Retrieving the information stored in the donated organ may cause the patient's personality to change after the transplant operation

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ABSTRACT

The results of some scientific research show that organ transplantation, especially heart transplantation, causes changes in the patient's personality and even memory. These changes can be due to the recovery of information stored in the donor's molecules and cells. In fact, as in the orchestrated objective reduction model, information in the form of polarization or spin of molecules, electrons, and photons is stored in microtubules due to the connection between the brain and the heart through blood vessels and nerves, and waves. A copy of the information is stored in molecules and heart cells and possibly through the induction of polarization and spin in some hexagonal or pentagonal molecules of DNA structures.

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Introduction

Organ transplants are lifesaving medical procedures that involve replacing a failing organ with a healthy one. Historically, the concept of organ transplantation dates back centuries to ancient civilizations like the Egyptians. However, the modern medical practice of successful transplants began in the 20th century. Due to limited medical knowledge, surgical techniques, and immunosuppression methods, early attempts were fraught with challenges. For example, the first successful kidney transplant was performed in 1954 by Joseph Murray and his team at Brigham and Women's Hospital in Boston, USA. The recipient was his identical twin brother, which helped him overcome tissue rejection challenges.[1] Another notable example is the first successful heart transplant, which was performed in 1967 by Christiaan Barnard in South Africa.[2] However, the recipient survived for only 18 days due to complications. In the 1970s, the development of cyclosporine revolutionized organ transplantation by providing a more effective way to suppress the immune system and prevent rejection. Thereafter, the development of other immunosuppressive drugs has further improved transplant outcomes.

Organ transplants are vital for saving lives when organs become damaged beyond repair. The main reasons for organ transplants include: i) organ failure – when an organ ceases to function, it can lead to further health complications and even death. The reasons for organs failing can be multiple and varying; for example, in diabetes, the kidneys fail; ii) sustained injuries – oftentimes, people can sustain an injury, like a motor vehicle or sports-related accident, and require a transplant; iii) congenital defects – some people are born with birth defects that affect their organs, necessitating transplantation.

The process of organ transplantation is 5-pronged and involves the following phases: i) patient evaluation – patients undergo a thorough evaluation to determine their eligibility for a transplant. This includes medical history, physical examinations, and other various tests to determine whether or not they are truly eligible to undergo the transplant; ii) waiting list – patients who meet the criteria are placed on a waiting list for a suitable donor organ. Oftentimes, these patients can be on these lists for years. An important factor that plays a big part in determining how quickly a patient needs to get the transplant done is the severity of their underlying condition; iii) organ donation – when a donor organ becomes available, it is carefully matched to a recipient based on factors such as blood type, size, and medical condition; iv) surgery – the transplant surgery is a complex procedure requiring a team of skilled surgeons and medical professionals. Many challenges are associated with this procedure, such as the patient's body rejecting the new organ; v) recovery – post-transplant recovery involves a period of hospitalization and ongoing medical care and monitoring to ensure the success of the transplant. Oftentimes, symptoms of the body rejecting the transplanted organ can be seen post-surgery.

A question then arises: does the transplanted organ retain information about the old patient, and if so, how much? Secondly, if the organ does not retain any information, is there an information paradox, and is information destroyed? In this research, we seek to address these questions in the context of human heart transplants. Using quantum biology methods, we propose a mathematical model based on the orchestrated objective reduction (orch OR) model.

So far, there have been many scientific reports of changes in the personality and memory of patients after organ transplantation. Although most of the reports are related to patients who have undergone heart transplantation, in some cases, changes in the personality or memory of patients who have transplanted kidneys or other organs are also seen.[3-5] Now, the question is, if the brain is the main place to store information and memory, how is this information transferred from the organ donor to the recipient?

In the next sections, we will discuss: i) the theoretical framework of our proposed model; ii) the mathematical underpinnings of the model; iii) the study's findings.

The model

In response, we must examine the models that store information in the human body. The best model that has been proposed is the Orch OR model,[6-10] in which information is defined as polarization and spin of electrons and photons in hexagonal molecules and other molecules forming microtubules in the brain. There can be a large number of these polarized molecules in the brain that store a large amount of information. With the loss of polarization of molecules or microtubule structures, part of the memory is lost and may cause Alzheimer's and other diseases (Figure 1).

