

Jury report for the Hanneke Janssen Memorial Prize 2015

The jury received two submissions of outstanding value: by Joshua Hunt (nominated by Jeremy Butterfield) and by Thomas Barrett (nominated by Hans Halvorson).

The jury has decided to award the 2015 Hanneke Janssen Memorial Prize to Joshua Hunt for his paper "Interpreting the Wigner-Eckart Theorem" and also to single out Barrett's work for honorable mention, as a very close runner-up. If there had been a second prize, it would go to him.

Below is a summary of the Jury's deliberations.

On Hunt:

In our judgment, this work takes on a subject (the Wigner-Eckart theorem) that has never been discussed before in the literature on philosophy of physics, and demonstrates a wide combination of skills: from chemical physics, from the history of spectroscopy, and unexpected resources in the general philosophy of science, like Manders' notion of "expressive means", to distill a new philosophical message: the Wigner-Eckart theorem is conceptually significant because it allows new expressive means playing different functional roles, including the modularization of practical problems.

To be sure, the Jury also had misgivings about the paper: it is somewhat longwinded, reports on exertions that lead to dead-ends, and its claims are only settled tentatively. Nevertheless, it is surprising that the author was capable of producing a new insight into the conceptual significance of this theorem at all. We would encourage the author to apply this strategy also to other symmetry problems in the philosophy of physics like gauge theories.

On Barrett:

The two papers comprising this submission show great competence, and excel in clarity and precision of argument. The first one, entitled "Spacetime Structure" deals with the invariant structure of various kinds of spacetimes and argues that comparisons of the "amount of structure" of such a spacetime only makes clear sense if the automorphism group of one is imbedded in that of the other. This, the paper argues, explains a remark of Earman in 1989, and shows that comparisons of the amount of structure fails when the automorphism groups are not imbedded, as happens for the Galilean and Minkowski space times.

The only hesitations the Jury had here is on the lack of historical context and on the level of ambition. Of the two claims this paper argues for, one is just an elucidation of a remark made in *passim* by Earman, and the other was almost obvious from the start.

The second paper submitted concerns the structure of classical mechanics and in particular a thorough criticism of a paper by Jill North on this topic

Again, the main theme is the comparison of the "amount of structure" through the automorphism group of the relevant formulations of classical mechanics. It is shown that North's arguments fail on almost every stage. This paper, again, shows great competence.

Our hesitation here is that the paper by North is weak to begin with, and some (but not all!) of the main criticisms put forward here were already presented in a paper by Swanson and Halvorson in 2012.

Comparing those two contributions, one might say that where Barrett's tool of trade is the scalpel to dissect a problem with surgical precision, Hunt's tool is the machete, to explore a way through a yet unthreaded jungle. Each of these tools has its own advantages and disadvantages.

Rough cuts and occasional retreats on what turn out to be less promising routes are naturally integral to jungle exploration. But what counts is whether one is able to come back with new insights. Since Hunt's submission is the more adventurous and audacious one, we designate the 2015 Hanneke Janssen Prize to this submission.

Nijmegen, December 1st 2015

The Jury:

Jos Uffink

Klaas Landsman

Christoph Lehner

Michiel Seevinck

