the opponents of three-valued significance logic to produce a better two-valued mapping, and one which does not require a three-valued metatheory.

Haack appears to be drifting along with the positive ascription view, in as much as he asserts that he does not see any reason for not allowing 'The number 2 is red' to be false and 'The number 2 is not red' to be true (p. 73). However, he does not give any reason why he considers them to be that way, and on p. 74 he criticises the distinction between positive and negative ascriptions; but in doing so he only reinforces the argument to inconsistency. His suggestion—mistaken in the case in point—that 'indifferent' means 'not committed' can be used to simplify Goddard's Battle of Hastings argument,⁶ which was designed to show the inconsistency,

³ This was suggested by M. Rennie, to whom we are also indebted for discussion of several other points.

⁴ Both here, and at other places in the paper, we have used quote marks to double as quotation functions. In fact the procedure of using English quotation marks both as functions and as name-forming is a familiar one, going back at least to Russell's earlier work. On the relevant quotation function ' qa ' see e.g. Goddard and Routley, *op. cit.*, chapter 2.

⁵ Details are set out in Goddard, *op. cit.* and in L. Goddard and R. Routley: *The Logic of Significance and Context*, vol. 1 (1972).

⁶ Goddard, *op. cit.*

in the following way: 'The Battle of Hasting is indifferent to tomato soup' is false, it being presumably a positive ascription. Whereas 'The Battle of Hastings is not committed to tomato soup' is true, it being a negative ascription. But, both of these truth-values should be the same, and hence there is a contradiction.

Anyone who thinks there is no need for nonsense but professes to be unable to distinguish between positive and negative ascriptions, as Haack does⁷, leaves himself open to quick objections. For English abets the introduction of new predicates such as 'bleen', meaning 'not red'. Without the ascription distinction why should the assertion, 'The number 2 is bleen' be reckoned true rather than false? Given Haack's *de facto* assignment of truth-value true to 'The number 2 is not red', he must maintain that 'The number 2 is bleen is true'. But whatever syntactical criterion Haack uses to establish that 'The number 2 is red' is false could surely be reapplied to establish that 'The number 2 is bleen' is false—and thereby simple inconsistency. Such objections may of course be avoided by a retreat to some syntactical atomism. However, this is impossible in the case of a natural language.

II

It is often thought (mistakenly, we shall see) that Quine has indicated how to get by without any distinction between meaningless and truth-valued sentences, despite his own heavy, though often implicit, use of the distinction he claims is dispensible. But has Quine really provided a satisfactory recipe for handling non-significant 'Don't Cares'? All he has to say on the matter is:

. . . the forms concerned would remain still quite under control if admitted rather, like self-contradictions, as false (and false by meaning, if one likes)⁸

What are the forms concerned? Haack contends that Quine is 'just considering *some* examples of sentences which other philosophers have alleged to be non-significant' (p. 72). But if so *which* forms can be admitted as false, and which not? No recipe for resolving the assignment problem is forthcoming, the dispensibility of meaninglessness has not been demonstrated, and there may remain philosophically important 'Don't Cares' which are irreducible. So Haack appears to be wrong; and what Quine has said in explanation of the forms and their reduction indicates that he *is* making a general claim which encompasses all cases of meaninglessness.

⁷ On reflection the distinction between positive and negative ascriptions appears rather more solid than that between the sentences philosophers care about and those that they don't.

⁸ W. V. O. Quine: *Word and Object* (1960), p. 229. Quine is of course only one, and a fairly late member, of the succession of philosophers who have peddled this view. Philosophers tend to suffer especially badly from reduction neuroses.

. . . Apart from the technical context [of set theory] there has been a concern among philosophers to declare as meaningless, rather than trivially false, such predictions as . . . with these we witness sometimes just a spontaneous revulsion against silly sentences and sometimes a remote project of cutting meaningful language down to empirical size.⁹

Thus the forms would certainly appear to include all potentially meaningless sentences outside the technical context, a general class which includes *such predictions as* the examples Quine cites, and also, it could just be, forms which fall outside empirical language. Quine can hardly be intending by 'the forms' just the very examples he cites, or those and just *some*, but not all, others. For if so, he would have fallen short of his aim of dispensing with meaningfulness as a value, since he would have only eliminated some, but not all, cases of it. He could hardly go on, as he does immediately, to claim:

tolerance of the don't-cares is a major source of simplicity of theory; and in the present instance it counts double, sparing us as it does both the settling of categories and the respecting of them.¹⁰

All grammatical (well-formed) nonsense is supposed to vanish into truth-valued discourse.

