Quantum Entanglement and the Flow of Time Animations

Total Entropy

By Mark Egdall 6/15/ 09

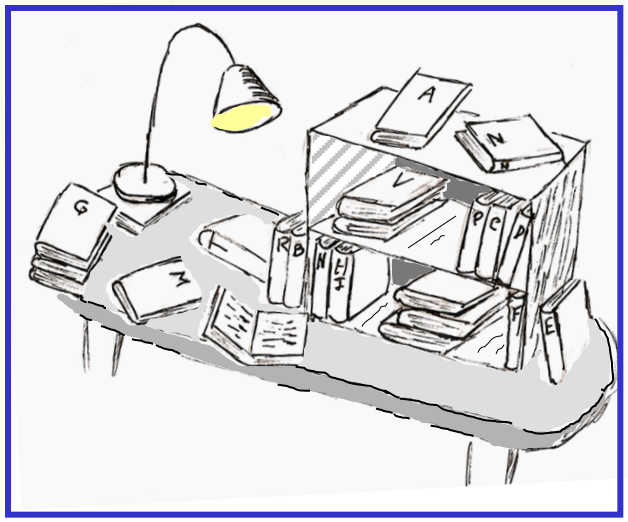
Based on Brian Greene's *The Fabric of the Cosmos*

4. Animation on *Total* Entropy:

• Orderly books in bookcase may appear to have lower entropy (less disorder) than when books were scattered about.

→ But the total entropy has actually increased due to fat burned and heat generated by person who cleaned up the room.

