

# Re: Help with a problem

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*Source:* <http://sci.tech-archive.net/Archive/sci.logic/2005-11/msg00645.html>

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- *From:* G. Frege <nomail@invalid>
  - *Date:* Fri, 25 Nov 2005 15:04:13 +0100
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On 25 Nov 2005 13:38:22 +0100, Torkel Franzen <torkel@xxxxxxxxxxx> wrote:

>>  
>> If one's aim is to use nd to formalize the inferences of informal  
>> reasoning, then a system like Copi's would work best.  
>>  
> A bizarre notion. The reasoning from "If r is positive, r is in E"  
> to "If r is positive and r is in S, r is in E" in the "elegant and  
> simple" derivation given by an unfortunate expert on Copi's system  
> goes  
>  
> If r is positive, r is in E. So either if r is positive, r is in E,  
> or r is not in S. So either r is not in S  
> or if r is positive, r is in E. So if r is in S, if  
> r is positive, r is in E. So if r is in S and r is  
> positive, r is in E. So if r is positive and r is in S,  
> r is in E.  
>

Background information:

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A fine example of the awful effects that a study of Copi's system may have is given by the following derivation of  $N \& P \rightarrow O$  from  $N \rightarrow O$

1.  $N \rightarrow O$  [assumption (i.e., premise)]
2.  $(N \rightarrow O) \vee \sim P$  [from 1, Add.]
3.  $\sim P \vee (N \rightarrow O)$  [from 2, Com.]
4.  $P \rightarrow (N \rightarrow O)$  [from 3, Impl.]
5.  $(P \& N) \rightarrow O$  [from 4, Exp.]
6.  $(N \& P) \rightarrow O$  [from 5, Com.]

This is described as an elegant and simple derivation by Keith Burgess-Jackson (co-author with Copi of *Informal Logic*).

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>  
> This bears no resemblance to any informal reasoning from "If r is

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- > positive, r is in E" to "If r is positive and r is in S, r is in E"
- > found in nature.
- >

Informal proof:

If r is positive, r is in E.  
Assume r is positive and r is in S.  
Then r is positive. Hence r is in E.  
With other words, if r is positive  
and r is in S, r is in E.

The proof formalized in [one of] Gentzen's system[s] of ND:

- 1 (1) N  $\rightarrow$  O A
- 2 (2) N & P A
- 2 (3) N 2 &E
- 1,2 (4) O 1,3 MPP ( $\rightarrow$ E)
- 1 (5) N & P  $\rightarrow$  O 2,4 CP ( $\rightarrow$ I)

"[...] Gentzen's systems are also natural in the more superficial sense of corresponding rather well to informal practices; in other words, the structures of informal proofs are often preserved rather well when formalized within the systems of natural deduction."

(Prawitz)

F.

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"I do tend to feel Hughes & Cresswell is a more authoritative source than you." (D. Ullrich)

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• *Follow-Ups:*

- ◆ **Re: Help with a problem**  
◇ From: G . Frege

• *References:*

- ◆ **Re: Help with a problem**  
◇ From: Chris Menzel
- ◆ **Re: Help with a problem**  
◇ From: Robert Zimmerman
- ◆ **Re: Help with a problem**  
◇ From: William Elliot
- ◆ **Re: Help with a problem**  
◇ From: William Elliot
- ◆ **Re: Help with a problem**

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◇ *From:* G . Frege

◆ ***Re: Help with a problem***

◇ *From:* George Dance

◆ ***Re: Help with a problem***

◇ *From:* Torkel Franzen

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