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Review Article

Non-Philosophical Arguments Challenging Scientific Materialism

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Abstract:

The confidence among scientists in a material- or molecular-only understanding of life appears solid and is largely unquestioned. This situation appears to extend to the medical realm as well. This is readily apparent in relevant literature. Herein arguments challenging that faith will be put forth using two approaches. The first of these consists in the plausibility of unusual and for the most part accepted behavioural challenges. The second of these is the unfolding genetic/heritability impasse and the associated larger challenge posed for the overall genetic explanation of life. Together these it will be suggested form a significant challenge to the modern understanding of life. A closing point here is that such objective challenges appear more significant (and interesting) than philosophical challenges.

Key words: biology; materialism; neuroscience; terminal lucidity; heart transplants; prodigies; heritability; religion; philosophy

Introduction

An article in a recent special edition of *Scientific American*, "The Conscious Brain", addressed the topic of free will and it provides a useful introduction to the motivation for the work herein [1]. That article, "The Case Against Free Will", by Schurger et al pointed out how premature earlier neuroscience investigations were in their claimed refutation of free will. The authors didn't, though, as claimed on the edition's cover provide "[t]he case for free will". Although, they appeared sympathetic on the issue - they claimed to have regularly received e-mails written in "desperation" on the subject (and additionally an earlier *Scientific American* article pointed out ways in which in appears that "scepticism about free will erodes ethical behaviour" [2]) - in fact the authors claimed neutrality on the subject. In a possible ray of hope, though, they closed by pointing out how complex the brain is, and thus like the weather, very difficult to predict. But this closing argument might be see as akin to the motto of the New York Lottery, 'Hey, you never know'; or the final desperation play in some football games, the Hail Mary pass.

That minimal or faux optimism apparently reflected the authors apparent inability to question the molecular-only model of the mind. Claims about the unpredictability of the mind do not appear relevant to the existence of free will, as long as its molecular/mechanical-only nature is accepted. An underlying reality of simply molecular physics - akin to the weather - might be intellectually interesting but it is also devoid of a basis for deeper meaning.

The point of this concentrated write-up is that it is not hard to find materialism-challenging examples; an unfolding broad genetic impasse; and from there begin to consider additional aspects of life, including a non-material soul.

Methodology

A variety of literature covering unusual and/or surprising behaviours was obtained and then carefully considered. These included books and articles on observations of prodigious intellectual abilities. It additionally included articles on some remarkable phenomena from the medical or health domain like terminal lucidity; the possible psychological import of some heart transplants; and multiple personality (or dissociative identity) disorder. It also included some books and articles relevant to the unfolding missing heritability problem and the associated larger import. Finally, a book and some articles dealing with the intriguing existence of our natural religion were also considered. All together then this literature review provided a basis for developing this manuscript which presents challenges facing the scientific vision of life.

Results and Discussion

The Prodigy Domain

Previous work by the author questioning materialism commonly encountered reflexive rejection. The simple opening here, thus, warms up to the subject by considering some relatively uncontroversial challenges in the form of prodigious intellectual feats.

First, a little background on our species' presumed particular psyche-shaping, evolutionary journey. The psychologist Steven Pinker offered a succinct layout in which [3]:

> "our minds are adopted to the small foraging bans in which our family spent ninety-nine percent of its existence, not the topsy-turvy contingencies we created since the agricultural and industrial revolutions (p.20)."

Pinker then went on to characterize the accompanying natural selection pressure as having effectively been "a camping trip that never end[ed]" (p.207). So in a simple evolutionary sense the demands of primitive camping would seem to have been a big factor in the development of our particular mental capabilities. Additionally, as the prominent evolutionary biologist Ernst Mayr pointed out [4], one of DNA's jobs is to encode "[t]he entire behavioural information available to the new born" (p.253). Accommodating prodigious cognitive feats within such an evolutionary framework appears to be difficult, though.

First up are examples of the underappreciated Einstein syndrome [5]. Thomas Sowell pointed out that children with this condition have "speech development [which] lags far behind that of other children their age, while their intellectual development surges ahead of their peers" (p.1). Such children appear to be strong willed, weak socially, delayed in toilet training, and their outstanding intellects are focused in analytical areas including music. Einstein children also tend to possess exceptional memories. All together kids with this syndrome appear to be strongly nerdoriented. Furthermore, they are almost always born into families with significant technical and/or musical presences [5].

This topic is more fully discussed, including parallel contributions by the speech pathologist Professor Stephen Camarata, in [6]. Both the economist Thomas Sowell and Professor Camarata had some personal exposure and thus motivation behind their investigations. This included the experiences of Sowell's own son.

