

Truthmakers, paradox and plausibility

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In a series of articles in this journal, Dan López De Sa and Elia Zardini (2006, 2007) (forthwith ‘LSZ’) have argued that several theorists have recently employed instances of *paradoxical reasoning*, while failing to see its problematic nature because it does not immediately (or obviously) yield inconsistency. In contrast, LSZ claim that resultant inconsistency is not a necessary condition for paradoxicality. According to them (2007: 246), ‘[w]hat really seems to be the essence [of the notion of ‘paradox’] is that, despite the apparent validity of the argument, the premises do not rationally support the conclusion’. It is our contention here that, even given their broader understanding of paradox, LSZ’s arguments fail to undermine the instances of reasoning they attack, either because they fail to see everything that is at work in that reasoning, or because they misunderstand what it is that the reasoning aims to show.

With their broader reading of ‘paradox’ in hand, LSZ argue that a number of philosophers – principally, Roy Sorensen, but also the present authors (given our attack on Sorensen (2001)) and several others – are guilty of wielding ‘paradoxical’ arguments, and, what is worse, of using them in the service of establishing substantial philosophical claims.¹ They contend that we must reject such ‘paradoxical’ reasoning and that this is so, even if the theses these theorists aim to establish are true.

As we will show, LSZ’s attacks fail to establish these cases of reasoning as paradoxical (even in their broader sense). However, this result does not offer any support to the idea that it is possible to establish substantive philosophical claims through nothing but abstract formal reasoning. This is because at least part of what must be addressed in the cases that LSZ consider is how we should think about the sorts of philosophical arguments they aim to depose. In clarifying this below, we briefly highlight the notion of a *plausibility argument*, namely, an argument made in support of a thesis, though without the aim of a (formal) proof. We take this kind of argument to be what is really at work in most of the cases LSZ consider, along with much of contemporary philosophy.

The plan is as follows. In §1, we consider some of the background for Sorensen’s epistemicism regarding certain indeterminate cases. Then, in §2, we explain his general approach to certain puzzling semantic cases and the assumptions that drive it. In §3, we explain Sorensen’s position on the case of central concern in LSZ’s argument, and in §4, we review their criticism of Sorensen’s reasoning. In §§5–6, we critically evaluate LSZ’s attack on

1 Recently, Goldstein (2008) has endorsed the arguments that LSZ muster.

Sorensen's view, while §7 responds to their related criticism of our recent argument against Sorensen's position. Section 8 turns to Sorensen's reply to our original challenge and both answers his reply and draws links to our response to LSZ. Finally, §9 concludes, by considering the notion of plausibility arguments and the impact that recognizing them has on the statuses of both Sorensen's and LSZ's arguments.

1. *Sorensen-style epistemicism*

Sorensen (1988, 2001, 2003, 2005) is an epistemicist who has argued that we should minimize postulating *truth-value* gaps (and thus minimize postulating 'truth-bearer illusions' (2001: 183)) by recognizing *truthmaker* gaps for a number of puzzling cases. Although he is primarily interested in defending an epistemicist solution to the sorites, he sees a need to go beyond Williamson's (1994) brand of epistemicism, given the latter's thesis that there are no absolutely unknowable truths. Sorensen contends that there are absolutely unknowable truths; he sees only *epistemic* indeterminacy where others grant *semantic* (or perhaps *ontic*) indeterminacy – he claims (2001, 2005) mere ignorance where others claim 'abnornance'.

Sorensen's guiding idea is that, by appealing to truthmaker gaps, he can commandeer a means for generating absolute borderline cases without taking on a commitment either to truth-value gaps or to any sort of semantic indeterminacy. On this view, though a putatively vague statement expresses a meaningful proposition, ignorance of what its truth-value is emerges from the fact that it lacks a truthmaker. Sorensen (2001: 177) explains:

[A] contingent statement that does not owe its truth-value to anything else is epistemically isolated. When the truth of a statement rests on further facts then I can gain evidence by examining those further facts. But when the truth-value is possessed autonomously, then there is no trail of truthmakers.

There are two parts to Sorensen's argument for truthmaker gaps. Part one, which functions as a lemma for part two, argues that, for certain sentences, while it may be impossible to determine what truth-values they have, these sentences, nevertheless, still have determinate truth-values. Part two takes off from part one, to the conclusion that such sentences suffer truthmaker gaps, making their truth-values merely epistemically indeterminate. Since LSZ's (2007) primary target is Sorensen's lemma, we will focus on that part of his proposal.

