

## DIALETHEISM, SEMANTIC PATHOLOGY, AND THE OPEN PAIR

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Over the past 25 years, Graham Priest has ably presented and defended *dialetheism*, the view that certain sentences are properly characterized as true with true negations. Our goal here is neither to quibble with the tenability of true, assertable contradictions nor, really, with the arguments for dialetheism. Rather, we wish to address the dialetheist's treatment of cases of *semantic pathology* and to pose a worry for dialetheism that has not been adequately considered.

The problem that we present seems to have broader bite, afflicting both consistent and inconsistent proposals for resolving semantic pathology. Thus, while our primary goal is to uncover some important connections between dialetheism, semantic pathology, and other, more general issues, the problem that we pose might be a worry for anyone who aims to resolve semantic pathology—consistently or not.

Over the past 25 years, Graham Priest has ably presented and defended *dialetheism*, the view that certain sentences are properly characterized as both true and false (i.e., true with true negations) [1979; 1984; 1987; 1995; 1998]. Our goal here is neither to quibble with the tenability of true, assertable contradictions (indeed, we are inclined to accept them), nor, really, with the arguments for dialetheism (although we review them, below). Rather, we wish to address the dialetheist's treatment of cases of *semantic pathology* and to pose a worry for dialetheism that has not been adequately considered. In fact, the problem we present has broader bite, afflicting both consistent and inconsistent proposals for resolving semantic pathology. Thus, while our primary goal is to uncover some important connections between dialetheism, semantic pathology, and other, more general issues, such as indeterminacy, and ad hocery, the problem we pose is a problem for anyone who aims to resolve semantic pathology—consistently or not [Herzberger 1970; Kripke 1975; Grover 1977].

The plan is as follows. In §I we identify the similarities and differences between a consistency-demanding reaction and a dialethic reaction to (what we call) *pathological semantic discourse*. §II briefly explores the motivation for adopting dialetheism, and §III initiates a challenge to this motivation by examining a special but infrequently cited case of pathological semantic discourse. Here we critique both consistentist and dialethic responses to the initial case we cite, by generating

‘revenge problems’ that thwart both approaches. In §IV we consider what we take to be the best strategy a dialetheist can employ in response to our revenge problem for him; and in §V we explain the inadequacy of this response by generalizing the challenge we have posed to still further, unresolved cases. §VI closes with a final assessment of the status of dialetheism in light of the problem we have presented.

### I. Semantic and Logical Pathology

Our focus, in assessing Priest’s view, will be on certain cases of semantic discourse—sentences employing semantic predicates, such as ‘is true’, ‘is false’, ‘refers’, ‘satisfies’, ‘is true of’, etc.—that appear to be *pathological*. A definitive feature of pathological semantic discourse is some sort of *semantic malfunctioning*, traditionally classed either as inconsistency or as indeterminacy.

Consider, for example, the liar sentence,

(L) (L) is false.

This sentence ‘says,’ of itself, that it is false. A contradiction follows directly, assuming the principle of bivalence and other, seemingly uncontroversial, principles.<sup>1</sup> As is familiar, if one were to deny the principle of bivalence and classify (L) as neither true nor false, the problem re-emerges in the *strengthened liar*, which arises in a sentence like

(L′) (L′) is not true.

If giving up bivalence really solves the problem (L) presents, then the same should be true of the problem (L′) presents. But if we assume that (L′) is neither true nor false then it follows (or, anyway, appears to follow) that (L′) is not true. And since that is precisely what (L′) ‘says’, it would seem that it is true after all, which, again, appears to yield contradiction.

Fearing the worst, a theorist might refuse to characterize (L′), in any of the standard ways—perhaps by concocting a new characterization,  $\delta$ , that classifies (L′) as without a *semantic status*. She is then confronted with

(L′′) (L′′) is  $\delta$ ,

from which a contradiction seems unavoidable.

For one who rejects contradictions—the *consistentist*, as she is called—what these cases suggest is that our naive semantic concepts exhibit *semantic*

<sup>1</sup>Most centrally, all instances of the schema,

(T) ‘p’ is true iff p,

and the operation of sentence labeling and quotation names in establishing the identity of (L) and ‘(L) is false’.

*pathology*.<sup>2</sup> While a mark of pathological semantic discourse is a resistance (given standard logical and semantic assumptions) to semantic characterization, as we use the term, ‘semantic pathology’ also indicates the *source* of this resistance, as opposed to just marking the resistance itself.<sup>3</sup>

While variants of the liar (and other related cases<sup>4</sup>) exhibit contradiction-inducing semantic pathology, there are other pathological cases that do not appear to involve inconsistency.<sup>5</sup> Consider, for example, the *truth-teller* [Herzberger 1970: 149–50; Kripke 1975: 693; Grover 1977: 597],

(K) (K) is true,<sup>6</sup>

which appears to reveal indeterminacy. We can ascribe either truth or falsity to (K) with (logical) impunity though, *prima facie*, there seems to be nothing that favours (or could favour) ascribing one truth-value over the other. Here, as with liar sentences (and others cases to be discussed below), the consistentist identifies (K) as semantically pathological on the basis of (failed) attempts at characterizing it. But she now recognizes semantic pathology as giving rise to two different symptoms: inconsistency, as in the case of liar sentences, and indeterminacy, as in the case of truth-teller sentences.<sup>7</sup>

When confronted with what she takes to be cases of semantic pathology, the consistentist attempts to resolve them. That is, she attempts to elucidate, or revise, the (putatively problematic) semantic concept, or the relevant logical principles (or both), so as to avoid the resistance to semantic characterization that follows from the inconsistency or indeterminacy manifested. The result is a *diagnosis* of the semantic pathology exhibited, together with a *treatment* aimed at rendering our concepts and principles both consistent and workable.<sup>8</sup>

<sup>2</sup>By ‘naive semantic concepts’ we have in mind those captured by acceptance of unrestricted schemata like the following:

(T) ‘p’ is true iff p

(R) ‘n’ refers to n (if at all)

(S)  $(\forall x)(x \text{ satisfies ‘F_’ iff } Fx)$ .

<sup>3</sup>Simmons [1993] also categorizes the liar as ‘semantically pathological’. Although he appears to mean what we mean by ‘semantic pathology’, whether he would *diagnose* it in the way that we do is, of course, a separate matter.

<sup>4</sup>We think, here, of paradoxical pairs or loops, paradoxical infinite series (Yablo’s paradox), Curry’s paradox, as well as non-alethic (by which we mean ‘not directly involving the notions of truth or falsity’) cases, such as Berry’s paradox, Grelling’s paradox, etc.

<sup>5</sup>Mortensen and Priest [1981] to the contrary.

<sup>6</sup>There are also truth-teller pairs or loops, truth-teller infinite series, etc., mirroring exactly the way pathological inconsistency extends beyond liar sentences.

<sup>7</sup>This sort of indeterminacy differs from that exhibited by the sorites paradox. The latter indeterminacy does *not* arise directly from semantic pathology; rather, it comes from soritical pathology latent in many of our non-semantic concepts. This difference remains, even if, as others have argued (e.g., Tappenden [1993]) the semantic and the soritical paradoxes call for a unified solution. A unified solution to both would provide a motivated account that resolves both, but it would not, thereby, identify both paradoxes as emanating from the same pathology.