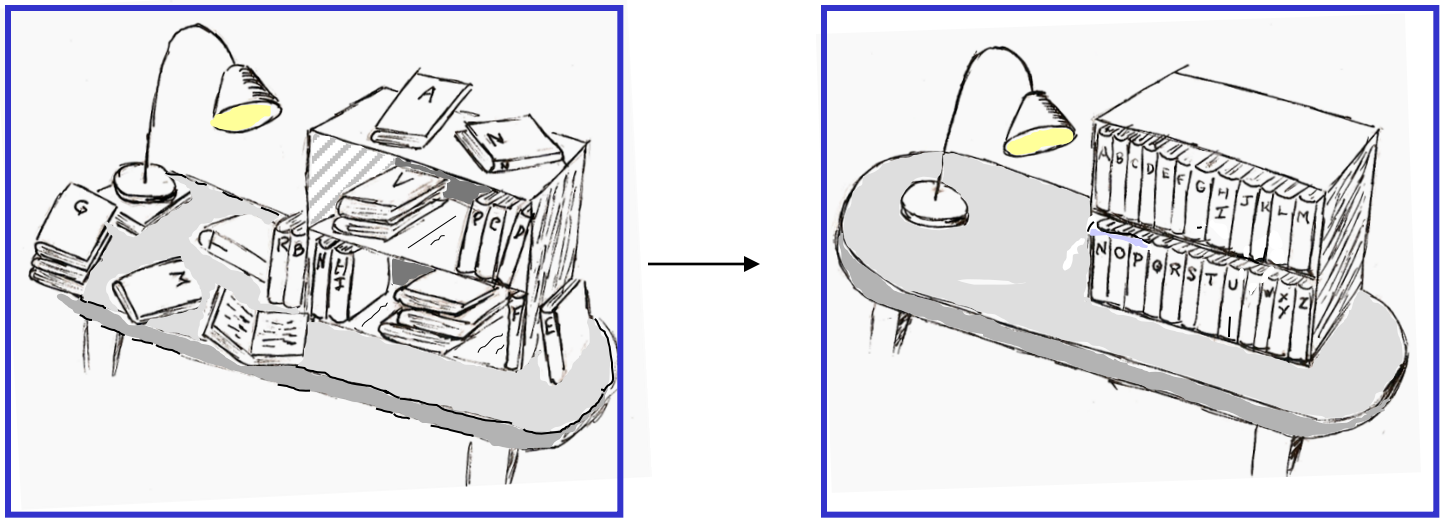
Total Entropy – Example *



Before

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene

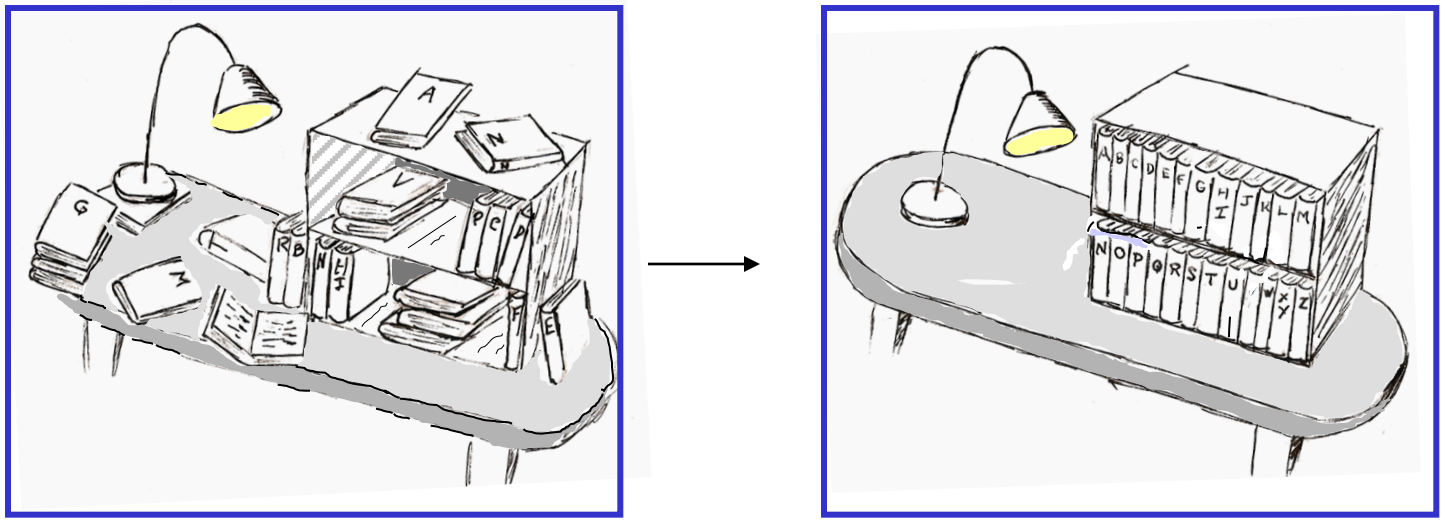
Total Entropy – Example *



Before **After**

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene

Total Entropy – Example *



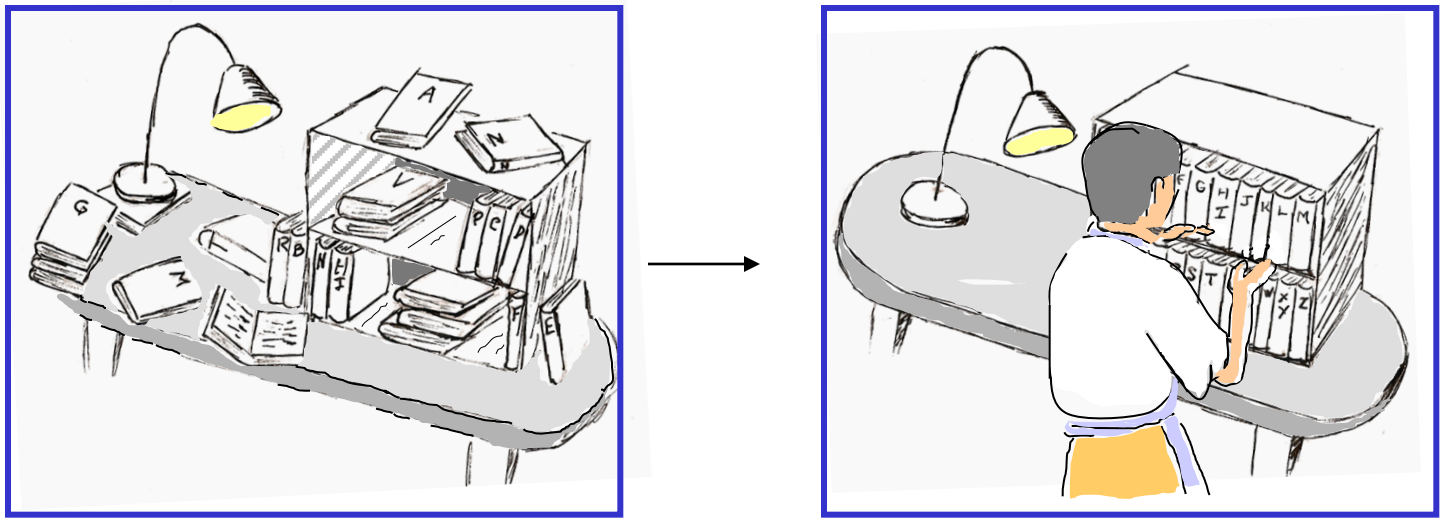
Before **After**

"After" encyclopedias more ordered than "Before"

