

# BOOK REVIEWS

## The Embodiment of Science

*Galileo's Pendulum: Science, sexuality and the body-instrument link*

By Dusan I. Bjelic

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*Review by T. Michael Roberts*

I am not a specialist in the philosophy of science and, therefore, may be the wrong person to review this book. I can follow the gist of what Bjelic is saying but I assume I am missing the significance of at least some of the details being pointedly highlighted because I do not know the history of 17th century science well enough to immediately grasp the significance of these details to what Bjelic obviously intends as a revisionist retelling of the way that history is conventionally told. I rush in where angels fear to tread only after bracing myself with the reflection that I'm not quite sure who would be the proper person to review a book fundamentally indebted to a diverse set of masters of thought ranging from Garfinkel to Foucault to Irigaray and Butler. I would love to sit at the feet of the rare scholar erudite in all the traditions from which Bjelic draws. I'm not sure anyone other than Bjelic himself answers to that description.

I do understand Bjelic's agenda; he wants to use the idea of "situated cognition" to deconstruct the conventional account of a shift in thinking which occurred in the 17th century. The author himself never uses this term, but it is, I think, the best shorthand description for the explicit return of the body and of actions performed bodily to our accounts of scientific discovery and of the pedagogy which transmits these discoveries as a body of knowledge. Bjelic's point is that this body of knowledge has been disembodied by accounts that leave the body itself out of the account.

This conventional story of the rise of experimental science leaves out the role of instruments in making available through mediation the observations that counted as evidence within Galileo's science. Bjelic wants to describe this shift as the forging of a new instrument-body link that privileged a notion of "objectivity" rooted in Neo-Platonism. "Historical representation

of Galileo's Pendulum depends on the dominant mode of rationality and its strategic suppression of the body. In other words, our knowledge today is rooted in the Christian and Neo-Platonist discourse of abstract pleasures, which were appropriated by the seventeenth-century scientist's subjectivity and dissociated from the body as a personal ethics and scientific method" (Bejic, 2003, pp. 115).

Bjelic is bringing this conventional story into question by constructing a counter-narrative which highlights everything that this conventional story leaves out in order to achieve closure and coherence. These omissions were not accidental but ideological, were ruled by a set of social prejudices and philosophical commitments that got built into the ideal of "objectivity" that came to regulate science after the seventeenth century. The conventional narrative presents this shift as an increased emphasis on experiment and empirical observation which, conversely, diminished the role of the kind of deductive reasoning one could do sitting in an armchair. In the conventional narrative, the clash involved is presented as a conflict between dogmatism based on reasoning deductively from axioms given by authority and an emerging tradition of empirical investigation.

What this account leaves out is any frank acknowledgment of the set of Neo-Platonic prejudices that drove this seventeenth century shift. The shift itself was, finally, the shift from an Aristotelian view that privileged the body and embodied subjectivity to a Neo-Platonism that defined truth as something mathematical which sat behind subjective experience. Being "objective" meant not being deceived by the body and its senses but rather finding ways to first see, and then show others the truth behind what appeared to the fallen flesh and corrupted senses to be. Behind that buzzing confusion was a perfect unity that was best expressed through mathematics and was only available to the senses through the mediation of instruments. "Once the center of knowledge and pleasure, aesthetics and ethics, the body in the seventeenth century represented a myriad of morally and epistemologically corrupted terms, such as "bodily pleasure," "women," "fallen nature," "artisanship, etc., excluded from this unity" (Bjelic, 2003, p.154).

The role of the Jesuits is an important part of the story of this shift. The Jesuit vision of "objectivity" was based on the homosociality of a quasi-military order based on rising above fallen nature through rejection of the pleasures of the flesh. There was always something severely Euclidean in the style of Jesuit celibacy. What was being rejected was never just heterosexual intercourse but all things and influences seen as feminine in the sense of

being a temptation to fall into deception, sin and error. The body was the target of temptation and the source of that error which was sin. The body and the senses were feminine, and “objectivity” was a correction of error achieved by spiritual discipline and rigorous study aided by proper instruments which corrected the fallen senses themselves to such an extent that the truth could be demonstrated.

Both Galileo’s pendulum and the prism provide paradigms of instruments which link to the body to correct the fallen senses. A mathematical reality becomes objectively observable and therefore “real” through a process of learning to properly manipulate the prism. Through this process of situated learning, the prism becomes an extension of the body which corrects the fallen senses to make a reality behind appearance visible. The pendulum achieves the same purpose. In both cases, the result is not so much an experiment as the visual demonstration of a mathematical truth already worked out. What the spectator witnesses is not a process of discovery but the demonstration of an abstract truth. QED.

The Jesuits were in the forefront of the new experimental science of the seventeenth century. Their genius was not for discovery but for demonstration. Galileo left out the details of how to build three pendulums that would demonstrate that Time of swing equals the square root of Length. He did not give instructions on how to build them, but only said, build them and set the balls swinging and thus will it be demonstrated. The Jesuits built them and used them to teach. The Jesuits observed rigorously and tinkered endlessly to make instruments that would close the gap between appearance and reality and make the pure truth itself appear even to the fallen senses. Where did this passion come from, this passion that drove and united these celibate brothers as they strove as furiously disciplined as any army to build instruments that would reveal the truth hidden behind the feminine deceptions of fallen nature and tempting flesh? Bjelic thinks he knows and I think he is right. I would not say that QED should sit at the end of this volume, but I will say that his conjectures are both interesting and plausible.