<sup>8</sup>The general notion of treatment covers more than just consistentist approaches to the liar paradox. It includes a broad range of responses, from doing nothing (as Chihara [1979] recommends) to more active approaches, such as revising one’s account of truth (i.e., semantic treatment), or revising one’s logic.

The orthodox consistentist approach to resolving semantic pathology involves an appeal to *truth-value gap*. Making such an evaluation is not, as Kripke and Soames have made clear, to assign a sentence a third truth-value, for there are only two: true and false [Kripke 1975: 700–1, n. 18; Soames 1999: chap. 6, *passim*]. Gappy sentences, then, are those that are not properly characterized either as true or as false. The idea of truth-value gaps just extends the range of possible classifications to include some means of semantically characterizing sentences that admit of neither truth-value.

An appeal to truth-value gaps might seem pointless, given recognition of the bifurcation of semantic pathology to include the symptom of indeterminacy along with that of inconsistency. However, it does not follow from the consistentist's recognition of this bifurcation that she takes *all* instances of indeterminacy to be semantically pathological, at least on some ways of understanding 'indeterminacy'. The difference between indeterminate semantic pathology and gappiness is basically the difference between 'either' and 'neither'. Pathological cases are those that could be *either* true or false, where nothing determines them to be one rather than the other; their status is open or unresolved. The status of gappy cases, on the other hand, is resolved; they have *neither* truth-value. One is free to call the latter status a kind of indeterminacy if he chooses, but that does not mean that an appeal to gappiness is automatically incapable of providing a resolution of semantic pathology, including indeterminate semantic pathology. The reason is that, while gappiness might involve a failure of *alethic* characterizability, it still provides a category of semantic characterization.<sup>9</sup>

In contrast to the forgoing view of pathological semantic discourse, the dialetheist rejects the consistentist's characterization of any such case as *semantically* pathological. He does so for separate reasons relative to the two putative symptoms of semantic pathology. First, while the dialetheist acknowledges that our semantic concepts are inconsistent, he denies that this inconsistency is itself pathological. We will return to this point presently. With respect to the sort of indeterminacy (K) seems to manifest, the dialetheist acknowledges that this would, if genuine, signal semantic pathology, as it would yield the telltale resistance to semantic characterization. However, he denies that any instance of semantic discourse is genuinely indeterminate in this way. His options, then, given any putatively indeterminate case, are either to declare it determinately true, declare it determinately false, or declare it determinately both.<sup>10</sup> Whichever resolution the dialetheist picks, he will have to say something similar of any *prima facie* case of truth-teller-like indeterminacy, since if he does not assign it some truth-value or characterize it semantically in some sense, he would be

<sup>9</sup>Of course, one might have other worries about the effectiveness of an appeal to truth-value gaps, for instance, worries about revenge problems of the sort already mentioned in the form of the strengthened liar, (L').

<sup>10</sup>Mortensen and Priest [1981] claims that the truth-teller is just another case of inconsistency. Priest [1987] argues that the truth-teller is determinately false. We think neither argument is successful, but we will leave that aside here.

acknowledging a resistance to semantic characterization, and thus, unresolved semantic pathology.<sup>11</sup>

As noted, while the dialetheist admits inconsistency, he does not characterize inconsistent cases as semantically pathological. The reason: by rejecting the thesis that truth and falsity are mutually exclusive semantic values, he accepts certain inconsistent sentences as semantically characterizable. Being dialetheia, they are *glutty*, i.e., meaningful sentences that are both true and false (or true with true negations). That said, the dialetheist does not declare such cases to be *entirely* free of pathological entanglements, given standard initial assumptions. He simply diagnoses the pathology involved differently.

As is familiar, the truth of a contradiction, together with *explosion*, from (e.g.) classical logic, yields *trivialism*—the unsavory claim that every sentence is true (as well as false), and (what is worse) provably so. The dialetheist sees trivialism as an untenable consequence of the union of true contradictions with classical logic. His diagnosis of the problematic component of this combination is not the acceptance of contradictions; it is the acceptance of classical logic. Thus, his recommended treatment of the *logical pathology* he identifies—the misfiring of the standard functioning of certain inference rules—is the replacement of classical logic with a paraconsistent logic. This limits the problematic rules of inference in a way that blocks explosion and obviates trivialism.

Thus, the dialetheist claims a complete resolution of putative semantic pathology through separate treatments of its supposed symptoms: the symptom of indeterminacy is eliminated, and the symptom of inconsistency is rendered non-pathological.

## II. The Dialethic Conjecture

Considering just semantically inconsistent cases, the consistentist sees semantic pathology where the dialetheist sees logical pathology.<sup>12</sup> Both counsel revisions, so why adopt one approach over the other? The former maintains that if we *can* resolve a paradox consistently, without violating standard methodological constraints, then we *should*. The latter agrees, for the dialetheist accepts the consistentist's hypothetical norm regarding the resolution of paradoxes. The dialetheist merely points out that, as the

<sup>11</sup>As Priest [1987] explicitly rejects truth-value gaps (as there are no truth-value gaps in a dialethic semantics), gappiness does not count as a legitimate semantic characterization for him. We should note that Beall [2004] presents a version of dialetheism that allows for gaps. Whether, ultimately, this position can avoid the challenge we pose is not something we take up here. As our main target is Priest's version of dialetheism, with special focus on his response to a particular case of pathological semantic discourse, and as Priest explicitly rejects (and does not also accept) truth-value gaps (and, thus, gappiness), for now we intend our arguments to extend only to 'Priestly dialetheists' with the same attitude towards gaps.

<sup>12</sup>The distinction we draw here between semantic pathology and logical pathology is reminiscent of one Ramsey draws in separating set/number-theoretic paradoxes (e.g., Russell's paradox) from semantic paradoxes. Of the former, Ramsey says, 'They involve only logical or mathematical terms such as class and number, and show that there must be something wrong with our logic or mathematics' (Ramsey [1925], from Priest [1994: 26]). By contrast, the latter, Ramsey claims, 'are not purely logical . . . for they all contain some reference to thought, language, or symbolism . . . [s]o they may be due not to faulty logic or mathematics, but to faulty ideas concerning thought and language'. (Ibid.)

antecedent is surely false (i.e., *false only*, as opposed to *both true and false*), the norm is not applicable.