Consider now a few examples of the Einstein syndrome [5]. In one instance the three year old "silent" son of a professor was involved in the following:

> "The older boy, now five, had learned to read and would entertain his doting parents by doing so aloud. One evening he came upon a word he did not recognize, and struggled with it. At which point his brother toddled over, peered at the text and read out the sentence perfectly. Following that, he again lapsed into silence for several months and only then began to speak easily (p.19)."

In another case a toddler "became deeply absorbed in listening to Bach, to the point of being moved to tears" (p.85). Sowell also wrote that "one of the five-year-old preschoolers in my group helped both his mother at home and his teacher at school when they had problems using the computer [circa the 1990's]" and the boy "could also play the piano with his eyes closed" (p.12). Sowell's own son had prior to the age of one demonstrated extraordinary child lock breaking abilities (p.41).

Thomas Sowell also considered some experiences of notable adults who apparently had experienced this syndrome [5]. One of these was the pianist Arthur Rubenstein who demonstrated a remarkable draw to the piano as a young child:

> "[h]e became fixated on the piano. Whenever he was asked to leave the drawing room where [it] was kept he screamed and wept. He began playing the piano at age three. When his father later brought him a violin to play, little Arthur reacted by smashing it, earning himself a spanking (p.39)."

Sowell suggested that such strong-willed behaviour "will be" quite familiar to the parents of Einstein syndrome kids. Furthermore Rubenstein:

> "[a]fter hearing a performance of the first suite of Edvard Grieg's Peer Gynt, returned home 'to play almost all of it - to the amazement of the family'. At this point Rubenstein was not yet five years old and had not yet begun formal instruction under a professional musician. At age seven, he gave his first public performance (p.40)."

A second notable challenge to materialism involves savant syndrome as depicted in Darold A. Treffert's fine Islands of Genius [7]. In addition to traditional autistic savants the book also considered acquired savant syndrome in which savant behaviours somehow follow a brain injury. Here are three excerpts from the book's preface-given introduction:

> "Kim Peek, the inspiration for the movie Rain Man, memorized 12,000 books. He is the Mt. Everest of memory with bottomless factual recall in multiple areas of expertise including history, geography, literature, music, sports, science and religion, to name only some. He became a living Google (p.XIII)."

Next:

> "Matt Savage, who couldn't stand noise or being touched as a child, very quickly mastered the piano at age 6 1/2 and had his first CD of jazz composition at age eight. Matt is recognized worldwide now as "the Mozart of Jazz," a title conferred on him by the famous jazz artist Dave Brubeck (p.XIII)."

And next:

> "Leslie Lemke is blind, severely cognitively impaired and has cerebral palsy. Yet he played Tchaikovsky's Piano Concerto No. 1 flawlessly after hearing it for the first time at age 14. Leslie, who has never had a music lesson in his life, is a musical genius (p.XIII)."

Such exceptional people Treffert claimed [7] have "savant syndrome, a rare but remarkable condition in which incredible abilities - 'islands of genius' - coexist side by side, in jarring juxtaposition, to certain disabilities" (pp.XIII-XIV). Treffert concluded that they represent a basic challenge to our self-understanding and in particular that until we can fully explain the savant, we cannot fully explain ourselves nor comprehend our full capacities (p.XIV). One apparent problem is how such people seem to know things they never learned, or as Matt Savage's teacher stated with regard to Matt, "[h]e seems to know things that are beyond his own existence" (p.XVII).

Finally, from the nearby prodigy realm, Treffert included this about a boy named Jay who had by age 5 composed:

> "[h]is fifth symphony, which was 190 pages and 1328 bars in length was professionally recorded by the London Symphony Orchestra for Sony Records. On a 60 Minutes program in 2006 Jay's parents stated that Jay spontaneously began to draw little cellos on paper at age two. Neither parent was particularly musically inclined, and there were never any musical instruments, including a cello, in the home (p.55)."

Yet at age three Jay asked if he could get a cello. Jay's parent then took him to a music store and to their amazement he "picked up a miniature cello and began to play it", although according to his parents he hadn't seen a real cello before. Subsequently, "he began to draw miniature cellos and placed them on music lines". That apparently was the start of his composing efforts about which Jay claimed:

> "that the music just streams into his head at lightning speed, sometimes several symphonies running simultaneously. "My unconscious directs my conscious mind at a mile a minute," he told the correspondent (p.56)."

A final prodigious phenomenon considered here was found in a *Scientific American* article, "Remembrance of All Things Past" [8]. That article discussed the autobiographical memories observed in some people connected with a syndrome called hyperthymesia. The article opened with an e-mail excerpt that the author James McGaugh had received from a woman, Jill Price, in which she reported on her extraordinary memory. The authors, James McGaugh and Aurora Le-Port, then extensively tested Price's recall of events and her memory was eventually proved faulty in one case - the day of the week of one of the previous 23 Easters (and Price happens to be Jewish). Additionally, she "corrected the book of

milestones for the date of the start of the Iran hostage crisis at the U.S. embassy in 1979". During testing she:

> "correctly recalled that Bing Crosby died at a golf course in Spain on October 14, 1977. When asked how she knew, she replied that when she was 11 years old, she heard the announcement of Crosby's death over the car radio when her mother was driving her to a soccer game [8]."

