A few thoughts:

1) A decrease in information doesn't always mean an increase in entropy. Consider this paragraph. If you scramble the order of its characters you will no longer have information but the entropy will be the same.

2) Consider the grocery list. Initially it did not exist. It was created by intelligence. So we must consider the relationship between entropy, order, information AND intelligence.

3) There are no closed systems yet we readily observe entropy and adding energy to a system doesn't magically make it organized. If that were true I could just leave my car out in the sun for a while to fix a flat tire -- or maybe just add gas. Even better I could constantly supply my body with food energy to cure disease and live forever.

4) Sometimes it seems like entropy is reversed and matter does become magically more organized. For example, if I scratch my arm until it bleeds my arm will eventually reorganize itself and heal through a series of programmed chemical reactions. Energy is required for this to happen but also information that specifies the programmed chemical reactions. This information is in our DNA. Overtime the information in our DNA is corrupted. Because of this we age and eventually die. Entropy overcomes information.

Similarly if you plant a seed in the ground and add water and sunlight, the surrounding molecules will organize into a plant through a series of programmed chemical reactions specified by the plant’s DNA.

But where does information come from? It comes from intelligence.