However, hexagonal structures and similar structures

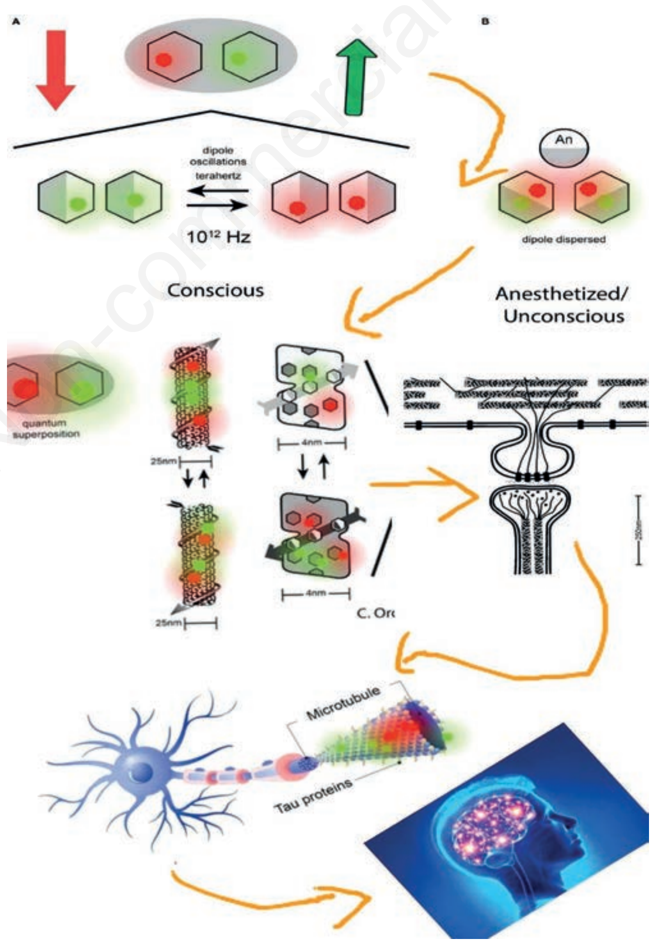

Figure 1. Information is stored in the form of polarization of molecules and spin of electrons in microtubules of the brain.

can be polarized, and electrons and photons can move between them and exist in heart cells, other body organs, and microtubules in the brain. For example, fibers and filaments of heart muscle cells (myocardiocytes) are composed of molecules and proteins with hexagonal structures and can be polarized. These structures can store information through the specific polarization of molecules or the spin of electrons and photons. For example, any particular orientation of a polarized molecule or the spin of electrons may be related to a quantum of information. The number of these structures in the cells of the heart and other body organs is very high, and therefore, like the brain, they can store a large amount of information (Figure 2).

Therefore, information storage does not happen only in the brain; any structure in the body that can be polarized or has spin can store information in the form of quantum data. Especially the heart, which is in direct connection with the brain, can receive and store a copy of information stored in molecules and brain cells through blood cells or neurons and even electromagnetic waves. Blood cells, especially red blood cells, have hemoglobin, which has both hexagonal structures necessary for polarization and iron atoms that can be polarized and thus store information. Blood cells get information from polarized molecules or spins in the brain; polarized and, after encountering polarizable or spin structures inside the heart and other body organs, give information to them (Figure 3).

Discussion: model formulation

We can do some calculations to show the effects of organ transplantation on the information storage mechanism. Suppose that information is stored as spin states. For example, spin-up corresponds to a bit of information, and spin-down is related to another bit of information. From this viewpoint, according to the Pauli exclusion principle, two parallel spins with the same quantum numbers could not be placed at one point. Thus, we can write as follows (Eqs. 1-3):

$$\Psi_{\text{two-spins}} = P_{\text{two-spins},\uparrow\downarrow} \times G(\uparrow\downarrow) + P_{\text{two-spins},\downarrow\uparrow} \times G(\downarrow\uparrow) \qquad \text{[Eq. 1]}$$

with

$$P_{\text{two-spins},\downarrow\uparrow} = \exp(-E_{\uparrow\downarrow} \times T^{-1}) \times [1+ \exp(-2E_{\uparrow\downarrow} \times T^{-1})]^{-1/2} \qquad \text{[Eq. 2]}$$

$$P_{\text{two-spins},\downarrow\uparrow} = [1 + \exp(-2E_{\uparrow\downarrow} \times T^{-1})]^{-1/2} \qquad \text{[Eq. 3]}$$