Jill Price demonstrated an "immediate recall of the day of the week for any date in her life After she was about 11 years old". On the other hand, she also "has trouble remembering which of her keys go into which lock" and did not appear to "excel in memorizing facts by rote". The article also chronicled the authors' subsequent confirmation of similar abilities in about 50 people. Such memories were found to be "highly organized in that they are associated with a particular day and date" and that this occurred "naturally and without exertion" [8].

This extraordinary hyperthymesia phenomenon should have an explanation and given its effortless nature scientifically that implies a DNA basis. This means that such people have a specific DNA pattern that fell out of evolution that allows them to effortlessly recall their lives and significant events, in a date and day-of-the-week fashion. But the authors didn't really acknowledge the associated extraordinary implications. This appears to be a concise introduction to the kind enormous expectations placed on DNA and evolution (and of course, brains).

Terminal Lucidity

An introduction to the surprising terminal lucidity showed up in a *Scientific American* blog piece by the psychologist Jesse Bering, "One Last Goodbye/ The Strange Case of Terminal Lucidity" [9]. That piece discussed earlier work by the biologist Michael Nahm that had reintroduced the topic [10]. Nahm had described terminal lucidity as:

> "The (re-)emergence of normal or unusually enhanced mental abilities in dull, unconscious, or mentally ill patients shortly before death, including considerable elevation of mood and spiritual affectation, or the ability to speak in a previously unusual spiritualized and elated manner [10]."

In considering this modern era neglected topic, Bering had perhaps responded to his own experience in which he had been with his dying mother as she somehow had managed "five minutes of perfect communion with me when, ostensibly, all her cognitive functions were already lost" [9].

Terminal lucidity has recently garnered general attention and some cases were presented for example in The Guardian [11]. That Guardian article contained some poignant episodes based on the recollections of relatives. In one case a woman whose life had taken a very difficult turn in the mid-1990's via what was diagnosed as vascular dementia. Her behaviour got much worse as "she became paranoid, aggressive, [and] verbally abusive" and she as a result ended up in a care home. Additionally, her "short-term memory was shot, and the rest of it was patchy". During the last 2 years of her life she was described simply as "angry, depressed and confused", but her family "visited anyway, sitting with her while she wanted to die" [11].

In October 2004 the woman was admitted into a hospital because of a urinary tract infection. For about a week she was minimally conscious but then on a Sunday as recounted by a relative:

> "She was sitting up in bed, smiling as we walked in. For the next two hours she laughed and joked, completely cognitive, coherent … lucid. A lifetime of memory had returned, and we took advantage of it as she regaled with episodes from her past. My mum [mother], who knew many of them, quietly verified them. Her funny, eloquent, vibrant mother had returned. 'It all came back to her in one rush,' remembers my mum. 'It was like a bolt of lightning. The clouds cleared.' After we left that after-noon, my grandma slipped back into a semi-conscious state, soon not knowing who my mother was, and died within days [11]."

This phenomenon is not new, and as such not likely to be related to novel drugs or technology. Perhaps the most striking case involved a severely disabled young woman named Anna ("Kathe") Katherina Ehmer [12,9]. Her case occurred in 1922 and had some official verification as Kathe had been a patient in a mental hospital and her episode was observed by that hospital's chief physician and also its director. Both of those officials reportedly went on to independently and consistently characterize Kathe's very difficult life (including several bouts of meningitis infection) and then her amazing rejuvenation.

Kathe had been born with severe disabilities and as such appeared to be withdrawn from the environment [12]. She also appeared to have been unable to speak. And yet during the last half-hour of her life she reportedly sung, and in particular this involved the refrain, "Where does the soul find its home, its peace? Peace, peace, heavenly peace!" Elsewhere it was reported that those "present were rendered speechless themselves; some sobbed in bewilderment; others felt they had witnessed a miracle of the soul" [13].

Now onto a fine clinical review, "Terminal lucidity: A review and a case collection" published in the Archives of Gerontology and Geriatrics, by Nahm et al [14]. That paper began by pointing out that what is now termed terminal (or paradoxical) lucidity, "has been reported over the past 250 years, but has received little attention". Given the remarkable nature of this phenomenon that lack of attention might seem surprising. Perhaps, though, some clarification was offered by the subsequent observation that "discussions and case reports" became "almost absent in the medical literature" during the 20th century [14]. This absence might reflect the growing hegemony of materialism as discussed by authors such as Rupert Sheldrake [15].

