A new view on dark energy and the expansion of the universe

Head Biotech June 2011, Oslo, Norway. Bjørn Sponberg M.Sc.

*Main theory = "Fourth law of thermodynamics – a philosophic introduction" (See scribd or wordpress)

Abstract

It seems that the expansion of the universe, instead of its collapse, is caused by *dark energy*. Dark energy is believed to yield about 70% of the universe and to have gravitational properties that diverge from ordinary mass.
From before the main theory* proposes a universal thermodynamic law which logic is based on two main observations:

1) In life, the two biologic features *love and intelligence* are accumulating over evolutionary time – on the whole. Pure evil does not seem to accumulate in nature - hence evil is *unfit,* and love is *fit.*
2) That free competition has worked during the course of evolution and thus seems to have played an important role in this handing out of fitness and unfitness.

In conclusion, an irreversible reaction formula is suggested to describe a law that drives the entire universe from the beginning to end:

Eu -> 0 -> Paradise

In this articles extension to the main theory* it is suggested that the same theory also can help to explain:

1) The cause behind dark energy.
2) The exponential expansion of the universe.

Background

The universe is programmed to favor its lowest energy states - in principal. This universal energy standard influences how the universe looks and operates. For example, it makes the planets in the universe round, the rain to fall towards the ground etc. The main article argues that this principle also causes the concept of *free competition* in nature. Nash equilibrium is believed to be the solution in free competition that results in the lowest possible universal energy state, of all possible competing solutions. Participants in free competition that comes closest to the theoretical Nash equilibrium will; 1) Win (on the whole), 2) Lower the universe energy state relative to the other solutions, and 3) Represent love and intelligence. By foreseeing a fight between good and evil in nature, the theory concludes that evil has not won over good during evolutionary free competition. The theory uses other herd animals in the wild nature such as, *Ants* and *Wild Dogs*, which have experienced a context of chaos, or free competition - for thousands of generations. Rather than evil, they seem to have accumulated good features such as, *solidarity* over greed and *loyalty* over lies. The theory concludes that free competition, which eventually originates from the universes energy standard, is evils worst enemy and is what has kept evil from accumulating in nature. In modern times, parts of the human population have experienced extreme changes in available food per individual, in particular after the industrialized revolution. This has given us the potential to step out of free competition and establishing stiff systems, or governments, of different sizes. Inside stiff systems, the principal of free competition disappears for the first time in evolution, and according to the theory it will influence how good becomes distributed in its power hierarchy. Dependent on the size and amount of excess energy within a stiff system, evil can according to the theory for the first time in evolution get the upper hand over good – on the whole. Consequently, evil can start accumulating over good and evolve towards “hell”, instead of towards “paradise”. However, this should only be locally within the universe, because the universal standard energy setting, Eu -> 0, has <u>not</u> changed. The influence to evil inside a stiff system will probably also follow its, size stiff system / size total population, ratio.

In summary, *love and intelligence* is the features in biology that makes biology a catalyst that help the universe to reach its final goal, Eu = 0. Consequently, this role as a universal catalyst should be why life is important to the universe.

Introduction

The main theory*: "Fourth law of thermodynamics – a philosophic introduction", is based on Charles Darwins evolutionary theory of natural selection [1].

From Darwins view it is the general lack of resources in nature that truly drives evolution. Further, that the general lack of resources forces forward *free competition*. In nature the fight for these limited resources has separated *fit*, from *unfit*, generation by generation for about 4 billion years. In conclusion, one can say that everything in life has so far adapted to the universal energy principal: *Too little energy*.

Due to this brutal principle, we can see amazing solutions in all life forms that have been forced to adapt to it. The brutal processes in which these selections take place causes harm to the loosing part. On the other hand, there are no traces of pure evil (Torture as a daily routine) to spot in nature. "Kill quickly - eat quicker" is the general standard seen in nature, due to the intense struggle for energy in free competition. Therefore, any mutation(s) in a given generation that have tried to start moving the genome code to producing evil phenotypes, seems to have been stopped by the universes constant struggle towards its lowest energy states. Hence, we cannot see the presence of pure evil in today's phenotypes. Not because they have been theoretically impossible to the genome, but because the universal energy context (Too little energy) has denied evil DNA codes *fitness* in nature, via free competition. This universal energy-logic combined with evolving life is the core argument of the main theory.

