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Reply to Ahmed

I reply to Ahmed's rejection (2011) of my argument (Walters 2009) that all counterfactuals with true antecedents and consequents are themselves true.

1. Introduction

Arif Ahmed (2011) rejects my argument for

Conjunction Conditionalization: $(X \wedge Y) \rightarrow (X > Y)$

(where 'X > Y' reads 'if X had been the case, Y would have been the case') by rejecting the second premise of my 'Argument 3' (Walters 2009, p.377). I defended this premise by recourse to two principles of counterfactual logic, namely

Substitution: $((X > Y) \wedge (Y > X) \wedge (X > Z)) \rightarrow (Y > Z)$

VLAS: $((X > Y) \wedge (X > Z)) \rightarrow ((X \wedge Y) > Z)$

Ahmed furnishes a putative counterexample to both Substitution and VLAS (§2), thus undermining my argument for Conjunction Conditionalization. Ahmed's example is of great interest since, whereas Conjunction Conditionalization may have been thought to have been an optional extra for the standard logics and semantics of counterfactuals, being easily replaced by $(A \wedge C) \rightarrow \neg(A > \neg C)$,[1] Substitution and VLAS lie at the heart of the standard logics and semantics of counterfactuals, both being consequences of an absolute closeness ordering of possible worlds (Stalnaker 1984, pp.129-131).

[1] Not for those, like Stalnaker (1968), who endorse Conditional Excluded Middle (CEM), $(A > C) \vee (A > \neg C)$, since Conjunction Conditionalization is a consequence of CEM and the replacement for Conjunction Conditionalization suggested here.

Ahmed is fully aware of this consequence. He proposes a revision to the standard account on which the measure of closeness of possible worlds should be ‘antecedent-relative’ (Ahmed 2011, p.120). So Ahmed’s counterexample has a broad significance. If it stands, not only is my argument for Conjunction Conditionalization undermined, but we need to embrace a wholesale revision of the standard model of counterfactuals. However, in what follows, I’ll demonstrate that Ahmed has not made the case for such a radical result. The force of his challenge is that his example has some intuitive force, and one of the key claims seems eminently plausible. I’ll argue, however, that by reflection on independent principles and by reasoning similar to Ahmed’s own, Ahmed’s counterexample must be rejected. The standard approach remains in place, and hence my argument for Conjunction Conditionalization, resting as it does on Substitution and VLAS.

2. Ahmed’s Counterexample

Ahmed asks us to consider the following set-up:

> A and B are assassins; C, D and E are prominent statesmen of the northern Republic (formerly Kingdom) of Zembla. A has orders to shoot C and D. She is an excellent shot and very determined. So unless the police catch her before she reaches C nothing will stop her from shooting C; once she has shot C nothing will stop her from shooting D unless somebody else has got to him first. B has orders to shoot D and E. He too is an excellent shot and very determined. So unless the police catch him before he reaches D nothing will stop him from shooting D; once he has shot D nothing will stop him from shooting E. As it happens neither A nor B gets to shoot anyone because independent policemen catch them: A is caught trying to enter

> Zembla from the east and B is caught trying to enter from the west. There is no other threat to the life of C, D or E. (Ahmed 2011, p.116)

Allowing the names of the individuals to do double-duty by standing for the names of the propositions that A or B avoids capture and that somebody shot C, D or E, it is clear that in such a set-up

(1) $C > (C \wedge D)$

is true. (That is, if C had been shot, C and D would both have been shot). It is also intuitive that

(2) $C > \neg E$

holds. As I note (Walters 2009, p.372), semi-factuals with antecedents that are irrelevant to the obtaining of the consequent are true, and (2) is such a conditional. Finally,

(3) $(C \wedge D) > C$

is an analytic truth, if there are any. From (1) to (3) we can conclude

(4) $(C \wedge D) > \neg E$

by Substitution. But Ahmed argues that (4) is false and so Substitution must be rejected. Similarly,

(5) $C > D$

is true given our set-up. But, assuming VLAS, (5) and (2) also license (4). So if Ahmed is correct that (4) is false, VLAS must also go.

