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THE RULE OF EXCISION IN POSITIVE IMPLICATION

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The point made in [1] that the rule of excision

RE: $\vdash \alpha, \vdash \phi\, (C\alpha\ \beta) \rightarrow \vdash \phi\, (\beta)$

can be more powerful than the rule of detachment

RD: $\vdash \alpha, \vdash C\,\alpha\,\beta \rightarrow \vdash \beta$

is to be made with great economy in the context of positive implication. Assuming **RE**, substitution and the axiom

1. *CCpCqrCCpqCpCsr*

we have

*2. *CCpCqrCCpqCpr* [1 *s*/1, **RE**]
3. *CCqrCqCsr* [1 *p*/1, **RE**]
*4. *CrCsr* [3 *q*/1, **RE**]

and **RD** as a special case of **RE**, thus having the positive system. But the matrix **MI**

MI

C	0	1	2
*0	0	1	1
1	0	0	1
2	0	0	0

MII

C	0	1	2
*0	0	2	2
1	0	2	0
2	0	0	0

which is hereditary under **RD**, verifies 1 and rejects 2;

CC1C12CC11C12 = *CC11C01* = *C0C01* = *1*.

If interest of the system is disregarded, the point can be proved with maximum economy by excising *s* from 4 to obtain 5. *Crr*; but the matrix **MII** shows that 5 is independent of 4 and **RD**.

REFERENCE

[1] Angell, R. B., The sentential calculus using rule of interference R_e, *The Journal of Symbolic Logic*, vol. 25 (1960), p. 143.

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