The dialetheist denies the aforementioned antecedent because he predicts that the consistentist's attempt at treating (what she views as) semantic pathology is doomed to fail. It is doomed to fail, per the dialetheist, because the consistentist cannot adduce an adequate resolution to the semantic paradoxes without falling victim to one or another of the following four pitfalls, which we dub the *Dialethic Conjecture* (henceforth, *the DC*) [Armour-Garb 2005]:

- (i) The consistentist's response to the liar paradox is too narrow, in the sense that, even if she responds to one version of the paradox, she seems powerless to respond to others (e.g., revenge problems).
- (ii) The consistentist's response to the liar paradox is ad hoc; it may respond to all versions of the liar paradox, but in an unprincipled way (e.g., via imposing Tarskian hierarchies or claiming liar sentences to be meaningless).
- (iii) The consistentist's response to the liar paradox is neither too narrow to respond to all versions of the liar paradox nor ad hoc in its responses to those paradoxes, but it fails to respond to semantic pathology, generally (e.g., Berry's, Curry's, Grelling's, etc.).
- (iv) The consistentist's response to the semantic paradoxes is neither too narrow nor ad hoc, but it restricts, unduly (and, thus, unacceptably), the expressive capacities of the language in question.<sup>13</sup>

Priest suggests something akin to the DC, in discussing (what he calls) the *Principle of Uniform Solution* (PUS): 'same kind of paradox, same kind of solution' [Priest 1994: 32]. Having argued that the set/number-theoretic—the 'logico-mathematical'—paradoxes and the semantic paradoxes share an underlying structure, he then rules out the orthodox (i.e., consistentist) approaches to all of these paradoxes on the grounds that solutions offered for each of these groups do not apply to the other, as PUS demands. The DC focuses on the semantic paradoxes and, without bringing in connections to the logico-mathematical paradoxes, supports Priest's conclusions about the limitations of consistentist approaches. What it predicts is that the consistentist's characterization of semantically paradoxical sentences as *semantically* pathological will leave the problems they present both undiagnosed and untreated. Better, then, to reject the diagnosis of semantic pathology, to highlight *logical* pathology, and to contain the contradictions

<sup>13</sup>While we will not make an appeal to (iv) here, we should note that it is central to the argument in favour of dialetheism, for the dialetheist maintains that natural languages are 'semantically closed', and that only a dialethic approach can capture this phenomenon (cf. Priest [1987] for a detailed discussion of this issue).

that follow. While we are inclined to accept the DC, as we discuss below, we are worried that the dialetheist falls victim to a version of his own conjecture.

### III. The Open Pairs

The dialetheist recognizes that *if* a consistent approach could resolve the semantic paradoxes without falling victim to the aforementioned pitfalls, then, on methodological grounds, he would have reason to opt for that approach. Of course, the dialetheist predicts that no such resolution will be forthcoming, and he therefore does not pursue such an approach. Instead, he maintains that the naive characterizations of our semantic concepts are inherently inconsistent, identifies and neutralizes the impending trivialism (*modulo* a classical logic), and defends the necessary logical revisions, where possible.

While we support this recasting of the pathology behind the semantic paradoxes, notice that the dialetheist and the consistentist both reject trivialism and indeterminacy and so take, as a condition of adequacy on a solution to the paradoxes, a resolution of any aspect of pathology, whether logical or semantic. The satisfaction of this condition becomes doubtful, however, when we consider a problem presented by a less familiar case of pathological semantic discourse—what we call *the open pair*.<sup>14</sup>

(1) (2) is false

(2) (1) is false.

As we will show, while *prima facie* the dialetheist seems to have an advantage over consistentist in dealing with the open pair, this presumed advantage is illusory; the dialetheist does no better at resolving variants of the open pair than does the consistentist. Thus, this case of semantic discourse remains an instance of semantic pathology that is both undiagnosed and untreated—for consistentists and (more importantly, for present purposes) dialetheists, alike.

In order to make the case for this claim, we first critically discuss some consistentist replies to the open pair, and then compare the dialethic response.<sup>15</sup> As we will show, neither is able sufficiently to resolve the semantic pathology that plagues variants of the open pair.

<sup>14</sup>The original source for this case is Jean Buridan's Eighth Sophism from Chapter 8 of *Sophismata* (see Hughes [1982]). A case something like the open pair is presented in Kripke [1975: 696–7], and then cited in Grover [1977: 600], but for them the issue is levels of truth and riskiness. The indeterminacy of the open pair is briefly acknowledged in Yablo [2003: 319, n. 10], where it is called 'under-determination'. Detailed consideration of the pathological nature of the open pair is offered in Goldstein [1992]; Sorensen [2001: chap. 11; 2003]; Priest [2006].

<sup>15</sup>The following three sub-sections are an expansion of Woodbridge and Armour-Garb [2006].

### A. Goldstein on the Open Pair

Laurence Goldstein takes the open pair to be a case of semantic pathology—one that suggests an argument for dealing with this phenomenon via an appeal to *truth-value gaps* [Goldstein 1992]. In order to establish the *gappiness* of (1) and (2), he relies on two assumptions. Call the first *the divergence assumption*,

(DA) If each statement in [the open pair] has a unique truth-value, then each has the opposite value of the other [ibid.: 2].<sup>16</sup>

(DA) is supported by the observation that, if we demand consistency, we can semantically evaluate (1) and (2) only if we ascribe them divergent truth-values—truth to one and falsity to the other.

The second assumption derives from the most notable aspect of the open pair: the symmetry between (1) and (2). Goldstein notes that we can replace sentence labels with quotation names, to produce

(1') '(1) is false' is false

(2') '(2) is false' is false.

As each sentence appears to 'say', of itself, exactly what the other 'says' of itself [Goldstein 1992: 2],<sup>17</sup> it seems that any reason for giving one of these sentences a particular truth-value would equally be reason for giving the other the same semantic characterization. Goldstein takes the forgoing considerations to yield (what we will call) *the symmetry assumption*:

(SA) If each statement in [the open pair] has a unique truth-value, then each has the same value as the other [ibid.].<sup>18</sup>

<sup>16</sup>We take (DA) to be an assumption that applies to all variants of sentences (1) and (2). Thus, for example, (DA) applies to Buridan's original version of the open pair [Hughes 1982: 73]:

(B1) What Plato is saying is false,

as said by Socrates, and

(B2) What Socrates is saying is false,

as said by Plato.

(DA) also applies to more complex cases, such as,

(I) (II) is false  $\vee$  (I) is false.

(II) (I) is false  $\vee$  (II) is false.

<sup>17</sup>On a standard view of quotation, technically this would be incorrect; since each sentence merely mentions, rather than uses, its own label it does not talk about itself. However, Goldstein is assuming a view that takes quotation to involve some degree of use as well as mention.

<sup>18</sup>Goldstein here expands slightly on Buridan's reasons for assuming (SA)—see Hughes [1982: 73].

Combining (DA) with (SA), it follows that if the sentences in the open pair have unique truth-values, they have both the opposite and the same truth-values. As Goldstein rejects the inconsistency expressed in this consequent, he concludes that the antecedent of both (DA) and (SA) is false—(1) and (2) have no unique truth-values—and concludes that they have no truth-values at all. Let us call this *the gappist solution to the open pair*.

Just as semantic paradox appears to re-emerge in the form of the strengthened liar, when a gappist solution is offered to the simple liar, the problem posed by the open pair threatens to re-emerge from the gappist solution—in the form of the *strengthened open pair*,

(3) (4) is not true.

(4) (3) is not true.

As with the strengthened liar, positing gaps for (3) and (4) appears to yield inconsistency, since, if they are neither true nor false, it follows that they are not true, from which one is tempted to conclude that they are, therefore, true after all.

Goldstein's response to the strengthened open pair is to explain gappiness as deriving from meaninglessness—from the failure of pathological sentences to express truth-valuable propositions [1985; 1992]. While we are suspicious of the meaningless strategy as a reply to the revenge problem posed by the strengthened liar (and, a fortiori, to that of the strengthened open pair), we leave that aside here.<sup>19</sup> This issue is irrelevant because Goldstein's solution fails to diagnose and, thus, to treat the semantic pathology of the open pair.