2. *Sorensen on ungrounded sentences*

A proper understanding of the reasoning Sorensen gives for his lemma requires a clear grasp of his views on ungrounded sentences. Sorensen is

prepared to grant that some ungrounded sentence tokens can have truth-values, at root, in virtue of certain formal considerations. For example, he contends (2005: 714) that while a sentence (token) that manifests the *prima facie* inconsistency arising in the liar paradox, for example,

(A) Sentence token (A) is not true,

is meaningless, another token of the same sentence type, for example,

(B) Sentence token (A) is not true

is both meaningful and true.

Sorensen's different evaluations of (A) and (B) show that he is a *tokenist* regarding semantic features – these features attach to sentence tokens, not types, and they can differ for different co-typical tokens involving different semantic circumstances. His evaluation of (A) shows that he endorses a version of the 'meaningless strategy' for dealing with tokens that present semantic paradoxes, a strategy captured by the following principle,

(MS) If a sentence token admits of no consistent truth-value assignment, then that token is meaningless.²

By contraposition (and some harmless juggling), Sorensen thus also endorses

(SM) If a sentence token is meaningful, it has a consistent truth-value assignment,

which is a corollary of the meaning-to-truth conditional,

(MT) If 'S' means that p then 'S' is true if, and only if, p.

In addition to MS and SM, he also explicitly accepts

(DT) If the only consistent truth-value assignment for a given sentence token, S, assigns it truth (falsity), then that will be the correct truth-value assignment for S.

And he extends it to a final principle that is relevant here, namely,

(DT*) If, for a pair of sentence tokens, S_1 and S_2 , the only consistent truth-value assignment the members of the pair will tolerate, assigns truth (falsity) to one and falsity (truth) to the other, then that divergent truth-value assignment to S_1 and S_2 will be correct.

Applying these principles to (A) and (B) yields different semantic statuses for these co-typical tokens. We get a still different result, when we apply these

2 For discussion and defence of (MS), see Goldstein (1985, 1992). For a worry about the strategy, see Armour-Garb (2001).

principles to an ungrounded truth-teller sentence token, for example,

(K) (K) is true.

Here Sorensen concludes that, while we cannot know what truth-value this sentence token has, it determinately has one and not the other by (DT). This is a marked contrast with his view on ungrounded sentences tokens that present the liar paradox. The point not to miss: different semantic circumstances mandate different semantic evaluations, even though the very same formal features of the truth-predicate are at work in these different cases.

3. Sorensen and the ‘no-no’

Sorensen (2001, 2003, 2005) claims that the pair of sentences that generate what he calls the ‘no-no paradox’ (which we (2005, 2006, 2008) have called ‘the open pair’)

- (1) Sentence (2) is not true
- (2) Sentence (1) is not true,

have determinate, albeit unknowable, divergent truth-values. Call this pair of sentences *N*. His (2001) reasoning for this claim about the members of *N* assumes bivalence and the general satisfaction of the truth schema,

(T) ‘*p*’ is true iff *p*,

for all meaningful sentences, along with classical logic and plain facts (e.g. that ‘sentence (2)’ names the sentence labelled ‘(2)’ just below the one that is labelled ‘(1)’).

Sorensen (2001, 2005) sees the initial puzzle about *N* as taking off from the following assumptions: (i) classical logic and classical semantics hold; (ii) (1) and (2) are both meaningful; (iii) they are also symmetrical; and (iv) if the pair is symmetrical, (1) and (2) will have the same semantic value. (Call (iv) *Buridan’s thesis*, which counsels us to ‘treat likes alike’.³) To skirt (logical) disaster, Sorensen denies Buridan’s thesis, while granting (i–iii), thereby avoiding contradiction. Prima facie, this saddles him with indeterminacy, given the two possible divergent truth-value assignments. His truthmaker gap proposal is designed to address that problem, declaring the indeterminacy merely epistemic: one and not the other divergent truth-value assignment in fact holds, though it is impossible to know which one it is. For the purposes of assessing LSZ’s attack on Sorensen’s view, the important consequence is that, by (i–iii), it follows that (1) and (2) are truth-valued. Sorensen’s basic idea seems to be that the members of *N* are divergently truth-valued – (1) is true and (2) is false, or vice versa – since, formally speaking, they can be.

