

Philosophy 148 — Assignment #4

04/03/08

This assignment is due Thursday, April 17 at 3pm. If you work in a group, list your group members at the top of your submitted work.

## Hempel's *Desiderata* for the Confirmation Relation

A confirmation relation is defined over ordered pairs of members of a (non-empty) Boolean algebra  $\mathcal{B}$  of propositions. Consider the following seven conditions that might be met by a confirmation relation:

**Equivalence Condition (EQC)** If  $E$  confirms  $H$  and  $H \equiv H'$ , then  $E$  confirms  $H'$ .

**Entailment Condition (EC)** If  $E \vDash H$ , then  $E$  confirms  $H$ .

**Special Consequence Condition (SCC)** If  $E$  confirms  $H$ , and  $H \vDash H'$ , then  $E$  confirms  $H'$ .

**Converse Consequence Condition (CCC)** If  $E$  confirms  $H$ , and  $H' \vDash H$ , then  $E$  confirms  $H'$ .

**Consistency Condition (CC)** If  $E$  confirms  $H$ , and  $E$  confirms  $H'$ , then  $H$  and  $H'$  are consistent.

**Non-Triviality Condition 1 (NTC1)** For all  $H$ , there exists an  $E$  such that  $E$  does not confirm  $H$ .

**Non-Triviality Condition 2 (NTC2)** There exists an  $H$  and an  $E$  such that  $E$  confirms  $H$ .

You are to answer the following four questions concerning these 7 conditions.

1. Show that if a confirmation relation satisfies EC, then it violates NTC1.
2. Show that if a confirmation relation satisfies EC, then it violates CC.
3. Show that if a confirmation relation satisfies CCC and CC, then it violates NTC2. (*Hint:* In each of (1)–(3), consider tautological or contradictory evidence, tautological or contradictory hypotheses, or both. Remember that anything entails a tautology, that anything is entailed by a contradiction, and that two propositions are consistent iff there is a possible world in which both are true.)
4. Show that (4.1) even if we restrict these conditions to *contingent*  $E$ 's and  $H$ 's, no confirmation relation can satisfy all 7 conditions, but (4.2) if we restrict these seven principles to *contingent*  $E$ 's and  $H$ 's, then 6/7 of them can be satisfied by some confirmation relation. For this, you'll need to describe a confirmation relation – defined over ordered pairs of *contingent* propositions drawn from some Boolean algebra  $\mathcal{B}$  – that satisfies six out of the seven conditions.

*Hint:* For (4.2), try the following definition of confirmation:  $E$  confirms  $H$  (where  $E$  and  $H$  are contingent) iff  $E$  and  $H$  are both true. This does not quite work (why?), but it comes close. How close?