

*Submission to Theory-ladenness Conference
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Title : **A logical analysis of theory-ladenness**
Name : F.A. Muller
Affiliations : Fac. of Philosophy, Erasmus University Rotterdam &
Dept. of Physics & Astronomy, Utrecht University
E-mail : f.a.muller@uu.nl
P-mail : IGG, 5th floor, Budapestlaan 6, 3584 CD, Utrecht
University, The Netherlands

We provide a logical analysis of *theory-ladenness*, in particular by inquiring into the logical relationships it has (if any) with:

1. the logical-positivist distinction between the *observational* and the *theoretical* vocabulary of a theory;
2. Carnap's distinction between *meaning* postulates and *theoretical* postulates;
3. the several kinds of *seeing* involved in the process of observation, e.g. registering *X*, seeing *X*, observing *X* and seeing *that F(X)*.
4. the testability of a theory, i.e. to the possibility of confirmation and of falsification of a theory;
5. different conceptions of *incommensurability* of concepts; and
6. different conceptions of *meaning* and *reference*.

Thus some conceptual geography should arise, as Ryle called it. Amongst other things, we shall be arguing that Kuhn's *ad nauseum* repeated example of incommensurable concepts (because *laden* by distinct theories yet expressed by the same word), namely the one of *mass* in classical mechanics and in special-relativistic mechanics, relies on a particular conception of meaning. We also explore the thesis, suggested in the context of statistical inference by J.-W. Romeijn of Groningen University, that theory-ladenness may be a necessary condition for the possibility of science.