Commentary on Plumer & Olson

John Woods

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In this most interesting paper, Gilbert Plumer and Kenneth Olson have set themselves an important task. They want to know whether there is a way of determining when, if at all, reasoning from inconsistent information is “allowed”. Two different approaches to reasoning flow from the answers to this question. If the answer is Yes, then the reasoning is paraconsistentist. If the answer is No, then the reasoning is consistentist. Plumer and Olson favour the consistentist option, but only after having given the paraconsistentist alternative careful and generally well-informed attention. In the remarks to follow, I shall first consider the grounds for the authors’ rejection of paraconsistentism. I shall then offer some very brief thoughts about how they deal with the consistentist option.

PARACONSISTENCY

Plumer and Olson consider two versions of paraconsistency. One is dialetheism and the other is defeasibilism.1 Dialetheism is the doctrine that some contradictions are true, that is, both true and false classically speaking. Dialetheism generates two difficult problems. One is to make a convincing case for true contradictions. The other is to show that it is less costly to retain intuitive theories afflicted with internal inconsistencies than to develop consistent but non-intuitive alternatives. Defeasible logics are also met with challenges. Perhaps the core issue is best set out as follows. Consider the following (true) claims which constitute what I’ll call the defeasibility knot.

1. Birds fly  
2. Penguins don’t fly  
3. Tweety is a bird  
4. Tweety is a penguin

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1 Plumer and Olson nowhere expressly categorize defeasible reasoning as paraconsistent, and certainly defeasible reasoning is not usually what is discussed in the literature under this heading. Even so, defeasible reasoning is paraconsistent. If a data-base contains inconsistent information, defeasible inferences therefrom fail to honour *ex falso quodlibet*. This suffices for (weak) paraconsistency. See below. As Plumer and Olson themselves point out, “… defeasibility logic has also been proposed as an alternative to classical deductive logic for dealing with inconsistent information.” (p. 4)

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It follows from these that

5. Tweety flies and does not fly.

Hence, by *reductio*, the above four sentences are inconsistent. But how can this be if they are all true? Let us consider these difficulties in order.

**DIALETHEISM**

The fundamental fact for dialetheists is the failure of *ex falso quodlibet*, that is, the theorem that contradictions logically imply every statement whatever. Why do they think it fails? Some logicians distinguish between the consequences that a set of sentences *has*, and the consequences that it would be necessary (or appropriate) for someone to *draw*. This distinction leaves it open that *ex falso* is true of the consequences that a contradiction has, yet false of the consequences that should be drawn from it. If we wished to emphasize this distinction, we could put it that consequence-having is classical and consequence-drawing is paraconsistent.

Paraconsistentists reject this suggestion. What is to be gained, they ask, by having consequences that can never be properly drawn? Besides, since paraconsistency is already well-embedded in this distinction, the more economical thing to do is to close the gap between having and drawing, and go whole hog with paraconsistency.

We are now well-placed to make the basic case for dialetheism. The standard or classical fix on *ex falso* is that if an inconsistency holds in a theory, the theory blows apart. This is the *catastrophe thesis*. Of course, the job of any theory is to distinguish in a principled way between its true and untrue sentences. But if *ex falso* were true, then no inconsistent theory could do its job, since the distinction between true and untrue sentences would now have collapsed. Accordingly, inconsistency is a catastrophe for any theory afflicted by it.

Plumer and Olson rightly point out historical examples of inconsistent theories that didn’t comport with the catastrophe thesis. Old quantum theory is one. Intuitive set theory is another. To this we might add a third – calculus before the discovery of limits and, later, of the hyperreals. No one seriously thinks that the presence of these inconsistencies made it impossible for Bohr, Frege, and Newton and Leibniz to generate a good deal of solid theoretical insight into electrons, classes and infinitesimals. So, whether we like it or not, the reasoning in those cases was inescapably and irreducibly paraconsistent. Since paraconsistentists already hold that the distinction between classical consequence-having and paraconsistent consequence-drawing is more trouble than it’s worth, their view about these productive but inconsistent theories is that *ex falso* simply fails in them (and that Frege’s and Russell’s reaction to the inconsistency of classes was quite mad).

