

Article

Science's Big Problem, Reincarnation's Big Potential, and Buddhists' Profound Embarrassment

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Abstract: Scientific materialism is the largely unquestioned basis for modern science's understanding of life. It also holds enormous sway beyond science and thus has increasingly marginalized religious perspectives. Yet it is easy to find behavioral phenomena from the accepted literature that seriously challenge materialism. A number of these phenomena are very suggestive of reincarnation. The larger test for science's paradigm, though, as well as for any potential general import from reincarnation - is the DNA (or genetics)-based model of heredity. If that conception-beget, DNA (deoxyribonucleic acid)-carried model can be confirmed at the individual level then in a very substantial way we would be confirmed as material-only creatures. In particular, can behavioral genetics and personal genomics confirm their DNA-based presumptions?

During the last decade enormous efforts have been made to find the DNA origins for a number of health and behavioral tendencies. These efforts have been an "absolutely beyond belief" failure and it is here that the scientific vision faces its biggest challenge. The common premodern reincarnation understanding, on the other hand, fits well on a number of specific conundrums and offers a broad coherence across this unfolding missing heritability mystery.

For people trying to make sense of a religious perspective or simply questioning materialism, you should be looking at the missing heritability problem.

Keywords: scientific materialism; genetics; reincarnation; soul; religions; science; Buddhism

1. Introduction

Modern science's understanding of life is a material-only (or physical-only) affair. Two recent books, Siddhartha Mukherjee's *The Gene: An Intimate History* (Mukherjee 2016) and Sean Carroll's *The Big Picture: On the Origins of Life, Meaning, and the Universe Itself* (Carroll 2016) illustrate this point. Mukherjee's book - despite literary and philosophical excesses - makes and maintains the point that "[i]nvolving special vital forces or inventing mystical fluids to explain life [is] unnecessary. Biology [is] physics." (Mukherjee 2016, p.142) Carroll's physics-centered perspective was even nicely capped with an appendix providing a mathematical equation "Underlying You and Me" (Carroll 2016, pp.435-441). Another interesting concise statement of materialism's reasoning was given in a recent *Scientific American* article in a quote of the physicist Richard Feynman that "[e]verything that living things can do can be understood in terms of the jiggings and wiggings of atoms" (Fromme and Spence 2017). These perspectives are regularly accompanied with idealisms about science and the presumed open nature of scientific inquiry. Consequently, the materialist perspective has essentially become the modern educated position. Alternative, and indeed religious, perspectives appear to be rarely taken seriously in intellectual discourse.

However, in contradiction to the assumptions of materialism are a number of accepted but unusual behavioral phenomena that have been largely ignored by the scientific community (likewise, of course, there are sincere works on taboo topics which raise serious questions) (Christopher [2015])

2016, Christopher 2017). Such phenomena are a good place to begin an inquiry into the validity of materialism, and after a brief look at taboo phenomena, that approach will be pursued here.

The much larger point, though, is with regards to the ongoing search for our individual-determining DNA (or genetic) specifics (our design-dedicated “jiggings and wiggings”). In a long and appropriate (and “most helpful”) Amazon.com customer review of Mukherjee’s *The Gene* it was stated that “[w]e used to think our future was in the stars. Now we know it’s in our genes.” Missing, though, in that review - as well as Mukherjee’s book - is the fact that we have very little variability in our DNA (available to potentially differentiate individuals) and that it has been scoured extensively for the last decade to find essentially no DNA connections across large parts of our innate differences. One of the centerpieces of Mukherjee’s book, as well as of genetics research in general, is efforts to identify the DNA-basis for the susceptibility to develop schizophrenia. The May 2017 issue of *Scientific American* in fact has a relevant review article in which the author concludes with regards to such DNA connections that they “didn’t happen”; one researcher declares that such investigations “will have no impact on resolving the biology of schizophrenia”, and another one saying that DNA might just provide “a general unspecifiable genetic background” to the disease (Balter 2017). This situation - and many analogous ones for other individual-distinguishing characteristics - represents an *enormous about-face* from the logic of genetics and their foundational place within scientific materialism. This kind of genetic failure underlies what one geneticist acknowledged was a “debate raging in human genetics” (Mitchell 2012). How then are we to deal with the many confident DNA-based suppositions we have encountered, such as Richard Dawkins’ statement that DNA “created [you], body and mind” (Dawkins 1976, p. 20)?

In addition to elaborating on the above problems facing science, this paper will also consider some explanations available via the common premodern reincarnation understanding (in my other works the word used is “transcendental”, reflecting phenomena that transcend one life). One key point I make is that the missing heritability problem, i.e., the inability to find the DNA responsible for many of our innate specifics, is consistent with a general influence from reincarnation, and as such could help this transcendental belief move beyond what has been characterized as an “underdetermined” status (Barua 2015).

Finally, some commentary on the associated possible significance to the Religion-versus-Science standoff is offered. A particular critical focus is placed on Buddhism in the modern world and the associated science-inspired detour it has experienced.

2. Findings

2.1. Science’s Little Problems: Taboo Phenomena

Scientific materialism’s dominance is so thorough that for the most part it isn’t even explicitly acknowledged, and then when it is usually only as a formality. Occasionally when a taboo report - such as a near-death experience (Alexander 2012) - gains sufficient popular attention some scientists and their skeptic supporters mount a vigorous counterattack.

