Review of: "The Conservation Laws in Quantum Mechanics"

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Potential competing interests: No potential competing interests to declare.

This is an article that discusses the foundations of quantum mechanics and physics in general. There is a large literature on this subject but the author does not refer to much of this. The author starts by considering absorption and radiation processes and praises Einstein's treatment. One gets the impression that there is an Einsteinian formulation of quantum mechanics that is better that other formulations but to my knowledge Einstein never formulated a theory of quantum mechanics.

On the whole modern theoretical physics does not have any problems in reconciling quantum mechanics with conservation laws. The processes studied at LHC are analyzed entirely from the point of view of energy, momentum and charge conservation. Emission and absorbtion of photons by atoms is nowadays studied within QED and there is no problem with conservation laws there either as far as I know even if the actual calculations can be quite tricky.

The author presents the action principle briefly and correctly and then returns to the problem of absorption and emission of photons by atoms. The author cites Wilczek and Zeilinger and that is fine. Not even they can say exactly what happens when an atom absorbs or emits radiation because these processes can not be investigated empirically without interfering strongly with the process. That is one of the main insights of quantum mechanics.

In the conclusion the author joins the large group of anti-reductionists. I am sure they will welcome him. I am aware that this review is not thorough but such a review would have to go through the entire history and philosophy of quantum mechanics and that does not seem realistic to ask.