To see why, consider the following case, which we call *the asymmetric open pair*:

(5) (6) is false.

(6) (6) is false  $\rightarrow$  (5) is false.

These claims are not symmetric in the way that (1) and (2) (or (3) and (4)) are. There is thus no reason to think that (SA) applies here, and so no reason to think that (5) and (6) have the same truth-value. Since (SA) does not apply, it does not interact with (DA) and motivate Goldstein's argument for truth-value gaps. However, (5) and (6) still exhibit the same symmetrical divergence in truth-value that (DA) requires for the (symmetric) open pair—one can be true and the other false, without contradiction—but there is nothing that could determine which sentence gets which truth-value.

<sup>19</sup>The reason is simple: If the consistentist's attempt at resolving the semantic pathology implicit in the liar paradox is successful then the dialetheist's reliance on the DC is, thereby, threatened. As we are assuming the truth of the DC, we assume the unacceptability of the meaningless strategy, as applied to the liar paradox and a fortiori to variants of the open pair. For an argument against the meaningless strategy, as employed by a deflationist, see Armour-Garb [2001].

The asymmetric open pair thus presents an unresolved case of indeterminate semantic pathology that cannot be blocked by appeal to truth-value gaps.

To see more fully how our asymmetric case thwarts Goldstein's attempted solution, consider his reply to another asymmetric variant,

(5') (6') is false.

(6') (6') is false & (5') is false.<sup>20</sup>

As is clear, (5') and (6') are not symmetrical in the way that (1) and (2) are. Moreover, while we cannot consistently assign them the same truth-value, we can make a consistent ascription if we given them divergent truth-values, in accordance with (DA). Thus, (5') and (6') present a different symmetry-breaking case.

To be sure, (5') and (6') are symmetry-breaking. However, they are quite unlike (5) and (6), for our asymmetric open pair is indeterminate, whereas the newer case is not. Consistentists and dialetheists alike maintain that *if* we can consistently (as opposed to inconsistently) ascribe semantic values to the sentences of a set,  $\sigma$ , then we are enjoined to do so. Let us call this the *consistency assumption* (herein, (CA)). (CA) is crucial to resolving (5') and (6'), for, *modulo* (CA), we will ascribe truth to (5') and falsity to (6')—as ascribing falsity to (5') or truth to (6') yields inconsistency, as is clear upon reflection. Thus, adherence to (CA) can resolve cases that could, absent this assumption, be taken as inconsistent.

Notice, however, that (CA) is powerless to resolve (5) and (6). Assuming (CA), Goldstein will conclude that we cannot ascribe those sentences the same truth-values, but in making a divergent ascription it remains indeterminate which sentence gets which truth-value. This is not to say that Goldstein is barred from harnessing his assumptions and declaring the sentences that constitute the symmetry-breaking case to be meaningless. But it is not at all obvious how such reasoning would go without falling victim to the DC. Hence, even if we grant Goldstein's assumptions, he does not seem able to resolve the semantic pathology that arises in certain variants of the open pair.

### B. Sorensen on the 'No-No Paradox'

Roy Sorensen, like Goldstein, wishes to resolve the semantic pathology implicit in the open pair (what he calls the *no-no paradox*) consistently [2001: chap. 11; 2003]. Unlike Goldstein, he proposes a *truthmaker*, as opposed to a *truth-value*, gap,<sup>21</sup> where a truthmaker gap obtains when a true sentence is not *made true* by anything else in the world. This difference avoids treating (1) and (2) as a pair of 'truth-bearer illusions', which a good theory, per Sorensen, should minimize [2001: 183]. Postulating a truthmaker gap

<sup>20</sup>Thanks to Laurence Goldstein, for discussion of this case.

<sup>21</sup>We should note that Sorensen [2001: 181–2] endorses Goldstein's [1985] truth-value gaps solution to the liar paradox, though he explicitly rejects Goldstein's [1992] application of it to the open pair.

maintains appearances—that these sentences are truth-evaluable—while responding to the problem the open pair presents.

Sorensen diagnoses the open pair as *semantically* determinate but *epistemically* indeterminate: although the sentences of the open pair have unique, divergent truth-values, we cannot *know* which particular truth-value each has. The absence of any truthmaker here denies us access to their truth-values. Moreover, since *nothing* makes the true sentence in the open pair true, it is pointless to note that anything that would make one true would equally make the other true as well—and (SA) is, thus, rejected. We are therefore free to conclude that these symmetric sentences have divergent truth-values, as consistency and (DA) demand.

As this approach already denies the apparent force of symmetry, the version of the open pair that thwarts Goldstein's reliance on (SA) poses no challenge for Sorensen. In fact, the existence of the asymmetric case can be seen as strengthening Sorensen's position, for this view can consistently resolve all of the versions of the open pair considered at this point, including the case that undermines Goldstein's solution in light of the latter's reliance on symmetry.

Even so, any sense of victory here must be short-lived. This becomes evident upon consideration of what we call *the truthmaker open pair*:

(7) (8) is true  $\rightarrow$  ((7) is false & (8) has no truthmaker)

(8) (7) is true  $\rightarrow$  ((8) is false & (7) has no truthmaker).<sup>22</sup>

Working through the possible truth-values for (7) and (8), one can see that matching ascriptions yield inconsistency, while divergent ascriptions are consistent. Thus, Sorensen can consistently ascribe truth-values to (7) and (8), as (CA) requires. As in earlier pairs, however, there is nothing favouring one divergent set of ascriptions over the other; either works equally well. That said, as a brief consideration makes clear, the truthmaker open pair seems to block Sorensen's strategy of claiming this indeterminacy to be merely epistemic, being the product of a truthmaker gap.

In order to see why, ascribe truth to (7) and falsity to (8). In that case, (7) is true, in virtue of the falsity of its antecedent. In order for (8) to be false, the antecedent of this (material) conditional must be true (which, *ex hypothesi*, it is), with the consequent false.<sup>23</sup> Since the first conjunct of the consequent is true, the second must be false. That is, it must be false that (7) has no truthmaker, from which (via obvious fiddling) we conclude that (7) *has* a truthmaker. Thus, we can consistently maintain that (7) is true and (8) is false, provided we also maintain that (7) has a truthmaker. A parallel argument shows that we can maintain that (7) is false and (8) is true, provided we also maintain that (8) has a truthmaker.

<sup>22</sup>We take this case to form a version of what we call *the curried open pair*, on the model of Curry's paradox. Replacing the consequents of (7) and (8) with the absurdity constant ' $\perp$ ', the resulting pair yields indeterminacy, inconsistency, or trivialism. We consider the curried open pair in detail below.

<sup>23</sup>Following Sorensen [2001], we assume a material conditional.

There is indeterminacy here, but not one explicable in terms of truthmaker gaps, since, on pain of contradiction (and, thus, in accordance with (CA)), the true sentence of this pair has a truthmaker—it is merely indeterminate which sentence that is. Thus, Sorensen’s appeal to truthmaker gaps cannot resolve the semantic pathology implicit in this revenge problem for his solution to the original open pair. This, then, casts doubt on the adequacy of his proposed solution to that case and the other open pair variants, as an adequate solution to should ramify about all cases.