One interesting testament to materialism’s position can be found with regards to Elizabeth L. Mayer’s fine *Extraordinary Knowing: Science, Skepticism, and the Inexplicable Powers of the Human Mind* (Mayer 2007). Mayer’s writing stemmed her investigations into paranormal phenomena and its collision with her “rational” background as a prominent psychoanalyst, whose work also included positions in the psychiatry department at the University of California Medical Center, San Francisco, and also as an associate clinical professor of psychology at the University of California at Berkeley. This work was sparked by the amazing help Mayer had received while attempting to recover her daughter’s harp which had been stolen in Oakland, California. In response to a friend’s suggestion, the desperate Mayer had contacted a man in Arkansas who worked as a dowser. The initial response to her phone call to the dowser went as follows:

“Give me a second,” he said. “I’ll let you know if it is still in Oakland.” He paused, then: “Well, it’s still there. Send me a street map of Oakland and I’ll locate the harp for you.” After overnighing the man a map she got a call back two days later. “Well, I got that harp located,”

he said, "It's in the second house on the right on D--- Street, just off L--- Avenue" (Mayer 2007, pp.2-3).

Mayer then located that intersection and went on to place flyers offering a reward in the two-block area surrounding the specified house. Three days later she got a phone call from a man who claimed to have seen the missing harp in the possession of a neighbor. After some subsequent phone calls, Mayer arranged for a meeting in which she was able to recover her daughter's stolen harp.

Shortly thereafter Mayer had the thought that that experience "*changes everything*". As chronicled in the book that launched her fourteen-year investigation which uncovered numerous instances of extraordinary knowing. These included a several encounters with psychics and also a sustained look at some of the astonishing happenings witnessed during the remote viewing investigations at Stanford Research Institute (SRI) in Menlo Park, California.

The work at SRI had been initiated when a physicist Harold Puthoff's inquiry into a grant proposal on the possible "implications of quantum theory for life" somehow got into the hands of a New York artist named Ingo Swann. Swann then contacted Puthoff and suggested as an alternative that Puthoff investigate parapsychological phenomena.

In part due to simple curiosity Puthoff had then invited Swann out to SRI for a week during June 1972. A brief description by Dr. Puthoff of some of the events of that week went as follows:

Prior to Swann's visit I arranged for access to a well-shielded magnetometer used in a quark-detection experiment in the Physics Department at Stanford University. During our visit to this laboratory, sprung as a surprise to Swann, [we asked him] to perturb the operation of the magnetometer, located in a vault below the floor of the building and shielded by mu-metal shielding, an aluminum container, copper shielding and a superconducting shield. To the astonishment of Stanford physics professor Dr. Arthur Hebard, whose experiments depended heavily on the magnetometer's much vaunted imperturbability to outside influence, Swann doubled the rate at which the magnetic field in the magnetometer was decaying. Then in response to Hebard's disbelieving subsequent request, Swann stopped the field change altogether for a period of roughly forty-five seconds. As if to add insult to injury, he then went on to "remote view" the interior of the apparatus ... by drawing a reasonable facsimile of its rather complex (and heretofore unpublished) construction. It was this latter feat that impressed me perhaps even more than the former, as it also eventually did representatives of the intelligence community [the CIA eventually became quite interested in the remote viewing phenomena] (Mayer 2007, pp.105-106).

That visit sparked a sustained series of remote viewing experiments at SRI that resulted in a number of observations that were "anything but ordinary and just blew [the scientists'] minds [away]" (ibid., p.108). Unfortunately, despite their findings - that "[t]here was so much good data and it was so damn compelling" (ibid., p.108) - and despite the involvement of physicists no less, their work was largely unappreciated and has simply faded away.

Not unlike those remote viewing experiments, Elizabeth L. Mayer's *Extraordinary Knowing* was largely neglected. It probably didn't help that she died shortly after its publication. It also didn't help that intellectuals could well be a notch up on the rigidity scale from the considerable rigidity that confronts other adults. *Extraordinary Knowing* even opens with a prominent physicist, Freeman Dyson, offerings his tentative conclusion that "ESP is real but belongs to a mental universe that is too fluid and evanescent to fit within the rigid protocols of controlled scientific testing" (ibid., p. xi). Similarly, is it realistic to expect that instances of scientific breakthroughs or genius would occur under "controlled scientific testing" conditions? It is also worth noting that this is another testament to materialism's clout as it is apparently critical to have a scientist offer support for self-evident points.

Furthermore, there is a possible objection to Mayer's repeated conclusion that these type of phenomena "*change[] everything*". For the modern intellectual or academic realms - which seems to have completely cut themselves off from such possibilities - this might be true. On the other hand for people outside these realms the evidence can be quite strong. For example, I have had a number of psychic experiences in my life. But is it realistic to think that these rare events - blips if you will - really amount to much significance? I don't think so and thus don't feel that they change much of

anything (and I also think that there are very few people who regularly experience psychic phenomena). At the very least, though, Mayer's work argued convincingly for the existence of some psychological phenomena that violate materialism.

Another challenging taboo point is with regards to investigations into possible cases of reincarnation. In a 2013 blog entry for *Scientific American* the psychologist and self-identified skeptic Jesse Bering reviewed Ian Stevenson's reincarnation work (Bering 2013). That review, entitled "Ian Stevenson's Case for the Afterlife: Are We Skeptics Really Just Cynics?" conveyed the strength of Ian Stevenson's work and as well as Bering's positive assessment. In it Bering wrote that:

when you actually read [the cases] firsthand, many are exceedingly difficult to explain away by rational, non-paranormal means. Much of this is due to Ian Stevenson's own exhaustive efforts to disconfirm the paranormal account. "We can strive towards objectivity by exposing as fully as possible all observations that tend to weaken our preferred interpretation of the data," he wrote. "If adversaries fire at us, let them use ammunition that we have given them."

And if truth be told, he excelled at debunking the debunkers.