3 The point is made in Buridan’s Eighth Sophism. See Hughes (1982: 51–2).

4. LSZ's attack on Sorensen

LSZ reject Sorensen's basic idea. According to them, 'the argument offered for the conclusion that either (1) is true or (2) is false or vice versa fails to carry any conviction' (2007: 245). To demonstrate the problem, they claim that if parallel reasoning presented in a structurally identical argument is applied to the following pair of sentences,

- (1') If (2') is true then [(1') is false and it is not the case that [(1') is short and (2') is long]]
 (2') If (1') is true then [(2') is false and it is not the case that [(2') is short and (1') is long]].

it would 'prove', *per impossible*, that (1') is true (and long) and (2') false (and short), or vice versa. Call the pair that LSZ introduce N' . They reason thus: like the members of N , the members of N' cannot both be true since, by disquotation, they would then both be false. But they cannot both be false since, by enquotation, they would then both be true. As such, '[i]t only remains that one is true and the other is false, which entails, again by enquotation, that the true one is long while the false one is short'. However, since it is a plain fact that sentences (1') and (2') are the same length, this conclusion is patently false and so could not be rationally supported by the reasoning. This, they claim, is all they need to show that Sorensen's reasoning regarding (1) and (2) is paradoxical (in their sense). They continue,

the argument to the effect that (1') is true (and long) and (2') is false (and short) or vice versa clearly fails rationally to support its conclusion, and hence so does the argument to the effect that either (1) is true and (2) is false or vice versa, whose soundness wholly relies on the very same abstract formal features.

There are two crucial assumptions involved in LSZ's attack, both of which Sorensen should reject. First, LSZ contend that, given Sorensen's position on (1) and (2), when it comes to (1') and (2'), 'it only remains that one is true and the other is false. . . .' (2007: 245). However, it does not *only* remain unless there is no *other* semantic status that can be attributed to the members of N' in a principled way. Second, they charge that, with respect to Sorensen's reasoning to the conclusion that (1) and (2) are divergently truth-valued, its putative soundness 'wholly relies on the very same abstract formal features' (2007: 245). Akin to the point made in response to the first assumption, Sorensen's argument does not *wholly* rely on such features unless no *other* factors bear on the conclusion regarding the semantic statuses of the members of N . Without these assumptions, LSZ's argument against Sorensen has no bite. In what follows, we show that Sorensen has an adequate response to their attack. Even so, as we shall make clear, he is not yet out of the woods.

5. Reply to LSZ on behalf of Sorensen

LSZ observe that '[t]he situation with respect to [N'] is . . . *structurally identical* to the situation with [N]. . . .' (2007: 245). Since N' appears to reveal that the kind of reasoning Sorensen uses is paradoxical, they conclude that his argument regarding N fails. Notice that this observation supports their conclusion only if the reasoning that Sorensen applies to the case of N is, in a certain sense, *topic neutral*. As we noted in §2, it is not: For Sorensen, the semantic details of such cases matter to the conclusions we should draw about them.⁴

With this in mind, consider what Sorensen would say about the following sentence tokens.

- (C) If sentence token (C) is true, then every sentence token is true.
- (C') If sentence token (C) is true, then every sentence token is true.
- (C'') If sentence token (C') is true, then every sentence token is true.⁵

(C) presents a version of Curry's Paradox. Like a liar sentence (token), Sorensen's solution to Curry's is to declare the 'first' token, (C), meaningless. However, employing structurally identical reasoning (with 'if' expressing the usual truth function) to that which rendered the first token meaningless, the 'next' token, (C'), turns out to be meaningful and true (since its antecedent is false). Turning to (C''), Sorensen would say that if we now apply the same abstract formal reasoning to (C'') as we did to (C) and (C') it turns out that (C'') is meaningful and *false*. The upshot: Sorensen would not accept that structural identity (as LSZ understand it) is sufficient for extending a conclusion drawn about one case to another.