Suppose that Sorensen were to change his tactics and make a special appeal to the symmetry of (7) and (8), in order to declare them without either truthmakers or truth-values. This is not a move that Sorensen would actually endorse, given his interests, but, even if someone were to make it ‘on his behalf’, it would not help. To see why, consider the *asymmetrical truthmaker open pair*:

(9) (10) is true  $\rightarrow$  ((9) is false & (10) has no truthmaker)

(10) [(10) is true  $\rightarrow$  ((9) is false & (10) has no truthmaker)]  $\rightarrow$  [(9) is true  $\rightarrow$  ((10) is false & (9) has no truthmaker)].

As in the case of the asymmetrical open pair, the asymmetrical truthmaker open pair makes evident that there is no compelling reason for assigning the same semantic value to (9) and (10). In accordance with (CA), we should ascribe them divergent truth-values, but this leaves us with an indeterminacy without any truthmaker gap. Bracketing (CA), we have a higher-order indeterminacy, as (9) and (10) are either indeterminate or inconsistent, with no reason for rendering them one rather than the other. In any case, semantic pathology reemerges, undiagnosed and untreated.

Of course, Sorensen might, in line with his view of liar sentences, declare both (7) and (8), as well as (9) and (10), meaningless and, qua meaningless, without truth-values. But if he adopts this strategy, it would undermine his attempt to maintain appearances while resolving the original open pair, (1) and (2) (and, by extension, (3) and (4), as well as (5) and (6)). More importantly, it would raise the question as to *why* these sentences, which *prima facie* seem perfectly meaningful, should be considered meaningless. As is clear, insofar as the chief motivation for dialetheism is the prediction that no adequate answer will be forthcoming, it seems that any solution Sorensen might propose to the open pair on the model of his approach to the liar paradox will be called into question—assuming the DC.

### C. Dialetheism and the Open Pair

The consistent solutions to the open pair put forward by Goldstein and Sorensen fail, and, assuming that the DC applies to their treatments of the liar and its variants, it also threatens any ‘last resort’ extensions of their consistentist strategies to open pair cases. Even without assuming the DC, we might take the failures of the official attempts to resolve the open pairs

consistently to strengthen the case for dialetheism as a general response to pathological semantic discourse. After all, insofar as these consistent approaches fail, this supports the prediction of the DC, which, in turn, motivates dialetheism.

Although Priest has not discussed the particular *demises* of these consistent approaches to the open pair that we have demonstrated, he has discussed Sorensen's solution to the open pair and claims that symmetry considerations rule out the latter's consistent solution. As Priest notes,

The situation concerning [the sentences of the open pair] is, in all respects, symmetrical; it cannot, therefore, have an asymmetric upshot. Either both sentences are true, or both are false . . . Hence, it would seem, both sentences [of the open pair] are true and false [or true and not true].

[2006: 5]

Thus, whereas Goldstein endorses both (DA) and (SA), and Sorensen endorses (DA) but not (SA), Priest endorses (SA) but rejects (DA).<sup>24</sup> It appears, then, that the dialetheist is in position to resolve the putative indeterminacy of the open pair, as follows. Like Sorensen, he will maintain that the sentences of the open pair have truth-values but, unlike Sorensen, the dialetheist will endorse symmetry, thereby yielding contradiction. Like Goldstein, the dialetheist will endorse considerations of symmetry, but, unlike Goldstein, he will reject the demand for consistency and divergent truth-values that yields indeterminacy. *Prima facie*, then, the putative semantic pathology that plagues the aforementioned consistentists does not filter down to the dialetheist: the latter can treat these cases as inconsistent semantic discourse that help reveal, at best, an initial logical pathology.

In fact, however, it seems that the dialetheist is *not* in a good position to resolve, even *inconsistently*, all the variants of the open pair. To see why, suppose, following Priest, that we are to accept both symmetry and inconsistency. This seems to give the dialetheist an advantage in resolving any of (1) and (2), (3) and (4), or (7) and (8)—he can take them as further cases of inconsistency. But what about (5) and (6) or (9) and (10)? To be sure, the dialetheist *can* ascribe them matching (and, thus, inconsistent) truth-values, and so can assimilate these cases to the liar, but he can also ascribe them divergent (and, thus, consistent) truth-values, with no independent reason to favour one of these approaches over the other. Moreover, with the asymmetric cases the dialetheist seems to face two levels of indeterminacy: (i) an indeterminacy regarding whether to make a consistent or an inconsistent truth-value ascription, and (ii) assuming (CA) and a consistent ascription, an indeterminacy regarding which sentence of a given pair is true and which is false.

<sup>24</sup>Care is needed here. The dialetheist recognizes that, insofar as (1) and (2) are both *glutty*, it follows that each is both true and false. As both are true and false, it follows that (1) is true if, and only if, (2) is false; and that (1) is false if, and only if, (2) is true, thereby appearing to satisfy (DA). This, however, is incorrect, for, once the dialetheist endorses truth-value gluts, he must allow that, while some sentences are true and false, others are *true only* or *false only*, where this disjunction is to be construed exclusively. (Whether a dialetheist can coherently express that some sentences are both true only and false only is not an issue that we take up here—pressing though it may be.)

Unless the dialetheist can resolve the indeterminacy presented by the asymmetric variants of the open pair, he will have to acknowledge undiagnosed and unresolved semantic pathology and thus the inadequacy of his semantic theory. But can he respond? He cannot argue that we should ascribe matching truth-values to the sentences in the asymmetric open pairs because that would avoid indeterminacy and just leave inconsistency, which he can accommodate. Such a ‘resolution’ would be ad hoc and would make dialetheism subject to the very sort of criticism it launches against consistentist approaches in its own DC. Without a motivated reply the dialetheist will not be able to eliminate the indeterminacy of the open pair and trade semantic pathology in for logical pathology across the board. In the next section we consider what we take to be the best candidate for a motivated reply, but, as we show in the subsequent section, even this reply ultimately falls victim to other variants of the open pair.

#### IV. An Attempted Response to Asymmetry

The best hope for the dialetheist in response to (5) and (6) is to re-invoke symmetry in order to ascribe them matching semantic values. Whether, ultimately, this strategy is successful in this case is not something we will address here. Rather, we will show that even if it were to succeed with (5) and (6), the problematic indeterminacy would re-emerge elsewhere, and, as with Goldstein’s and Sorensen’s solutions, the semantic pathology of the open pair would remain.<sup>25</sup>

The intuitive argument for re-introducing symmetry, in order to resolve the asymmetric cases inconsistently, begins by establishing certain material equivalences. In particular, since all instances of schema (T) hold, we have the following instance, from (5), viz.,

(T-5) ‘(6) is false’ is true if, and only if, (6) is false.

As (5) is the sentence ‘(6) is false’, we can substitute the label ‘(5)’ for the quotation name in (T-5) to arrive at

(T-5’) (5) is true if, and only if, (6) is false.<sup>26</sup>

Given the material equivalence stated in (T-5’), together with the substitutability of materially equivalent sentences in extensional contexts, we can substitute into the antecedent of (6) to arrive at

(6’) (5) is true  $\rightarrow$  (5) is false,

<sup>25</sup>Thanks to Graham Priest, for a helpful discussion of this section.

