

The Cognitive Capacity of the Human Brain - Evolutionary Evidence of Eternal Barriers

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Abstract: proof is presented, using well-known biological facts (which are common knowledge to high school students) that the information the human brain can process is limited by the organizational level in which it (brain) exists (Holo 5).

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Introduction:

Matter, in the universe, is a hierarchy of complex systems visibly topped today in our solar region by the human brain. Although the available information in the universe, as it expands, is progressively limitless, understanding it, at any given level of organisation, is not. This essay is an attempt to prove that the universe may be teeming with information never attainable by man or, for that matter, by any multi-cellular organism however long it may evolve.

The Proof:

At the lower end of the organisational spectrum of matter is pure energy (radiation)-- a state thought to have existed at the beginning of the universe. At the upper end, here on earth, is man. Elsewhere matter may have evolved to several levels beyond man-- we don't know. Since the ends of the organisational spectrum of matter are not well-defined, we may choose, as our point of reference, the proton and call its level Holo 0 in recognition of the concept of holism. (see table).

Our position on this spectrum is 5 (Holo 5). We contain within our bodies five levels of organisation beyond the proton. From this perspective it would become clearer to us why our capacity in comprehending the universe must be limited. It is sufficient to compare the properties of any two consecutive levels on this spectrum to arrive at our goal.

Take for example atoms (Holo 1) and molecules (Holo 2). The properties of atoms by themselves are very limited. Once they organise into molecules, however, their properties increase exponentially, the simplest new property being a shape other than spherical, and a myriad new properties based on this change in shape as in enzymes and proteins. Now could atoms ever 'hope' to perform the feats so easily performed by enzymes? It is obviously an

impossibility now and forever. Therefore the capacities of matter at the Holo one level are eternally limited at that level.

Now let us compare cells (Holo 4) to human beings (Holo 5). Can a cell ever 'hope' to someday see, hear, smell, taste, or feel? Can it ever 'hope' to think or speak even if given another billion years of favourable evolution? Will a cell ever be able to comprehend a biologist's tinkering with its genes? Certainly cells participate in great numbers to perform such feats, but only for a being on a higher level than themselves. Billions of cells, starting at the corneas and ending in the visual cortices of the brain, labour in unison to make it possible for the organism they constitute to see, while they themselves have absolutely no inkling of what they are doing. Therefore the cognitive capacities of cells are eternally limited at the Holo 4 level.

Now it would be very naïve of us to assume that the vertical evolution of matter in the universe has stopped or would stop at the Holo 5 level. Why should it? It could have stopped at the Holo 4 (cells)--it didn't. There must therefore already be, or will in the future be, beings at the levels Holo 6, Holo 7 and so on. In fact there may be no end to vertical evolution.

Finally, let us consider some of the possible characteristics of theoretical Holo 6 organisms and compare them to the characteristics of Holo 5 (multi-cellular) organisms. Holo 6 organisms would obviously be space-dwelling 'super-organisms' constituted of trillions of human beings and other multi-cellular organisms serving functions that would forever remain unknown to us, Holo 5 organisms, just as the functions performed in us by cells would forever remain unknown to them, Holo 4 organisms.

Table 1: The Organisational Spectrum of Matter

Holo 7	Intergalactic Organisms
Holo 6	Multi-humanoid Organisms (Super-organisms)
Holo 5	Man , Multi-cellular organisms
Holo 4	Cells, Unicellular Organisms
Holo 3	Organelles (Viruses, Bacteria)
Holo 2	Molecules (Proteins, Enzymes, DNA)
Holo 1	Atoms (All elements on the Periodic table)
Holo 0	Protons, Neutrons
Holo -1	Subatomic particles
Holo -2	Sub-sub-atomic Particles
Holo - ∞	Pure energy

Holo 6 organisms could possess what would be exponentially more fantastic than our five senses, our intelligence, our languages and our science. In fact, our level of consciousness may be mere coma measured on their scale. I am sure we will remain eternally ignorant of the true capabilities of Holo 6 organisms. They may even be as 'invisible' to us as we are to cells

Conclusion:

Therefore man must humbly acknowledge the fact that his understanding has a plateau that forever cannot be transcended, hence the importance and inevitability of faith.

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