In our system, we translate “P only if Q” as “P ⊃ Q”; that is, we treat ‘only if’ as serving up the consequent of our conditional. As we know, this means that the “only if” part is a necessary but not a sufficient condition for the antecedent—in this case, that means that in order for P to be true, Q must be, but Q’s truth does not guarantee P’s truth. This is not the most perspicuous of claims, but it can be defended. Below are several arguments supporting this translation.

I.  Appeal to Intuition

Consider the following examples:

1.  I am in my office only if my lights are on.
2.  I’ll have their coffee only if they have donuts.
3.  We leave Afghanistan only if a Democrat is elected president.
4.  I’ll jump off that building only if I have a parachute.
5.  I’ll have children only if I have a partner.

None of these provides a knockdown case for our translation, but I think they can be evaluated as supplying support. Consider (1): because I am afraid of the dark, I must have my lights on to be in my office; however, my lights could be on without me being in there (e.g., if the janitor is also afraid of the dark); further, if (1) is true, it could not be the case that I’m in my office without my lights on—that is something it rules out for sure. Thus, it would appear that the pre-‘only if’ part is the antecedent and the post-‘only if’ part is the consequent.

Consider (3), and assume it’s true. Then leaving Afghanistan requires a Democratic president, but it isn’t the case that electing a Democrat ensures that we leave Afghanistan. It could turn out that once in office, the Democrat decides that the mission isn’t accomplished and we should stay a bit longer. But if (3) is true, then we would not be leaving Afghanistan if Romney (or some other non-Democrat) is elected. Again, this means that ‘only if’ serves up the consequent in this case.

The problem with all of these is that we are inclined to interpret ‘only if’ not as ‘if’, serving up the antecedent, but as ‘if and only if’; that is, we are inclined to interpret it as a biconditional. But this can’t be right, for reasons given in section II.

II.  Argument from ‘iff’

We translate “P if and only if Q” as “P ↔ Q”, where ‘if and only if’ makes P’s truth sufficient for Q’s truth, and vice versa. This means that we should think of this as a conjunction of “P ⊃ Q” and “Q ⊃ P”. But if that is so, then which part of ‘if and only if’ gives us “P ⊃ Q” and which part gives us “Q ⊃ P”? It seems like we should be able to break the connective up at the ‘and’ when interpreting it, so that we have “P if Q” and “P only if
Q”. The first of these, “P if Q”, is pretty clearly identical to “If Q, P”, which would be “Q ⊃ P”. Thus, “P only if Q” must be “P ⊃ Q”. So ‘only if’ must be understood as serving up the consequent of the conditional.

III. Argument from Conversational Implicature

This sort of argument exploits Grice’s idea that we can cancel additional chunks of meaning that attach to claims which are not a part of their truth-conditional meaning without contradicting ourselves. Thus, we can say, “I had a baby and got married, but not in that order,” without contradiction; however, if the temporal order were a part of the truth-conditional meaning of ‘and’, then we couldn’t do this without explicitly canceling an aspect of meaning that was affirmed by uttering the ‘and’, thereby asserting something equivalent to “A and not-A”.

In the current case, the additional chunk of meaning we’re haggling over is that associated with interpreting “P only if Q” as “Q ⊃ P”, whether we take ‘only if’ to be a conditional or, as I suggested above, the biconditional. (If the former, then “Q ⊃ P” represents the competing interpretation; if the latter, then “Q ⊃ P” is what we would have to add to “P ⊃ Q” to get the biconditional. Cancelling “Q ⊃ P” would involve asserting Q and denying P. Consider this: “I’ll have their coffee only if they have donuts; however, I might pass on their coffee even if they have donuts (if we stop at a Starbucks on the way over, for example).” This seems fine. Contrast it with this: “I’ll have their coffee only if they have donuts; however, if they do not have donuts I’ll still have their coffee.” This seems like a pretty straightforward contradiction. (Agreed? Could you fiddle with the second part to make it work nevertheless? Is there a parenthetical you could add that would eliminate the contradiction?)

IV. Argument from Necessary Conditions

I’ve saved the best for last. Consider these sentences:

3’. We leave Afghanistan only if a Democrat is elected president, and only if he decides it isn’t too risky.

5’. I’ll have children only if I have a partner, and only if she wants to have children.

There would appear to be nothing wrong with these sentences, but what they suggest is that the post-‘only if’ parts of (3) and (5) above are merely necessary conditions on leaving Afghanistan and having children, respectively. It is required that we have a Democrat if we are to leave Afghanistan, but that’s not enough—other things have to fall in place as well. Likewise for having children—it’s rather difficult to have children if you’re a guy even if you have a partner, assuming she isn’t on board with the plan. Thus, more has to be added in these cases to turn what you find after the ‘only if’ into sufficient conditions for what comes before the ‘only if’, and this implies that what we find after the ‘only if’ in (3) and (5) are not sufficient conditions. Thus, they are not antecedents, and so must be consequents. Thus, “P only if Q” must be translated as “P ⊃ Q”.