

Exploration

Human & Other Souls

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Abstract

In this paper, we argue that human soul can be identified with binding energy of human brain. The calculated “energy/mass of the soul” is of the order of 10^{30} GeV.

Keyword: Human soul, other soul, energy, mass, brain, binding energy.

According to classical theistic belief - classical Muslim and Jewish as well as Christian belief - first of all there is God, the chief being of the universe, who has neither beginning nor end. Most important, God is personal. Alvin Plantinga

Introduction

Our souls are owner of our body, not reverse. In this paper, we are looking for physical manifestations of human souls. We argue that binding energy of human mind is the physical representation of human soul.

The binding energy of an atom (including its electrons) is not the same as the binding energy of the atom's nucleus. The measured mass deficits of isotopes are always listed as mass deficits of the neutral atoms of that isotope, and mostly in MeV. As a consequence, the listed mass deficits are not a measure for the stability or binding energy of isolated nuclei, but for the whole atoms. This has very practical reasons, because it is very hard to totally ionize heavy elements, i.e., strip them of all of their electrons.

This practice is useful for other reasons, too: Stripping all the electrons from a heavy unstable nucleus (thus producing a bare nucleus) changes the lifetime of the nucleus, or the nucleus of a stable neutral atom can likewise become unstable after stripping, indicating that the nucleus cannot be treated independently. Examples of this have been shown in bound-state β decay experiments performed at the GSI heavy ion accelerator. This is also evident from phenomena like electron capture. Theoretically, in orbital models of heavy atoms, the electron orbits partially inside the nucleus (it does not *orbit* in a strict sense, but has a non-vanishing probability of being located inside the nucleus).

A nuclear decay happens to the nucleus, meaning that properties ascribed to the nucleus change in the event. In the field of physics the concept of "mass deficit" as a measure for "binding energy" means "mass deficit of the neutral atom" (not just the nucleus) and is a measure for stability of the whole atom.

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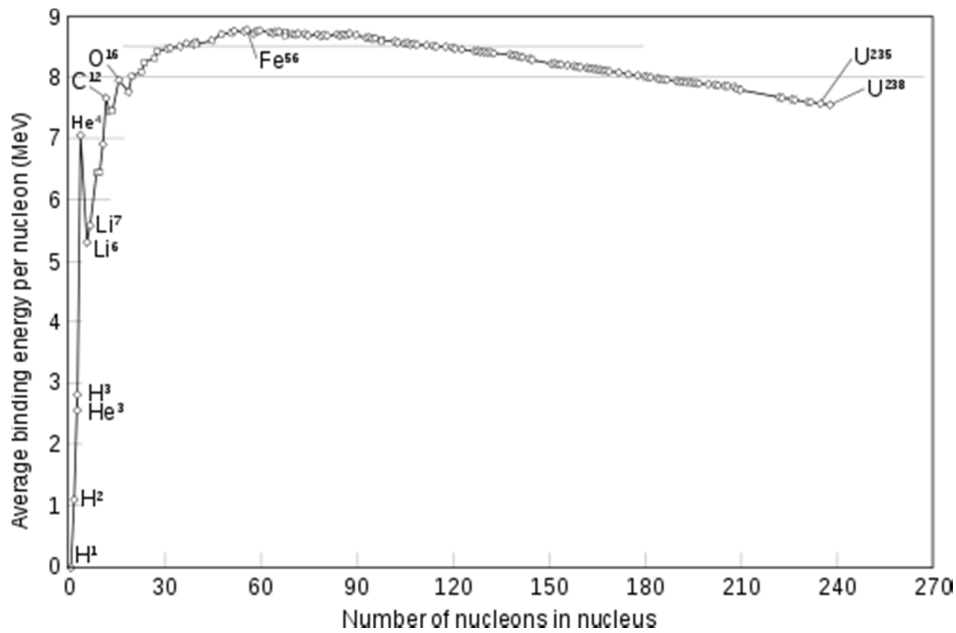


Fig 1. Binding energy per nucleon for all known nuclides

In the periodic table of elements, the series of light elements from hydrogen up to sodium is observed to exhibit generally increasing binding energy per nucleon as the atomic mass increases. This increase is generated by increasing forces per nucleon in the nucleus, as each additional nucleon is attracted by other nearby nucleons, and thus more tightly bound to the whole.

In design, *gestalt* refers to the physical parts and their arrangements that compose meaning through relationship. The basic tenet of gestalt is "the whole is greater than the sum of its parts," or "1+1+1=4." Rather than registering each formula equation, or relationship as a separate piece of information, the design is understood as a whole of interacting parts that harmonize, influence, and expand upon one other. There is no formal set of gestalt principles, but there are some generally identified rules that describe what are considered the basic principles that define "good design gestalt," or design organized through patterns. Because we do recognize patterns continually and unconsciously, how stimuli of equations or laws are organized is often ignored. Still, awareness of the principles is fundamental to the understanding of workable and beautiful design.

