

8. Comparison of Human and Animal Biosystems

Since Allah has given mind only to man, which imparts consciousness, it follows that animals are unconscious beings. Further, Allah has given the faculties of seeing and hearing only to man (see Q. 67:23 quoted above). That would mean animals do not see as we see and hear as we hear even though they have eyes and ears (Q. 7:179).

وَلَقَدْ ذَرَأْنَا لِجَهَنَّمَ كَثِيرًا مِّنَ الْجِنِّ وَالإِنسِ لَهُمْ قُلُوبٌ لَا يَفْقَهُونَ بِهَا وَلَهُمْ أَعْيُنٌ لَا يُبْصِرُونَ بِهَا وَلَهُمْ آذَانٌ لَا يَسْمَعُونَ
بِهَا ۗ أُولَئِكَ كَالْأَنْعَامِ بَلْ هُمْ أَضَلُّ ۗ أُولَئِكَ هُمُ الْعَافِلُونَ

7:179 We have made many of the *jinn*s and human beings for Hell. They have minds with which they do not understand, they have eyes with which they do not see and they have ears with which they do not hear. They are like cattle; nay more misguided. They are the heedless people.

The same message is conveyed in a different way through verse 25:44 also.

أَمْ تَحْسَبُ أَنَّ أَكْثَرَهُمْ يَسْمَعُونَ أَوْ يَعْقِلُونَ ۖ إِنْ هُمْ إِلَّا كَالْأَنْعَامِ بَلْ هُمْ أَضَلُّ سَبِيلًا

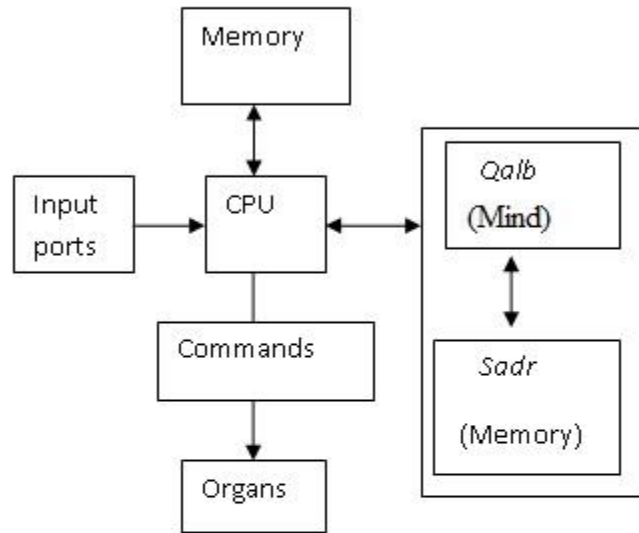
25:44 Or do you think that most of them do listen or understand? They are only like cattle; nay, they are farther off the (righteous) path.

How can these messages be explained? A comparison of human and animal biosystems in the light of computer model would help explain these messages in the right perspective. It may be noted that biosoftwarewise and hence biohardwarewise (i.e., phenotype), man and animal are two distinctly different biosystems. Since the animal biosystem does not have a conscious processor (mind), all its functions are unconscious ones. In other words, an animal has only an unconscious Central Processing Unit (CPU) to direct and control its functions. The functions include both internally executed house-keeping functions (biological activities like digestion, blood circulation, etc.) as well as externally performed activities (e.g., movement, eating, etc.). On the other hand, human biosystem has both CPU that controls house-keeping or life-sustaining activities and mind that controls voluntary or conscious activities. Since house-keeping functions going on inside human biosystem are controlled by the CPU, man is not aware of them. He is aware of only those activities directed by mind. In fact it is mind itself and no other part of the body that is conscious of the activities performed as per its directives. In view of the differences in the processors, the mechanisms involved in the functioning of animal and human biosystems will also be different. The Quranic revelations such as “animal does not see or hear as man does” must be therefore examined and explained in the light of the differences in system configuration revealed through the Quran.

Although animals have external data input ports like eye, ear, etc., the signals coming through them from outside are processed by the CPU and not by mind and hence do not result in conscious perception of the environment (Fig. 1). A signal arising from inside or outside of the system is an abioswitch that actuates the biomeme(s) concerned in the cells. The CPU processes it in accordance with the biosoftware and gives orders to appropriate hardware component (organ) for action. This is an action performed unconsciously as in man-made robot. The animals are thus comparable to man-made robots in their mode of functioning. They do not feel or experience anything (i.e.,

conscious perception) and are not aware of themselves as well as their surroundings. The performance of the animal biosystem is purely mechanical.

