Truth Without Detachment

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- *Take-home 1*: that familiar non-classical theories face a prima facie challenge is uncontroversial; the debate is over *how best* to meet the challenge.
- *Take-home 2*: there is an alternative to the 'quest for suitable conditionals', one that both distinguishes Logic from reasoning [10] and recognizes the role of extra-logical principles in acts of inference.

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- Logic: $X \vdash_{lp} A$ iff no $v \in \mathbb{V}_{lp}$ satisfies X but dissatisfies A.

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- In general: LP is detachment-free [6]!
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...*Good news* is that we can coherently enjoy a 'transparent truth' predicate in an LP (similarly, K3) setting; but...

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This challenge (though not by this name) has been embraced by non-classical truth theorists for the last 50 years or more through today. The standard response: recognize additional logical machinery... Prepare for the quest!

The standard response: Quest!

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  - Trouble: Curry's paradox via $A \wedge (A \rightarrow B) \rightarrow B$ etc!

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Standard PMP derivation of Curry's paradox [15]:

1. $C \leftrightarrow (C \rightarrow \bot)$. [T-biconditionals]
2. $C \wedge (C \rightarrow \bot) \rightarrow \bot$. [PMP]
3. $C \wedge C \rightarrow \bot$. [2; Substitution Equivalents]
4. $C \rightarrow \bot$. [3; Conjunction behavior]
5. C. [1,4; Detachment]
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...back to Quest – giving up PMP (etc)!

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- One route for LP is RM3 (think of K3 and Ł3): add a primitive (extensional) detachable conditional.
  - Trouble: Curry's paradox via $A \wedge (A \rightarrow B) \rightarrow B$ etc!
- Standard route: go 'non-extensional'! Generally: use a strict-implication approach in a non-normal-worlds or 'impossible-worlds' setting. [Details aside]

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...but if we give up the quest, where do we go?

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Rejecting inconsistency: we also – all of us – accept principles whereby we reject gluts (indeed, without thinking about it). At the very least, it is an exceptional case where we accept a glut.

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....*but there are some notable LP^+ validities corresponding to the LP invalidities*...

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Consider the noted LP *in*validities: DS and Detachment.

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- $A, A \supset B \nvdash_{lp} B$.

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[Dual K3: $X \vdash^+_c Y$ iff $e(Y) \cup X \vdash^+_{k3} Y$, where $e(Y)$ is the 'atomic completeness set of Y', *containing* $p \vee \neg p$ etc.]

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When we ask Logic what follows from $\{A, A \supset B\}$, Logic leaves us with a choice between B and $A \wedge \neg A$.

Question: how do we choose among the options that Logic gives us? ***Answer: we resort to extra-logical principles!***

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[Dual K3: we accept the pivotal 'completeness' claims in $e(Y)$.]

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Logic has left us with a 'choice', and *extra-logical* principles against accepting contradictions go from there.

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[nb: this is dual to the paracomplete case, where extra-logical principles tell us to *accept* LEM instances.]

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- Background to answer – logic and inference [10]:

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  - Liar is *rare* exception: go back and choose the glut!

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