→ Entropy *decrease*

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene

Total Entropy – Example *



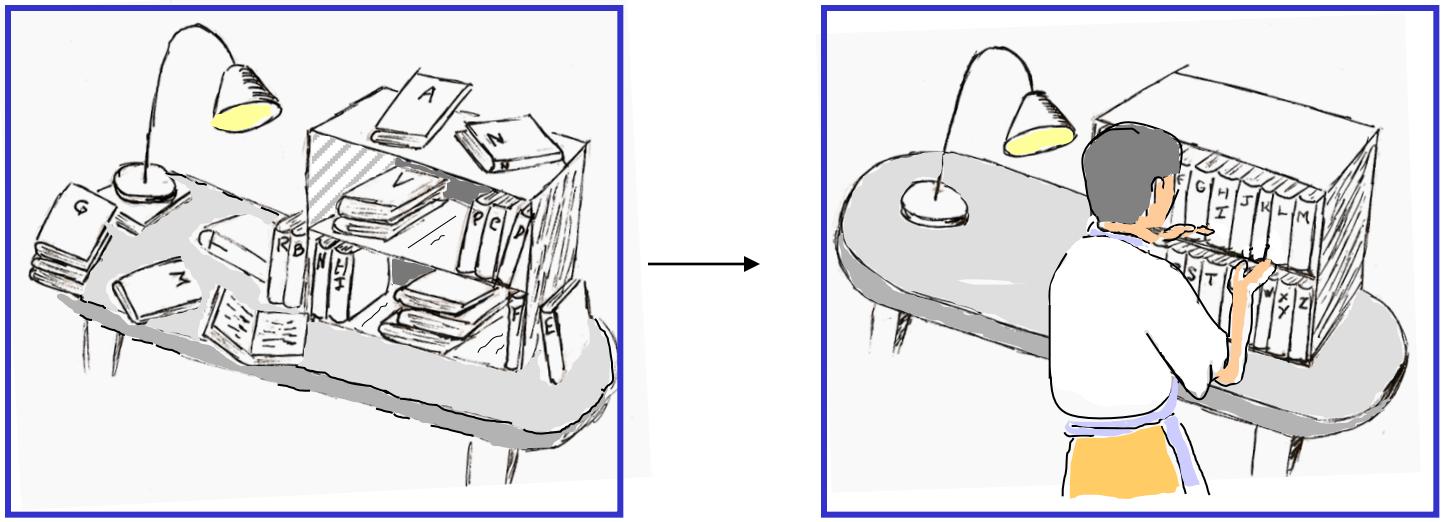
Before **After**

"After" encyclopedias more ordered than "Before"

→ Entropy *decrease*

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene

Total Entropy – Example *



Before **After**

"After" encyclopedias more ordered than "Before"

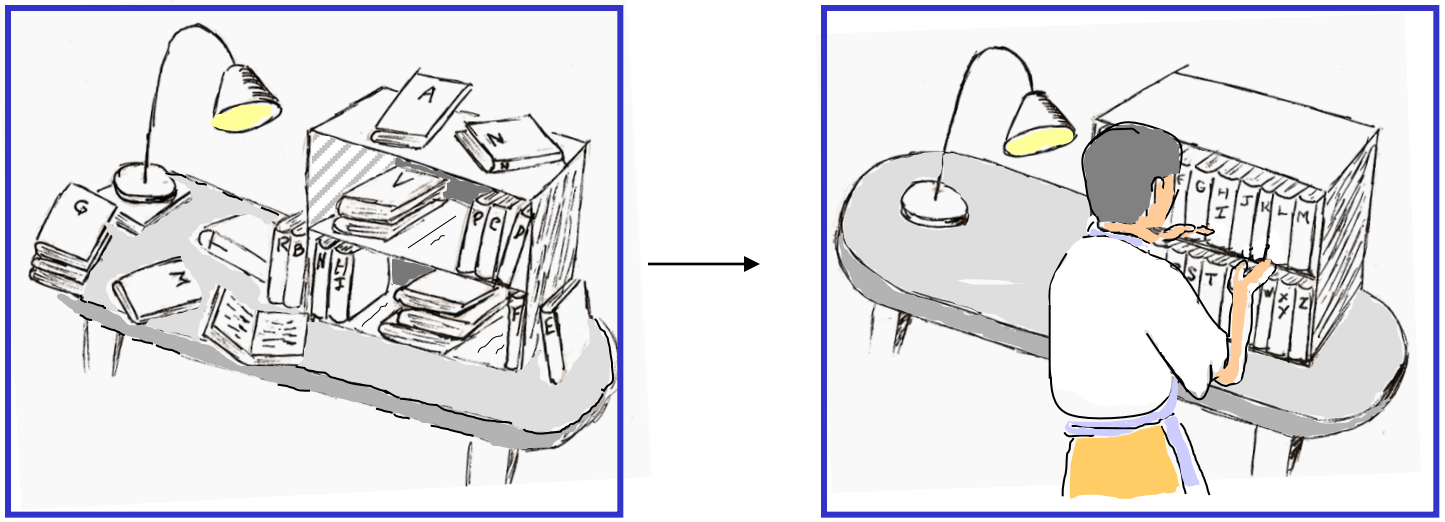
→ Entropy *decrease*

• <u>But</u> more than compensated by

- Fat burned and heat generated by person who put everything back in place!

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene

Total Entropy – Example *



Before **After**

"After" encyclopedias more ordered than "Before"

→ Entropy *decrease*

• <u>But</u> more than compensated by

- Fat burned and heat generated by person who put everything back in place!

Net Result: Total entropy *increase*

* pp. 172- 173, *Fabric of the Cosmos*, B. Greene