In the Science-of-Counting, counts in a time-series are enforced as constraints on maximum entropy. The Lagrange multiplier, λ, measures self-coupling. The Science-of-Counting generates more than a dozen scientific measurements. The most important are presented below.

Properties (dataname)	Definition	Format
mass, m	Unit Mass, m, is related to the self-coupling, λ, by m = exp(-λ). In general, mass is not constant. The stronger the self-coupling, the less the unit mass. Illustratively, the photon is very self-coupled.	To four decimal places
momentum, p	Momentum, p, measures the inertia of the time-series. As the momentum increases, more effort as an external force, is needed to produce the same deviation from the current direction. • When displacement velocity vanishes, v = 0, the momentum reduces to the mass, m. • When E ≠ 0, p = m exp(v). The expression for p is non-linear. Note that the momentum is not equal to mv.	To four decimal places
energy, E	Displacement energy from equilibrium. The energy at equilibrium is subtracted from the total system energy. • When E = 0, the system is in equilibrium (statistical or thermal). Equilibrium means that all states are equally likely. Equivalent to: there is no energy entering or exiting the system. • When E ≠ 0, energy enters (E>0) or exits (E<0) the system. Non-zero displacement energy signals non-equilibrium behavior, with all its consequences.	To four decimal places
free energy, <A>	Helmholtz Free Energy. The maximum energy available to do work. For example, the energy available for price movements, or, sales increase, or, an increase in demand.	To four decimal places

temperature, T	The entropic temperature of the system.	To four decimal places
body temperature, T_B	Body temperature of the system. Same as the reservoir temperature.	To four decimal places
free entropy, <M>	Massieu Free Entropy. The entropy minus the heat lost from the system, <M> = S - E/T, defines the entropic potential energy. The slope of the free entropy equals -F, the force due to the potential.	
Expected demand	Expected Demand, <\eta>. The expected value of the demand.	
Displaced expected demar	Delta Expected Demand. The displacement of the expected demand from equilibrium.	
Susceptibility expected de	Susceptibility Expected Demand. The impact that an increment of energy would have on the displacment expected demand.	

Advanced Comments

Dispersion Relations. Data measurements in this first section define the dispersion relations that enforce algebraic relationships between the mass, momentum and displacement energy measured from equilibrium (the zero-offset).

The displacement energy, E, is due to internal or environmental processes that add energy to or remove energy from the system.

Internally generated energy should include emotions (plural). Emotions is the human-generated displacement energy from equilibrium.

Thermodynamics. Similar to the dispersion relations, thermodynamic expressions define and enforce algebraic relationships between the energy E, free energy, temperature, free entropy, and body temperature through the second law of thermodynamics: $\langle F\rangle \equiv T\langle A\rangle/T_B = E - TS$, offset from equilibrium. When in thermal equilibrium, $T = T_B$, and classical thermodynamics is regained. However, equilibrium is not assumed and is infrequently observed in time-series.

The entropy, $S(\lambda,E)$, is the number of different counting configurations that are possible when subjected to the constraints due to counting time-series. The entropy is a function of the the lagrange multiplier, λ, that is used to impose the constraints of the time-series, and the displacement energy, E. In general, the entropy, S, and the entropic temperature, $1/T = \partial S/\partial E$, of a time-series are not constant.

Non-Equilibrium Dynamics. Defined by the connection.