Bering also cited the support of one prominent scientist, the physicist Doris Kuhlmann-Wilsdorf, who found that Stevenson's work provided "overwhelming" evidence for the existence of reincarnation. A more recent and extraordinarily detailed case is chronicled in *Soul Survivor: The Reincarnation of a World War II Fighter Pilot* by Bruce and Andrea Leininger (with Ken Gross) (Leininger and Leininger 2009). In the Leininger's book they chronicled their experiences with their son as he appeared to vividly recall experiences as a World War II fighter pilot. The strength of their case was significantly boosted by the fact that the father, Bruce, is a devout Catholic and went to amazing lengths to investigate the possible reincarnation explanation in hopes of debunking it. That book earned a "spectacular" review comment from Jim Tucker, Ian Stevenson's successor at the University of Virginia.

One could argue that Jesse Bering's points about Stevenson's work are self-evident. Stevenson really did go to extraordinary degrees to be critical and in particular to hedge against the reincarnation explanation. I personally found it to be overdone in that regard and it can make for awkward reading. It is also not clear that it would have been possible for Stevenson to have received approval from the entrenched skeptic camps. The larger question here is again the 'So What?' question. If such cases are exceedingly rare - Bering cited a 1 in 500 possible occurrence rate in India - and furthermore they might have rather limited impacts on the affected individuals - should reincarnation's potential influence be considered that significant? The growing big picture-case for reincarnation, along with Ian Stevenson's conclusions, will be returned to later.

2.2. Science's Little Problems: Unusual Accepted Phenomena

Here a number of very compelling and non-controversial examples will be considered that appear to violate materialism and thus could be considered supernatural. These examples are in part taken from an essay I wrote in the winter of 2017 (Christopher 2017) and which had also appeared in *A Hole in Science* (Christopher [2015] 2016).

You can read in Sean Carroll's *The Big Picture* about "the tremendous strides in understanding" made by neuroscience into how our brains work, but for sober assessment you might better read an informed review article like that found in the March 2014 issue of *Scientific American* by Rafael Yuste and George M. Church (Yuste and Church 2014). After a splashy title - "The New Century of the Brain: Big science lights the way to an understanding of how the world's most complex machine gives rise to our thought and emotions" the article was very sober. The first paragraph read:

Despite a century of sustained research, brain scientists remain ignorant of the workings of the three pound organ that is the seat of all conscious activity. Many have tried to attack this problem by examining the nervous systems of simpler organisms. In fact, almost 30 years have passed since investigators mapped the connections among each of the 302 nerve cells in the round worm *Caenorhabditis elegans*. Yet the worm-wiring diagram did not yield an understanding of how these connections give rise to even rudimentary behaviors such as

feeding and sex. What was missing were data relating the activity of neurons to specific behaviors.

The article went on to describe the extraordinary challenges facing neuroscience and then later closed with the plea-ful conclusion:

[w]e need collaboration among academic disciplines. Building instruments to image voltage in millions of neurons simultaneously throughout entire [human] brain regions may be achieved only by a sustained effort of a large interdisciplinary team of researchers. The technology could then be made available at a large-scale observatory-like facility shared by the neuroscience community. We are passionate about retaining a focus on new technology to record, control and decode the patterns of electrical spikes that are the language of the brain. We believe that without these new tools, neuroscience will remain bottlenecked and fail to detect the brain's emergent properties that underlie a virtually infinite range of behaviors. Enhancing the ability to understand and use the language of spikes and neurons is the most productive way to derive a grand theory of how nature's most complex machine functions.

Existing serious challenges are found elsewhere, though. Some individuals can function very well despite having very little brain tissue and such under-appreciated findings clearly challenge a brain-only explanation for human consciousness and behavior. A condition called hydrocephalus results in enlarged reservoirs or ventricles (holding cerebrospinal fluid) within the brain and thus people with this condition can have other brain tissue displaced and/or destroyed. In a *Science* article the neurologist John Lorber reported on hydrocephalus findings (Lewin 1980). Those findings had been based on the brain scans of over 600 patients with the condition spina bifida (most of whom also had hydrocephalus), and those patients had been categorized based on the fraction of their brain case (or cranium) that was occupied by the enlarged ventricles. Of particular note were cases in which the ventricles filled about "95 percent of the cranium". Individuals falling into this category constituted "less than 10 percent" of the patients. Amongst those in this category it was noted that "many" of them were:

severely disabled, but half of them have IQ's greater than 100. This group provide[d] some of the most dramatic examples of apparent normal function against all odds.

Lorber described one particularly startling example:

[t]here is a young student at [Sheffield University] who has an IQ of 126, has gained a first-class honors degree in mathematics, and is socially completely normal. And yet the boy has virtually no brain.

Given such findings why then don't a significant fraction of unaffected individuals (with normal-sized brains) function at extraordinary levels? What do such findings say about the evolutionary logic of homo sapiens' growth in brain size? Readers' can also juxtapose the above findings with Sam Harris' assertion that "[t]here is no place for a soul inside your head" (S. Harris 2014, p.205).

Additional neuroscience/materialism-challenging observations can be found in studies of human memory performance. A *Scientific American* article, "Remembrance of All Things Past", by James McGaugh and Aurora LePort (McGaugh and LePort 2014) opens with an excerpt from an e-mail received by McGaugh from a woman Jill Price:

As I sit here trying to figure out where to begin explaining why I am writing you ... I just hope somehow you can help me. I am 34 years old, and since I was 11 I have had this unbelievable ability to recall my past ... I can take a date, between 1974 and today, and tell you what day it falls on, what I was doing that day, and if anything of great importance ... occurred on that day I can describe that to you as well. I do not look at calendars beforehand, and I do not read 24 years of my journals either.

McGaugh and LePort then followed up by extensively testing Price's recall. Her memory was eventually proved faulty in only one instance - the day of the week of one of the previous 23 Easters (and Price is Jewish). During this testing she "corrected the book of milestones for the date of the start of the Iran hostage crisis at the U.S. embassy in 1979." On smaller matters Price:

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 [note

an apparent typo in the article since Price couldn't have been 11 years old in both 1974 and 1977].

