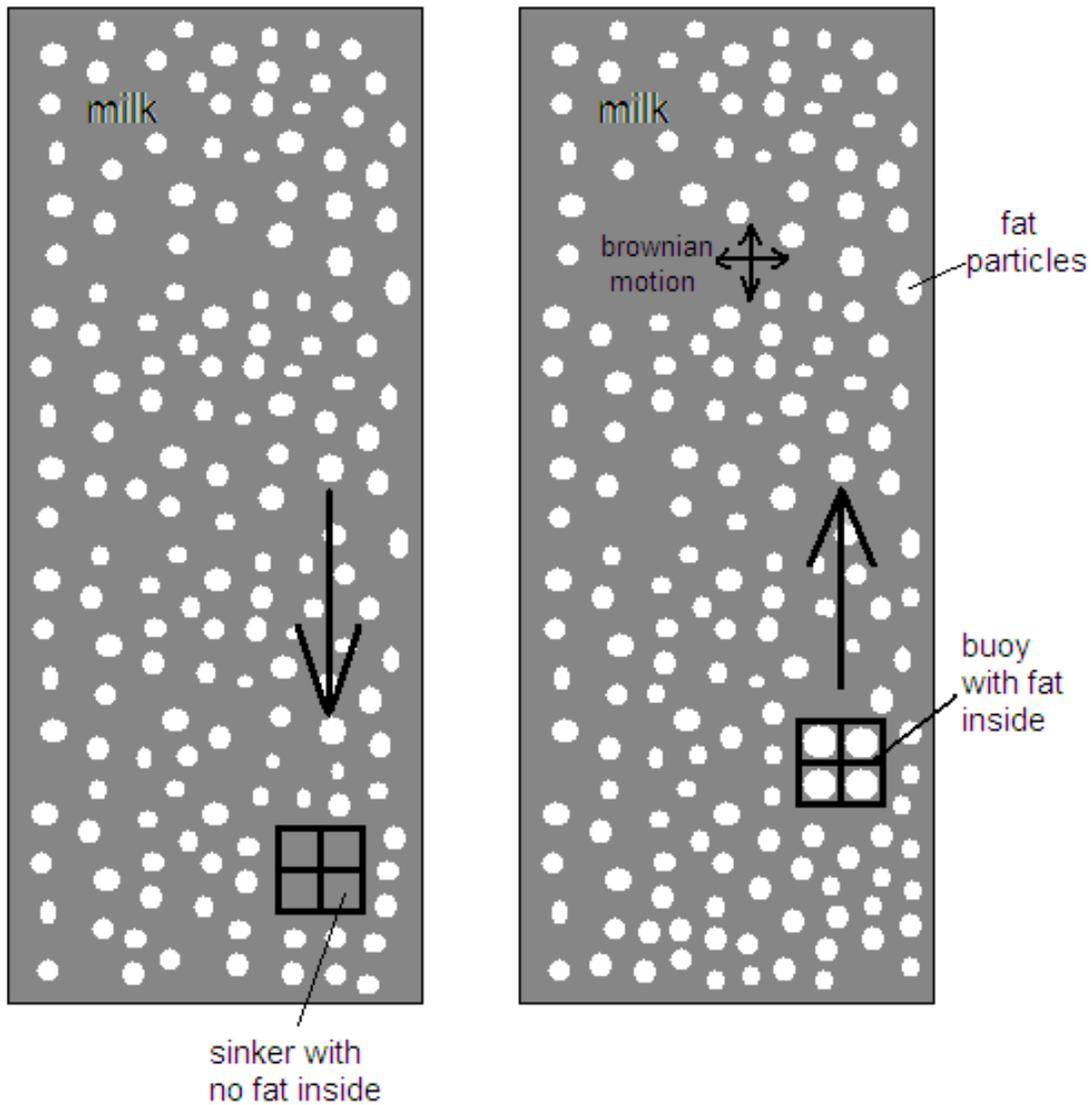


Violating the Second Law with Milk



When a small buoy (tiny container) in milk is filled with only fat particles, it floats since the buoy is not affected by brownian motion due to its size (big enough to be a buoy, and not small enough to be affected by brownian motion). The buoy travels upward and can perform orderly directional work. When the buoy arrives at the top of the container the fat particles are released and the buoy now becomes a sinking object filled with salty milk water (no fat particles). Brownian motion causes fat particles to defy gravity and stay suspended, but by increasing the size of the fat content into a buoy, it floats to the top since brownian motion does not affect larger objects. This would violate the second law since milk's internal energy is being exploited (no macro temperature differential). Microscopic motion emulates turning off gravity (ignores it), while the macroscopic object does not ignore gravity, and floats (directed motion). By switching back and forth from nano particles to a macroscopic buoy, one has emulated turning off gravity, which no one has been able to do in history. (gravity is not literally turned off; the nano fat particles don't float, so gravity *appears* off, then turned on again when the fat particles float as a larger macro/micro buoy)

The Milk Demon

Homogenized milk seems to defy gravity since fat particles stay suspended when they normally would float to the top due to buoyancy. This paper intends to answer: does changing geometry, allow 2nd law violation, if there is a force (gravity) that only affects a microscopic particle (floats) if it is a certain size.

One can imagine that a plane flying in the air is “defying” gravity only because it is expending energy doing so. If the plane stopped expending energy, it will eventually fall to the ground (unless the plane landed on a convenient shelf that was located in the sky to hold it in place). If an airplane requires energy to defy gravity, does milk require perpetual energy in it (from the heat bath) to keep the fat particles suspended to defy gravity? Is not an airplane suspended in air only because of the energy available to the airplane? Is this perpetual motion in milk exploitable by creating a gravity potential difference?

It is argued in this paper that there is an exploitable energy available in milk using a buoy that gathers the particles together to make a floating object not affected by brownian motion.

The milk demon attempts to exploit energy from milk by using simple geometry. Brownian motion is sensitive to the geometry (size) of the object being affected. If a milk particle does not float in homogenized milk, it's only because the milk particle is too small – but about four milk particles together in a container (buoy) will float, since four milk particles are big enough to no longer be suspended in place by brownian motion. Whether it is four milk particles or ten milk particles doesn't really matter but let's use