CORRECTION

The paper Solution to a Problem of Ono and Komori (this journal, vol. 18) contained an error. The proof of multicut admissibility (page 109) breaks down in the case of degree reduction where the principal connective is \rightarrow . Even in the simple case where the multicut is just a cut, we have:

$$\frac{X; A : B}{X : A \to B} \qquad \frac{Y : A \quad \Gamma(B) : C}{\Gamma(A \to B; Y) : C}$$
$$\Gamma(X; Y) : C$$

which converts, following the cut elimination algorithm, into two cuts:

$$\frac{X; A : B}{Y : A} \qquad \frac{\Gamma(B) : C}{\Gamma(X; A) : C}$$
$$\frac{\Gamma(X; Y) : C}{\Gamma(X; Y) : C}$$

The problem is that the lower of these two cuts now has the proof of X; A : B above its major premise, whereas this was previously a minor premise. Thus the contraction rank of the multicut may have increased, destroying the induction.

The cure is to revert to using Mix instead of Multicut. See for instance [1] §28.5 for details of the construction. In [2] I expressed a concern that Mix elimination would fail on one of the disjunction cases, but this concern was groundless.

I am grateful to Peter Schroeder-Heister for drawing this problem to my attention.

REFERENCES

- Anderson, A.R. & Belnap, N.D. Entailment: The Logic of Relevance and Necessity, Vol. I, Princeton University Press, Princeton, 1975.
- [2] Slaney, J.K., Solution to a Problem of Ono and Komori, Journal of Philosophical Logic 18 (1989), pp. 103-111,

Journal of Philosophical Logic 21: 337, 1992.