In the *Scientific American* article, the researchers related that 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". Yet she also "has trouble remembering which of her keys go into which lock" and "does not excel in memorizing facts by rote". Later in the article they describe similar memory 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 the process occurred "naturally and without exertion". These extraordinary memories did not appear to have a family history and thus do not lend support to a (remarkable) genetic explanation. But the larger point here - and a point skirted in the article - is that such effortless memories seem highly implausible given the brain's apparent biological basis for memory (i.e., it is supposed to perform like a muscle). Readers' can compare these findings with another comment by Sam Harris on the limits of minds, "I don't remember what I did on this date in 2011" (S. Harris 2014, p.204). A related point here is that this kind of memory function appears similar to those reported in some near-death experiences (Holden et al 2009, p.306).

Another area where the scientific vision appears to be seriously challenged is with extraordinary intellectual abilities. In Darold A. Treffert's *Islands of Genius* (Treffert 2010) the following description is given of a musical prodigy:

By age five Jay had composed five symphonies. His 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 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. At age three Jay asked if he could have a cello of his own. The parents took him to a music store and to their astonishment Jay picked up a miniature cello and began to play it. He had never seen a real cello before that day. After that he began to draw miniature cellos and placed them on music lines. That was the beginning of his composing.

Jay says 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 (Treffert 2010, pp.55-56).

Treffert's book contains other examples that support his conclusion that prodigal behavior typically involves "know[ing] things [that were] never learned". Interested readers can look up descriptions of the historical musical prodigy Blind Tom. *Islands of Genius* also considers acquired savant syndrome in which the onset of savant behaviors follow a setback to the central nervous system. Thus it would seem then that a three pound neural organ can acquire skill as a result of damage. These cases of prodigal and/or exceptional intellect offer huge challenges to materialism, albeit challenges that are rarely if ever acknowledged by scientists (for Treffert's part he extrapolated an optimistic NOVA documentary on the epigenome, "Ghost in Your Genes", for a scientific-sounding prodigal explanation).

A final, non-controversial challenge to materialism can be found with the not too uncommon transgender phenomena. Some individuals strongly identify with the opposite gender and this identification can show up when they are very young. One transgender study found that amongst the subset that have undergone sex-change efforts (or transitioned) many "knew that they had been born into the wrong gender from childhood" (Landau 2009). Such an explanation would seem to require some kind of DNA mutation which resulted in an individual whose brain then felt committed to identifying as the opposite gender and an associated agenda. It is worth noting here that from the materialist perspective that behind the scenes here are merely programmed molecular interactions and thus the perceived entities including self and free will are simply illusions. This is difficult to imagine.

From an article in the *New York Time Magazine* (Padawer 2012) a description of a 3 year old included:

he insisted on wearing gowns even after preschool dress-up time ended. He pretended to have long flowing hair and drew pictures of girls with elaborate gowns and flowing tresses. By age 4, he sometimes sobbed when he saw himself in the mirror wearing pants, saying he felt ugly. Such tendencies can present difficulties for parents, as one father put it, “I didn’t know how to be the father of a girl inside a boy’s body”.

One eight year old’s self assessment found in Andrew Solomon’s *Far From the Tree* (Solomon 2012) contained:

“I’m a girl and I have a penis. They [her parents] thought I was a boy until I was six. I dressed like a girl. I said, ‘I’m a girl.’ They didn’t understand for the longest time (ibid., p.604).

The assessment went on look ahead (after considering possible ways to deal with their penis problem):

[w]hen I’m a mommy I’ll adopt my babies, but I’ll have boobies to feed then and I’ll wear a bra, dresses, skirts, and high-heeled shoes (ibid., 605-606).

Do such behaviors really make sense within an evolutionary framework, and in particular as a function of DNA specifications?

Together with taboo examples like those considered earlier, I would argue that extraordinary behavioral phenomena offer clear rebuts to materialism. At least around the behavioral edges there are phenomena that do not make “jiggings and wiggings”-sense. These could again be exceptions to the big picture, though I suppose.

2.3. Science’s Big Problem: Heritability

From the scientific perspective, human behavioral tendencies should follow some kind of nature (DNA-linked) plus nurture (environmental exposure-linked) causal combination. In fact decades worth of studies appear to support the common intuition that the majority contributor to our particular tendencies is nature. In a simple overview of the supporting logic here is Steven Pinker on schizophrenia:

schizophrenia is highly concordant within pairs of identical twins [about 50% of the time when one is affected so is the other twin], who share all of their DNA and most of their environment, but far less concordant within pairs of fraternal twins, who share only half of their [variable] DNA ... and most of their environment. The trick question [“What is the biggest predictor that a person will become schizophrenic?”] could be asked - and would have the same answer [“Having an identical twin who is schizophrenic.”] - for virtually every cognitive and emotional disorder ever observed. Autism, dyslexia, language impairment, learning disability, left-handedness, major depressions, bipolar illness, obsessive-compulsive disorder, sexual orientation, and many other conditions run in families, are more concordant in identical than in fraternal twins, are better predicted by people’s biological relatives than by their adoptive relatives, and are poorly predicted by any measure of the environment (Pinker 2002, p.46).

There are of course some environmental influences on our behaviors, though. The environment does provide for items like language, trauma-based fears, and apparently shows some influence towards family-based allegiances like political party affiliation (perhaps also involving fear) (Alford et al 2005).