Human biosystem (Biprocessor)



Animal biosystem (Single processor)

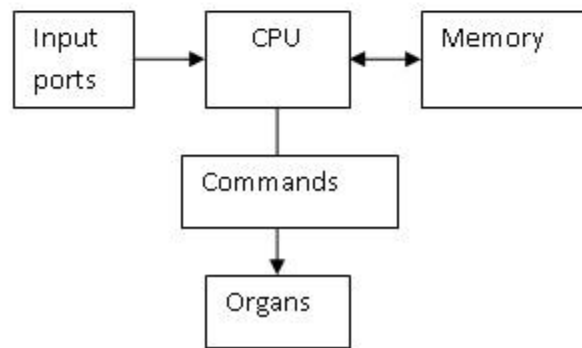


Fig. 1. Contrast between animal and human biosystems

The universe is nothing but information – the divine instructions carried by the energy. The world around us is basically without sound, colour, taste, size, etc. If a flower appears to us as beautiful (a mental feeling or experience) it is our mind that creates that image and feeling based on our biosoftware. The natural things are intrinsically neither good nor bad, neither beautiful nor ugly, neither sweet nor bitter. It is human mind that confers these characteristics to the outside world in accordance with the biosoftware. Allah designed the human biosoftware (Adam’s *nafs*) and mind that way.

A signal received from the environment through an input port acts as abioswitch, which activates the biomeme(s) concerned in the body cells. It is then processed by the mind (and not by the CPU) in accordance with the actuated program resulting in conscious perception. Thus conscious perception occurs only in human beings and man alone perceives the world with colour, sound, etc., and no other species does. The Quranic message mentioned above that Allah made faculties of hearing, seeing, feeling and understanding only for man (Q. 67:23) points to that. The Quran (Q. 7:179) further implies that mere possession of organs like eye and ear is not enough to provide the system with faculties of seeing and hearing. Animal has organs like eye and ear but they do not see or hear as we do (Q. 7:179; 25:44).

All cases of conscious perception are effectively mental constructs like the creation process itself; i.e., transformation of intangible (*ghayb*) information into tangible (*shahadat*) form. The mind also distinguishes between the internally inputted signals and externally inputted information (through five sensory organs) in their mode of projection. While internally inputted signal (e.g., pain signal) is transformed into conscious perception with respect to the point of origin of that signal inside the body, the externally inputted signal is transformed into tangible form with respect to its location of origin outside of the biosystem.

Let us take an example. Consider an object, which we see as red. In reality the object is not red. It only emits or reflects electromagnetic radiation in the wavelength region of about 600 nm. The electromagnetic radiation is a signal carrying divine information. This signal enters the human biosystem through eyes, acts as abioswitch and actuates specific biomeme(s) which is processed by the mind to create red image on the mental screen. Thus we see it as red. To put it differently, if the signal has been specified for actuating the biomeme for green colour, mind would have created green image of the object. Audio signals entering through ears also undergo similar pathways. Take another example, the taste we experience when a substance comes into contact with the cells of our tongue or the so-called taste buds. The abiomemes (chemical structures) in the food substance we eat actuate specific biomemes in the tongue cells and they come into operation. The mind processes it and experiences the taste in accordance with the biosoftware. The biomemes included in human biosoftware must be inconceivably large. Just think of the ranges in colour, smell, taste, sound, pain, feelings we experience, to mention but a few! Further Allah has fixed in our biosoftware thresholds and maxima for the signals that create all these experiences. For instance, there is minimum intensity (threshold value) required for the sound wave to create audibility in man although this value may vary slightly from individual to individual. What does this indicate? This indicates that the audibility and the sound volume we experience depend on the specific biomemes in our biosoftware. For instance if the threshold value for the auditory signal creates a thousand-fold more volume, we would have heard a sound thousand times louder than what we experience now. Coupled with that, it would have also permitted a lot of noise (background interference) to become audible. We should therefore realize that all these aspects are so finely and meticulously taken care of by the Omnipotent Creator in designing Adam's *nafs* – the source of bioinformation in human species. The Quranic message that Allah made faculties of hearing, seeing, feeling and understanding only for man can be explained that way.

Information is stored in our memory in intangible form (as in computer hard disk) and not in any human language. During thought process the intangible information is transmitted down to the mind in tangible form in a chosen language. Obviously there should be a program to translate information into one's chosen language as well as to decide and regulate the flow of information onto the mind. This program may be referred to as 'guidance program' that controls the flow of both *a priori* (that reached via germ line) and *a posteriori* (acquired through experience) information stored in the memory of the individual.

Any information or signal 'viewed' by the *qalb* (i.e., transmitted to mind) is a conscious activity and any action commanded by the *qalb* is also a conscious activity. It is mind that takes decision to act as it is bestowed with freewill. The decision is transmitted to the CPU which, in turn, activates the concerned tissues/organs for action (Fig. 1). If nothing is communicated, no action will result. The decision taken by mind (whether it is for an action or for no action) also forms a conscious activity.