Now here’s the dialetheic rub ([Woods, 2005]). If a theory’s telos is left undisturbed by a provable inconsistency in it, if the presence of the inconsistency is not catastrophic, why should its truth be anything to get lathered up about? Thus the absolutely foundational insight for dialetheists is that true inconsistencies are no more catastrophic than provable inconsistencies. And since provable inconsistencies aren’t catastrophic at all, neither are true ones.
So far so good. We’ve been able to show that true contradictions wouldn’t be awful. But this is a long way from showing that they would do us some real good. The good that dialetheists think that they do us are theories restored to intuitiveness by the reinstatement of axioms that generates the once-dreaded inconsistencies. Plumer and Olson are quite right to observe that, under this option to date, dialetheic set theory and dialetheic semantics haven’t attained anything like the productivity of their consistent rivals.

Even so, I can’t help thinking that dialetheism is largely irrelevant to our question, which is, to repeat, whether it is ever sound policy to reason from inconsistent information, irrespective of whether the inconsistency is true. In this I think we would be better served by consulting paraconsistent logics that aren’t dialetheic. Ray Jennings, Peter Schotch and Bryson Brown have done good work on preservationist logics ([Jennings and Schotch, 1984], [Schotch and Jennings, 1989], [Brown, 1999], [Brown, 2004]), as have Dederick Batens, Joke Meheus and their colleagues on adaptive logics. ([Batens et al., 2000]).

**DEFEASIBILISM**

If I were czar, I would place a ten-year moratorium on Tweety. Tweety reminds us that some generalizations are not universally quantified conditional sentences, but rather are generalizations of a sort that can tolerate (certain numbers and kinds of) true negative instances. Such generalizations are called “generic”. A principal task is to specify truth (or, more pointedly, falsity) conditions for generic claims. The Tweety case reminds us that there can be two true generic claims, each truly instantiated by Tweety, whose respective consequents are inconsistent with one another. Thus defeasible reasoning is not reasoning from inconsistencies but reasoning to them. Part of what is so odd about the Tweety line of reasoning is that, although it leads to an inconsistent conclusion, it doesn’t sanction reduction, as we’ve already said. So there are consistent premiss-sets which (non-classically) imply inconsistent conclusions.

If this sounds wrong, let us remind ourselves that it simply mimics what might be called the primary semantic fact about true generic claims: *There are false instantiations for which they remain true.* Modus tollens fails in such contexts.

Of course, if we decided to add the conclusion of the Tweety demonstration to our knowledge-set or data-base, any further reasonings from this source would have to be paraconsistent. Suppose – contrary to fact – that the inconsistency weren’t dissolved. Then these further reasonings would indeed be paraconsistent, but they needn’t be defeasible.

This gives us reason to think that defeasibilism is not intended as a species of paraconsistentism. A further reason is evident in the way in which the Tweety inconsistency is actually handled. It is dissolved. No one thinks that Tweety can fly. Although birds fly, Tweety is one of those birds that can’t. He is a penguin.

Let me try to sum up this brief review of the paraconsistentist option:

1. Although there is clearly a distinction between consequence-having and consequence-drawing, it is not all obvious that it is a distinction that calls out for paraconsistentism in the second instance (which it does) and classicality in the former (which it might not).
2. If this is right, then it is not obvious that *ex falso* holds for consequence-having; hence it is not obvious that paraconsistency is not the best general strategy.

3. In any event, dialetheism is not the decisive issue for paraconsistentism.

CONSISTENTISM

It remains, then, to say something about the authors’ support of the consistentist alternative. Here the basic idea is that whenever one is faced with an inconsistency in a data-base, reasoning from it must await its removal. It is regrettable that time doesn’t allow for much discussion of the various procedures for the restoration of consistency canvassed by Plumer and Olson. So I’ll make a couple of rather more general points instead.