For the first time in ca. 4 billion years, biology on this planet have gotten the opportunity to create huge governments that can withstand the principle of free competition. This developmental pattern of stiff systems (Not free competition) has been possible due to the reversal of the universes energy context. In particular after the industrial revolution in the western world - the amount of energy available per inhabitant has exploded. During this time, in this part of the world, the energy context in the human species surroundings has gone

from *too little*, to, *too much* energy. Hence, the full control of power distribution is taken away from the universe and handed over to *man* - as long as the stiff system can be maintained. It means that we for the first time in evolution can choose to escape free competition.

Due to the high energy levels in such societies, these stiff systems are possible since the energy situation has become opposite to what the universal principle is build upon. This new stiff system does not desperately seek the lowest energy states for survival anymore, as in free competition/nature. The consequence of this is that what have held the development of evil phenotypes in check so far - free competition, is removed. This means that evil activities cannot be picked up by nature/universe anymore, because errors in the struggle for survival will not give any critical consequences without free competition. In free competition, lies, or 'misunderstandings', are quickly eliminated in competition with the truth. Hence the danger of camouflaging evil activities with positive egoism becomes possible within stiff systems (As illustrated in figure 12 in the main theory). That is, it is now *man* himself that decides what is *evil* and what is *good*, and not god or "the invisible hand" as described by Adam Smith.

The main theory* suggests that the unnatural energy context within stiff systems is in a critical contrast to the universal energy setting that generally works in life. When life lives in the universal energy context a person/company must intensively consider its energy usage to avoid death/bankruptcy - due to many competitors that can do otherwise (Free choice). Hence nature will get the chance to remove the individual, or company that tries to camouflage evil activities since there are very little room for "misunderstandings" without dramatic consequences. It seems that the universe can judge truth from lies within life in free competition.

To get to the totalitarian irreversible reaction equation, Eu = 0 = Paradise, I have added philosophy to the basic logics described over:

The very reason why the logics above exist in nature/universe could have a bigger purpose, as seen by the universe. For example to guarantee the universal end-product at E = 0 to become paradise (Eu=0=Paradise) and to avoid hell. Consequently, paradise then becomes the universes zero point energy state, or the universes final goal.

Within stiff systems the energy setting to the universe is out of balance - consequently life in it does not need to share its goal with the universe anymore. The universal pulling towards ground state cannot reach the individuals that are supported by the stiff systems - because they have alienated them self away from the free competitive concept that this energy principal produces in nature. Hence the possibility of systematically rewarding evil activities, with safety and comfort, can now become a reality for the first time in evolution. Hence in theory, such a system will become more and more evil over time (See also figure 8 & 9 in the main theory*). However, such will probably be caught up by the main systems constant pulling in the other direction. That is, a stiff systems local excess of energy will probably have a limited time period within this universe.

One can now imagine that it is the energy principal in the universe that drives evolution safely in a preset direction.

The theory has now created a direct link between the universes main will (Lowering its energy state) with biological features that we can put words on ourselves. According to the main theory* the mental properties love-and-intelligence is helping to lower the universes energy state, since these features have steadily increased during free competition in evolution. This can explain how religions and their loving nature have come about as natural products in nature - since they help the universe to lower its energy state. Hence religions are probably not a mistake, but rather a desired and foreseen product by the universe. Especially since they according to the theory, are products of free competition, established away from modern stiff systems (Huge governments).

The main theory* assumes 'paradise' to be the optimal desire to any living organism and that this concept can be viewed as an extension to the universes physical will (Its pulling towards ground state). In this way the concept of paradise in our minds can put words on the will to the universe, as well as to ours. The main thermodynamically theory then interpolates this logic into a compact form, the totalitarian irreversible formula:

Eu -> 0 -> Paradise (1)