The computer concept also allows us to define the phenomenon of sleep. Sleep may be thought of as the result of temporary cessation of transmission of biomemetic information (resulting from the actuation of biomemes by abiomemes) to the mind. Signals arising from both inside (e.g., pain) and outside of the system (audio, olfactory, tactile and taste) are cut off from mind. Since eyes are closed during sleep, light cannot enter them. Even if eyes are open during sleep, the light that enters them cannot reach mind. This is a temporary functional and not physical severance of the connection with mind. Since no signal reaches the mind, it remains in an unconscious state oblivious of the external world while the house-keeping functions will go on uninterrupted as they are carried out by CPU. The biosystem is in 'sleep' mode.

Although the processor mind is cut off from all these signals, it is still functionally connected to *sadr*. Both *a priori* and *a posteriori* kinds of data and information can get transmitted from memory to mind in sleep. This results in the production of dream. Dream is a mental construct generated from the stored data and information transmitted from the memory (*sadr*) much like the computer projects a video clip on its monitor from the data stored on its hard disk. When it is awake (i.e., when sensory organs are functionally connected to mind), mind generates the image, sound, etc. about the world around it directly from the data (signals originating from outside of the biosystem) received by it via sensory organs (eyes, ears, etc.).

Cartesians consider animals as 'mere automata' that lack minds. This view of Descartes, seventeenth century French philosopher and mathematician, is based on the failure of animals to use language conversationally or reason generally. On this basis he claimed that nothing in animal behaviour requires a non-mechanical (mental) explanation; hence he saw no reason to attribute possession of mind to animals [1]. According to Carruthers [2, 3], all animal behaviour can be assimilated to the non-conscious activities of humans such as driving while distracted. An example of 'action under unconsciousness' in human beings is 'sleepwalking or somnambulism'. Sleepwalking is a common arousal disorder especially in children. The activities of sleepwalkers are not limited to walking alone; they may perform several complex activities such as cooking and eating food, getting into automobiles, washing clothes, feeding pets, physical and verbal attack of others, etc. Somnambulists are usually

unaware of their activities. After waking up also, most people cannot recollect even the conversations they had with others [4]. In sleep, as already mentioned, the processor mind (*qalb*) is functionally severed from outside world and no signal from outside reaches it. Obviously the activities of somnambulist are unconscious activities and can be attributed to CPU. They are comparable with the house-keeping functions carried out by the CPU. The human biosystem operates like animal biosystem during sleepwalking with CPU in full control. Since *qalb* is not involved, these activities are not saved in the memory (*sadr*). As a result, the individual cannot remember (retrieval of information to *qalb* from *sadr*) them also.

Only humans are unquestionably regarded to possess a ‘theory of mind’ (ToM). An individual is said to have ToM if it acts as if it understood that other individuals have mental states and if it is able to interpret these states in the appropriate context and intentionally modify its behaviour accordingly [5].

Certain animals can be trained to perform tasks that are not governed by their bioprograms. The famous story of the dog that Ivan Pavlov trained to salivate upon sounding a bell just prior to bringing food to it falls in this category. In the normal course (before training), the dog would not have salivated upon hearing the bell. It would salivate only at the sight of the food in accordance with its biosoftware. During training, the bell-food connection formed a rule and it is saved in its memory (random access memory). Subsequently, when it heard the sound of the bell, the CPU responded in accordance with the new rule by sending commands for salivation in anticipation of the food. This is not a conscious learning process but is one of conditioned reflex. True, an animal also stores in its memory the information it receives from the environment. Such information as permitted for storage by the biosoftware of the animal is required for the analysis of the environment around it by the CPU and hence for its very existence.

The Quranic revelation of absence of feelings (*afidat*) in animals (Q. 67:23) has more significance than meets the eye particularly in respect of pain, which is also a conscious perception or experience. We think of animal system much like ours and hence we believe that they also have feelings as we do. But the Quran does not say so. The activities of an animal can be likened to the activities of a somnambulist. An animal is mere automata like our robot and does not experience feelings including pain. Animal does not have mind to create feeling, a conscious experience. A striking observation in this regard is that the male and female members of an animal species do not exhibit any sign of sexual arousal or attraction towards the opposite sex although they are fully naked. They are sexually activated only for the purpose of reproduction as prescribed in their biosoftware and they do it unconsciously like programmed robots. A dog when beaten produces crying sound and runs away. We attribute its response (crying and fleeing) to the pain it felt because we interpret it from human angle. That is not correct. We should realize that such responses can be created even without experiencing pain. For example, we often see persons watching a tragedy scene in a film get tears in their eyes. This is because the signals emanating from the scene create sorrowful feeling in them as they think that actors involved have suffered a lot, but in reality they had not. An animal’s case is similar to that. An animal’s outward expressions by way of crying, running, etc., are not because it felt pain but because it is programmed that way. Our robots can also be programmed to create such responses when beaten. That does not

