

Evidence

Study Questions for Lecture 4 (25. May 2022)

Newton's Controversies with Hooke, Huygens and Pardies

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Reading – This lecture covers: Smith and Seth (2020), *Brownian Motion and Molecular Reality*: chs. 1–3

I give a brief, severely incomplete list of questions both to keep in mind and think about while doing the reading for tomorrow's lecture, and to review after you have completed the reading. Please come up with your own questions as well, to discuss in class.

1. Smith and Raghav claim that they will put aside explicitly treating the realism/instrumentalism debate. Do you think that is reasonable, given their topic and their aims?
2. What exactly is Smith and Raghav's complaint with van Fraassen?
3. Smith and Raghav claim the book will focus on two issues (stated on pp. 8 and 13). What exactly is the difference between them? Do you think the two can be treated independently of each other, as they intend to do?
4. Why do they frame (part of the) discussion of the book as a response to van Fraassen (2009, 2012)?
5. What did (*inter alia*) Ostwald and Nernst mean when they claimed that the atomic picture of the submicroscopic world was merely a "hypothesis"?

References

- van Fraassen, Bas C. 2009. "The Perils of Perrin, in the Hands of Philosophers". *Philosophical Studies* 143:5–24. doi:[10.1007/s11098-008-9319-9](https://doi.org/10.1007/s11098-008-9319-9).
- . 2012. "Modeling and Measurement: The Criterion of Empirical Grounding". *Philosophy of Science* 79 (5): 773–784. doi:[10.1086/667847](https://doi.org/10.1086/667847).
- Smith, George E., and Raghav Seth. 2020. *Brownian Motion and Molecular Reality: A Study in Theory-Mediated Measurement*. Oxford Studies in Philosophy of Science. Oxford: Oxford University Press. doi:[10.1093/oso/9780190098025.001.0001](https://doi.org/10.1093/oso/9780190098025.001.0001).

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