So why does Ahmed think (4) is false? Ahmed reasons as follows

> [I]t is not true that if *somebody* had shot C and *somebody* had shot D then it would have been A who shot them *both*. It might have been A who shot C and *B* who shot D. In that case, B would have gone on to shoot E. So it is not true that if somebody had shot C and somebody had shot D then E *would* not have been shot ... (Ahmed 2011, p.117)

As presented, Ahmed's case rests on the claim that the truth of 'if C and D had been shot, it might have been A who shot C and B who shot D', is sufficient for the falsity of 'if C and D had been shot, it would have been A who shot them both'. This claim is controversial, however, and both Lewis (1979, Postscript D) and Stalnaker (1987, pp.142-5) reject it. Leaving the delicate issue of might-conditionals to one side, what Ahmed needs is

(6) $\neg((C \wedge D) > \neg B)$

That is, it is not the case that: if C and D had been shot then B would not have shot E. It can be agreed that it is a realistic possibility in the envisaged scenario that A shoots C and B shoots D: all that is needed is for both A and B to avoid capture or else to escape and for them to carry out their instructions. But this alone does not establish (6). If it were sufficient, then presumably this same realistic possibility would falsify (2), and so Ahmed's counterexample would fail.

Nevertheless, (6) has some plausibility: one realistic, salient way that the antecedent of (6) could obtain is where A shoots C and B shoots D; if that were the case, then clearly B would have been the case; and given that we cannot rule out that C and D would have been shot in this way, (6) is true.[2] This is the line of thinking that underlies the plausibility of (6) and of Ahmed's counterexample.[3]

The remainder of the paper is as follows. In §3 I argue that Ahmed's reasoning to the rejection of (4) is unsound given his preferred semantics. In §4, I show that a piece of reasoning which seems to stand or fall with Ahmed's own, shows that Ahmed's reasoning is unsound. Finally, in §5, I offer three arguments which show that either (6) is false or that (4) is true (and so that (6) is false).

3. Antecedent-Relative Semantics

Now let us assume, for the moment, that (6) is indeed true. Ahmed's reasoning then takes the following form:

> It is not the case that: if C and D had both been shot, this would not have been because A shot C and B shot D. In that case – where A shoots C and B shoots D – E would have been shot. Therefore, it is not the case that if C and D had been shot, E would not have been shot

We can formalize Ahmed's argument as follows

[2] Why does this possibility not undermine the case for (2) as argued in the previous paragraph? The line of thinking must be that whereas A shooting C and B shooting D is a relevant way in which the antecedent of (6) can be realized, it is not a relevant way in which the antecedent of (2) can be realized. B's involvement in the realization of C being shot is gratuitous. It is this thought that leads us to consider antecedent-relative semantics, and which I shall be rejecting.

[3] I have argued elsewhere (Walters MS) that not every salient, realistic way, X, that Y can come about is such that $\neg(Y > \neg X)$. Such 'realization reasoning' is, in general, invalid, and I take Ahmed's argument to be another instance of invalid realization reasoning.

(6) $\neg((C \wedge D) > \neg B)$

(7) $(B \wedge C \wedge D) > E$

Therefore

(8) $\neg((C \wedge D) > \neg E)$[4]

And (8) is the negation of (4). So if Ahmed's reasoning to (8) is sound, then Substitution and VLAS must be rejected.

Ahmed's reasoning to (8) as I have reconstructed it, is an instance of the following schema which is valid on the standard logics and one which I accept

Restricted Transitivity: $(\neg(X > \neg Y) \wedge ((X \wedge Y) > \neg Z)) \rightarrow \neg(X > Z)$

It is easy to see why Restricted Transitivity is valid on the standard account: if some of the closest X-worlds are Y-worlds then these worlds are the closest $(X \wedge Y)$-worlds, so if these closest $(X \wedge Y)$-worlds are $\neg Z$-worlds, then some of the closest X-worlds are $\neg Z$-worlds.

But if closeness is an antecedent-relative matter as Ahmed suggests, this explanation does not hold. On the standard account, antecedents determine that we are concerned only with worlds where the antecedent holds true "but that is their only role in determining [the] selection [of worlds]. The rest of the job is done by some antecedent-independent

[4] This formalization ignores some detail of Ahmed's case, for example that it is C who shoots A, but this is irrelevant to argumentative strategy employed here.

conception of similarity or minimal difference" (Stalnaker 1987, pp. 129-30). But when closeness is an antecedent-relative matter, the closeness ordering itself is determined by the antecedent of the conditional under consideration, so that instead of a single closeness ordering, we have multiple X-closeness orderings, where 'X' takes the value of the antecedent being considered.[5] On such a semantics, it need not be the case that if some of the X-closest X-worlds are Y-worlds then these are the (X ∧ Y)-closest (X ∧ Y)-worlds. So if the antecedent-relative semantics that Ahmed endorses is to validate Restricted Transitivity, which underlies Ahmed's reasoning, then there needs to be some additional constraint on the closeness ordering. The natural suggestion is

> Constraint: If some X-closest X-worlds are Y-worlds, then the (X ∧ Y)-closest (X ∧ Y)-worlds are (a subset of) the X-closest Y-worlds

Although I accept the validity of Ahmed's reasoning, and that he is entitled to reason that way if he employs Constraint, I reject that his reasoning is sound. In particular, I think that reflection on the conditions imposed on us by the revised principles shows that we ought to reject (6). That is, in the relevant context we ought not to deny that 'even if C and D had both been shot, then E would not have been'. Since (6) has some force, we need to work through how we might support our rejection of it.