But now Quine is open to the charge of inconsistency that one of us has previously made,¹¹ because on Quine's theory there are pairs of sentences, of the form p and $\sim p$ where ' $\sim$ ' is a classical negation, such that both are meaningless. Pairs of sentences such as 'Quadruplicity drinks procrastination', and 'Quadruplicity does not drink procrastination' are not examples of this sort, since Quine would no doubt say that whereas the first sentence is admitted as false the second is in any case true. Typical examples, however, are provided by pairs of quantified intensional assertions, e.g. the English renditions of ' $(\exists x) \Box (x > 7)$ ' and its negation ' $(x) \Diamond \sim (x > 7)$ ', both of which Quine considers nonsense. For, according to Quine, 'you cannot quantify into an opaque construction',¹² where the 'cannot' means 'cannot significantly' since sentences such as ' $(\exists x) \Box (x > 7)$ ' and ' $(\exists x)$ (Tom believes that x denounced Cataline)' *do not make sense*.¹³ Now under Quine's general mapping, these forms are admitted as false, whence plainly the forms no longer remain under control, as absolute inconsistency is the upshot. Moreover, even if Quine gave up his inadequate general mapping, and solved the resulting assign-

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ R. Routley: 'The Need for Nonsense', this journal, 47 (1969) pp. 367-74. The charge was that on this point Quine's philosophy is inconsistent, not Haack's misrepresentation of the charge (on p. 73). However we are prepared to enlarge the charge, to please Haack, to (i) Quine is committed to a distinction between nonsense and falsity in his discussion of quantified intensional statements, and (ii) *Word and Object* is inconsistent.

¹² Quine, *op. cit.*, pp. 166-7.

¹³ *Ibid.*

ment problem, he would still have problems, since one or other of ' $(\exists x) \Box (x > 7)$ ' and ' $(x) \Diamond \sim (x > 7)$ ' would have to be admitted as true (though really nonsense).¹⁴ Thus Quine's theory would either have to be supplemented by a quantified intensional logic—of the sort he wants to dispense with as containing meaningless assertions—in order to capture the omitted logical truths, or else would be seriously incomplete, through failing to express admitted truths in cases where incompleteness is far from inevitable.

Haack kindly tries to help Quine out by distinguishing types of nonsense, thus:

the possible nonsense [from quantified intensional logic] is quite different from that alleged to pertain to sentences such as Carnap's ['This stone is thinking of Vienna'] (p. 73).

But, firstly, there is no textual evidence that Quine would distinguish types of nonsense, and his doing so would run counter to the whole tenor of his philosophy, which is to minimize such distinctions. Secondly, it would be no help to Quine even if he were to distinguish several sorts of nonsense: it is enough that there is one sort of nonsense, such as that provided by quantified intensional assertions, which leads to trouble. For if *this* use of nonsense comes under Quine's rubric for the admission of nonsense, then control is lost; and if it does not, the general reduction of grammatical assertions to truth-valued discourse is again sacrificed. It is no good saying, as Haack does, that 'Quine does not contend that [$(\exists x) \Box (x > 7)$] is false'; of course he does not, but he is nonetheless committed to this assignment by his proposed truth-value reduction of 'Don't Cares'. Nor is it any good saying, as Haack does, that the arbitrary assignment of sense to ' $(\exists x) \Box (x > 7)$ ', and hence of truth-value to it, does not have to be such that the value assigned is false. Of course it does not have to be, any more than that assigned to 'Quadruplicity drinks procrastination' has to be false. Quine simply decrees that it is, in the supposed interests of simplicity: he does not appear to have taken time off to assign the sentence a sense.

Quine's vaunted tolerance of 'Don't Cares' is going to have to be much less liberal than it initially pretended to be. In his flight from non-existence and intensions, large and philosophically important classes of grammatical English sentences get written off as nonsense.¹⁵ These sentences Quine does care about, and he is keen to dispense with them; but if treated as 'Don't cares' and admitted as truth-valued, they would return to cause endless trouble. With these sentences, then, the easy tolerance disappears, like the salesman's smile. Nor are intensional expressions tolerated in the canonical object language.

¹⁴ We have the impression, too, that Quine cares a bit more about truths than about falsehoods. But not all that much more: see R. Routley: 'Quine's proof that God Exists' (unpublished).

