

The Reference of Numerals in Frege

Edward Kanterian

`edward.kanterian@trinity.ox.ac.uk`

Trinity College, Oxford

Joan Weiner has recently (2007) argued that Frege's analysis of numerals does not commit him to the view that prior to this analysis numerals already referred to particular objects, numbers; the requirements for a faithful definition of number did not involve for him criteria for the preservation of sense or reference in the transition from pre-systematic uses of numerals and number statements to their use in his formal system. For the pre-systematic use is too vacillating and indeterminate for pure science.

I demonstrate that her account faces both exegetical and substantive difficulties. It ignores Frege's robust realism in both logic and arithmetic; logic describes pre-existing relations between Platonic objects (thoughts), and his account of number and arithmetical truth in general is subservient to this realism. It is also not true that Frege does not ask for the preservation of any sense or reference of ordinary uses of number. His revisionism is limited to predicative/attributional uses considered irrelevant for scientific purposes (*FA* 57, 60). Without some preservation of sense and reference the point and nature of the transition from pre-systematic to systematic arithmetic would be left wanting. In fact, as I show, on Weiner's account Frege turns into a formalist for whom the sense and reference of numerals and number statements is a system-internal feature. But it is demonstrated that this misses not only Frege's Platonism, but also his insistence on the applicability of arithmetic. Finally, it is argued that while it is correct to stress, as Weiner does, that Frege's logicism had an epistemological agenda (to prove the analyticity of arithmetical truths), this characterisation must be supplemented by the ontological aspect of his project, which is to prove that numbers are objects and thus that arithmetic is a science with a proper subject matter.

References

- Joan Weiner, *What's in a Numeral? Frege's Answer*, in: *Mind*, 116: 2007