Review of: "Classical Thermodynamics: Primacy of Dissymmetry Over Free Energy"

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Potential competing interests: No potential competing interests to declare.

Thank you for the opportunity to read the new work of Professor Lin-Shu Wang (Stony Brook University, USA). Like most of his works, it deals with the foundations of thermodynamics in a historical perspective, i.e., foundations taken more from the side of technology and engineering and less from the physical side of natural phenomena. Such an approach is most often opposed by physicists because it places the laws of technical thermodynamics as ubiquitous and the most fundamental.

Prof. Wang is an apologist for engineering thermodynamics, but he is astonished to discover how many vague assumptions, arbitrary simplifications, or inexplicable intuitions there are. However, he treats dyssymmetry not as an anthropomorphic element in the development of science, but as an eternal law of nature, which, however, still has a different kind of representation and mathematical approach in the activity of constructors and engineers.

As an academic researcher explaining the fundamental concepts of thermodynamics in a historical perspective, I attest to the originality with which Wang reads the work of Thomson and Clausius. He is also familiar with the ideas of Lazar Carnot and his son. I personally dislike his interpretations of Helmholtz's and Gibbs' motivations, although they are consistent with the "American view of the foundations of thermodynamics." I believe, like Prof. Wang, that the laws of thermodynamics should be formulated in terms of the concept of energy and its various forms. I like this approach since it deprives Clausius's entropy of its halo of semi-divine origin.

I believe that the peer-reviewed work is valuable, gives an original view of the role of dissymmetry in nature, and can be published in your journal.

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