¹⁵ This is more clearly revealed in Quine's earlier writings, though the same thesis underlies craftier later work such as *Word and Object*.

Naturally, we do not claim that one cannot 'get by' without significant distinctions; one can get by much as one can with varying success in a foreign country without knowing the local language. And much as one tends to be most successful in the foreign country with linguistically undemanding exchanges, so getting by without significance distinctions is most successful in untesting cases, such as those concerned with the small fragments of discourse to which logic characteristically restricts itself. For in these cases there may be no need for significant distinctions, any more than there is a need for a grasp of the local language in undemanding transactions. It is only when the significance apparatus is put to work, as Quine somewhat surreptitiously puts it to work in dispensing with important parts of discourse, that its indispensibility starts to obtrude.

III

The idea is abroad not just that one can get away with a two-valued theory, but, what is worse, that all *needed* significance distinctions can be handled within two-valued logic. Again Haack provides an illustration:

we can have a logic of significance (though admittedly not a very interesting one) within two-valued classical logic if we care to distinguish between significant and non-significant sentences (p. 76).

Haack introduces formally a notion of meaningfulness, using '*M*' for 'it is meaningful to say that . . .', which satisfies the following theses:

- | | |
|---|------------|
| $\sim MA \leftrightarrow \sim M \sim A$ | (1) and |
| $MA \leftrightarrow TA \vee FA$ | (2), where |
| $TA \leftrightarrow A$ | (3), and |
| $FA \leftrightarrow \sim A$ | (4) |

Haack thinks that he can use these theses to show both that (1) 'does not force us to depart from the classical interpretation for negation', and 'hence [contrary to Presley] the operator "*M*", so understood, can be dealt with entirely within classical two-valued logic'.

But it follows, upon substituting (3) and (4) into (2), that $MA \leftrightarrow A \vee \sim A$, whence, since $A \vee \sim A$ is valid in classical two-valued logic, MA is valid and also $\sim MA$ is logically false. Hence, on Haack's assumptions, classical two-valued logic is restricted to meaningful sentences only and there can be no definition of '*M*' within it which distinguishes between meaningful and meaningless sentences.¹⁶ Such a distinction could once again only be made in the metatheory. One still needs, then, a three-valued-significance logic to provide a satisfactory definition for '*M*' in the formal theory, and (1) and its mates do force us to depart from the classical interpretation for negation.

¹⁶ Likewise Haack's analogy (on p. 75) between '*M*' and the contingency operator '*A*' breaks down, since whenever a sentence is contingent it is meaningful, but all necessarily true or necessarily false sentences are also meaningful.

Principles (1)—(4) are of course easily encompassed, without collapse, within the framework of a three-valued significance logic. In three-valued logics the equivalence connective is interpreted (at rock-bottom strength) as ‘has the same value as’, that is, the truth-tables of two equivalent wffs would be exactly the same. Applying this assumption to (3) and (4) leads to columns (a) and (b) shown.

	(a) <i>T'</i>	(b) <i>F'</i>	(c) <i>M</i>	(d) $\sim$	(e) $\sim M; \sim M \sim$	(f) <i>T</i>	(g) <i>F</i>	(h) $\neg$
I	I	O	I	O	O	I	O	O
O	O	I	I	I	O	O	I	I
n	n	n	n	n	n	O	O	I

Hence, by (2), ‘*M*’ is determined by column (c); whence both $\sim MA$ and $\sim M \sim A$ have the same column (e) assuming that ‘ $\sim$ ’ is determined classically as in column (d). Within these constraints (as assembled in the above table), the connectives ‘ $\leftrightarrow$ ’ and ‘ $\vee$ ’ could in fact have any of the tables (with $\bar{I}$ for O or n, and $\bar{O}$ for I or n):

$\leftrightarrow$	I	O	n
I	I	$\bar{I}$	$\bar{I}$
O	$\bar{I}$	I	$\bar{I}$
n	$\bar{I}$	$\bar{I}$	I

$\vee$	I	O	n
I	I	I	$\bar{O}$
O	I	O	$\bar{I}$
n	$\bar{O}$	$\bar{I}$	n

From these tables it follows straightforwardly that an adequate significance logic can include principles (1)—(4) without collapse, though not without departing from two-valued logic.