But many studies - including those involving monozygotic (identical) twins, dizygotic (fraternal) twins, and also adoptees - have shown strong support for the nature component’s contributions. Specifically, they have suggested that about half of the specifics of a person’s complex behavioral traits (i.e., “whether they are smarter or duller, nicer or nastier, bolder or shyer”, etc.) comes from their DNA (or genome). These findings also suggest that very little is contributed by the home environment which is most apparent through the limited impact observed in adoptees. The remaining mysterious contributor to one’s behavior is supposed to be based on an individual’s unique experiences and this most tangibly provides a basis for the differences between identical twins. An example of those differences can be found amongst male identical twins in which the concordance of exclusive homosexuality is only about 20-30% (Collins 2010, pp.204-205). Thus

despite all the certainty trumpeted about science's vision of life there is some officially acknowledged mysteriousness about individuality and this is reflected in a statement by Steven Pinker:

a simple way of remembering [the three laws of behavioral genetics] is this: identical twins are 50 percent similar whether they grow up together or apart. Keep this in mind and watch what happens to your favorite ideas about the effects of upbringing in childhood [Pinker 2002, p.381].

He also acknowledged that "something is happening here but we don't know what it is" (Pinker 2002, p.380).

The critical testable question here is - can science identify a DNA basis for the other roughly half-ish of who we are? Can behavioral genetics confirm its own title? In parallel can personal genomics identify the DNA specifics behind our differing health trajectories and challenges? There is conclusive inferential evidence pointing towards innate contributions, which from a scientific perspective implies a DNA basis. On the other hand, there really are surprisingly large behavioral and health gaps between identical twins which raise serious questions for the DNA paradigm.

Contributing to geneticists' optimism is the under-appreciated fact that the variable portion of our DNA is merely a small subset of the complete DNA code. Roughly then one might argue that we are all identical twins. But not exactly, since the DNA codes of any two individuals differ by about 3 million letters out of 3 billion genomic letters (or about 0.1%) (Schafer 2006; Kolata 2013; Kingsley 2009). That small subset of variable DNA should then largely be the home of our innate differences and thus support the expectations of personal genomics and behavioral genetics. In a further crude sense then one could argue that the ongoing DNA searches are simply trying to identify some additional Y chromosomes; that is variations in the genome which can result in significant changes in the associated individuals (even if they are not visible in a mirror).

The minimally-communicated problem facing genetics, though, is that despite searching for the expected DNA connections for about a decade now and they have found almost nothing. In a rare critical assessment of the situation, Jonathan Latham and Allison Wilson of the Bioscience Resource Project (Ithaca, New York) pointed out in 2010 that, with few exceptions (including genes for cystic fibrosis, sickle cell anemia, Huntington's disease; and also some genetic contributions to instances of breast cancer and Alzheimer's):

according to the best available data, genetic predispositions (i.e. causes) have a negligible role in heart disease, cancer, stroke, autoimmune diseases, obesity, autism, Parkinson's disease, schizophrenia and many other common mental and physical illnesses that are the major killers in Western countries (Latham and Wilson 2010).

Those two authors went on to ask "*[h]ow likely is it that a quantity of genetic variation that could only be called enormous (i.e. more than 90-95% of that for 80 human diseases) is all hiding in what until now [circa 2010] had been considered genetically unlikely places?*" They added that "[b]y all rights then, reports of GWA [genome wide assessments] results should have filled the front pages of every world newspaper for a week". But nothing like that happened.

That 2010 contrarian assessment had been preceded by an initial acknowledgement in 2008 by geneticist David Goldstein that:

[a]fter doing comprehensive studies for common diseases, we can explain only a few percent of the genetic component of most of these traits. For schizophrenia and bipolar disorder, we get almost nothing; for Type 2 diabetes, 20 variants, but they explain only 2 to 3 percent of familial clustering, and so on (Wade 2008).

And further that:

[i]t's an astounding thing that we have cracked open the human genome and can look at the entire complement of common genetic variants, and what do we find? Almost nothing. That is absolutely beyond belief (Wade 2008).

And finally in 2017, the same Goldstein added that the latest potential breakthrough in the genetic origins of schizophrenia - arguably "account[ing] for only a trivial amount of schizophrenia" - represents "the first time we have gotten what we wanted out of a GWA" (Balter 2017). He also reflected on the ongoing optimistic genetic reports by saying "[p]eople working in the schizophrenia

genetics field have greatly over-interpreted their results". As an outsider who has followed the reports from the genetics literature I think that his criticism is appropriate to many areas of the field.

Given the circumstances - little variable DNA to consider and that years of genome research has yielded virtually nothing - their ongoing failure really is a very big one for the scientific model. The appropriate analogy here is not some long drawn out search for an esoteric, singular entity - like the physicist's Gibbs particle. A good analogy here is more akin to an extensive search through a small haystack for a whole bunch of needles. That they haven't found substantial DNA origins (or needles) represents an "absolutely beyond belief" failure for genetics.

2.4. Reincarnation's Big Picture Potential

Ian Stevenson did extensive and impressive work investigating possible cases of reincarnation. His conclusions about reincarnation are therefore very noteworthy. In his condensed book, *Where Reincarnation and Biology Intersect*, Stevenson wrote that:

I do not propose reincarnation as a substitute for present or future knowledge of genetics and environmental influences. I think of it as a third factor contributing to the formation of human personality and of some physical features and abnormalities. I am, however, convinced that it deserves attention for the additional explanatory value that it has for numerous unsolved problems of psychology and medicine (Stevenson 1997, p.186).

In particular, Stevenson wrote that those contributions could include:

some cognitive information about events of the previous life; a variety of likes, dislikes, and other attitudes; and, in some cases, residues of physical injuries or other markings of the previous body (Stevenson 1997, p.182).

The last point refers to reincarnation's possible contributions to birthmarks and birth defects and was a significant focus of his research (and in large part the basis for the book's title). Finally, Stevenson went on to suggest that "[w]e may, after all, be engaged in a dual evolution - of our bodies and of our minds or souls".

