

FORMAL EPISTEMOLOGY WORKSHOP
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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 \mathbf{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

$$1^* \quad p(E/e) > p(E)$$

$$2^* \quad p(E/eF) = p(E)$$

$$3^* \quad p(F/eE) = p(F/E), \text{ and}$$

$$4^* \quad p(F/eE^c) = p(F/E^c),$$

Then

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

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

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

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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
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p :	ab	$a(1-b)$	$(1-a)b$	$(1-a)(1-b)$
q :	$A\beta$	$A(1-\beta)$	$(1-A)B$	$(1-A)(1-B)$
r :	a	0	$(1-a)$	0
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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
$$\beta_{q,p}(E:E^c) = q(F/E^c) / q(F/E)$$