Nahm et al review included details about 19 clinical cases (excluding Anna Katherina Ehmer's). The review also mentioned that there could be at least two distinct versions of this phenomenon. One in which there is a gradual return to mental coherence during the last month or so, which was suggested to happen "in conjunction with the decline of bodily vitality". Consistent cases cited included a schizophrenic person who after spending 17 years in a "profoundly regressed catatonic state" then gradually returned to a lucid state before dying. Another version of terminal lucidity appears to happen "when full mental clarity can emerge suddenly just before dying". Notable is that researchers had observed these two dynamics sometime ago, in fact one 1826 report was cited [14].

For brevity's sake only 2 short cases of the sudden lucidity variety will now be considered but suggest that readers consider obtaining this significant (and only 4 and 1/2 pages long) article. The first case described here involved a young man suffering from lung cancer which had spread to his brain. This 2007 report mentioned that as the end of his life approached a brain scan revealed that "little brain tissue" remained since "the metastasized tumours [had] not simply pushed aside normal brain tissue but actually destroyed and replaced it". As an apparent result the man lost the ability to speak or move in his final days. Yet according to his wife and a nurse:

> "an hour before he died, he woke up and said good-bye to his family, speaking with them for about five minutes before losing consciousness again and dying [14]."

A second case involved a 1990 report of a 5 year old boy who had been in a coma for three weeks. The boy was under the influence of a malignant brain tumour. During that time the boy reportedly had been "almost constantly" in the presence of relatives. Then following the advice of their minister the relatives told the boy that it was ok if he died. Next:

> "[S]uddenly and unexpectedly, the boy regained consciousness, thanked the family for letting him go, and told them he would be dying soon. He did in fact die the next day [14]."

Recent efforts to ascertain the commonness of terminal lucidity were also described. One survey involved interviewing nursing home staff and it found that "interviewees from all units reported first hand accounts" of confused seniors "suddenly becoming lucid enough in the last days of life to recognize and say farewell to relatives and carers". Another nursing home survey reported that "7 out of 10" caregivers reported having observed patients during the past five years with "dementia and confusion becoming lucid a few days before death" [14].

An update was given in the aforementioned "The Conscious Brain" edition of *Scientific American*. Therein, in "A Final Lucidity" by Jordan Kinard [16], a gerontologist Jason Karlawish was quoted saying that with regard to lucidity, "our study wasn't a prevalence study" since "we found [that] lucidity was more common than it was the exception in dementia patients". Additionally, researcher Dr. Sam Parnia pointed out, "[i]f you talk to hospice nurses and palliative care doctors, they all know about this [terminal/paradoxical lucidity]," he further added, but no one's ever studied it properly because no one ever thought anyone would take it seriously enough" [11].

It would appear then that the history of sincere accounts of terminal lucidity were more than what might be dismissed as casual anecdotes. That science is now starting to reconsider terminal lucidity is significant. Perhaps other materialism-based barriers can also break down.

Our Natural Religion

In the aforementioned special edition of *Scientific American* there was a glimmer of acknowledgement with regard to dualistic possibilities. This was done via some coverage of terminal lucidity and also near-death experiences. Missing, though, was the big overlap point between science/materialism and religion/dualism, and that appears to be our innate or natural religion.

That under-appreciated mystery was considered in Justin L. Barrett's, *Born Believers - The Science of Children's Religious Belief* [17]. That book discussed support for the hypothesis that as infants we tend to believe in the existence of God/souls/gods, to display what Barrett referred to as a "natural religion". The book included some striking examples, including those involving the rebuttals of atheists' atheism by their young children. Barrett claimed that [c]hildren are prone to believe in supernatural beings such as spirits, ghosts, angels, devils, and gods during the first four years of life" (p.3). He went on to add that:

> "[e]xactly why believing in souls or spirits that survive death is so natural for children (and adults) is an area of active research and debate. A consensus has emerged that children are born believers in some kind of afterlife, but not why this is so (p.120)."

Additionally, this situation was considered elsewhere and the findings of an Oxford University psychologist, Olivera Petrovich, were therein synopsized. After reviewing some "international studies of children aged 4 to 7", Petrovich reportedly claimed that "hardwired" into young children is a belief in God as a "creator", and further that "atheism is definitely an acquired position" [18]. Similarly, professor and director of Yale University's Mind and Development Lab, Paul Bloom, had written that "[t]he universal themes of religion are not learned...They are part of human nature. Creationism – and belief in God – is bred in the bone" [18].

Justin Barrett also included some details gleaned with regard to our natural religion [17]. Obtained through interviews with young children those innate beliefs appear to include:

> 1). That there exists "superhuman beings with thoughts, wants, perspectives, and emotions."
>
> 3). That "superhuman beings generally know things that humans do not (they can be super-knowing or super-perceiving, or both), perhaps particularly things that are important for human relations."
>
> 5). That "like humans, superhuman beings have free will and can and do interact with people, sometimes rewarding and sometimes punishing them."
>
> 7). That "people may continue to exist without their earthly bodies after death" (pp.138-39).