The scope of this take on reincarnations' possible import, though, is still quite limited. Based on Stevenson's work we don't know how often it happens, and even with regards to the suggestive cases one can still wonder how significant reincarnations' influence might be? Would such contributions to cognitive specifics and birth abnormalities matter much? Since Stevenson's work a much bigger potential contribution - and intersection with biology - has come into view. That is genetics' missing heritability problem. This general opening, along with some additional potential behavioral support, provide a chance to advance the reincarnation research front.

The coverage here on reincarnation begins with findings about the spiritual or religious understandings of infants, followed by some general points on reincarnation theory. This will be followed by a section on two potential reincarnation-based explanations and then another section on theory.

One can certainly gain confidence in the possible existence of reincarnation by looking at some individual cases and/or by examining relevant unusual behaviors. The substantial challenge, though, for a reincarnation explanation is finding a larger fit for it amongst the phenomena of life. There you have the opportunity of uncovering some larger significance.

In Justin L. Barrett's book, *Born Believers - The Science of Children's Religious Belief*, he laid out some of the growing evidence that young children tend to have an innate understanding of the existence of souls/God/gods, that they are believers in what Barrett termed a "natural religion" (Barrett 2012). *Born Believers* contains some striking examples including ones in which the positions of atheists' were rebutted by their young children. Barrett wrote 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" (ibid., p.3). Later he wrote 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 (ibid., p.120).

These remarkable observations were simply placed by Barrett within the materialist vision, though. Even as a practicing Christian, Barrett concluded that these are simply delusional tendencies derived from evolution and experience - "biology plus ordinary environment" (ibid., p.20). It is a remarkable act of faith, though, to extrapolate our evolution-shaped genomes to provide a basis for such beliefs. That act of faith appears to be symptomatic of what one insider acknowledged was the fact that "science is in many ways its own religion" (Adler 2013).

At the beginning of *Born Believers'* scientific take on our innate spiritual beliefs, though, there is also a traditional explanation offered. That explanation was confidently provided by an Indian man Barrett had encountered on a train. In Barrett's words that man had explained:

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. They had not yet forgotten or grown confused and distracted by the world. In a real sense, he explained, children came into this world knowing God more purely and accurately than adults do (Barrett 2012, p.2).

That reincarnation perspective will be pursued here. This point of view appears to have been a common premodern understanding as discussed in *M'Clintock and Strong's Cyclopaedia of Biblical, Theological and Ecclesiastical Literature*, "[t]ransmigration, dating back to a remote antiquity, and being spread all over the world, seems to be anthropologically innate, and to be the first form in which the idea of immortality occurred to man" (Head and Cranston 1967, p.170). Chris Carter, in *Science and the Afterlife Experience*, also presented the broad historical background of the reincarnation belief (Carter 2012, pp.18-20). Carter included a quote of Ian Stevenson who had written that "nearly everyone outside the range of orthodox Christianity, Judaism, Islam, and Science - the last being a secular religion for many people - believes in reincarnation".

This belief can be divided into two components: the intuitive continuity of behavior/personality component and the more puzzling cause-and-effect or karma component. Of these two aspects it has been claimed that they were historically "in fact ... virtually always conjoined" (Head and Cranston 1967, p.10). Perhaps the apparent continuity of personalities across lives in small and relatively undistracted groups helped to establish the continuity hypothesis. The karma belief might have gained strength in parallel when observing individuals encountering their just deserts across lives. Perhaps these beliefs could have been furthered by the insights of dedicated mystics. Another explanation for the origin of these beliefs is that they were derived from reports of the previous lives by individuals (Carter 2012, p.20). In any case, possible contributions from such observations could have been furthered by our own innate religious instincts.

As an introductory synopsis of some of reincarnation's potential explanatory power:

[one might] argue that in addition to offering a straightforward explanation for our natural religion, a [reincarnation] perspective also provides traction on some scientific conundrums including prodigies, transgender individuals, and the surprising variations in personality found amongst a number of species; a simple explanation for the mysteries associated with monozygotic twins; a backdrop for some controversial phenomena including near-death experiences; and finally a consistent framework for the missing heritability problem. In brief, the missing origins for a number of our innate specifics could be understood as carryover from previous lives and with some standout behaviors - as found with prodigious savants and prodigies - there could be some additional carryover consistent with some of the remarkable descriptions of the intervening disembodied state (Christopher [2015] 2016, p.9).

The continuity aspect of reincarnation would be consistent with individual cases of young children experiencing apparent recall of a previous life (Stevenson 1997; Tucker 2005; Leininger and Leininger 2009) as well as exhibiting some suggestive behaviors. Contributions from the karma aspect would also be consistent with the unexpectedly large health differences found between identical twins and more generally the disease susceptibility element of the missing heritability problem. All together a number of under-appreciated phenomena - including the missing heritability problem - could help push the reincarnation theory beyond what has been characterized by Ankur Barua as an "underdetermined" status (Barua 2015).

Another suggested point here is that reincarnation's import would likely overlap with, as well as be complementary to, that of DNA. If as was commonly believed the incarnating soul is drawn to

their future parents, then the soul might tend to find some continuity in the DNA specifics produced by conception - beyond the default codes for species and sex. This could include DNA-determined unusual conditions as well as the general features of appearance. Of note here is that if such a parental-draw dynamic roughly represented a draw between similar beings - analogous to the assortative mating phenomena (Baron-Cohen 2012) - then that dynamic should produce its own crude heredity pattern. For example, if an incarnating relatively aggressive soul were drawn to similarly-inclined future parents, then that dynamic should produce an apparent inheritance of the tendency to be aggressive. This would be true even in the absence of any confirmed DNA basis for that tendency (as is the case for aggression and more generally for behavioral genetics).

