

## NOTES & DISCUSSIONS

### SOME THINGS JUST DON'T BELONG

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In *Logical Forms*, Sainsbury [1991, 219] remarks:

Whatever one might want from the "Law of Identity" (the validity of every sentence of the form " $a = a$ ") can be obtained from a conditional version of the law (the validity of every sentence of the form " $(\exists x) (x = a) \rightarrow (a = a)$ ").

Sainsbury's restriction of the "Law of Identity" points the way to a novel solution for Russell's Paradox, obtained by restricting Cantor's Comprehension Principle, as in (1):

$$(1) \quad (\exists y) (\forall x) [(x \in y) \leftrightarrow ((x = x) \& (\dots x \dots))] .$$

From (1) we have (2):

$$(2) \quad (\forall x) [(x \in R) \leftrightarrow ((x = x) \& \sim (x \in x))] ;$$

and from (2), (3):

$$(3) \quad (R \in R) \leftrightarrow ((R = R) \& \sim (R \in R)) .$$

(3) and Sainsbury's principle together yield that there is no  $R$ :