The defect in Haack’s argument lies in the connection of ‘*M*’ with the vacuously defined ‘*T*’ and ‘*F*’, which do not distinguish ‘*T**A*’ and ‘*F**A*’, respectively, from the two-valued ‘*A*’ and ‘ $\sim A$ ’. Thesis (2) is best retained by switching to the important connectives ‘*T*’ and ‘*F*’ characterised in columns (f) and (g) but then (3) and (4) both fail (and likewise significance analogues of Tarski’s convention *T*); and in any case classical two-valued logic has to be abandoned.

Haack imagines that his argument, that (1) can be embedded in classical logic—as it can, but not under the intended interpretation—shows that Presley is mistaken in his claim that

... if the notion of negation is extended so that the negation of a meaningless statement is meaningless, and if the rule is retained that a schema is valid if and only if it comes out true for all interpretations of its letters ... some schemata that are valid in the classical propositional calculus will be invalid in the three-valued calculus.¹⁷

Since Presley is considering a matrix system, what Haack says about

¹⁷ C. F. Presley: ‘Arguments about Meaninglessness’, *British Journal for Philosophy of Science* (1962), pp. 225-34.

isolated syntactical principles is simply irrelevant. What Haack erroneously asserts concerning the role of 'M' does nothing to refute Presley's semantical claim concerning a third value, meaninglessness.

Though Haack claims that Presley 'is mistaken on a second count' (p. 76), his second objection is equally irrelevant. Haack appeals to Segerberg's three-valued logic, which does validate all of classical logic among other things, to counter Presley. However, Segerberg is obliged to 'designate' meaninglessness along with truth to achieve his result. This, of course, destroys the philosophical point of meaninglessness as a value to be assigned to non-significant sentences; one does not want to be committed to sometimes asserting logical nonsense. Segerberg disregards the interpretation of designation for the sake of making all classical two-valued theses valid in his system (but classical theses are bought at the excessively high price of giving up *modus ponens* as a rule which preserves validity). Designation of a value is generally intended to mean that the value is truth (or some degree of truth such that it is more true than false), because a valid wff ought to be true for all substitutions into its variables. If such a wff is meaningless for some substitution, then it cannot always be asserted. Hence Segerberg's system abandons one of Presley's quite proper requirements, and so cannot be used to counter Presley's argument.

Moreover, there are various anomalies in Segerberg's system. One would expect the law of excluded middle to fail in a three-valued *significance* logic, but it is valid in his system. One would expect to be able to derive ' $\neg A$ ' from ' $(A \rightarrow B) \wedge \neg B$ ' but one can derive *every* wff from it. One would also expect to be able to derive ' $\neg A$ ' from ' $A \rightarrow B \wedge \neg B$ ' & ' $(\neg A \rightarrow C \wedge \neg C)$ ' but one can also derive *every* wff from it. Hence Segerberg's system is a decidedly bad example of a *significance* logic; and so likewise are its recently fashioned modal extensions.

IV

The frequent occurrence in English of the wide negation ' $\neg$ ' read 'it is not true that' and definable as ' $\sim T$ ' (as column (h) indicates) in rejecting nonsense (as e.g. in 'The mind is *not* in space' or 'A theory is *not* coloured') has fostered the view known to have been favoured by Wittgenstein, that *the* negations of meaningless assertions are true. However wide negation is not the only, or even the most familiar negation determinable in English, and while we are bound to agree that, where ' p ' is meaningless, ' $\neg p$ ' is true, ' $\sim p$ ' is, of course, meaningless. Erwin, in developing his case for identifying meaninglessness with *a priori* falsehood, has to rely however on the faulty assumption that a negation like ' $\neg$ ' is the only negation determinable:

There may be some further argument that would show that the negations of so-called meaningless statements are meaningless, but

I know of none. Henceforth then I shall assume that such statements as 'Virtue is not square' are not meaningless.¹⁸

Quite apart from the fact that the procedure is methodologically thoroughly unsound in the absence of an exhaustive search—failure to know p can be guaranteed by avoiding, or by not looking for countervailing evidence, certainly no warrant for assuming not p — there are simple semantical arguments to show that where ' q ' is meaningless, so is its negation ' $\sim q$ ' e.g. the argument that formalises column (d) giving the matrix for ' $\sim$ '. Thus it is analytic that, where an assertion is meaningless, so is its classical negation.