This has an important consequence, for it means that, while we can grant that the reasoning that LSZ employ regarding the semantic statuses of the members of N' is structurally identical to the reasoning Sorensen employs regarding the semantic statuses of the members of N, this by no means requires Sorensen to conclude that the members of N' have the same semantic statuses as those of N. In fact, since (1') and (2') seem unable to tolerate any (consistent) truth-value assignments, Sorensen would declare them *meaningless*, as he would (A) or (C). In contrast, since the members of N appear to tolerate consistent truth-value assignments, Sorensen would take them to be,

4 Thanks to Sorensen for verifying what seemed implicit in his work. (Cf. 2001, 2003, 2005).

5 Recall that Sorensen holds that different tokens, even of the same sentence type, can have different semantic features. Co-typicality is just one, rather exacting, way by which different tokens (of sentence types or forms of reasoning) can be said to be structurally identical in LSZ's sense. After all, their structurally identical reasoning employs the names '(1') and '(2')', while Sorensen's employs the names '(1)' and '(2)'. So their understanding of structural identity allows for this sort of difference.

while epistemically indeterminate in truth-value, both meaningful and (consistently) truth-valued.

6. LSZ, Sorensen and epistemic openness

In a footnote, LSZ (2007) mention a second pair for which reasoning structurally identical to Sorensen's on N appears paradoxical, though, unlike (1') and (2'), not because the sentences cannot tolerate any truth-value assignment. Call the following pair of sentences N'' .

- (1'') If (2'') is true then [(1'') is false and it is not the case that [(1'') will officially be pronounced at some time by the next Spanish King and (2'') will not]].
- (2'') If (1'') is true then [(2'') is false and it is not the case that [(2'') will officially be pronounced at some time by the next Spanish King and (1'') will not]].

LSZ (2007: 246, n. 6) contend that these sentences show Sorensen's reasoning to be paradoxical (in their broader sense) because '[a] structurally identical argument [to Sorensen's, for the truth-valuedness of the members of N] would establish that the true one will not be officially pronounced at some time by the next Spanish King while the false will'. However, as LSZ note, the issue of what the next Spanish King will or will not officially pronounce is 'epistemically open', meaning that the semantic statuses of these sentences are currently unknowable and, thus, are not the sort of thing that can be proven, in particular, on the basis of abstract formal reasoning.

Sorensen can agree with LSZ's general conclusion regarding N'' . But there remains a relevant difference between the two pairs, N and N'' , which would allow Sorensen to treat them differently. Briefly put, while, *ex hypothesi*, the semantic statuses of the members of N'' are merely contingently (and temporally) *unknown*, those of N are *unknowable*. So, while Sorensen can agree that the reasoning LSZ set out does not establish that the members of N'' are meaningful and thus truth-valued (as opposed to inconsistent and thus, by (MS), meaningless), that does not provide him with a *reason* for concluding that he is barred from holding that the members of N are truth-valued. Therefore, this further case offered by LSZ also fails to show that Sorensen's reasoning with respect to (1) and (2) is paradoxical, even if that notion is construed in LSZ's broadest sense.

7. Further paradoxes

Mistakenly believing that they have refuted Sorensen's argument for the truth-valuedness of the members of N, LSZ extend their refutation strategy to the arguments we (2005, 2006) directed against Sorensen's proposed solution to the pathology of the open pair. To challenge Sorensen's postulation of

truthmaker gaps, in his proposed epistemicist solution to the indeterminacy that the open pair exhibits, we offered a pair of sentences that display the same indeterminacy but that cannot, on pain of contradiction, be said to suffer truthmaker gaps. Call the following pair of sentences *M*.

- (4) If (5) is true, then (4) is false and (5) has no truthmaker.
 (5) If (4) is true, then (5) is false and (4) has no truthmaker.

As with *N*, in the case of *M*, either matching truth-value assignments would yield contradiction. The members of *M* could tolerate either divergent truth-value assignment, but only if the true member of the pair has a truthmaker. Thus, we argued, Sorensen cannot explain the indeterminacy that *M* displays as merely epistemic, being a product of a truthmaker gap.⁶

LSZ claim that in our proposed refutation of Sorensen's solution to the open pair we are 'willing to grant [the soundness of Sorensen's argument] and merely aim to show that Sorensen's own explanation of the ensuing ignorance lacks the required generality' (2007: 246). They further claim that

to grant the soundness of the argument to the conclusion that (1) is true and (2) is false or *vice versa* is a *premier pas fatal*. This is not remedied by putting forward (4) and (5) [see below], since the argument . . . is just as effective as the argument below, which relies on exactly the same abstract formal features. (2007: 246)

LSZ then offer the following pair of sentences,

- (4') If (5') is true, then (4') is false and (5') is not short.
 (5') If (4') is true, then (5') is false and (4') is not short,

which we shall call *M'*.