<sup>26</sup>Of course, (T-5’) does not amount to a reintroduction of (DA), since, for a dialetheist, it does not rule out (6) also being true when (5) is true.

which is materially equivalent to (6). But now, given (6'), combined with the relevant instance of propositional logic's surrogate for the law of identity, viz.,

(\*) (5) is false  $\rightarrow$  (5) is false,

it follows that (5) is false, whether true or false. For anyone who rejects gaps, then, (6') at least entails

(6'') (5) is false.

Moreover, not only is (6'') true if (6') is, but it is also false if (6') is false, making the two materially equivalent. And since (6') is materially equivalent to (6), so too is (6'').

The material equivalence between (6) and (6'') provides a way to re-introduce symmetry—specifically what we will call *indirect symmetry*.<sup>27</sup> The *direct* symmetry displayed by (1) and (2) is due to the fact that each sentence 'says' of the other exactly what the other 'says' of it. The thought behind indirect symmetry is as follows. In the case of (5) and (6), (5) appears to 'say' of (6), what a claim *materially equivalent to (6)* (i.e., (6'')) 'says' of (5). Of course, one might worry about whether material equivalence is a strong enough connection to re-establish a genuine symmetry. That is, while (5) might (in some sense) 'say' of (6) what a sentence materially equivalent to (6) 'says' of (5), it is not the case that (5) and (6) 'say the same thing' *of each other*, at least they do not in the way that (1) and (2) do. Perhaps so, but we will set any such worries aside here. After all, since the question about (5) and (6) is what truth-values these sentences get, a symmetry grounded in material equivalence is arguably all the symmetry needed to establish that we should ascribe these sentences matching truth-values.<sup>28</sup>

Indirect symmetry appears to give the dialetheist what he needs—at least any dialetheist who rejects gaps. With symmetry apparently re-established, he can claim that we must ascribe (5) and (6) the same truth-value, which means that they are both true and false. Thus, like the earlier variants of the open pair, this case too exhibits inconsistency without indeterminacy. As the pathology it manifests is of a piece with the liar paradox, this case appears to merit both the same diagnosis and the same treatment.

Appearances, however, are sometimes just that. What we have seen thus far is that the dialetheist must introduce something like indirect symmetry, if he is to resolve, inconsistently, symmetry-breaking cases of the open pair. While indirect symmetry seems to provide a resolution of such cases, even if this proposed solution is successful as applied to (5) and (6), there are still other cases that cannot be resolved by appeal to symmetry—either direct or indirect. As we show in the next section, the open pair phenomenon can be

<sup>27</sup>We will henceforth call the notion of symmetry explicitly endorsed by Goldstein and Priest, *direct symmetry*, in order to mark the contrast between it and indirect symmetry.

<sup>28</sup>As should be clear, the notion of indirect symmetry is also available to a consistentist, e.g., Goldstein, who relies on symmetry to resolve versions of the open pair. Our arguments below for the ultimate ineffectiveness of this strategy as applied by the dialetheist apply to consistentists as well, as we hope is clear.

generalized, revealing a recalcitrant semantic pathology that extends throughout our central semantic concepts.

## V. Generalizing the Open Pair

As noted above (§I), semantic pathology bifurcates, yielding either inconsistency or indeterminacy. Semantic paradoxes (e.g., the liar, Grelling's, Berry's) appear to exhibit the former symptom, whereas their duals (e.g., the truth-teller, 'autological' [von Wright 1960], 'the greatest integer nameable in fewer than 19 syllables' [Gupta and Belnap 1993: 264, n. 23]) appear to exhibit the latter. The open pair, we maintain, exhibits both symptoms of semantic pathology. Thus, it would be surprising if this sort of case were limited to versions that take off from the liar paradox.

In fact, it is not. For each case of semantic pathology that manifests either of the aforementioned symptoms separately, there is an analogous variant of the open pair that exhibits both features. If appeals to direct or indirect symmetry allow the dialetheist to characterize the symmetric and asymmetric variants (respectively) of the open pair as *dialetheia*, their appearance of semantic pathology will disappear. If there are variants the dialetheist cannot resolve via some such appeal, then he will be stuck with indeterminacy-generating semantic pathology. Unfortunately for the dialetheist, such revenge variants exist.

Our first revenge variant is still from the alethic domain. It is a version of the open pair that stems from Curry's paradox, one rendering of which is as follows:

$$(C) \quad (C) \text{ is true} \rightarrow \perp.^{29}$$

(C) threatens to yield trivialism, even given a paraconsistent logic. The official dialethic response to Curry's paradox involves rejecting Absorption.<sup>30</sup> Whether this strategy is an adequate resolution of (C) is controversial, but we leave that issue aside here [Priest 1987: chap. 6.2; Everett 1994; Priest 1996; Beall 2001]. Indeed, even assuming that it resolves (C), the dialetheist is then faced with *the curried open pair*, viz.,

$$(C1) \quad (C2) \text{ is true} \rightarrow \perp.$$

$$(C2) \quad (C1) \text{ is true} \rightarrow \perp.$$

While it is possible to avoid trivialism by ascribing one of these sentences truth-only and the other falsity-only, this tactic would yield the usual indeterminacy, sticking the dialetheist with semantic pathology. If the

<sup>29</sup>There is also, of course, an indeterminate-only analogue of (C), namely,

$$(C') \quad (C') \text{ is false} \rightarrow \perp.$$

Even dialetheists acknowledge (C) and (C') are well-formed, since logics compatible with dialetheism contain the absurdity constant, ' $\perp$ '. Priest [2006] glosses ' $\perp$ ' as 'everything is true'.

<sup>30</sup>The principle:  $(A \rightarrow (A \rightarrow B)) \rightarrow (A \rightarrow B)$ .

dialetheist attempts to avoid this outcome—by appealing to symmetry and taking these sentences to have the same semantic-value—then, whether they are both true, false, or glutty, trivialism threatens.

Perhaps, in line with his response to Curry's paradox, Priest will appeal to direct symmetry and reject Absorption, in order to avoid the threat of trivialism. However, even assuming this tactic resolves both (C) and the pair, (C1) and (C2), the dialetheist then faces *the asymmetric curried open pair*:

(C3) (C4) is true  $\rightarrow \perp$

(C4) ((C4) is true  $\rightarrow \perp$ )  $\rightarrow$  ((C3) is true  $\rightarrow \perp$ ),

which raises a question for the proffered solution to (C1) and (C2). As should be clear, (C3) and (C4) exhibit the same *prima facie* indeterminacy that (C1) and (C2) do, but they do so without the direct symmetry of the earlier pair. To eliminate the indeterminacy of the asymmetrical case, the dialetheist must wheel in indirect symmetry, in order to establish that these sentences get the same truth-value, making them *dialetheia*.

However, an appeal to indirect symmetry is blocked in this case. Reasoning as with (5) and (6), the (T)-schema, substitutability, and (C3) together yield that (C4) is materially equivalent to

(C4') (C3) is true  $\rightarrow$  ((C3) is true  $\rightarrow \perp$ ).

