

Re: reductio ad falsum versus reductio ad absurdum

Source: <http://sci.tech-archive.net/Archive/sci.logic/2005-09/msg00169.html>

- *From:* "futurist" <adamgolding@xxxxxxxxxxxxxxxxxxx>
 - *Date:* 5 Sep 2005 00:42:38 -0700
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Torkel Franzen wrote:

> adamgolding@xxxxxxxx writes:

>

>> the => means |- , here?

>

> We don't need to take => to refer to provability in any formal calculus.

> Just read $G \Rightarrow A$ as "A follows from G". The rule

>

> $G, A \Rightarrow B$

> -----

> $G \Rightarrow A \rightarrow B$

>

> then allows us to conclude, given that B follows from G together with

> A, that $A \rightarrow B$ follows from G.

>

>> so, by this line of thinking, saying that CP is

>>

>> $(P \mid\!-\! Q) \mid\!-\! (P \rightarrow Q)$

>>

>> makes a lot of sense to me--although i gather from the responses that

>> there is something wrong with this--although i don't quite gather

>> what--is there something formally/techincally wrong? is it false?

>

> To make good sense of the above, you need to specify the language

> you use and how |- is to be understood.

ok, and since |- seems to have a rather precise meaning attached to it, which prohibits such nesting, perhaps i should use the more versatile "=>" (which i have seen used with nothing sort of five different meanings) like so:

Conditional Proof:

$P \mid\!-\! Q \Rightarrow P \rightarrow Q$

perhaps?

Re: reductio ad falsum versus reductio ad absurdum

>
>>>
>>> $\sim A \Rightarrow Q \sim A \Rightarrow \sim Q$
>>> -----
>>> $\Rightarrow A$
>>
>> Allen & Hand call the above rule "Impossible Antecedent", and they lump
>> all the rest under RAA...
>
> "Impossible Antecedent" is not standard terminology. But the
> important thing is that indirect proof is not constructively
> valid, but constructive reductio is.

hrm, i'm guessing you're referring to intuitionistic logic, which i'm not exactly familiar with

>> ok, so with RAA often being used as an umbrella term, 'constructive
>> reductio' makes it clear that one means the one with no premises.
>
> Here I don't see what you have in mind.

just the form you told me was called constructive reductio:

> A (assumption)
> ...
> Q
> ...
> $\sim Q$
> $\sim A$

is one with no premises, and is presumably construed as a 'variety' of RAA.

>
>> there another specifying term in somewhat common parlance to specify
>> the other kind, i.e. not constructive reduction, not impossible
>> antecedent, but the one i called 'reductio ad falsum' ??
>
> Not that I know of.

i suppose we could simply call it the 'nonconstructive reductio' but 'reductio ad falsum' seems a rather good term to me—relating it to the link i gave before

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◇ *From:* Torkel Franzen

- *References:*
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◇ *From:* adamgolding
 - ◆ *Re: reductio ad falsum versus reductio ad absurdum*
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