In order to make explicit our supposed fatal error, LSZ argue that, because an argument structurally identical to ours regarding *M* fails rationally to support its conclusion when applied to *M'*, it follows that the same must be true of the argument that we launch, in our attempt at constructing a revenge problem for Sorensen's solution to the no-no paradox.

The problem with this response is that it fails, as in the previous cases, to recognize that if they are to show that there is a problem with our attack on Sorensen's proposed solution, they cannot assume that just because, *formally*

6 To close off any appeal to Buridan's thesis and the meaningless strategy, we offered an *asymmetrical variant* (the 'asymmetrical truthmaker open pair') that we can call *M''*, namely,

- (4'') If (5'') is true then ((4'') is false & (5'') has no truthmaker)
 (5'') If [If (5'') is true then ((4'') is false & (5'') has no truthmaker)] then
 [If (4'') is true then ((5'') is false & (4'') has no truthmaker)].

It is easy to show that the problem we pose for Sorensen's solution to *M* extends to the members of *M''*. We leave that as an exercise to the interested reader.

speaking, the members of M' can tolerate divergent truth-value assignments, it follows that, given Sorensen's reasoning (and, thus, on ours), we must conclude that they have divergent truth-values. In fact, precisely what would make a divergent truth-value assignment to (4') and (5') absurd could be used, by Sorensen, to argue that, like the members of N' , those of M' are meaningless.⁷

But the same charge of meaninglessness cannot be attributed to our (2006) proffered pair, M (or to its *asymmetrical variant*, M''). We address our revenge problem for Sorensen in §8. For now, it is worth noting that LSZ seem to have misunderstood the point behind our argument. Contrary to what they charge, we did not assume the *soundness* of Sorensen's argument, in order to *prove* that his reasoning commits him to the conclusion that the true member of M is a truth with a truthmaker. Rather, we argued that even if we assume that Sorensen's argument with respect to the status of N is correct *for the sake of argument*, we could still show that his truthmaker gap proposal will not account for all relevantly similar cases of indeterminacy. So as to avoid further misunderstanding, while also addressing Sorensen's (2005) reply to us (2005), we briefly return to M (and M'').

8. *Revenge for Sorensen*

As noted, we presented M and M'' and, aping Sorensen's reasoning, show that the members of those pairs enjoy consistent, though divergent, truth-value assignments only if the true member of the pair is a truth *with* a truthmaker (2005, 2006). Since, at least *prima facie*, (4) and (5) admit of a consistent assignment of truth-values, the question that presses is how this jibes with Sorensen's employment of truthmaker gaps, given that the true member of the pair will have a truthmaker. After all, the palatability of epistemically indeterminate, though semantically determinate, tokens is supposedly supported by the appeal to truthmaker gaps. How, then, has the positing of truthmaker gaps served the cause for which it was introduced?

Although Sorensen does not address this issue directly, he does claim that merely having a truthmaker is a necessary, though it is not a sufficient, condition for knowability. This suggests that even a truth with a truthmaker can be unknowable. But this raises a further question: if the members of M can be shown to be merely epistemically indeterminate without appeal to truthmaker gaps, what possible work could their introduction do? Aside from the fact that this appears to render the introduction of truthmaker gaps irrelevant, it raises questions about the conditions for absolute unknowability, for example, what is the motivation here for saying that the indeterminacy is merely epistemic? What is the source of ignorance in this case?

7 Cf. Sorensen (2005: 716), where he adverts to his 'last ditch' treatment, treating the troublesome pair as he does the liar paradox.

Unless absolute unknowability is connected with truthmaker gaps in such a way that the presence of the latter supports a consistent solution to the no-no paradox – which, by the way, manages to avoid the profusion of truth bearer illusions – then there is simply no reason to endorse Sorensen’s position. But it is clear that the connection must be forged, for, as he reminds us,

[t]he truthmaker gap solution extends [his solution to the truth teller] to the no-no. The sentences of the no-no paradox have different truth-values despite their symmetry. Nothing is responsible for the difference in truth-values. The law of bivalence says every proposition must have a truth-value. But there is no restriction on how the proposition gets that truth-value. (2005: 713)

In turn, this raises a further question: if truthmaker gaps provide a sufficient, though not a necessary, condition for semantically determinate, but epistemically indeterminate, cases of absolute unknowability, why think that truthmaker gaps are even relevant to Sorensen’s solution to the no-no paradox? Indeed, why think that the true member of N suffers a truthmaker gap at all?