Given that where ' p ' is meaningless, its negation ' $\neg p$ ' is true, Erwin's master-argument to show that meaninglessness is a case of falsehood¹⁹ is devastatingly simple. The negation of ' $\neg p$ ' is false (something which is correct whether the negation is ' $\neg \neg p$ ' or ' $\sim \neg p$ '); therefore, since the double negation of an assertion is the same as the original assertion, the original assertion must have been false all along. The argument is patently rotten, and the reason is not far to seek. Whichever (regular) negation is taken for ' $\neg p$ ', e.g. ' $\neg \neg p$ ' or ' $\sim \neg p$ ', it is not equivalent to ' p ', as the matrices above reveal.

Erwin contends that should his first argument fail to demonstrate that meaningless assertions are truth-valued, he has two further arguments to fall back upon.²⁰ But these two reasons do not hold up.²¹ The first reason Erwin gives depends on his assumption that if we can find a common denominator for truth, falsity and meaninglessness—for example a class of items (such as assertions) which can significantly be said to be true and false as statements can, and can also be meaningless as sentences can—then the sortal dichotomy between bearers of truth-values on the one hand and meaninglessness on the other upon which philosophers rely essentially for a significance theory will be demolished. Erwin addresses himself only to arguing for the premiss, which can in fact be made good, for paradox-free languages, by a simple mapping procedure. But his assumption is false; and though some philosophers (e.g. Strawson) have leaned heavily on a sortal dichotomy, the reliance is not essential. The second argument is that

there is another concept closely resembling it [meaninglessness] which can be used for most, if not all, of the significant philosophical purposes for which the original concept has been used,²²

namely, *a priori* falsehood. This misses entirely the point of introducing

¹⁸ Erwin *op. cit.*, pp. 135-6.

¹⁹ *Ibid.*

²⁰ Erwin *op. cit.*, p. 134. The further arguments, that "meaninglessness" in the sense of "neither true nor false" should be abandoned, are presented on pages 136-8.

²¹ As details in Goddard and Routley, *op. cit.*, make plain.

²² *Ibid.*

a third value, which was to set aside from truth-valued discourse both assertions and their classical negations, and to dispose of both sets of traditionally competing positions. Erwin's move, far from enabling the same philosophical claims to be made, would set Ayer—who in arguing that 'God exists' is meaningless aimed to dispose of both theism and atheism—with the atheists. It would set Ryle with the idealists, and Carnap with the nominalists, or the Platonists, depending on the formulation of the key thesis (for the assignment problem remains). Even worse, anyone who attempted to escape from paradoxes by resort to a third value, as Russell did, would be immediately trapped, were Erwin right.

V

Another idea with some currency is that non-significance is really a degree truth or falsity, and typically that meaningfulness is an ineradicable degree of falsity. Again Haack obliges in presenting a version of the view, having dismissed what he takes to be the alternatives (p. 71):

Suppose we have have a denumerable²³ set of truth-values $\{1, 2, \dots, n\}$ where '1' is the truest (the standard value 'true') and 'n' is the falsest value (the standard value 'false'). Then we have the following possibilities: If A is a (well-formed) indicative sentence and A is non-significant, then A has just one of $i, 1 \leq i \leq n$:
(B1) A has n,²⁴ (B2) A has one of 1 or n, (B3) A has some $j, 1 < j < n$, (B4) A has some $j, 1 \leq j \leq n$.

Plainly, non-significance is here assumed to be some degree of truth and falsity. But, as is often observed, significance is a precondition of either truth or either truth or falsity, or degrees thereof such a probability theory might be thought to provide. Non-significance is a breakdown of sense, and non-significant sentences fail to yield propositions, which alone bear the requisite degrees of truth properties. Accordingly where a many-valued theory with a degree of truth and falsity is being used, these values all have to be *significant* values. Thus Haack begs the question in assuming that such a many-valued logic will cater for non-significant sentences.

The *finite* degrees of truth and falsity view in fact runs into arithmetical difficulties. It is reasonable to assume that truth and falsity degrees are symmetrical to at least this extent, that for every degree of truth there is a unique corresponding degree of falsity produced by negating a sentence with this degree of truth, and vice versa. If Haack's number n of truth-

²³ Presumably Haack means 'finite'.

²⁴ Haack mistakenly takes this position, inconsistent given a classical negation, to be the falsidical position (as initially characterised by Lambert).

values is odd, the truth-value $\frac{n+1}{2}$ will be neither a degree of truth nor of

falsity as it is situated in the middle of the set of values, $\{1, 2, \dots, n\}$, with an equal number of values on either side.