Another basic point is that the probability that the crapshoot that is conception could deliver a variable DNA match for a soul's overall trajectory is zero. If reincarnation were happening in a big way then the conception's DNA definition would have to be breached in many ways. This is the general collision point between reincarnation and the scientific vision. Consequently, to the degree that science can show that nature plus nurture roughly defines individuals, then this would markedly limit the possible import associated with reincarnation phenomena. Note the "roughly" here since from a physical perspective there would also have to be some random contributions. For example, scientists are not surprised that the physical features of monozygotic twins (like freckle patterns) are not completely identical. In this way the efforts to confirm the expectations of behavioral genetics and also in particular to account for the substantial differences found between monozygotic twins are of interest.

Two possible explanations provided by reincarnation will next be considered next, followed by a little more on the reincarnation framework.

2.5. *Two Reincarnation Explanations*

The first idea considered here is with regards to monozygotic twins. This necessitates some brief background. Such twins represent a number of mysteries. One such mystery is the cause of their origin, the initial split or division of a single cell zygote (Segal 2005, p.2). This process only happens within some species.

Similar appearances aside, the realities of monozygotic twins represent a substantial challenge to the sacred DNA "created [you] body and mind" logic. Despite being DNA replicas, identical twins whether they were raised together or separately, have been observed to be on average more different than alike personality-wise. Twin pairs can closely share the same environment or inhabit separate ones (with whatever epigenetic implications), and yet they still appear to have comparably different personalities. Note that this environment or nurture challenging finding is also consistent with the findings of adoption studies. After reading about twin studies and/or having personal exposure to identical twins, it is probably not a surprise to hear that one conjoined (attached) monozygotic twin said that "[w]e are two completely separate individuals who are stuck to each other. We have different world views, we have different lifestyles, we think very differently about issues" (J. R. Harris 2006, p.1). This behavioral genetics mystery was the focus of Judith R. Harris' *No Two Alike* (J. R. Harris 2006) and also received considerable attention in Steven Pinker's *The Blank Slate* (Pinker 2002, pp.372-399).

On the other hand, monozygotic twins can still share remarkably specific behavioral tendencies even when they were separated at birth. From small habits like "sitting out elections because they feel insufficiently informed" (Pinker 1997, p.20), to the big life-defining stuff - like becoming dedicated volunteer firemen (Segal 2005, p.14). Examples like these have been used to convey the power of DNA's influence, but when juxtaposed against twin differences they may simply add to the mystery.

The surprising health differences found between monozygotic twins were discussed in a review article (Kolata 2006). The article opens by describing a healthy and active 92 year old and her identical twin. The other twin was "incontinent, she has had a hip replacement, and she has a degenerative disorder that destroyed most of her vision ... [and] has dementia." These twins had grown up together, lived in the same city, but had very different ambitions and personalities. This example

leads to the article's main item, a discussion of the findings of a very large study of twins' longevity. Using standard procedure, that study had made comparisons between the longevity outcomes experienced by fraternal and identical twins to infer the general DNA impact on longevity. This study, involving 10,251 twins, found that identical twins died only a little closer together than fraternal twins and in particular that the deaths of monozygotic twins averaged "more than 10 years apart". Consistent with this, one of the studies author's concluded that "[h]ow tall your parents are compared to the average height explains 80 to 90 percent of how tall you are compared to the average person [but] only 3 percent of how long you live compared to the average person" follows from your parents longevity.

One final identical twin mystery mentioned here is the degree of closeness found between them. Steven Pinker pointed out that "when separated at birth and reunited as adults, ... [they] say they feel like that have known each other all their lives" (Pinker 2002, p.47). In one of my childhood neighborhoods I can't even remember the local twins being apart. Given that siblicide is common in nature does this really make sense for twins (Tenneson 2006)?

These monozygotic mysteries can be approached from a reincarnation perspective. Such twins could have been close before their current life; maybe as siblings, close friends, coworkers, or spouses. Scenarios like these are consistent with some of the reports from investigations into cases suggestive of reincarnation (Stevenson 1997, pp.171-172). That earlier closeness could have brought them together to be born as identical twins and further could have been the underlying cause of the initial split of the single cell zygote. Behavioral continuity across lives could have resulted in their roughly similar personalities, a crude similarity which appears to be found between those who are close. Such continuity also could have contributed to their shared behavioral preferences. Their remarkable closeness could have followed from their earlier connection, perhaps including shared experiences in the disembodied realm. Altogether then from this perspective monozygotic twins are, superficially replicas, but deeper down there are two separate beings with mostly separate backgrounds which would then account for their otherwise surprising differences.

For a Western historical perspective on such an explanation consider the following from the 1600s by Joseph Glanvill, Chaplain to King Charles II:

Every soul brings a kind of sense with it into the world, whereby it tastes and relisheth what is suitable to its particular temper ... What can we conclude but that the soul itself is the immediate subject of all this variety and that it came prejudiced and prepossessed into this body with some implicit notions that it had learned in another? To say that all this [individual] variety proceeds primarily from the mere temper of our bodies is methinks a very poor and unsatisfying account. For those that are the most alike in the temper, air, and complexion of their bodies, are yet of a vastly differing genius ... What then can we conjecture is the cause of all this diversity, but that we had taken a great delight and pleasure in some things like and analogous unto these in a former condition (Head and Cranston 1967, p.122).

Does any scientific literature even mention this intuitive approach or quote?