This formula tells that mass/energy are not constant in the universe but rather goes over to a third form which can be described as 'love-and-intelligence' (In this way the principle in *first law of thermodynamics* can still be valid but introduces a new state). Further, the entropy as seen from the universe actually decreases instead of increases, totally. These consequences of the law are probably the hardest to swallow. To see it, it is critical to imagine how the mass/energy to love and intelligence ratio can take exponential forms in our future evolution. First then can these proposed developments be seen. As for now, the current view is probably correct in our observable surroundings, but it does not need to yield the entire universe in all of its space and time. Especially not in those places that the mass/energy to love and intelligence ratio has reached exponential levels. It is into this world this article takes us via the main theory - into the world of dark energy. The main theory view the universe as a dynamic system in which rules will change dependent on where you are in it. The main theory tries to describe a universal law for the whole system that includes the traditional physical world with the mysterious dark energy etc. So the assumptions made now is correct from this point of view, but is not complete - as seen from the universe. The main theory describes both worlds, and how they are naturally linked via life. What is common in the two different physical worlds and links them is the totalitarian formula Eu -> 0 -> Paradise. The main theory actually tries to convince you that a conversion-process takes place on a universal scale, Eu -> 0 -> Paradise (Figure 2 under). This conversion process will be difficult to notice at this stage/place in evolution due to the very slow energy/mass -> love-and-intelligence conversion rate that now goes only via the sun. As suggested in this article, at exponential higher conversion rates (Figure 1), the same evolutionary principle will produce more noticeable effects - such as *dark energy*. This, since mass and energy are converted to love-and-intelligence at a tremendous rate compared to now - and that at theses stages it is possible to observe the predicted physical changes. Dark energy could then actually be a bi-product of this process, that is, very high concentrations of love-and-intelligence. According to the main theory* it will be wide spread within the universe, and grow exponentially over time. The main theory* foresees an exponential increase in the production rate to love-and-intelligence in the time that lies ahead - on this planet. This is mainly based on the development seen in medical technology and knowledge the last century [2] (Figure 1 on next page).

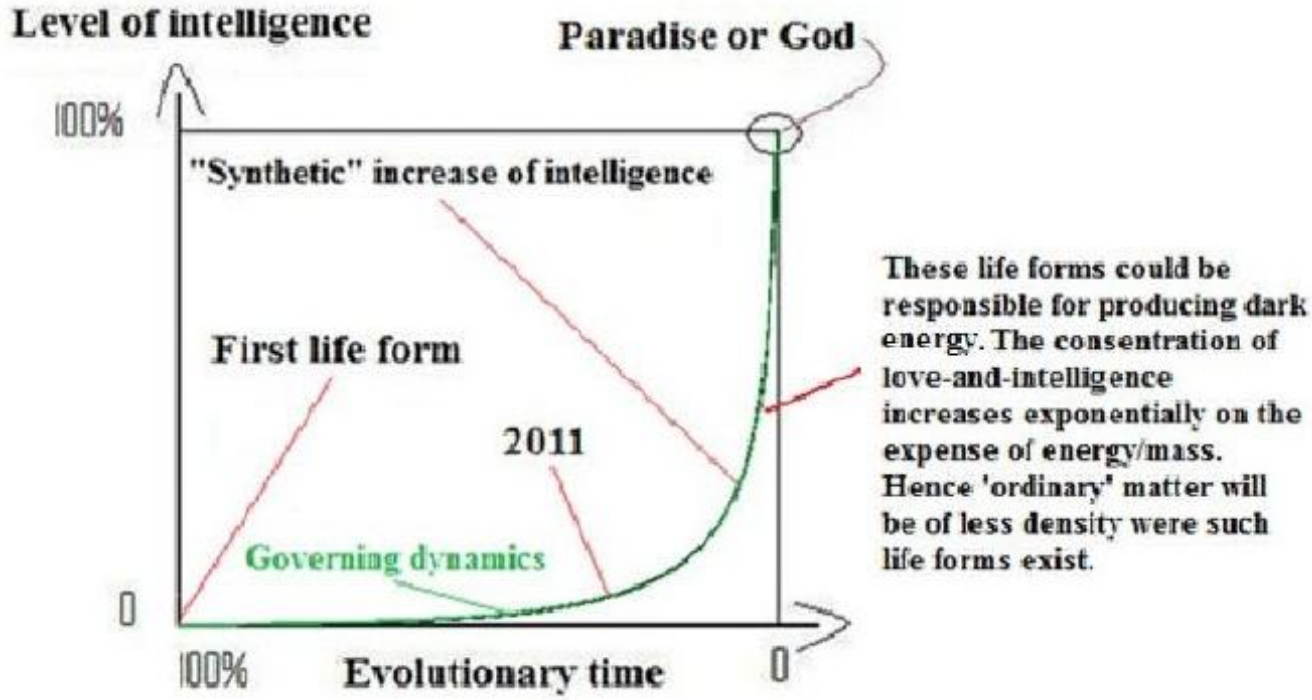

Figure 1. Taken from the main theory*. Higher evolved life forms could make an impact on their nearby surroundings due to exponential mass/energy -> love-and-intelligence conversion rates.