Not only does Constraint validate Restricted Transitivity, it also validates

> VLAS: $((X > Y) \wedge (X > Z)) \rightarrow ((X \wedge Y) > Z)$

Under an antecedent-relative closeness ordering, the first conjunct of the antecedent of VLAS requires that some of the X-closest X-worlds (in fact all of them) are Y-worlds. From

[5] I here ignore issues to do with context-sensitivity which are orthogonal to the debate over absolute versus antecedent-relative closeness orderings.

Constraint it follows that the $(X \wedge Y)$-closest $(X \wedge Y)$-worlds are a subset of the X-closest X-worlds. But given that the second conjunct of the antecedent of VLAS requires that all of the X-closest X-worlds are Z-worlds, then it follows that all of the $(X \wedge Y)$-closest $(X \wedge Y)$-worlds are Z-worlds, thus making true the consequent of VLAS.

What this shows is that given his preferred semantics, Ahmed's reasoning is unsound. Given VLAS, we can reason from (5) and (2) to (4), which is inconsistent with (8). Since nothing impugns (7), Ahmed can avoid contradiction only by rejecting (6) or by rejecting VLAS. If he rejects (6), his argument to (8) is unsound. If, on the other hand, he rejects VLAS, then he needs to reject Constraint which validates it, but in this case, as Constraint also validates Restricted Transitivity, Ahmed's argument to (8) is invalid. Either way then, Ahmed's argument for (8) fails, given an antecedent-relative semantics. Since I am happy to endorse VLAS and Restricted Transitivity, I think one ought simply to reject (6). And since Ahmed's counterexample to Substitution relies on this same unsound reasoning to (8), Substitution is not threatened either. (Moreover, given that Substitution follows from VLAS and some uncontroversial principles of counterfactual logic, if VLAS is valid then so is Substitution).[6]

4. More Ahmed-Style Reasoning

But that is not to say that the plausibility of (6) rests on Ahmed's controversial semantics. So one might think that his challenge to VLAS, Substitution and my argument for Conjunction Conditionalization remains. However I think we can show independently why the reasoning is unsound and in particular why we should not accept (6). Consider the following amendment to Ahmed's set-up: although B has orders to kill D and E, she would, if she had shot D, have flipped a coin to decide whether to go on to shoot E. So although it is not true that if B had shot D she ***would*** have gone on to shoot E, neither is it true that if B had shot D,

[6] Thanks to Ahmed here.

she would not have shot E. In such a set-up, we can revise Ahmed's reasoning to (8) without depriving it of any of its force:

> it is not true that if *somebody* had shot C and *somebody* had shot D then it would have been A who shot them *both*. It might have been A who shot C and *B* who shot D. In that case, B might have gone on to shoot E. So it is not true that if somebody had shot C and somebody had shot D then E *would* not have been shot

This revised reasoning is similar to Ahmed's original reasoning accept that it relies on a modified second premise:

(6) $\neg((C \wedge D) > \neg B)$

(9) $\neg((B \wedge C \wedge D) > \neg E$

Therefore

(8) $\neg((C \wedge D) > \neg E)$

This reasoning is an instance of the following schema which is also valid on the standard logics:

Very Restricted Transitivity: $(\neg(X > \neg Y) \wedge \neg((X \wedge Y) > Z)) \rightarrow \neg(X > Z)$

Now as we have seen the revised passage is every bit as persuasive as Ahmed's original. But Ahmed cannot accept Very Restricted Transitivity which underpins this reasoning. This is because

(10) $\neg(C > \neg D)$

follows from

(5) $C > D$

given that C is not impossible, and is otherwise obvious. But (10) combined with (8) yields the negation of (2), $\neg(C > \neg E)$, by Very Restricted Transitivity. But (2) is true, and is in any case relied on by Ahmed. So by Very Restricted Transitivity, we must reject (8) and therefore accept (4). Thus, Ahmed's putative counterexample lapses.

Ahmed's only way of responding to this argument for (4) is to claim that whilst the reasoning, encoded by Restricted Transitivity, to (8) is valid, the reasoning in the modified case, encoded by Very Restricted Transitivity, is invalid. This does not seem promising: Restricted Transitivity and Very Restricted Transitivity seem valid for the same reasons and so seem to stand or fall together.[7] So if Ahmed's original reasoning is valid, it is unsound as demonstrated by this argument from Very Restricted Transitivity to (4). Given the uncontroversial nature of Ahmed's other premises, it must be (6) that is false.