It appears then that children show up believing in a significant and unseen complementary realm. That realm is believed to have an overlapping presence with our realm, including even mysteriously a design-oriented contribution. At least conceptually, the superhuman beings might be akin to transcendental souls and/or gods. Additionally, free will is believed to hold in both realms.

Barrett also provided a gross explanation that he heard from an Indian man he had met on a train. That man (apparently a Brahmin) questioned Barrett about his research with regard to people's facility to talk about God. Then in response to Barrett's answer that he was finding that while children are comfortable with the topic, adults are not; the Indian had confidently offered to explain why. That suggested explanation was in Barrett's words that, "on death, we go to be with God and are later reincarnated. As children had been with God more recently, they could understand God better than adults can" (p.2). The Indian man went on to suggest that as children get more immersed in embodied life they then tend to become "confused and distracted by the world", and in so doing drift away from our innate spiritual connection or grounding.

Barrett then went on to acknowledge "that perhaps surprisingly, the evidence to date suggests that as the Brahmin indicated, children show remarkable natural affinities for thinking about and believing in gods" (p.3). The book then went on to offer a materialist alternative to the Indian's explanation. In fact, Barrett suggested that research into "systems of the human mind" "make belief in some kind of god almost inevitable" (p.20).

On the other hand, the key inevitability here might well be that follower of science, like Barrett felt compelled to make science-kosher a profound mystery. Justin Barrett, and his colleagues, were unlikely to have taken the Indian's explanation seriously. That explanation involving prior exposure to God/gods/spirits - with or without reincarnation - would seem to be one route to a natural religion. Furthermore, the author has not seen evidence that our belief in an afterlife is academically an "area of active research and debate".

The author here adds that a strong basis for their belief in God came via an interaction with a young child. Over 30 years ago (and before exposure to work like Barrett's), the author was in the midst of an adult conversation on the subject of God, when a perhaps 3 years old child walked into the conversation and matter-of-factly stated, "There is a God". The kid paused and then repeated the claim. Given the nature of young children and the child's obvious sincerity, it really jolted the author. As a result, the author can still remember the incident clearly and as physically-oriented person they can also remember their location in an obscure park in Rochester, New York (along with the weather). That incident appears to have been consistent with Barrett's message.

If neuroscience wants to pursue investigations into dualistic possibilities, then they should consider our innate religion. How could the presumed forces that shaped our system of "organs of computation" (or "systems of mind") have arrived at this [3]?

Psychological Impacts Following Heart Transplants

Another challenge to materialism or physicalism are the psychological impacts found with some heart transplants. A number of reports have suggested that heart transplant recipients sometimes got more than a new

heart [19-21]. These reports claimed that a "transfer of personality characteristics from one person to another" followed some such surgeries, and this has been noted for over 50 years [19,22]. In particular such reports suggested that this transference process involves four components: "(1) changes in preferences, (2) alterations in emotions/temperament, (3) modifications of identity, and (4) memories from the donor's life" [19].

Coverage here is based on material contained in the writeup "Organ Transplants and Cellular Memories" which was published in *Nexus* Magazine [21]. The authors, Paul Pearsall, Gary E. Schwarz, and Linda G. Russek (all PhDs) also authored earlier related literature. Pearsall also wrote a book, *The Heart's Code.*

The authors discussed some cases along with their suggested explanation, cellular memories. Such memories were hypothesized to function within a heart and to be capable of significantly capturing an individual's experiences. That hypothesized storage capability could then in some heart transplant cases become a vehicle for the transfer of psychological content from a donor to a recipient. Perhaps their reason for this hypothesis was in part to provide a material-based explanation for some otherwise inexplicable (and likely difficult to publish on) phenomenon.

A common feature with a number of these transplant cases was that recipients knew little about the donor. In all of the cases the recipients had been diagnosed with some type of impending heart failure. First considered is Case 4 (among 10), in which the donor was a 17 year-old black male who had been fatally shot in what appeared to be a drive-by shooting. The 17 year-old's mother had described his final moments in which after being shot while walking to violin class, he had hugg[ed] his violin case" [21]. The victim had loved classical music despite being teased by peers, and his mother stated that he had impressed his teachers.

A 47 year-old white male foundry worker was the corresponding recipient and he reported that in the aftermath of the transplant, that "I used to hate classical music, but now I love it". Furthermore, he added "[s]o I know it is not my new heart, because a black guy from the 'hood wouldn't be into that" and also that "[n]ow it calms my heart". He was also quoted with regard to classical music, "I play it all the time" [21].

The recipient's wife pointed out that in addition to now socializing more with black co-workers, her husband was:

> "driving me nuts with the classical music. He doesn't know the name of one song and never, never listened to it before. Now he sits for hours and listens to it. He even whistles classical music songs that he could never know. How does he know them? You'd think he'd like rap music or something because of his black heart [21]."