In order to establish indirect symmetry between (C3) and (C4), we need (C4') to be materially equivalent to

(C4'') (C3) is true  $\rightarrow \perp$ .

A material equivalence between (C4') and (C4'') would mean at least that the former entails the latter. But this is an application of Absorption—precisely what the dialetheist must reject in order to resolve Curry's paradox. (C3) and (C4) thus present a case of indeterminacy the dialetheist cannot trade in for inconsistency without yielding trivialism as a consequence.

The inadequacy of indirect symmetry becomes even more apparent when we move beyond the alethic domain and consider the apparent pathological nature of our other central semantic notions. While the dialetheist endorses inconsistent solutions to semantic paradoxes beyond the liar—e.g., those that arise with the notions of reference, predicate-satisfaction, etc.—further variants of the open pair mirror these inconsistent cases of pathological semantic discourse, infecting semantic concepts beyond that of truth.

Consider, for example, an open pair variant involving predicates that is analogous to Grelling's paradox:

(P1) ... does not satisfy the predicate labelled '(P2)'

(P2) ... does not satisfy the predicate labelled '(P1)'

Given the dialetheist's unrestricted schema for the notion of predicate satisfaction, e.g.,

(S)  $(\forall x)(x \text{ satisfies 'F\_'} \text{ iff } Fx)$ ,

(P1) and (P2) appear to yield either inconsistency or indeterminacy: on pain of inconsistency, each object satisfies either (P1) or (P2), but not both. The dialetheist maintains that Grelling's paradox establishes the inherent inconsistency of predicate satisfaction. As (P1) and (P2) are symmetric, he may assimilate them to Grelling's by saying the same regarding this pair as he does about (1) and (2) or (3) and (4).

The problem, however, is that, as with the alethic cases, the dialetheist faces a revenge problem if he attempts to resolve (P1) and (P2) inconsistently. The predicates that constitute this revenge problem are as follows:

(P3) ... does not satisfy the predicate labelled '(P4)'

(P4) ... satisfies both the predicate labelled '(P3)' and the predicate labelled '(P4)' or does not satisfy the predicate labelled '(P3)'.

As reflection will make clear, each object may (consistently) satisfy either (P3) or (P4) (though not both) or it may inconsistently satisfy both or neither. It is easy to verify, however, that it is indeterminate which predicate each object satisfies, if we opt for consistency. Moreover, as these predicates do not 'say the same thing' of one another, there is no immediate reason to ascribe them matching semantic-values (extensions) and thus trade in the indeterminacy for inconsistency. Still further, the notion of indirect symmetry seems to have no application here, since it is grounded on material equivalence, a notion with no straightforward application to predicates.<sup>31</sup>

A similar issue arises, were the dialetheist to attempt to resolve the following open pair analogue of Berry's paradox, involving the notion of reference:

(N1) The thing(s) not referred to by the expression labelled '(N2)'

(N2) The thing(s) not referred to by the expression labelled '(N1)'.

Given an unrestricted reference schema, e.g.,

(R) 'n' refers to n (if it refers at all),

we can avoid inconsistency only if we treat each object as denoted by either (N1) or (N2), but not both. Of course, it would be indeterminate in each case which expression denotes the object.

<sup>31</sup>Actually, there might be a way to make material equivalence applicable to predicates by adopting a free logic and treating predicates as open sentences. However, even if this strategy makes sense, a truth-table will quickly make clear that it will not establish indirect symmetry between (P3) and (P4). Moreover, this free-logic strategy does not extend to the next open pair case we present.

Even assuming the dialetheist has an adequate resolution of Berry's paradox, he will not be able to extend it to all related pair cases. Once again, things become more problematic for the dialetheist when we consider the related asymmetric case:

- (N3) The thing(s) not referred to by the expression labelled '(N4)'
- (N4) The thing(s) either referred to by both the expression labelled '(N3)' and the expression labelled '(N4)' or not referred to by the expression labelled '(N3)'.

These expressions have the same semantic features as (N1) and (N2), but there is no symmetry here the dialetheist can appeal to as a basis for a solution in terms of inconsistency. There is no direct symmetry, as these referring expressions do not 'say the same thing' of one another, and, even more clearly than in the predicate case, indirect symmetry has no application, since the notion of material equivalence does not apply to referential expressions. This case thus shows an indeterminacy latent in the notion of reference, one that the dialetheist cannot trade in for inconsistency.

The variants of the open pair canvassed in this section make evident that the dialetheist is stuck with ineliminable indeterminacy pervading all of our central semantic notions and thus signalling genuine semantic pathology. Moreover, he cannot avoid this indeterminacy either by stipulating that we treat all open pair cases as *dialetheia* or by arbitrarily selecting one of the available consistent truth-value assignments over the other. Such moves would be blatantly ad hoc, and would thus make dialetheism a victim of his own dialethic conjecture. The problem is that there appears to be no non-ad-hoc way for the dialetheist to resolve the indeterminacy of the asymmetrical variants of the open pair, for any paradox-generating predicate. Thus, even if we grant that the dialetheist can adequately resolve *some* cases of pathological semantic discourse, the revenge problems that arise in the guise of certain asymmetrical open pair cases show that the dialetheist, like the consistentist, is plagued by semantic pathology that remains, at the least, both under-resolved and undiagnosed.

Before closing, we should make clear that the semantic pathology of the variants of the open pair is by no means restricted to standard semantic concepts. Consider, for example, *the asserter's paradox*, which takes off from

- (A) (A) is not assertible,

and which appears to yield contradiction, *modulo* dialethic assumptions [Priest 2002]. Whatever a dialetheist wants to claim about (A), we can generate problems by constructing a related symmetrical open pair variant, viz.

- (A1) (A2) is not assertible
- (A2) (A1) is not assertible,

as well as the asymmetrical variant,

(A3) (A4) is not assertible

(A4) (A4) is not assertible  $\rightarrow$  (A3) is not assertible.

This case constitutes another counter-example to the applicability of indirect symmetry, since the argument aimed at establishing indirect symmetry between, e.g., (5) and (6) does not go through here, as there is no obviously valid inference from

(A4') (A3) is true  $\rightarrow$  (A3) is not assertible

to

(A4'') (A3) is not assertible,

since the notion of assertion does not provide us with the conditional

(A5) (A3) is false  $\rightarrow$  (A3) is not assertible.

Thus, the asserter's variant of the open pair presents another case of unresolved semantic pathology.<sup>32</sup>

## VI. Conclusions: Assessing the Consequences

The DC predicts that the consistentist will be unable to resolve, in a methodologically kosher way, inconsistent semantic pathology. That is, he predicts failure for any consistentist attempt to characterize semantically, in a consistent fashion, the class of paradox-inducing cases of semantic discourse. If the conjecture is correct, then what we learn from it is that the

<sup>32</sup>It is an interesting question, whether the same is true of the knower's open pair, which takes off from

(K) (K) is not known,

to yield the knower's open pair,

(K1) (K2) is not known.

(K2) (K1) is not known,

and the related symmetry-breaking case, viz.

(K3) (K4) is not known

(K4) (K4) is not known  $\rightarrow$  (K3) is not known.