Good design is created when awareness brings the subconscious to the forefront. When we consider all the information contained within your perceptual context, it is really quite complex: background, foreground, specific objects, relationships between those objects, the parts those objects are made up of, their order - well, you get the idea. That we are able to make sense of any of this is really quite a feat. Most of it is far too detailed to register at the conscious level, but when involved in the process of intentional design, the principles must be taken into consideration and can be realized with a little effort. Our investment of effort to make the viewer's experience effortless is well worth the response to your design.

The word *gestalt* is derived of a German word meaning "shape, form, figure, configuration, or appearance" and is also tied to the more obsolete term *stellen*, which means "to place or arrange." Most simply put, *gestalt* is the arrangement of form in various patterns. Gestalt theory has traditionally been used by psychologists as a way to assemble an entire picture of a personality. But it has evolved into becoming relevant to anything that uses the context of basic principles to define highly detailed or complex relationships and how they are expressed as a "whole" composite.

Historical perspective

In the preface to the first (German) Edition of the book "Collected Papers on the Quantum Mechanics" , Zurich 1926 [1] E Schrodinger wrote: a young lady friend recently remarked to the Author (Schrodinger) "When you began this work you have no idea that anything so clever would come out of it , had you."

This unorthodox comparison between scientific and purely aesthetic communication is able to provide a first clue towards criteria distinguishing good fantasy in science from bad. Science as a crowning intellectual achievement is essentially disciplined; but it is not always easy to realize the need for an equally severe discipline in the domain of the imaginative arts.

Imagination and intellect, however, are not always in antithesis to one another. Reason implies not only a capacity for logical sequence of argument, but also a sensitivity to balance and contrast a trained intuition without untrained intuition s arrogant claims to short-circuit the discipline of the intellect When the imagination thus becomes disciplined, and undertakes the severest obligations inherent in perfecting the pattern of an art-form, it has taken the essential step towards security against the weaknesses of fantasy. Structure as disciplined as that of a mathematical argument is capable of transfiguring the merest nonsense into divine nonsense.

Modern physics might well be regarded as study of the structure of matter and of the behavior of radiation. A criterion for success pursuit of the former study demands that analysis of material structures into atoms and molecules, and of these into nuclei with groups of associated electrons, must be capable of giving rise to verifiable prediction of the bulk properties of matter, mechanical, thermal, chemical, and electrical. Criteria for theories as to the behaviour of radiation are that the phenomena of light, colour, radio, X-rays, heat radiation, must become explainable by some single mechanism; the only mechanism so far successful has been the propagation of electric and magnetic quantities with a unique and universal speed which is accurately measurable. This speed exceeds that of the fastest material particles, as a limit towards which the latter can only approach.

Within the scope of these two most general schemes, the structure of matter has been a prime example of pattern since D Mendelejev in XIX century arranged all the then known chemical

species or elements into a two-dimensional framework. Written down in a table of horizontal rows and vertical columns, the chemical elements were found to repeat certain properties periodically, much as the harmonic properties of the notes on a piano keyboard repeat themselves at intervals of octaves.

To form the gross substances which we distinguish by touch, smell, taste, etc., the affinities for chemical combining of atomic species are found to wax and wane with precise regularity throughout the periods of this table. The whole assemblage of empirically periodic patterns is now understood as manifesting the way in which successive electrons can become associated with atomic nuclei of definite mass: these additions proceed until one after another their possible federations into electrically and mechanically stable groups or sub-patterns are.

There have been eras in which an educated man could only live up to his standard if he were at the same time a poet and a philosopher and an experimental or mathematical researcher. E. Schrodinger is a good example. He attended a gymnasium, which emphasized the study of *Greek* and *Latin* classics. His book *Nature and the Greeks* published in 1948 is an elegant exposition of ancient physical theories and their relevance. Schrodinger wrote in 1925 an intensely account of his beliefs, *Seek for the Road*. The book was influenced by *Hinduism* and is an argument for the essential oneness of human consciousness.

Human Brain

According to general idea of Gestalt, we look for design in human brain. It is well known that the mass of human brain equals 1.5 kg. On the other hand, human brain consist of 10^{11} neurons with mass of each equals 10^{-8} kg. We have a serious problem: Mass of all neurons is equal 10^3 kg – This is greater than that the full body of an adult human. When I consult this fact with many neurologist, they cannot refuse my calculation.

The formula for the mass of human brain is not complete. Our new formula for the human brain is

$$M_{HB} = N_N \cdot 10^{-5} g - B_E \quad (1)$$

In formula (1), M_{HB} denotes human brain mass, N_N is the number of neurons in human brain and B_E is human brain binding Energy. The binding Energy can be calculated as

$$B_E = 10^3 \cdot 10^{27} \cdot 10^3 = 10^{33} MeV = 10^{30} GeV \quad (2)$$

This value is rather big on both scales macro- and microscopic scales. This is the reflection of the fact that soul connects or bind macro-universe with micro-universe. We can calculate binding energy per neuron:

$$\frac{10^{30} GeV}{10^{11}} = 10^{19} GeV \quad (3)$$

It occurs that the binding energy per neuron in human brain is equal to the mass of Planck particle - The binding block of the Universe.

Conclusions

The human soul is on the edge of Universe. In this paper, we have argued that human soul can be identified with binding energy of human brain. The calculated “energy/mass of the soul” is of the order of 10^{30} GeV.

References

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