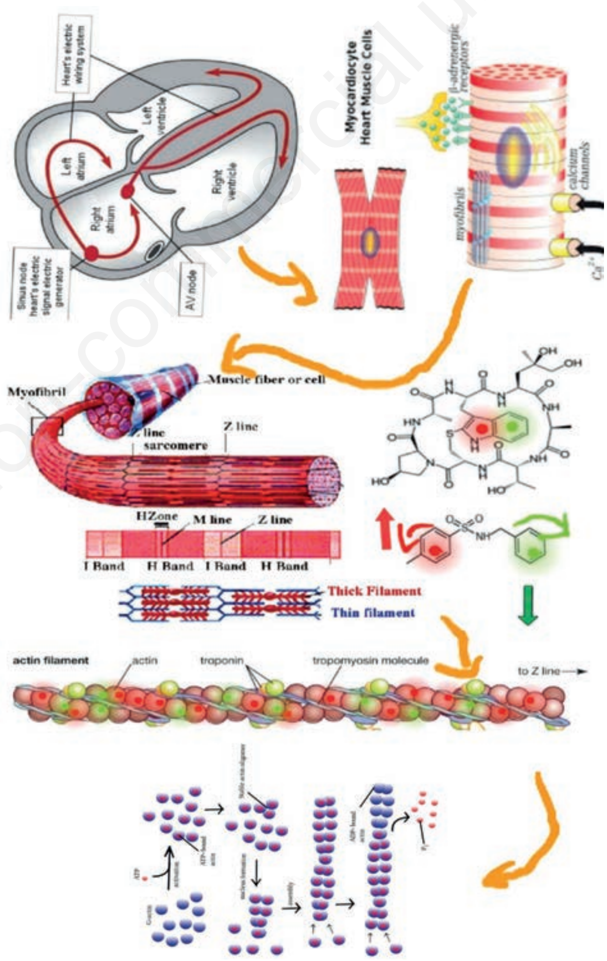

Figure 2. Information is stored in the form of polarization of molecules and spin of electrons in myofibrils and filaments of the heart.

Where P is the probability of a spin configuration, E is the energy between the two coupled spins, T is the temperature, G is a function of spinors, and and $|\uparrow>$ and $|\downarrow>$ are the spin up and spin down states, respectively, defined as follows (Eq. 4)

$$|\uparrow> \triangleq \begin{pmatrix}1\\0\end{pmatrix}, \quad |\downarrow> \triangleq \begin{pmatrix}0\\1\end{pmatrix} \qquad \text{[Eq. 4]}$$

Now, suppose that we have four spinors in one place. We can write (Eqs. 5 and 6):

$$\Psi_{\text{four-spins}} = P_{\delta\times\in\times\text{four-spins}} \times G\,(1{:}\ 2{:}\ 3{:}\ \uparrow\downarrow\uparrow\downarrow) \qquad \text{[Eq. 5]}$$

with

$$P_{\delta\times\in\times\text{four-spins}} = \delta_{ijkl} \times \in_{ij} \times \in_{kl} \times Q_{\text{four-spins}} \qquad \text{[Eq. 6]}$$

Where $\in\uparrow\uparrow = \in\downarrow\downarrow = 0$, $\in\downarrow\uparrow = 1$ $\{i, j, k, l\}$ are dummy indices. In addition (Eqs. 7 and 8):

$$\delta_{ijkl} = \Sigma_{\text{spin up}} \Sigma_{\text{spin down}} \Psi \qquad \text{[Eq. 7]}$$

$$Q_{\text{four-spins}} = P_{\text{two-spins},ij} \times P_{\text{two-spins},kl} \qquad \text{[Eq. 8]}$$

Where δ_{ijkl} is the sum of all up and down spin states of arbitrary spinors ψ, and $Q_{\text{four-spin}}$ is the product of the probabilities of the spin system.

Now, for an N-spin system, we can extend the above ideas to get Eqs. 9 and 10:

$$\Psi_{N\text{-spins}} = P_{\delta\times\in\times N\text{-spins}} \times G\,(1{:}\ 2{:}\ \ldots{:}\ N, \uparrow\downarrow \ldots \uparrow\downarrow) \qquad \text{[Eq. 9]}$$

with

$$P_{\delta\times\in\times N\text{-spins}} = \delta_{i_1 i_2 \ldots i_N} \times \in_{i_1 i_2} \times \in_{i_3 i_4} \times \ldots \times \in_{i_N i_{N+1}} \times Q_{N\text{-spins}} \qquad \text{[Eq. 10]}$$

with $i_j = \{\downarrow\uparrow\}$ for $1 \leq j \leq N+1$.