The donor for Case 5 was a 19 year-old woman who died as a result of a car accident. The donor's mom said of her daughter that she was a "most loving girl" and that she had "owned and operated her own health food restaurant and scolded me constantly about not being a vegetarian". Although she was reportedly a bit [w]ild, the mom also described her daughter as a "great" kid. Her mother further suggested that she had been into "the free-love thing and had a different man in her life every few months", and that her daughter had been man crazy even as a youngster. Also as the daughter was dying she reportedly communicated that she "could feel the impact of the car hitting them" [21].

The corresponding recipient for Case 5 was a 29 year-old woman who reported that "two things happened" following her transplant surgery. The 29 year-old's first claim was that "I could feel the accident my donor had", in fact "I can feel the impact in my chest". Her doctor, though, suggested that "everything looks fine". Additionally, the recipient claimed that "I hate meat now", but before "I was McDonald's biggest money maker, and now meat makes me throw up". Her doctor was dismissive on this point and felt "it was due to [her] medicine" [21].

The Case 5 recipient also reported that she had effectively had had "a gender transplant" as she had no desire to "be with a woman" now. Although previously committed to being gay, after the surgery the recipient found that her new "boyfriend turns" her on, but "women don't". She in fact had gotten engaged to be "married to her boyfriend". In addition to confirming her change in diet, the recipient's brother also reported that his sister had been "gay and her new heart made her straight". Furthermore, the brother reported that his sister had also thrown "out all her books and stuff about gay politics and never talks about it anymore", despite previously being "militant" on the subject [21].

The Case 7 donor was a 3 year-old girl who died in a family pool accident (apparently involving a babysitter being inattentive). The only testimony that Pearsall et al received was from the recipient's side. The recipient's mom claimed that her son didn't know about the donor or their death, but reported her son "is now deathly afraid of water", although he previously "loved it". They in fact "live on a lake and he won't go out in the backyard" and furthermore he kept "closing and locking the back door" [21].

That recipient was a nine year-old boy who claimed that "he talks to her [the donor] sometimes" and that she "seems very sad" and "very afraid". The boy added that "[s]he says she wishes that parents wouldn't throw away their children", but the boy didn't know why she felt that way. The recipient's mother again pointed out that although her son didn't know about the donor or their death, his parents did [21].

Finally, Pearsall et al Case 10 involved a 34-year-old male donor who had been killed as he tried to arrest a drug dealer. The donor's wife reported that her husband had been fatally shot in the face and that the unarrested suspect's appearance had been described as looking "sort of like some of the pictures [i.e., drawings] of Jesus".

The corresponding recipient was a 56-year-old male college professor and he reported, along with a request for confidentiality, that:

> "[a] few weeks after I got my new heart, I began to have dreams. I would see a flash of light right in my face and my face gets real, real hot. It actually burns. Just before that time, I would get a glimpse of Jesus. I've had these dreams and now daydreams ever since: Jesus and then a flash. That's the only thing I can say is something different, other than feeling good for the first time in my life [21]."

The wife of the recipient concurred about the disturbing dreams and added "God we wish they would stop."

Pearsall et al laid out the heart as a receptacle of memory and thus a potential basis for the transferences. But for the heart to pick up such memories - including high level stuff like classical music - does not seem plausible. Even if it were possible then how at the recipient's end would those memories be brought online? And how would the loss of the recipient's own heart not likewise have left a memory gap? Furthermore, the apparent transferences as noted earlier go beyond memory and also include personality/temperament, nuisances (in one case a donor's idiosyncratic laugh was seemingly transferred), as well as sexual orientation.

This striking transplant phenomenon would appear to be consistent with the transfer of a soul and as such would be beyond science's purview. Also note that such transference phenomena are not short term affairs, and they also obviously raise many questions. Additionally, this phenomenon offers a straightforward case of a possible reincarnation dynamic [23]. No questions about the incarnation's previous identity, although in this case the incarnation process would lead to a shared residency and not entail starting over pre-birth in solo fashion. This writeup is inherently very concentrated, and the limitations of the compaction are perhaps most significant with regard to some of the stunning observations associated with heart transplant transferences.

A final and somewhat overlapping soul-suggestive topic is that of multiple personality (or dissociative identity) disorder. This was considered in a *Scientific American* article, "A New Therapy for Multiple Personality Disorder Helps a Woman with 12 Selves", by Rebecca J. Lester [24]. With this condition there can be multiple personalities which "regularly take control of the person's behaviour, as well as recurring periods of amnesia". The title's patient, Ella, referred to her personalities as "parts" and among the reported 12 parts the claimed ages ranged from two to sixteen. This appears to be a very challenging circumstance in which an experiencer can regularly "wake-up" in surprising circumstances and in Ella's experience, most of the time the different parts were not aware of what was happening when another part was 'out'". This puzzling phenomenon is also not that uncommon with global prevalence estimates of about 1 to 1.5 percent.