If significance were a matter of degrees of truth and falsity, non-significance would in any case differ only in degree from truth and falsity.

If n were odd, for example, the truth-value $\frac{n+1}{2}$, unlike non-significance,

would be produced by a cancelling out effect from various degrees of truth and falsity, or would at least be a neutral value balanced between truth and falsity degrees. A small change in meaning of a sentence with such a truth-value would presumably make it true or false. However, non-significance is not such a neutral value. A small change of meaning in a sentence, say from 'Saturday is red' to 'Saturday is crimson', is not going to affect its non-significance. This is so because significance-ranges are broad categories, and the predicate-ranges for a given subject expression are likewise quite broad. But the main fact underlying these points is that non-significance fails to behave in many of the ways that degrees of truth and falsity could be expected to: it has the wrong logical and epistemic properties.

That non-significance is a value set apart from the meaningful values, truth and falsity (or their degrees), can be used as a criterion for a 'good' significance logic. Such a logic would have an 's-n sublogic',²⁵ that is, the two values, truth and falsity, can be pooled together to form a value, significance, yielding a two-valued logic with the values, significance and non-significance. The two-valued 's-n sublogic' can be used to determine the significance or non-significance of compound sentences in terms of the significance or non-significance of their atomic sentences.

VI

It is a familiar complaint, of course, that both meaning issues and, what is different, meaninglessness issues are rather a bore; a decision on what to say in cases of meaninglessness has no rationale. As usual, Haack helps out by showing that we are not criticising a straw man (p. 71; cf. also p. 77):

We mention in passing that the dispute between whether we should say of non-significant sentences that they lack a truth-value or whether we should say that they have a non-standard value is entirely uninteresting in the absence of some rationale.

There is however a rationale, and reasons for thinking that non-significant

²⁵ R. Brady: 'Significance Logics', *Notre Dame Journal of Formal Logic*, forthcoming; see also Goddard and Routley, *op. cit.*

sentences have a non-standard value. Moreover the dispute should be of interest because its resolution will make a difference to the eventual significance logic, and hence to what is true.

Values,²⁶ representing classes of sentences (best world and context relativised), are an integral part of the semantics of formal systems that are designed so as to determine the validity of arguments, both of specialists' arguments and everyday arguments. Formal logic should aim to express as much of pre-formal reasoning as possible, not only with a view to clarifying the reasoning involved, but also with the object of determining which arguments are valid and when, and ultimately of determining the scope of valid argument. In this respect formal logic complements, indeed, widely conceived, underpins, investigations of the semantics of natural languages. Conversely, as not only formal and meta-theoretic systems generally, but also the large class of so far unformalised arguments, can be expressed in natural languages such as English, the study of the logic and semantics of natural language is an important part of logical studies. Significance and nonsense assessments are a conspicuous part both of informal arguments and of claims concerning natural language. They are, that is, part of the data. Such arguments and assessments are obviously a prime matter for logical investigation, and arguments involving significance assessments, since a matter of logical and philosophical concern, should be studied and as far as possible formalised. As Goddard says:

A restricted logic, in terms of which the formal evaluation of Russell's paradox arguments and Ryle's use of the literal *reductio ad absurdum* is impossible, would not only be impoverished but philosophically useless.²⁷

Hence, to cope with the matter, a non-standard value, non-significance, should be introduced as part of the semantics of formal systems, and these systems should be constructed so as to be able to assess the validity of arguments involving significance or non-significance. A good start has already been made, and Haack is well astray in suggesting (on p. 71) that non-significant sentences may have no semantics, since appropriate semantics have already been devised for many classes of cases.

VII

We often encounter an argument which runs roughly as follows: A theory of meaning is a necessary condition for a theory of meaninglessness. No theory of meaning has so far been provided to underpin theories of significance, but until it has, significance theories have no adequate foundations. Furthermore, the need for a theory of meaning in philosophy is passé. So there is no need for nonsense. Haack regards such an argu-

²⁶ Like Haack we use the term 'truth-value' for the standard values truth and falsity, but we reserve the term 'value' for any value, standard or non-standard.