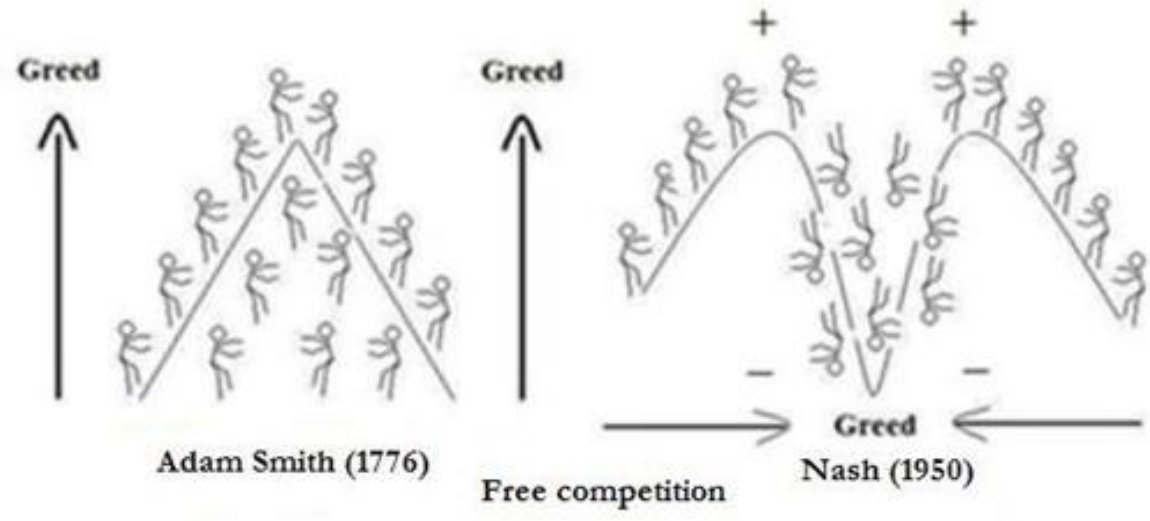

Figure 2. According to the theory, Nash equilibrium describes the solution which also gives the universes lowest energy state. Evil features are filtered away from the power hierarchy, because good and evil are connected to universal energy states.

Dark energy is believed to be a low dense form of mass compared to masses in our immediate atmosphere. It is suggested that approximately 70% of the universe consist of this material. In this follow-up comment to the main theory it is suggested that the huge mass/energy conversion rates in advanced life forms can cause production of dark energy [3].

The idea was originally inspired by an article that suggested the possibility of generating dark energy [4].