Whether, ultimately, the variants of the knower's open pair can be resolved via an appeal to indirect symmetry (although in personal communication, Priest has expressed doubts), the counter-examples canvassed above evidence that unresolved semantic pathology ramifies about our paradoxical concepts, generally—both those that are overtly semantic and those that are not.

consistentist cannot resolve the inconsistent cases of semantic pathology, which thus remains both undiagnosed and untreated.

We agree that the dialetheist's rejection of inconsistency as semantically pathological resolves the problem he poses for the consistentist, given his insistence that inconsistency does not signal semantic pathology. But what about the other horn, i.e., what about the symptom of indeterminacy? In order to answer this question, let us suppose that the consistentist could resolve indeterminate cases of semantic discourse (thereby rendering it non-pathological), while still plagued by inconsistent semantic pathology. As we hope is clear, this would not satisfy the dialetheist, for, so long as the semantic paradoxes were unresolved, he would still be in his rights to point out that the underlying pathology—the source of the problematic resistance to semantic characterization that certain sentences display—remains.<sup>33</sup>

If that is right (and we believe that it is) then the lesson of the last section suggests an extension of the DC that appears to be self-stultifying. It appears that, without invoking ad hocery or dubious methodology, the dialetheist is unable to resolve, even inconsistently, the indeterminacy-generating cases of the open pair. Why would this be a disaster for the dialetheist? The answer, we maintain, is that what the dialetheist purports to learn from observing the inconsistency of our central paradox generating concepts—together with the apparent fact that consistentist attempts to resolve such cases are inadequate because they violate methodologically principles or unacceptably restrict certain expressive needs—is that the best solution to the putative problems they pose is to treat such predicates as genuinely inconsistent and, as inconsistent, unpathological. We grant the importance of this move, but what the variants of the open pair suggest is that simply allowing for inconsistency, even with the treatment of logical pathology, is not enough to resolve the semantic pathology that arises. This, in turn, suggests that merely 'going dialetheic' is not sufficient to resolve (or to dissolve, as the case may be) semantic pathology, absent a methodologically acceptable solution to all variants of the open pair.<sup>34</sup>

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Received: August 2004

## References

- Armour-Garb, Bradley 2001. Deflationism and the Meaningless Strategy, *Analysis* 61: 280–9.  
 Armour-Garb, Bradley 2004. Diagnosing Dialetheism, in *The Law of Non-Contradiction: New Philosophical Essays*, ed. G. Priest, JC Beall, and B. Armour-Garb, Oxford: Clarendon Press: 113–25.  
 Armour-Garb, Bradley 2005. Wrestling with (and without) Dialetheism, *Australasian Journal of Philosophy* 83: 87–102.  
 Beall, JC 2001. A Priestly Recipe for Explosive Curry, *Logical Studies* 7: <http://www.logic.ru/LogStud/07/No7-06.html>

<sup>33</sup>It is an interesting question, why consistentists have put forward much effort to resolve inconsistent semantic pathology without doing the same for indeterminate ones. Perhaps the reason is that, while the inability to semantically characterize sentences *is* problematic, the threat of explosion, when faced with an inconsistency and assuming classical (or, just a non-paraconsistent) logic, is too much to bear. Of course, even if that is right, it by no means follows that the consistentist can ignore indeterminate semantic pathology, for what he cannot semantically characterize remains a problem for his overall semantic theory.

<sup>34</sup>Thanks to Roy Cook, Laurence Goldstein, Stephen Read, Roy Sorensen, and especially Graham Priest.

- Beall, JC 2004. True and False—As If, in *The Law of Non-Contradiction: New Philosophical Essays*, ed. G. Priest, JC Beall, and B. Armour-Garb, Oxford: Clarendon Press: 197–216.
- Chihara, Charles 1979. The Semantic Paradoxes: A Diagnostic Investigation, *Philosophical Review* 88: 590–618.
- Everett, Anthony 1994. Absorbing Dialetheia?, *Mind* 103: 413–19.
- Goldstein, Laurence 1985. The Paradox of the Liar—A Case of Mistaken Identity, *Analysis* 45: 9–13.
- Goldstein, Laurence 1992. 'This Statement is Not True' is Not True, *Analysis* 52: 1–5.
- Grover, Dorothy 1977. Inheritors and Paradox, *Journal of Philosophy* 74: 590–604.
- Gupta, Anil and Nuel Belnap 1993. *The Revision Theory of Truth*, Cambridge MA: MIT Press.
- Herzberger, Hans 1970. Paradoxes of Grounding in Semantics, *Journal of Philosophy* 67: 145–67.
- Hughes, G. E., tr. and comm. 1982. *John Buridan on Self-Reference*, Cambridge: Cambridge University Press.
- Kripke, Saul 1975. Outline of a Theory of Truth, *Journal of Philosophy* 72: 690–716.
- Mortensen, Chris and Graham Priest 1981. The Truth Teller Paradox, *Logique et Analyse* 24: 381–8.
- Priest, Graham 1979. The Logic of Paradox, *Journal of Philosophical Logic* 8: 219–41.
- Priest, Graham 1984. The Logic of Paradox Revisited, *Journal of Philosophical Logic* 13: 153–79.
- Priest, Graham 1987. *In Contradiction: A Study of the Transconsistent*, The Hague: Martinus Nijhoff.
- Priest, Graham 1994. The Structure of the Paradoxes of Self-Reference, *Mind* 103: 25–34.
- Priest, Graham 1995. *Beyond the Limits of Thought*, Cambridge: Cambridge University Press.
- Priest, Graham 1996. Everett's Triology, *Mind* 105: 631–47.
- Priest, Graham 1998. What Is So Bad About Contradictions?, *Journal of Philosophy* 95: 410–26.
- Priest, Graham 2002. Rational Dilemmas, *Analysis* 62: 11–16.
- Priest, Graham 2006. Words Without Knowledge, *Philosophy and Phenomenological Research*, forthcoming.
- Ramsey, Frank P. 1990 (1925). The Foundations of Mathematics, in *Philosophical Papers*, ed. D. H. Mellor, Cambridge: Cambridge University Press.
- Simmons, Keith 1993. *Universality and the Liar: An Essay on Truth and the Diagonal Argument*, Cambridge: Cambridge University Press.
- Soames, Scott 1999. *Understanding Truth*, Oxford: Oxford University Press.
- Sorensen, Roy 2001. *Vagueness and Contradiction*, Oxford: Clarendon Press.
- Sorensen, Roy 2003. A Definite No-No, in *Liars and Heaps*, ed. JC Beall, Oxford: Oxford University Press: 229–55.
- Tappenden, Jamie 1993. The Liar and Sorites Paradoxes: Toward a Unified Treatment, *Journal of Philosophy* 90: 551–77.
- Woodbridge, James A. and Bradley Armour-Garb 2006. Semantic Pathology and the Open Pair, *Philosophy and Phenomenological Research*, forthcoming.
- Von Wright, G. H. 1960. The Heterological Paradox, *Soc. Sci. Fenn., Comm. Phys.-Math.* 24(5): 3–26.
- Yablo, Stephen 2003. New Grounds for Naive Truth Theory, in *Liars and Heaps*, ed. JC Beall, Oxford: Oxford University Press: 312–30.