With the original pair N there may have been some intuitive appeal to the idea that neither claim has a truthmaker. Consistency demands that exactly one sentence be true, but since, for Sorensen, having a truthmaker is a necessary condition for knowability, the plausibility of a truthmaker gap here makes room for saying that the indeterminacy – regarding which member of N is true – is merely epistemic. But an explanation of our ignorance in terms of a truthmaker gap is closed off in the case of M. The true claim here has a truthmaker, and, as a result, either the pair is not absolutely unknowable, which would undermine Sorensen’s general diagnosis of the no-no paradox, or the importation of truthmaker gaps is inessential, in which case we are left wondering what the solution to the no-no paradox is.

As a last ditch effort, Sorensen will likely employ his ‘back-up to [his] back-up strategy for dealing with [our] revenge problems’, declaring the sentences of the problematic pairs to be meaningless. The idea, which Sorensen explicitly advocates (2005: 716), would be that any pair’s resistance to a truth-value assignment would give him a principled reason for declaring the sentences meaningless. Indeed, in his (2005) reply to our (2005) paper, he contends that because he cannot (consistently) maintain that the members of M are consistently, though divergently, truth-valued, and are merely epistemically indeterminate in virtue of a truthmaker gap, he always has available his appeal to a ‘meaningless’ strategy: declare the members of M (and ditto, for M’) meaningless and, thus, without truth-values (or, *nota bene*, truthmakers).

As we hope is clear, this response is a non-starter. In order to present his solution to the no-no paradox (and the truth-teller), Sorensen proposed that the members of N were epistemically indeterminate, in virtue of suffering a

truthmaker gap. While the members of M and M'' appear to be indeterminate in the way that N is, Sorensen cannot propose that the true members of M (and M'') have truthmaker gaps, for the true one, whichever it is, will have a truthmaker and the false one, whichever it is, will not. But he cannot declare the members of M (and M'') to be meaningless, simply from the fact that if divergently truth-valued, the true one has a truthmaker and the false one does not. To propose that the members of M (or those of M'') are meaningless is to beg the very question that he was attempting to answer, namely: How can we resolve putatively pathological cases, like those found in N ? After all, the meaninglessness of the members of M follows only if they are contradictory. But those sentences are contradictory only if they cannot abide consistent truth-value assignments. And the only thing that could rule out a consistent truth-value assignment here is an assumption of a truthmaker gap.

Put differently, he can deploy his 'last ditch effort' in the cases of M and M'' only if his truthmaker gap proposal is assumed.⁸ But M , M'' and their kin were adduced precisely to raise a challenge for Sorensen's truthmaker gap proposal. He cannot, therefore, employ his 'last ditch effort' in these cases without assuming precisely the principle he aims to support. As such, his 'back up plan' begs the question in a blatantly unacceptable way. After all, we have shown that it is possible to generate a meaningful pair that resists determinate truth-value assignments by being indeterminate without suffering a truthmaker gap. The 'desperate treatment' of declaring meaninglessness here needs some other motivation beyond the fact that if they were meaningful they would be indeterminate in truth-value in a way that is not just an issue of ignorance resulting from a truthmaker gap.

9. Conclusions

Where does this leave us? We have shown that LSZ's argument against Sorensen's contention that the members of N are truth-valued fails, as does their attack on our proposed revenge problem for Sorensen's truthmaker gap proposal. When we turned to Sorensen, we found that he has available resources sufficient to neutralize LSZ's argument. Even so, when we consider M and M'' , we find that these problematic pairs make evident that Sorensen's argument for truthmaker gaps is *not* successful, since they either show his truthmaker gap principle to be otiose (if the true members of these pairs have truthmakers) or show it to be unmotivated (if the claims of meaninglessness for the members of M and M' depend on the prior assumption of the truthmaker gap principle). As such, it is for these reasons – and, in particular, *not* for LSZ's – that Sorensen's argument fails.

8 Of course, Sorensen might come up with some other reason for declaring the members of M and M'' meaningless, but that does not affect the point we are making.

Despite their failure, the initial attraction of LSZ's attacks is instructive. They accused a number of theorists – in addition to Sorensen and us, Cook (2006), Grim (2000) and Milne (2005) – of attempting to prove certain philosophically significant theses, solely on the basis of abstract reasoning and formal features of certain philosophically significant predicates. We agree with LSZ that such an approach would be problematic, if the relevant theorists aimed to *prove* such theses in the way LSZ described (cf. 248). But we doubt that most philosophers are trying to do exactly that.⁹

Sorensen, for example, aspired to establish something weaker – to support, rather than to prove, that the members of N are divergently truth-valued; to show that the position is *possibly* true – from which he could then say the same about absolute borderline cases, etc. In short, and to all appearances, he is putting forward what we have called a *plausibility argument*.