The Genetic Impasse

Science's material/physics-only understanding of life was frankly depicted by the biologist, Ursula Goodenough [25]:

> "[T]he workings of life are not mysterious at all. They are obvious, explainable, and thermodynamically inevitable. And relentlessly mechanical. And bluntly deterministic. My body is some 10 trillion cells. Period. My thoughts are a lot of electricity flowing along a lot of membrane. My emotions are the result of neurotransmitters squirting on my brain cells. I look in the mirror and see the mortality and I find myself fearful, yearning for less knowledge, yearning to believe that I have a soul that will go to heaven and soar with the angels (pp.46-7)."

Although the integral or cumulative nature of the underlying physics is certainly complex - as with the weather - the presumed mechanics are not. Also, for some context here, Goodenough comes from a prominent academic-connected family, which included a brother who was a Nobel-winning, solid-state physicist.

Other elemental descriptions are available including the physicist Richard Feynman's "everything that living things can do can be understood in terms of the jiggling's and wiggling's of atoms" [26], and the physicist Michio Kaku's [27] "the unification of quantum physics not only revealed the secrets of the universe, it also united the tree of life" (p.87). The latter quote reflected Kaku's optimistic take on Erwin Schrödinger's contributions towards "banishing the life force from biology" (p.85).

Continuing, on the inside cover of geneticist J. Craig Venter's, *A Life Decoded: My Genome: My Life*, there was a claim that the "deciphering of the human genetic code" was likely the greatest achievement of the past century due to its "implications for our future". With that deciphering "we will discover the most intricate workings of our species, the particularities of our own genetic makeup, and the promise of novel approaches to health and medicine that will mark a new stage in human development" [28]. And from that book's first page a quote was given from the biologist Richard Dawkins that, "DNA neither cares nor knows. DNA just is. And we dance to its music".

DNA is of course supposed to be the foundation of it all, or as Craig Venter claimed elsewhere [29], life simply consists of "DNA-driven biological machines" (p.6). Additionally, DNA's presumed evolutionary role is confidently laid out in work such as Ernst Mayr's What Evolution Is [4] or in much more detail in a textbook like Evolutionary Analysis by Jon C. Herron and Scott Freeman [30].

The potential problem with this intellectual framework is that - in addition to the certainty in which it has been presented - it glossed over a number of phenomena including the earlier given conundrums. Significant progress was supposed to have been established via genetic searches in the wake of the "deciphering", but that has yet to happen. A good sample of the missing heritability situation can be found in the title of the behavioural geneticist Eric Turkheimer's current blog, "Gloomy Prospect Blog" [31]. Twenty-four years ago Turkheimer's earlier prominent DNA-affirming declaration (to the effect that the Nature vs. Nurture debate had been settled) was trumpeted in Steven Pinker's influential *The Blank State* [32] (p.372). Yet now as detailed in Turkheimer's blog, geneticists are still striking out in their attempts to identify many presumed DNA origins. Thus, even after extensive searches amidst our limited variable DNA, they still haven t found many of the expected gene-behaviour correlations. And beyond some previously confirmed and mostly rare genetic diseases, the disease susceptibility arena as considered in personal genomics appears to be facing a similar impasse [33-39].

A significant sample of this situation showed up in a *New York Times* article, "The 'Nation's Psychiatrist' Takes Stock, With Frustration" by Ellen Barry [38]. The article reflected on a recent book by Dr. Thomas P. Insel the former head of the National Institute of Mental Health (NIMH). During his 13 year tenure at NIMH, Insel had steered resources "away from behavioural research and toward neuroscience and genetics", and in particular as Insel put it, he had "bet big on genomics." Barry's article related the failure of that big bet, as well as the undeterred commitment to genetics (a perceived need to "double down" on it). But a significant and neglected mystery is, as Stanford's Tanya Luhrmann pointed out, that "[s]chizophrenia has a more benign course and outcome in the developing world" [40]. In fact in our country people with schizophrenia commonly spend a lot of time homeless in part because "[t]hey dislike the diagnosis even more than the idea of being out on the street, because for them the idea of being 'crazy'" is worse. Additionally, Luhrmann wrote that "Indian families don't treat people with schizophrenia as if they have a soul-destroying illness." This from Tanya Luhrmann who appears to have dedicated a good chunk of her career to dismissing the potential validity of religious beliefs.

One might, though, infer a genetic basis for the overall layout of bodies since monozygotic twins often have very similar appearances, and offspring can visibly mirror features of their parents. Moreover, amongst physical traits the DNA connection was reportedly being confirmed as reported in David M. Kingsley's "From Atoms to Traits" [41]. On the other hand, the inexplicable discordance between monozygotic twins with regard to behaviour and health has been suggestive of heritability complications all along [42,43,39].

