

Re: completeness what is it exactly

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 - *Date:* Sun, 20 Jul 2008 19:36:08 +0000 (UTC)
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On Sun, 20 Jul 2008 12:18:50 -0700 (PDT), translogi <wilemien@xxxxxxxxxxxxxxxxxx> said:

Ahh

At least two different kinds of completeness.

In this post I stick to (modal) propositional logic

A (Uppercase) is a well formed formula
p (lowercase) is a propositional variable

1 the opposite of soundness

Better: the converse.

$\models A \rightarrow \not\models \neg A$

if (using a truth table, or other mechanical means) a formula is always true

Whether one has a mechanical means of determining validity is completely irrelevant to the definition. We do have such a means, of course, in classical propositional logic and some modal logics, but we don't in predicate logic, yet the definition of (semantic) completeness still applies.

then that formula is provable .

also

if a formula A is unsatisfiable (never true) then $\not\models \sim A$

(or is this a step too far)

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No, it is exactly equivalent in classical logic.

2 negation completeness

All well formed formula's are (provable) true or false.

No, negation completeness has nothing whatever to do with truth. It is a purely proof theoretic notion.

for every A $\vdash A$ or $\vdash \sim A$

this is more complicated.

No, this is wrong. Negation completeness is a property of theories, not of logics. Perhaps you missed my earlier post, but a theory T is negation complete if, for any formula A in the language of T, $T \vdash A$ or $T \vdash \sim A$.

for this all propositional variables need to have a fixed truth value (otherwise neither $\vdash p$ or $\vdash \sim p$ can be deduced)

Again, the concept of negation completeness has absolutely nothing to do with truth.

am i forgetting something?

Forgetting isn't exactly the right concept.

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