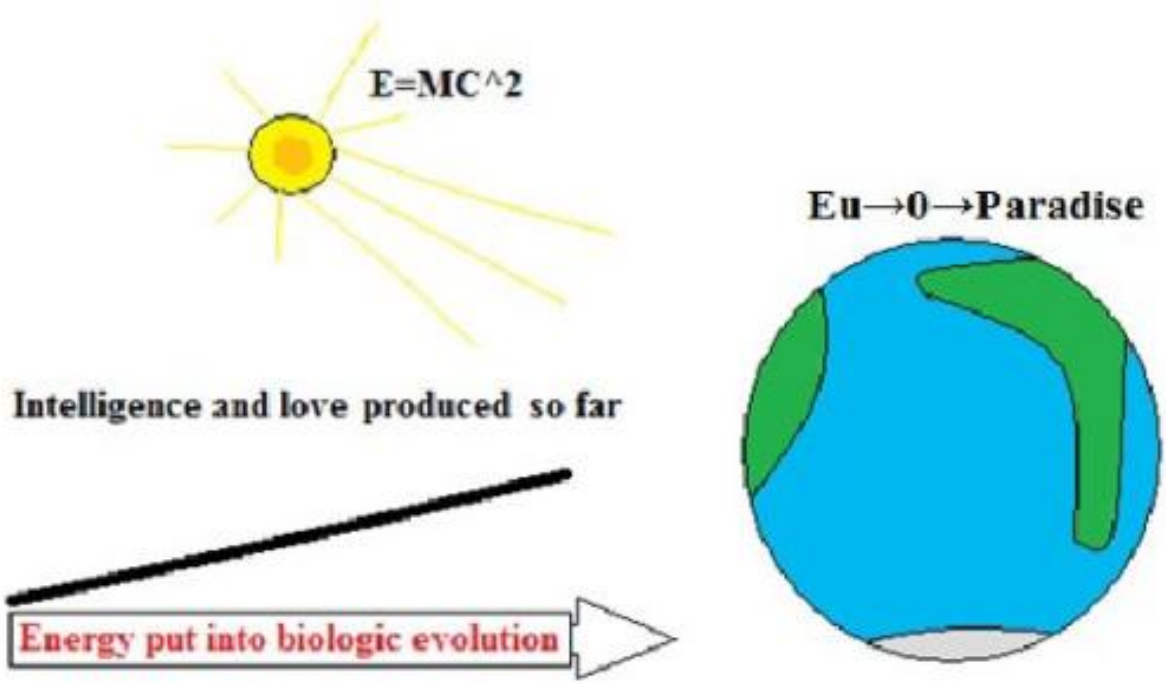

Figure 3. Figure is taken from the main theory*. Biology as an energy-converting process with a universal function. The hypothesis predicts that love and intelligence is nature's desired product and that it will take exponential growing rates in the future.

Discussion

Obviously, if life can exist in other parts of the universe, some of these life forms would probably lie ahead of us by millions, and billions of years. Hence if the irreversible Eu -> 0 -> Paradise reaction formula suggested in the main theory (Figure 3) has worked the universe from the beginning of time, very high concentrations of love-and-intelligence should now exist in the universe. Necessarily, these advanced life forms will exist in, or be surrounded by, intermediate stages between mass and no-mass (In which no-mass means mass/energy after it has been converted over to love-and-intelligence). This since an exponential Eu -> 0 -> Paradise reaction rate should probably affect the life forms physical being or surroundings (Its mass/energy).

As suggested in fourth law of thermodynamics we are today on the evolutionary graph just before love and intelligence will start to show exponential production rates. The theory suggests this developmental pattern to follow Newton's law of gravitation, but is not very important. The important thing to explain the expansion to the universe in this article is that the growing rate to love-and-intelligence probably will become exponential in the future, and rise towards its full potential - 100% (Figure 1). However, it should be similar to the universal expansion rate since this evolutionary rate is what causes it (Compare figure 1 and figure 4).

The life forms that are millions of years ahead of us, have probably taken other life forms than the animal kingdoms 'arms and legs'. This since according to the main theory* we will focus on the mental properties love-and-intelligence in the future and enhance them – which features don't need 'arms and legs 'to exist.

Let's try to imagine the logic steps that would take place according to fourth law of thermodynamics in the evolutionary pattern that lie ahead of us today. The first versions of elevated intelligence levels would probably be even more efficient in producing the same features as the previous level was. Consequently, the predicted exponential developmental pattern of love-and-intelligence production will follow.

The next steps would probably also include trying to fit in as many 'souls' as possible per volume unit. This logic step of increasing the love/volume ratio per unit volume is possible to imagine today and is also one of the main principles that fourth law of thermodynamics is

based on (The universe has found its ground state when everything has become love and intelligence). Further, to maximize the number of souls per volume space unit, each soul must have the lowest possible energy consumption. So, probably only the things that are needed to capture the sensation of love and intelligence would be favored (Without losing control of the practical tasks). Consequently, the 'arms and legs' will fade away eventually. At some point in these stages in the irreversible process one could imagine that the same life form starts to extract energy from ordinary masses (And not go via the sun anymore) to produce even higher concentrations of love and intelligence at a more rapid rate (As predicted in the spontaneous Eu -> 0 -> Paradise equation). At this point the evolving life form actually becomes so high in concentration per volume unit that it starts to affect the physical properties (Its mass/energy) of its surrounding atmosphere at a grand scale.

An end result of this evolving pattern of actions could result in atmospheric states which are alternative versions to 'ordinary' masses. Such atmospheric bi-products could show similar properties as dark energy since it probably is partly 'opposite' to ordinary mass – or *away* from ordinary mass. This could mean that the gravitational component in ordinary masses disappears. A logic result of fourth law of thermodynamics in late evolutionary stages is therefore mass-properties that lie between the ordinary mass state, and some other unknown empty state (Very high concentrations of love and intelligence). These ever expanding proportions of altered masses will probably affect how gravitation works in the universe. Further, it could also explain the ever increasing speed of universal expansion, because according to the main theory*, dark energy (Or love-and-intelligence) will be produced at similar exponential rates in the most advanced evolutionary stages (Compare figure 1 and figure 4 under) [5].

