5 TRADE-OFFS

Analytical understanding must always be a basilisk which kills what it sees and only sees by killing.

C.S. Lewis

Many games are of necessity zero-sum games. One party can win only at the expense of another party. Such inverse relations or trade-offs are frequently due to the finiteness of the system, but in other cases, they derive from mathematical or physical principles.

- The Uncertainty Principle. It is impossible to know both the momentum and position of a particle with unlimited precision. We must sacrifice knowledge of the position to acquire knowledge of the momentum and vice versa.
- Energy Efficiency ≠ Time Efficiency. Other parameters being equal, an increase in time efficiency will cost more energy, while a saving in energy will require slower operation of the system.
- Field ≠ Resolving Power. In systems with bounded information channels, enhanced definition of detail can be purchased only with sacrifice of field of view and vice versa.
- Completeness ≠ Perfection. An inference from Godel's Theorem tells us that completeness requires a sacrifice of perfection and vice versa. If a file is to be complete, it must contain the imperfection of an unclassifiable miscellaneous section. If, on the other hand, we desire a perfect file with every item classified, then we must sacrifice completeness by throwing out the miscellany file.
- Notariety ≠ Autonomy. The price of renown is the loss of freedom. The celebrity is a prisoner to his fame. Autonomy is only possible with anonymity.

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