The Three Laws of Thermodynamics

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Relativity

(Relativistic) Proof of Fermat's Theorem

The Three Laws of Thermodynamics

1. You can't get something for nothing.
2. The best you can do is break even.
3. You can't even do that.

The First Law of Thermodynamics – "You can't get something for nothing".

You (the observer O can't get something (a widget Ψ) for nothing. That is, you both must exist. (If there is no observer ($\mathrm{O}=0$) , the widget is unobservable. If there is no widget $\Psi=0$, the observer can't observe anything). In order for either observer or widget to exist, it must be able so shout "there it is" and point at it, which means that at least the observer must definitely exist (i.e.,be "positive" definite); only an observer can point and shout, so that: $|\mathrm{O}|>0$

Counting (addition)

The process of observation is called counting, or "addition" ($+$) in which

$\psi=\varphi=O+\Psi=2$. This implies that since a widget can be counted, if it is not an observer, then $|\Psi|>0$ as well. If an observer or a widget can be counted, it is sometimes called an "integer".

Note that if $\Sigma=O+\Psi$ and Σ is an integer, then $\Sigma\neq1$ in terms of the widget (and/or observer) count.

Interaction (Multiplication)

The process of interaction is called multiplication. To multiply observers or widgets, one has $\mathrm{X}=\mathrm{O}\Psi=\Psi\mathrm{O}$, and in particular an observer or widget must at least be able to interact with oneself, implying there may be more than one identical observer or widget, the number of which will be called a "dimension" (n) $\mathrm{X}_{\mathrm{O}}{}^{n}=\mathrm{O}^{n}$, $\mathrm{X}_{\Psi}{}^{n}=\psi^{n}$ Note that positive definiteness means that $n>0$ and

$|\mathrm{O}| = \sqrt{\mathrm{O}^2}$, which means the observer must at least interact with itself (Bertrand Russell called the process of interaction “shaving”).

To understand this, the process of interaction of two widgets or observers is represented by $\varphi^2 = (O + \Psi)^2 = \mathrm{O}^2 + \Psi^2 + 2(\mathrm{O}\Psi)$, where $\mathrm{O}\Psi = \Psi\mathrm{O}$ represents the interaction between the observer and the widget.

This is the Binomial Expansion for existing widgets and observers for the case $n = 2$ (a consequence of the associative and distributive rules of arithmetic for positive integers).

Interaction Ignorance in the Imagination

You can ignore the interaction between the widget and the observer in your imagination. If all observers are widgets or vice versa, then $\mathrm{O} = \Psi$ then $\psi^2 = \varphi^2 = (O + \Psi)^2$

The Second Law of Thermodynamics - “The best you can do is break even.”

This interaction can be ignored by imagining that it is added and subtracted by using “imaginary” numbers (sometimes called “complex” by those with no imagination), which can be represented by interaction with $i = \sqrt{-1}$, so that an imaginary widget can be added and subtracted in the process.

This process is represented by $\psi_{\mathrm{O}}\psi_{\mathrm{O}}{*} = \psi_{\mathrm{O}}{*}\psi_{\mathrm{O}} = (\mathrm{O} + i\Psi)(\mathrm{O} - i\Psi) = (\mathrm{O}^2 + \Psi^2)$, where the subscript represents the fact that at least the observer must exist (if $\Psi = 0$, so the widget does not exist, then $\psi_{\mathrm{O}}\psi_{\mathrm{O}}{*} = \psi_{\mathrm{O}}{*}\psi_{\mathrm{O}} = 1^2$, so the question is moot.)

This is represented by the Second Law of Thermodynamics – which can only be accomplished in a single observer’s imagination.

The Second Law of Thermodynamics is the foundation of the Special Theory of Relativity, Quantum Mechanics, Quantum Field Theory, and Einstein’s law of Gravitation. (Note that experimental evidence applies only if there is more than one observer along with one or more existing widgets).

The Third Law of Thermodynamics – ("You can't even do that")

The Third Law of Thermodynamics is a consequence of the fact that if O and Ψ exist and interact, then the product $\mathrm{X} = \mathrm{O}\Psi = \Psi\mathrm{O}$ must also exist (can't be ignored). This has consequences for the mental disciplines of Physics and Mathematics. For "thermal potential", reality can be imagined by the expression $\varphi = \frac{N_d}{N_a}\exp(\frac{kT}{q})$ where N_d and N_a are "counts" modified by an imaginary density $k = \frac{N_a}{V_a}$ where V_a is an imaginary volume and q is an element of charge (or mass) in that volume, and T is a scaling factor, where all multiplication is governed by the First Law of Thermodynamics…..

(In Physics and Mathematics, it is instructive to examine the consequences of setting each variable in every theory to 0 or 1 to examine the consequences, but is outside the scope of this discussion. The imagination may boggle, but reality seldom (if ever) does.)

This result is the foundation of proof for Fermat's Theorem via the consequences Relativistic Unit Circle and the Binomial Theorem for $n > 2$, which shows that Fermat's expression is a metric of a Pressburger arithmetic which only involves addition and powers of widgets. This has consequences in the interpretation of "self-referral" sentences in a Gödel arithmetical characterization of propositions in a referential logic.

See "The Relativistic Unit Circle" and other documents in the Relativity section on my website. If you have any questions, feel free to email me at BuleriaChk@aol.com.