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On Jonathan Weisberg's "Commutativity or Holism? A Dilemma for Jeffrey Conditionalizers"

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THEOREM (J. Weisberg). The conditions

1. $q(E) > p(E)$
2. $q(E/F) = p(E)$
3. $q(F/E) = p(F/E)$
4. $q(F/E^c) = p(F/E^c)$, and
5. $p(E/F) = p(E)$

are incompatible. In particular, conditions 1,2,3, and 4 together imply that

6. $p(E/F) < p(E)$.

INTERPRETATION

(i) $q = p_e$, a revision of p after experience e, a non-doxastic reason for becoming more confident in E.

(ii) F is an after-the-fact defeater of that reason

CONCLUSION

Since 3 and 4 hold iff, on the algebra **A** generated by E and F, q comes from p by Jeffrey conditionalization on $\{E, E^c\}$, "JC doesn't allow for after-the-fact defeaters of non-doxastic reasons."

Weisberg's Theorem in the case of a doxastic e: If

1^* $p(E/e) > p(E)$
2^* $p(E/eF) = p(E)$
3^* $p(F/eE) = p(F/E)$, and
4^* $p(F/eE^c) = p(F/E^c)$,
Then
6 $p(E/F) < p(E)$.

Some variants of Weisberg’s result:
With

1. $q(E) > p(E)$
2. $q(E/F) = p(E)$
3. $q(F/E) = p(F/E)$
4. $q(F/E^c) = p(F/E^c)$, and
5. $p(E/F) = p(E)$,

THEOREM A. Conditions 1,2,3, and 5 together imply that

7. $q(F/E^c) > p(F/E^c)$.

THEOREM B. Conditions 1,2,4, and 5 together imply that

8. $q(F/E) < p(F/E)$.

THEOREM C. Conditions 2,3,4, and 5 together imply that

9. $q(E) = p(E)$.

THEOREM D. Conditions 1,3,4, and 5 Together imply that

10. $q(E/F) > p(E)$.

How non-doxastic e and F commute:

	EF	EF^c	E^cF	E^cF^c
p:	ab	a(1-b)	(1-a)b	(1-a)(1-b)
Q:	a	0	(1-a)	0
R:	a	0	(1-a)	0

p:	ab	a(1-b)	(1-a)b	(1-a)(1-b)
q:	Aβ	A(1-β)	(1-A)B	(1-A)(1-B)
r:	a	0	(1-a)	0

Remarks:

1. p revised to Q based on learning F.
2. Q revised to R based on experience e.
3. p revised to q based on experience e.
4. q revised to r based on learning F.
5. $q(E) = A > a = p(E)$
6. $q(F/E) = \beta \quad b = p(F/E) = p(F)$
7. $q(F/E^c) = B > b = p(F/E^c) = p(F)$
8. q does not come from p by JC on $\{E, E^c\}$; r comes from q by conditioning on F iff $\beta_{q,p}(E:E^c) = q(F/E^c) / q(F/E)$