If $\psi_{N\text{-spins}}$ is a function of spinors that store information about human cells, then we can consider the effects of organ transplantation on it. By changing an organ, some of the spinors are removed, and some new spinors are placed. Thus, these functions change as follows (Eq. 11):

$$\Psi_{\text{human after transplant}} = \delta_{i_1 i_2 \ldots i_{N-M}; j_1 j_2 \ldots j_M} \times \in_{i_1 j_1} \times \ldots \times \in_{i_M j_M} \times \Psi_{M\text{-spins:plantation},\, j_1 j_2 \ldots j_M} \times \Psi_{(N-M)\text{-spins},\, i_1 i_2 \ldots i_{N-M}} \qquad \text{[Eq. 11]}$$

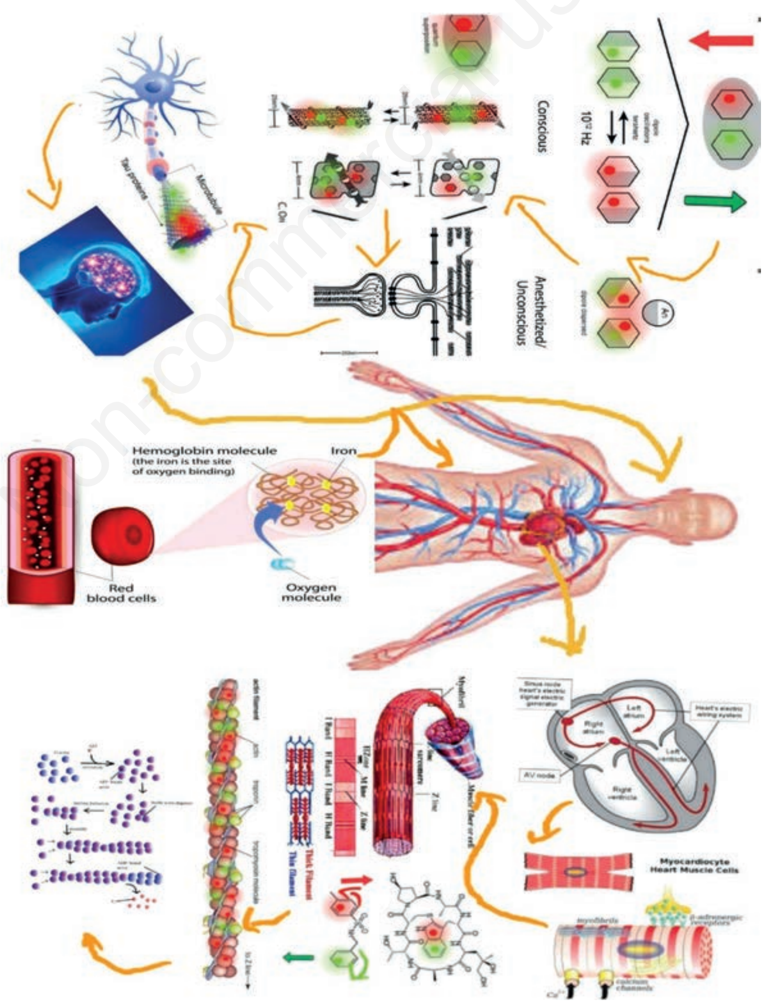

Figure 3. Blood cells take information from brain cells and store it in polarized structures in the heart.

Thus, the effect of transplantation can be seen in Eq. 12:

$$\begin{aligned}\Psi_{\text{effect}} &= \Psi_{\text{human before transplant},N} - \Psi_{\text{human after transplant},N\text{-}M} \\ &= \Psi_{N\text{-}spins,i_1 i_2 \dots i_N} - \delta_{i_1 i_2 \dots i_{N\text{-}M}:j_1 j_2 \dots j_M} \times \in_{i_1 j_1} \times \in_{i_2 j_2} \times \dots \times \in_{i_M j_M} \\ &\quad \times \Psi_{(N\text{-}M)\text{-spins},\, i_1 i_2 \dots i_{N\text{-}M}} \times \Psi_{\text{M-spins:plantation},j_1 j_2 \dots j_M} \qquad \text{[Eq. 12]}\end{aligned}$$

Eq. 10 shows that any organ transplantation causes some of the information stored in cells to disappear, and new information appears. This new information causes a change in some properties, like psychological traits, such as human personality.

Conclusions

In the orch OR model, information is stored in the form of polarization and spin of electrons and photons in hexagonal molecules and other molecules forming the microtubule structure in the brain. However, similar structures in fibers, filaments, and proteins make up muscle, heart cells, and other body cells. Even the hexagonal and pentagonal structures of DNA and RNA can be polarized and store information. It is natural that with organ transplantation, this information is transferred from the donor to the recipient. For this reason, there are various reports of personality and memory changes after organ transplantation.

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