And a final neuroscience point here, the first article in *Scientific American*'s 2025 special issue, "The Conscious Brain" was a big picture-one entitled "Origins of Consciousness" [44]. That article chronicled what was to have been a critical examination on the merits of two competing theories - global neuronal workspace theory and integrated information theory. But the results of the completed "large brain-imaging study" involving 12 different laboratories in fact "was effectively a draw and raised far more questions than it answered". That ambiguous showdown was even followed by one group of researchers accusing the integrated information theory of being "pseudoscience" and calling for its denunciation.

Superficially, science's materialist vision - along with its evolution - make straightforward sense and this vision has certainly been promoted as such. But the inherent complexity of brain analysis on the one hand; the unfolding failures in the simpler genetic arena; and moreover a number of behavioural conundrums paint a different picture. Perhaps attention to some of those conundrums would have limited science's fixation on their genetic and neural models, and with it opened the door to some novel questioning.

For some general perspective on these challenges facing science, the author turns to commentary offered some years ago by the fine (albeit marginalized) physicist David Bohm, along with another physicist David Peat. In their thoughtful book, Science, Order, and Creativity, they broadly discussed some problems in contemporary science, and in particular suggested, "that science has lost its bearings in favour of a

narrow, abstracted, fragmented approach to nature and reality" [45]. Some of the points were perhaps overly philosophical, but two basic points stayed with the author. One point is that you should watch out for becoming too authoritative in your presentations, and ultimately in your own convictions. Their second point was that all descriptions or explanations are incomplete. Science, long ago though, apparently moved away from such an approach and in particular went all in with a material-only vision on life. In doing so this effectively marginalized consideration of challenging phenomena, alternative theories, and broadly religions. In very literate fashion the writings of Steven Pinker capture this modern trend, as well as a good chunk of the associated hubris. And ironically, even Bohm for all his intellectual prowess, seemed too anchored in quantum questions to see the proverbial writing on the wall with regard to much more significant mysteries associated with life.

Perhaps the unfolding heritability problem along with some growing recognition of behavioural challenges, though, might shakeup some of science's materialist fixation. Downstream from this some scientists might even begin to appreciate religions for their attempts to address life's ultimate mysteries. As is, modern science has established an effective intellectual moat around our innate intuitions, and with it traditional dualistic understandings of life.

Conclusions

For those interested in questioning science's "biochemistry and biophysics"-only model there are of course a number of established approaches including those discussed in works such as [15, 46-54]. Each of those books provides some support for a break from materialism, although for the most part the explanations bailout to quantum speculation. A number of these books tend to be somewhat narrow, and Sheldrake's if it errs, does so in being almost unbounded with its questioning. The above books also vary in their style, from relatively easy reading like those by Mayer and Tucker, up to academic tomes like that of Kelly et al.

Mayer's *Extraordinary Knowing* [53] is perhaps particularly noteworthy in that she was a mainstream academic before an incident involving a psychic turned her attention elsewhere. Her subsequent curiosity-led investigations led to her producing her broad and very interesting book (and unfortunately she died shortly thereafter). Mayer's interesting coverage of Stanford Research Institute's remote viewing experiments appeared to be bolstered by the official declassified U.S. government assessments as given in Mark Gober's book [54] (pp.71-2). A possible shortcoming in her work - and not uncommon among paranormal works - is found in her conclusions. She repeatedly claimed "these changes everything". Somewhat analogously a near-death experiencer and communicator was considered in *Scientific American*'s special edition and his message (based on his short experience), is that "to die is something fantastic" [55]. Life may well be more complex than assumed by the materialist, but it is also likely not as simple and rosy as assumed in some alternative extrapolations.

Continuing with the basics, short of elaborate fraud-based efforts, the psychological impacts of some heart transplants; terminal lucidity's resurrections; and ofcourse the prodigy domain appear to offer straightforward challenges to materialism.

Possible simple support for the existence of free will can be found with the apparent heart transplant transferences and terminal lucidity. In the later case, one might argue that as the end of life approaches the underlying soul somehow responds by making a big push for a final connection. This could be a real challenge and thus - at least in sudden lucidity cases - it offers only a brief window for coherent communication and presence. With the transplant transference cases, the donor souls might have strongly clung to life - think of a lifeboat analogy - and thus followed their heart to a new body.

A simple question with regard to free will is - how well could either of these two phenomena be tied to neural activity? Without such a connection the prime movers behind such dynamics would appear to evade material explanations. Furthermore, our innate dualism suggests these might involve free will. Thus, together the behavioural support for the existence of a soul (in particular at the end of life) and our innate intuition for transcendence and free will; appear to offer a simple argument supporting free will, as well as some support for a deeper vision of life.

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