²⁷ L. Goddard, *op. cit.*

ment as part of the 'firm methodological base' for his 'proposal to regard every (well-formed) sentence of natural language as significant or meaningful'. But it is obscure what Haack's proposal amounts to, whether to reject *prima facie* non-significant sentences as ill-formed in the fashion of type and level theorists and of some linguists, or whether to somehow reclassify these sentences as truth-valued in the way that Quine and others favour. For there is no doubt that there is a class of *prima facie* non-significant sentences, lists of which are easily compiled; and there is strong *prima facie* linguistic and logical evidence that such a distinction, between meaningful and meaningless sentences, is made and understood by many speakers of natural languages, and that it does not coincide with the distinction between well-formed and ill-formed sentences.

But whatever Haack's 'proposal'²⁸ amounts to, it is this on which, so he claims, his contention that 'we do not need a substantial significance logic is based':

The claim that a (well-formed) sentence is meaningless is based on sand unless a *theory* of meaning is devised to support it. Once we have a theory of meaning we will need an associated logic of meaning to accompany it. but then we need to consider seriously why philosophers need a theory of meaning, and what the adequacy conditions of such a theory are. We are inclined to think that the sooner meaning is displaced from its central position in philosophy the better (p. 77).

To displace semantics from its central position in philosophy would be to do the impossible, like banishing numbers from mathematics; only different and much impoverished disciplines would remain. Thus semantics cannot be disposed of, and work on more adequate semantics for natural languages is hardly passé, but one of the most important things going on in current philosophy. Insofar as significant logics are essential for an adequate semantics they share this importance.

It is false, however, that a theory of meaninglessness presupposes a theory of meaning any more than a theory of falsity presupposes a theory of meaning; and the other assumption in the argument is also false, namely that no theories of meaning have been devised in connection with nonsense logics (the adequacy of these theories is of course another matter). In part, the idea that a theory of meaning is a necessary preliminary for a theory of meaninglessness arises from an elementary linguistic confusion, due to the fact that the word 'meaning' is part of the word 'meaninglessness'. (What Haack writes suggests that he erroneously thinks that significance logic is a logic of meaning, not just of meaninglessness.) In part, the idea comes from the assumption that in order to know, or to find out, whether a sentence is meaningless or not [true or not], one has to know, or to find

²⁸ A set of detailed objection to both these positions, the rejection as ungrammatical position and the truth-valued reclassification line, may be found in Goddard and Routley, *op. cit.* chapter 4.

out its meaning; but these epistemic requirements are too strong, and the assumption is false, since it is enough to know significance conditions [truth conditions].²⁹ In fact, semantics for significance logics can be provided along the very same lines that semantics for classical truth-valued logics take, only predicates have significance as well as truth-ranges. Just as a theory of truth can be given independently of, and indeed provides part of the basis for, a theory of meaning, so likewise a theory of significance can be given independently of that of meaning, and a combined theory of truth and significance provides a fundamental ingredient in—what is far more comprehensive than these, *unless* the theories of truth and significance are highly intensionalised—a theory of meaning.³⁰

Much as a theory of meaning is not a necessary preliminary to a significance theory, neither is a theory of categories. Haack however regards it as unfortunate that ‘a scheme of categorization is . . . not devised independently of claims about what is significant’, largely because he supposes that the proper delineation of meaninglessness is undertaken relative to a scheme of categorization’ (p. 71). (The view seems to spring from a mistaken referential assumption as to how explanations must trace back beyond words to things themselves in their purely referential guise, and as to how it is features of these things that *fix* categories). On the contrary, a category theory may be set up within the framework of a significance theory, and such a category theory will be dependent on a significance theory. This point suffices to refute a further criticism that Haack makes, namely that:

. . . the idea that a sentence such as ‘This stone is thinking about Vienna’ is an elliptical way of saying ‘A stone is not the sort of thing which can think about Vienna’, [is] without support . . . until some independent theory of categories or kinds is provided, (p. 75; our rearrangement).

For obviously a dependent theory of categories may justify the connection, best of all by establishing it as analytic, since there can be no better support than through an analytic connection.

It is precisely when it comes to furnishing supplementary theories such as a theory of categories that an adequate significance logic really comes into its own, since classical logic is insufficiently rich to fulfil the task. Indeed, far from significance logic being worthless in comparison with classical two-valued logic, there is nothing that classical logic can do that significance logic cannot do better, and much that significance logics can do that classical logics cannot do at all.

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²⁹ Details of the semantics of quantified significance logics are set out in Goddard and Routley *op. cit.*, chapter 7, and a way in which sense and reference can be defined in terms of the underlying significance theory is sketched in chapter 3.

³⁰ *Ibid.*