First, in its weakest and most widely accepted form, paraconsistentism is simply the doctrine that *ex falso* fails for consequence-drawing. In a stronger version, it is the doctrine that *ex falso* fails for consequence-having. But neither in its weak form nor in its stronger is there the slightest discouragement of the generic imperative that people should reason consistentistically whenever they can. Neither is there any reason to doubt that when faced with an inconsistency in one’s database, it is good general policy to try to get rid of it. Paraconsistentist logicians are nothing but happy to admit consistentism as a very large sublogic of their own. Paraconsistentists are wholly at home with the idea that in the general case the best paraconsistent reasoning is consistentist reasoning. This tells us something generic importance. It is that when it comes to how one should reason, consistentism is hardly a rival of paraconsistentism.

Secondly, in Plumer and Olson’s hands consistentism is not a strategy for reasoning from inconsistent information. Indeed it is not even a strategy for reasoning from consistent information. It is a strategy for **eliminating** inconsistency. It is a way of making inconsistency go away, so that the question of what to infer from it doesn’t arise. Consider now the reasoning required of triers of fact in legal proceedings when faced with conflicting testimony. If the main consistentist (and paraconsistentist) impulse is to be given sway here, something should be done to eliminate these inconsistencies. Plumer and Olson offer some attractive options for achieving these expungements. Let E be any corpus of testimony in which such conflicts occur. As Plumer and Olson themselves observe with respect to their own option C, E presents a judge or a juror, J, with an inconsistency if and only if some subset of E that preserves the inconsistency is **believed** by J or **accepted** by him. Of course, it’s true, given the constitution of E, that the content of what some witnesses have said contradicts the content of what other witnesses have said, or of what a given witness himself has attested to earlier. Similarly, when experts favour courts with conflicting opinions, the content of what one says contradicts what some other expert says. But, although it may be true that witness W says P and witness W’ says Q (a contrary of P), that’s no contradiction, hence no occasion for dialetheic or even paraconsistent measures.

What, then, is the inconsistency-problem for J? One might think that it is the task of trying to figure out what inferences to draw from E, whether paraconsistently if the inconsistency is left in place, or consistentistically if J can manage to get rid of it. But there is a prior question that has nothing to do with reasoning, and which, once dealt with, leaves
the question of what to infer from E wholly unencumbered by the problem that Plumer and Olson are intent on solving.

No juror is going to believe any inconsistencies embedded in the content of the witnesses’ conflicting testimony. The issue is not how I reason from “P and Q”, with Q a contrary of P. The issue is which of these, if either, do I believe or should I accept. It is interesting to note that there is nothing in the nature of this task that requires the deployment of Plumer’s and Olson’s expungement procedures. Rather, in figuring out what if anything to accept of E, J’s belief-formation devices and J’s proposition-accepting protocols serve to filter inconsistency from J’s belief-set or acceptance-set as a byproduct of the general principle that people don’t believe or accept contradictions, except possibly in set theory or native semantics. But not in legal proceedings.

J doesn’t have a reasoning-problem with respect to E. He has a reasoning-problem only with respect to what he believes or accepts of E. That is, he has a reasoning-problem with respect to E′, a proper subset of E. Since people don’t believe or accept inconsistencies, E′ will be inconsistency-free. Now it’s true that J must now try to determine what he should (or might) infer from E′. But since E′ is inconsistency-free, none of the Plumer and Olson inconsistency-expungement measures is needed here.

Now I freely concede that what I have just said has the look of Plumer’s and Olson’s strategy B, which in turn looks rather like Rescher’s maximal consistent subset strategy ([Rescher, 1976]). It is a strategy that tells J to form the largest consistent subset of E. True enough, but my point is that this is achieved automatically, by whatever devices fix what J believes of E or determine what parts of E he thinks should be accepted. Let me repeat that since inconsistencies aren’t believed anyway and aren’t found to be acceptable anyway, the inconsistencies in E are filtered out, not by a policy for their removal, but by J’s quite ordinary belief-formation devices. There is another way of saying the same thing. Suppose that J is worried enough to ask, “How in the world am I going to eliminate these drat inconsistencies?” What would we tell him? We’d tell him not to be such a nervous nelly. We’d tell him simply to determine what of which witness’s testimony to believe. The rest takes care of itself.

REFERENCES