four as an example. Four milk particles are collected by a demon and put into a tiny container: this container then acts as a buoy and floats to the top of the container. This buoy could perform useful work, therefore violating the second law since internal energy of milk is being utilized (or is it violating the first law since gravity energy is being used? Likely it would be violating the second law since the first law is more solid than the second law). The height of the container can be lengthened to a maximum to get the most work done. The fat particles are put in a buoy with sections, so that the fat does not become one huge fat particle in the buoy; rather small individual fat particles exist.

A demon sits at the bottom of the tall milk container and grabs four milk particles and puts them in a container with four compartments: this makes a buoy. Once the demon gathers four milk particles and puts them in the box, the box now floats up to the top of the container. The buoy moves in a predictable direction, upward, and therefore can now extract energy from the buoy. When the buoy arrives at the top of the container, a demon releases the four milk particles and fills the buoy with the salty milk water (no fat) which sinks rather than floats since salty milk water is denser than the fatty milk overall. The milk temporarily has more fat particles at the top of the container now that fat is brought upward, but random motion scatters them, and the process repeats.

Possible **falsification**: does it take more energy for the demon to gather the milk particles then is gained from the long path the buoy travels up the container? Since the height of the container can be extremely high one would think that more energy is gained overall than is lost. One can change the height of the container and the milk still stays mixed. The sorting energy required would be minimal, since fat particles are located conveniently everywhere for the demon to grab hold of. Still, the sorting is a possible energy balancing and falsification. But is it, if for example one could just make the container taller and taller while expending the same amount of work sorting, while gaining energy the taller the container is? One might argue that it takes energy to make the buoy at the bottom of the container, but how can it require more energy, if the buoy is released and gets pushed up a container tens of meters high, or even hundreds? The amount of energy to make the buoy is fixed. It seems less and less likely that this scenario could be falsified. However maybe someone else can falsify it.

Practical problems: designing this device may not be practical since it requires a sorting demon. Even though the milk demon may not be a practical at the moment (someone may beg to differ), it's an important thought experiment to see if the laws of physics always hold true, similar to maxwell's demon. It is also interesting to see whether gravity can be defeated microscopically. Is the only anti gravity technology microscopic in size?