This raises a number of questions about the notion of plausibility arguments and their force in philosophical theorizing. (E.g. How widespread is the phenomenon? Are such arguments best understood inductively, as opposed to deductively? Do the conclusions of plausibility arguments ever leave us in a position to assert, without qualification, the theses they aim to support?) While we think that these questions press, we shall have to leave them for another time, resting content that neither Sorensen's argument nor LSZ's recent attack have the plausibility that either assumed.¹⁰

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References

- Armour-Garb, B. 2001. Deflationism and the meaningless strategy. *Analysis* 61: 280–89.
- Armour-Garb, B. and J. Woodbridge. 2006. Dialetheism, semantic pathology, and the open pair. *Australasian Journal of Philosophy* 84: 395–416.
- Cook, R. 2006. Knights, knaves and unknowable truths. *Analysis* 66: 10–16.
- Goldstein, L. 1985. The paradox of the liar – A case of mistaken identity. *Analysis* 45: 9–13.

9 While we cannot attest to Milne's motives (and are convinced by Rodriguez-Pereyra's (2006) argument against his position), we can attest to those of Sorensen and Cook.

10 We would like to thank Roy Sorensen for helpful and enjoyable discussion on these issues. Armour-Garb would also like to thank Laurence Goldstein, in particular, for helpful (and also enjoyable) discussion and encouragement.

- Goldstein, L. 1992. 'This statement is not true' is not true. *Analysis* 52: 1–5.
- Goldstein, L. 2009. A consistent way with paradox. *Philosophical Studies* 144: 377–89.
- Grim, P. 2000. The being that knew too much. *International Journal for Philosophy of Religion* 47: 141–54.
- Hughes, G. 1982. *John Buridan on Self-Reference*. Cambridge: Cambridge University Press.
- López De Sa, D. and E. Zardini. 2006. Does this sentence have no truthmaker? *Analysis* 66: 154–57.
- López De Sa, D. and E. Zardini. 2007. Truthmakers, knowledge and paradox. *Analysis* 67: 242–50.
- Milne, P. 2005. Not every truth has a truthmaker. *Analysis* 65: 221–23.
- Rodriguez-Pereyra, G. 2006. Truthmaker maximalism defended. *Analysis* 66: 260–64.
- Sorensen, R. 1988. *Blindspots*. Oxford: Clarendon Press.
- Sorensen, R. 2001. *Vagueness and Contradiction*. Oxford: Clarendon Press.
- Sorensen, R. 2003. A definite no-no. In *Liars and Heaps*, ed. JC. Beall, 255–29. Oxford: Oxford University Press.
- Sorensen, R. 2005. A reply to critics. *Philosophy and Phenomenological Research* 71: 712–29.
- Woodbridge, J. and B. Armour-Garb. 2005. Semantic pathology and the open pair. *Philosophy and Phenomenological Research* 71: 695–703.
- Woodbridge, J. and B. Armour-Garb. 2008. The pathology of validity. *Synthese* 160: 63–74.

Judy Benjamin is a Sleeping Beauty

LUC BOVENS

Consider van Fraassen's (1981) Judy Benjamin (JB) problem. Judy is dropped in an area that is divided vertically in Blue (B) and Red (R) and horizontally in Headquarters (Q) and Second Company (S). These divisions define four quadrants, as in Figure 1 (roman script headings). Judy initially believes that there is an equal chance of being in each quadrant. She is then told by a fully reliable source that if she is in R, then there is a chance of $q > 0.50$ that she is in Q. Now ask yourself: what should Judy's credence be that she is in B on the basis of this information? I am interested here in the limiting case of this problem in which $q = 1$. Let us call this limiting case the JB' problem.

Consider now Elga's (2000) Sleeping Beauty (SB) problem. Beauty is put to sleep on Sunday. A fair coin has been flipped. If Heads came up, then she will be awakened once, viz. on Monday (*Mo*). If Tails came up, she will be awakened twice, viz. on Monday and on Tuesday (*Tu*). After a Monday awakening, amnesia will be induced and she will have no memory on