



**KURT GÖDEL RESEARCH CENTER FOR  
MATHEMATICAL LOGIC**

UNIVERSITÄT WIEN

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INVITATION

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**ON INEFFABLE LIARS**

Abstract:

The most promising non-classical approaches to the theory of truth build on that of Saul Kripke (1975) by adding a conditional satisfying reasonable laws. Among the attractive features of such approaches are their capacity to offer object-language means for classifying the defectiveness of paradoxical sentences and formulas; in (2007), Hartry Field shows his approach yields a transfinite hierarchy of determinacy operators of increasing strength that seem to play exactly this role. There are, however, difficult technical questions about the extent of the hierarchy of such operators that turn on the availability of reasonable ordinal notation systems, and these may yield philosophical issues for Field's approach to the paradoxes. According to Field, the extent of the hierarchy is inherently 'fuzzy', because of indeterminacy concerning the unrestricted notion of definability. As a result, Field argues, one can't diagonalize out of the hierarchy of determinacy operators in any meaningful sense, since the hierarchy in question is not bivalently definable. In (2014), Philip Welch has argued that on the contrary the hierarchy of determinacy operators breaks down precisely at the least  $\Sigma_2$ -extendible ordinal (relative to a given model  $M$ ); moreover, Welch has shown how to use this result to produce "ineffable liars", that diagonalize out of the hierarchy: these are sentences that are indeterminate on Field's theory, but whose defectiveness is not measured by any determinacy operator in the object language.

The task of this paper is to assess the significance of Welch's result, and to adjudicate the dispute between Field and Welch. In the opening sections, I will review the Kripke and Field constructions, focussing especially on the hierarchy of determinacy operators and their behaviour. After that, I will give an overview of Welch's construction, culminating in the construction of an ineffable liar sentence. Finally, I will scrutinize Welch's argument from a philosophical perspective, and suggest that Field's project is not adversely affected by Welch's results. Nevertheless, I will show some ways in which that the latter are still of considerable philosophical interest.

## References

- Saul A. Kripke: Outline of a theory of truth. *Journal of Philosophy* 72 (19):690-716 (1975)  
Hartry Field: Solving the paradoxes, escaping revenge. In J. C. Beall (ed.), *Revenge of the Liar: New Essays on the Paradox*. Oxford University Press (2007)  
P. D. Welch: Some observations on truth hierarchies. *Review of Symbolic Logic* 7 (1):1-30 (2014)



[http://www.logic.univie.ac.at/  
Friday\\_seminar.html](http://www.logic.univie.ac.at/Friday_seminar.html)

**FRIDAY, JUNE 2, 2017**

Sandwiches at 12:00pm  
in the KGRC meeting room (room 104)  
Talk at a convenient time afterwards  
in the KGRC lecture room (room 101)

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