Figure 4 shows an illustration of the universes history when it comes to expansion. From this figure the universe started to take exponential forms about 7.5 billion years ago. If the main theory is true this would mean that it took about 7 billion years from Big Bang to the first life forms reached the exponential threshold barrier suggested in figure 1. Further that this happened before life started to evolve on this planet.

Conclusion

The earlier suggested fourth law of thermodynamics can help to explain dark energy. More explicitly, that dark energy is a result of life forms millions and billions of years ahead of the animal kingdom in evolution of life.

It could also explain why the universe expands with an ever increasing rate. The production rate of dark energy would in this case follow a similar curve as the production of love-and-intelligence, as predicted in fourth law of thermodynamics.

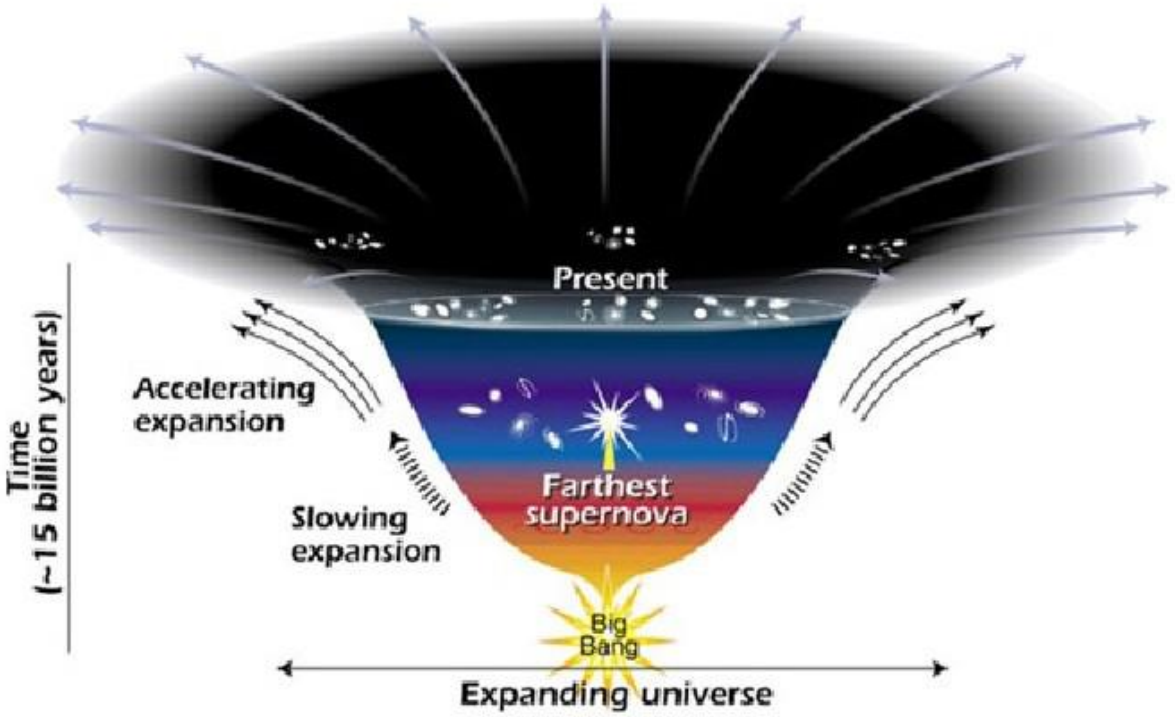

Figure 4. A NASA-illustration of the expansion-rate to the universe since its birth [5]. The expansion curve behaves similar as the catalytic rate proposed in fourth law of thermodynamics, shown in figure 1.

REFERENCES

1. http://en.wikipedia.org/wiki/Darwin%27s_Theory_of_Evolution

2. http://en.wikipedia.org/wiki/Biotechnology

3. http://en.wikipedia.org/wiki/Dark_energy

4. Murad Shibli. The Foundation of the Fourth Law of Thermodynamics: Universe Dark Energy and its Nature: Can Dark Energy be Generated?

5. http://imgsrc.hubblesite.org/hu/db/images/hs-2001-09-g-full_jpg.jpg