mean the robots feel pain. Thus based on the Quranic revelation it can be inferred that since animals do not have *qalb*, they do not have consciousness and hence do not experience feelings including pain. Most Merciful Allah's permission (Q. 5:1, 5:3) to kill animals (barring the banned ones) by pronouncing His name for our food and other purposes (e.g., animal sacrifice in hajj) must be viewed in this light.

يَا أَيُّهَا الَّذِينَ آمَنُوا أَوْفُوا بِالْعُقُودِ أُحِلَّتْ لَكُمْ بَهِيمَةُ الْأَنْعَامِ إِلَّا مَا يُنْتَلَىٰ عَلَيْكُمْ غَيْرَ مُحِلِّي الصَّيْدِ وَأَنْتُمْ حُرْمٌ ۗ إِنَّ اللَّهَ يَحْكُمُ مَا يُرِيدُ

5:1 O believers! ... Lawful to you (for food) are animals with the exceptions mentioned to you. Hunting is forbidden while you are in sacred pilgrimage (*hajj* or *umrah*). Verily Allah directs what He intends.

حُرِّمَتْ عَلَيْكُمُ الْمَيْتَةُ وَالِدَمُّ وَالْحَمُّ الْحَنْزِيرُ وَمَا أَهَلَ لِغَيْرِ اللَّهِ بِهِ وَالْمُنْخَنِقَةُ وَالْمَوْقُوذَةُ وَالْمُتَرَدِّيَةُ وَالنَّطِيحَةُ وَمَا أَكَلَ السَّبُعُ إِلَّا مَا ذَكَّيْتُمْ وَمَا ذُبِحَ عَلَى النُّصُبِ وَأَنْ تَسْتَقْسِمُوا بِالْأَزْلامِ ۚ ذَٰلِكُمْ فِسْقٌ ۗ الْيَوْمَ كَفَرُوا مِنْ دِينِكُمْ فَلَا تَخْشَوهُمْ وَأَخْشَوْنَ ۗ الْيَوْمَ أَكْمَلْتُ لَكُمْ دِينَكُمْ وَأَتَمَمْتُ عَلَيْكُمْ نِعْمَتِي وَرَضِيْتُ لَكُمُ الْإِسْلَامَ دِينًا ۗ فَمَنْ اضْطُرَّ فِي مَخْمَصَةٍ غَيْرَ مُتَجَانِفٍ لِإِثْمٍ ۖ فَإِنَّ اللَّهَ غَفُورٌ رَحِيمٌ

5:3 Forbidden to you (for food) are dead meat, blood, pork, that on which a name other than Allah's has been invoked, that which has been killed by strangling or a violent blow or a headlong fall or gored to death or what is (partly) eaten by a wild animal unless it is slaughtered (pronouncing Allah's name before it dies); that which is sacrificed on stone (altars). And (forbidden) is also the division (of meat) by raffling with arrows; that is impiety.... But if anybody is forced by hunger with no inclination to transgress, (he is not at fault to eat the prohibited food). Allah is indeed Oft-Forgiving, Most Merciful.

Besides the permission given to man to kill animals, Allah has also made many animals food for other animals, which is reflected in prey-predator relationship.

Animals do not have feelings (*afidat*) including pain because they lack *qalb* (mind). If we extrapolate this argument a little further, it would seem likely that human infant is an "unconscious" biosystem like animal until the development of mind. Till then all its expressions and activities are unconsciously performed ones by the CPU. It does not have feelings including pain. The biprocessor model of human biosystem thus helps to explain these phenomena.

Understanding the Quranic revelations about Allah's robot (Abdullah) scientifically makes it clear why Allah wants to create such a biosystem as His servant and test man for his obedience to Him.

References

1. <http://plato.stanford.edu/entries/consciousness-animal/> Accessed May 23, 2002.
2. Carruthers, P. 1989. Brute experience. *J. Phil.* 86:258-269.
3. Carruthers, P. 1992. *The Animal Issue*. Cambridge: Cambridge University Press.
4. <http://www.sleepdisorderchannel.net/sleepwalking/index/shtml>. Accessed May 23, 2002.
5. Byrne, R. 1995. *The Thinking Ape. Evolutionary Origins of Intelligence*. Oxford University Press, Oxford.