

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

Erik Flidr

Potential competing interests: No potential competing interests to declare.

Dear Lin-Shu Wang,

I would like to thank you for your interesting work. I must admit that while reading your paper, I encountered some issues which I will attempt to explain. Hopefully, these comments will help you improve the paper for the benefit of the readers.

Firstly, I admire your attempt to blend a historical perspective with physics. Such an endeavour deserves appreciation. However, from my point of view, the style you used can be somewhat confusing to the reader. At times, I found it challenging to differentiate between your analysis and the historical narrative.

Therefore, I propose two potential solutions for you. Firstly, you could consider reorganizing your paper to separate these two aspects, which would enhance clarity for the reader. For example, if I were to write such a paper, I would begin with an introductory paragraph outlining the history of thermodynamics, followed by my analysis.

Preferably, I would recommend dividing the paper into two separate papers, allowing for a deeper exploration of each subject. This division would not only enhance the depth of analysis but also result in shorter individual papers, which would aid readers in following your thoughts more effectively.

I've reviewed all your examples, and they are correct. However, I have two notes about your analysis:

First, on page 3 after equation 3, you introduced the work

$$dw = pdV,$$

however, this work should be referred to as mechanical work, not simply "the work." Equation 1,

$$dU = dQ - dW,$$

is more general than

$$dU = dQ - pdV,$$

as work can include many contributions. You mentioned in the following part of the paper that chemical work is caused by reactions; however, it's worth noting that work can also be caused by other factors, such as electric and magnetic fields.

Therefore, the work equation could be represented as

$$W = W_{mech.} + W_{reac.} + W_{ele.} + \dots$$

Second, in the Afterword, you numbered them from one to five and then used this labeling to address them with additional information. I believe it would be beneficial to number these examples correspondingly in the paper itself.

From a language standpoint, as a non-native speaker, I don't feel confident in judging your work and correcting it.

However, I also have some notes that may be helpful to you.

For example, on page 1, I believe the phrase '...Thompson (Kelvin) invented the concept...' is not entirely correct. A better word choice would be '...Kelvin introduced...'. Sometimes, there are phrases that may appear humorous but might not suit the tone of the paper. For example, on page 30, the expression '... will kill the goose that lays the golden eggs' could be considered as such.

Once again, thank you for your work, and please consider my suggestions during the preparation of the final version of your paper, or maybe papers?

Best regards,

Erik Flídr