ABSTRACT. The paradoxes of self reference have to be dealt with by anyone seeking to give a satisfactory account of the logic of truth, of properties, and even of sets of numbers. Unfortunately, there is no widespread agreement as to how to deal with these paradoxes. Some approaches block the paradoxical inferences by rejecting as invalid a move that classical logic counts as valid. In the recent literature, this 'deviant logic' analysis of the paradoxes has been called into question.

This disagreement motivates a re-examination of the philosophy of formal logic and the status of logical truths and rules. In this paper I do some of this work, and I show that this gives us the means to defend the 'deviant' approaches against such criticisms. As a result I hope to show that these analyses of the paradoxes are worthy of more serious consideration than they have so far received.

One thing that Australia is growing to be famous (or infamous) for in the logical community is logical deviance — a phenomenon which is not easy to characterise, but which at least features an iconoclastic attitude towards classical logic. Australia is one of the centres of research into paraconsistent logic and we have on our shores some of the best relevant logicians alive. Exactly why this is so is a matter I'll gladly leave to others, except to observe that the study of non-classical logics is a great deal of fun. Evidence of this can be gleaned from any of Bob Meyer's papers. This is one of the joys of working in the area, but it is also a hazard because we 'deviants' can forget to explain to outsiders what is going on. More of our energy is spent on the task of finding a pleasing semantics for RQ, seeing how strong your logic can be while...
retaining a non-trivial naïve set theory, or discovering the idiosyncracies of an inconsistent arithmetic with only 3088 numbers.

This is not to say that the nuts and bolts of an apologetic for deviant logic haven't been worked out — they have. But they often appear in articles primarily about something else (Slaney 1991, Meyer and Martin 1986) or hidden in jokes that only an insider would appreciate, or they're written in a too-polemical fashion. None of this is helpful to the outsider looking in, who wonders what the fuss is about. This paper is intended to be a user-friendly introduction to a philosophy of logic that is behind some of this work on deviant logics, and a defence of the deviant position against those who take it to be misguided.

Another aim of this paper is to thank to Bob Meyer, whose work has not only shown me that there's something good about logical deviance, but that there's something good about having a laugh while you're doing it.

1. PARADOXES

The paradoxes of self-reference have provided one of the driving forces behind much of the semantic and set theoretic enterprise of the twentieth century. To the paradoxes we owe the type hierarchy of Russell and Whitehead, Zermelo-Fränkel set theory, and the Tarskian hierarchy of languages and truth predicates. These theories owe their central features to their own particular response to the paradoxes. Paradoxes provide the data that prospective theories must deal with. This sentiment was expressed by Bertrand Russell (1905).

It is a wholesome plan, in thinking about logic, to stock the mind with as many puzzles as possible, since these serve much the same purpose as is served by experiments in physical science.

In this paper I will attempt to show that the puzzles provided by the paradoxes of self-reference don't just provide us with material useful in formulating theories in semantics and set theory — they also give us good reasons to explore logical systems that deviate from classical logic in particular ways. The paradoxes give us reason to hold that classical logic is not a good candidate for modelling valid inference.