5. The Falsity of (6)

There are further arguments which show the falsity of (6). Firstly, we have the following direct argument against (6). If C and D were both shot, then this would be because only A

[7] See my (MS) for more support for this claim.

eluded capture and shot them both, or else because both A and B avoided capture and A shot C and B shot D. But we know that if A had avoided capture, then only A would have avoided capture since 'if A had avoided capture, then B would not have' is true for the same reasons that (2) is. And since if only A had avoided capture, both C and D would have been shot, we know that if C and D had been shot, this would have been because only A avoided capture and shot them both. So if C and D had both been shot, B would not have avoided capture, contra (6).

Secondly, we have two arguments for (4) – the negation of (8) – which given (7), shows that (6) is false, which rely principles concerning counterfactuals with disjunctive antecedents. First, consider the following argument

(11) $A > \neg E$

Therefore,

(12) $((A \wedge (C \wedge D)) \vee (A \wedge \neg(C \wedge D))) > \neg E$

(13) $\neg((A \wedge (C \wedge D)) > \neg E)$

Therefore,

(14) $((A \wedge (C \wedge D)) \vee (A \wedge \neg(C \wedge D))) > A \wedge \neg(C \wedge D)$

Therefore,

(15) $A > (A \wedge \neg(C \wedge D))$

(11) is true for the same reasons as (2) – it is a semi-factual whose antecedent is irrelevant to whether the consequent obtains or not. (12) follows from (11) by substituting logical equivalents. Ahmed would endorse (13) for the same reason that he rejects (4); if $(C \wedge D)$ had been shot, it might have been because A shot C and B shot D, and this does not change if A shoots C – indeed it requires it. The step from (14) to (15) is licensed again by

substituting logical equivalents. But (15) is obviously false. So if (14) is true, Ahmed must be wrong about (13) and hence (4).

The justification for (14) is that it follows from (12) and (13) and the following schema

(16) $(((X \vee Y) > Z) \wedge \neg(Y > Z)) \rightarrow ((X \vee Y) > X)$

(16) is valid on the standard account. More importantly, it is hard to see how it could be invalid. So it seems we must endorse (14).

Second, we have the following argument for (4).

(17) $A > \neg E$

(18) $A > \neg(A \wedge \neg(C \wedge D))$

Therefore,

(19) $((A \wedge (C \wedge D)) \vee (A \wedge \neg(C \wedge D))) > (\neg(A \wedge \neg(C \wedge D))$

Therefore,

(20) $(A \wedge (C \wedge D)) > \neg E$

(17) and (18) follow from the set-up of the case, and (19) follows from (18) by substituting logical equivalents. (20) follows from (17) and (19) if the following schema is valid:

(23) $(((X \vee Y) > Z) \wedge ((X \vee Y) > \neg Y))) \rightarrow (X > Z)$

It is hard to see how (23) could fail. Now as we saw above, Ahmed rejects (20) for the same reason as he rejects (4) – that is, he would accept (13). But given that (20) is entailed by (17) and (19), given (23), Ahmed's reasons for rejecting (4) must be discarded, and so Ahmed's counterexample to Substitution and VLAS fails.

We can also see why (4) is true. If A shoots C and D, this requires only one assassin to avoid capture or to escape, whereas if A shoots C and B shoots D, this requires two assassins to be active. But intuitively, counterfactuals do have something to do with minimal change, and the situation in which A shoots both C and D is less of a change than the one in which A shoots C and B shoots D.[8] Of course, we can get into a mindset where we allow changes which are not necessary, but such a mindset is hard to reconcile with endorsing irrelevant semi-factuals like (2), since if we are allowing both A and B to be active rather than just A, then why think that if C were shot, E would not be?

6. Conclusion

Ahmed's putative counterexample to Substitution and VLAS has some initial plausibility. Nevertheless it must be rejected. Although Ahmed's reasoning to (8) is valid, it relies on a false premise, (6). The antecedent of a conditional often encourages us to consider ways in which it could be realized which are in fact ways it would not be realized if it were to obtain. (4) is such a conditional. I (Walters MS) have argued elsewhere that in general such reasoning is invalid, and that it has, in a number of cases, led philosophers into error. Ahmed's putative counterexample is one more example of this phenomenon.[9]

[8] Ahmed (2011, p.118) rejects this, but his reason for doing so relies on the falsity of a counterfactual with an existentially quantified antecedent. But, as I have argued (Walters MS), such conditionals are liable to mislead us.

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