Another place reincarnation could provide some explanatory insight is with regards to the wide range of personality found amongst animals. During the last decade or so, scientists have returned to investigating the personalities of animals (for quite a while this had been a taboo topic). In a review article by Natalie Angier it was reported that:

[in] the burgeoning field of animal personality research, the effort to understand why individual members of the same species can be so mulishly themselves, and so unlike one another on a wide variety of behavioral measures. Scientists studying animals from virtually every niche of the bestial kingdom have found evidence of distinctive personalities - bundled sets of behaviors, quirks, preferences and pet peeves that remain remarkably stable over time and across settings. They have found stylistic diversity in chimpanzees, monkeys, barnacle geese, farm minks, blue tits and great tits, bighorn sheep, dumpling squid, pumpkinseed sunfish, zebra finches, spotted hyenas, even spiders and water spiders, to name but a few. They have identified hotheads and tiptoes, schmoozers and loners, divas, dullards and fearless explorers, and they have learned that animals, like us, often cling to the same personality for

the bulk of their lives. The daredevil chicken of today is the one out crossing the road tomorrow (Angier 2010).

Further she added, “[r]esearchers are delving into the source and significance of all these animal spirits.” From a reincarnation perspective personality could be a relatively constant thread across different embodied lives. The experiences of a soul then could have helped create and solidify their personality - and then possibly change it. The alternative, i.e. of trying to materially manufacture a variety of personalities - even in tiny animals - appears difficult.

2.6. More on a Possible Reincarnation Framework

Earlier it was discussed how the two components - behavioral continuity and karma - of a reincarnation belief might have been established. Observations of the apparent continuity of personality, together with possibly more subtle observations of behavioral cause and effect, across lives in small groups could have helped form this common belief.

One interesting career-related example from outside the reincarnation literature involves an experience of Cornell University’s nutritional scientist T. Colin Campbell. Campbell has spent the latter part of his career researching the under-appreciated possible health benefits associated with a plant-based diet (Campbell 2004). While on sabbatical in Oxford, England in 1985, he came upon the writings of a London surgeon named George Macilwain who had researched and practiced in the early 1800’s. Upon some subsequent genealogical research Campbell came to the conclusion Macilwain was his great-great uncle. Campbell subsequently wrote that:

This discovery has been one of the more remarkable stories of my life. My wife Karen says, “If there’s such a thing as reincarnation ...”. I agree: if ever I lived a past life, it was George Macilwain. He and I had similar careers; both of us became acutely aware of the importance of diet in disease; and both of us became vegetarian. Some of his ideas, written over 150 years ago, were so close to what I believed that I felt they could have come from my own mouth (Campbell 2004, p.344).

The possible reincarnation connection here would be behavioral continuity that played out along family lines as was commonly believed (Head and Cranston, p.173; Columbia 2000, p.2874). An underlying appreciation for a plant-based diet could have played itself out in a big way in Campbell’s life. Looking beyond this, there is no apparent basis for a personality comparison other than the inference that both individuals were able to endure being outsiders in the health world.

A general reincarnation explanation would have to be rather complicated, though. By contemplating the realms of prodigies and transgender individuals one can get a sense of this. In the prodigious realm somehow young children show up in amazingly focused adult modes and this can appear in families without relevant backgrounds (Christopher [2015] 2016, pp.4-5, 46-47). Given that many adults can groove into quite focused existences - probably more commonly with males and their jobs - why then wouldn’t prodigious children be more common? Some insight here and elsewhere might be available by considering the *Tibetan Book of the Dead* (TBD), a book written in the 8th century by a Buddhist religious teacher named Padmasambhava (Freemantle and Trungpa, 1992). The TBD contains instructions to aid a dying or recently deceased person in dealing with the presumed tumultuous intermediate state, and in particular at a minimum to obtain a good rebirth. The coauthor and late Tibetan teacher Chogyam Trungpa offered a modernized synopsis in his commentary:

[t]here is something which continues, there is the continuity of your positive relationship with your friends and the [religious or spiritual] teaching, so work on that basic continuity, which has nothing to do with the ego. When you die you will have all sorts of traumatic experiences, of leaving the body, as well as your old memories coming back to you as hallucinations. Whatever the visions and hallucinations may be, just relate to what is happening rather than trying to run away. Keep there, just relate with that (Freemantle and Trungpa 1992, p.40).

Another teacher, Tulku Thondup, characterized the existence between lives or “bardo” experience as “like a dream journey, fabricated by our habitual mental impressions” (Thondup 2005, p.10). Tibetan Buddhist-based mental impressions would then have seemed to have framed many of the TBD’s

descriptions. Trungpa's commentary emphasized an energy-oriented interpretation of the bardo experience, and then as described in the TBD, a soul might tend to grasp at proverbial straws facing such a helter-skelter energetic scenario. An exceptional rebirth outcome might then be explained as the result of a soul's exceptional grasping in which it inadvertently ended up catching a resonance (in a physics-sense) and obtaining a hyper-focused rebirth. From this perspective then a very strong tendency to obsess about one's work might then produce an overly-focused prodigal-type rebirth. Analogously, it follows that a tendency to fantasize about the opposite gender (perhaps based on earlier experiences as that gender), might then produce a transgender rebirth (in some form).

Another possible insight provided in the premodern TBD text is with regards to the remarkable capacities of the soul which surface within the bardo. In that book it is stated repeatedly that the "mind becomes nine times more clear" in the bardo and also that even if before dying the TBD was "heard ... only once and the meaning not understood" then after death "it will be remembered with not even a single word forgotten" (Freemantle and Trungpa, pp.167-168). These capacities for memory and clarity might then be hypothesized to surface on occasion within an embodied existence and thus provide a basis for some extraordinary cognitive abilities, as for example with savants or perhaps even those individuals who, despite reduced brain tissues, still exhibit normal functioning. As a final input from the *Tibetan Book of the Dead* one can consider its description of our ultimate identity or soul. That book describes a duality between an active (or "luminosity") component and also a passive (or "emptiness") component. Here is a sample description:

[t]hese two, your mind whose nature is emptiness without any substance whatever, and your mind which is vibrant and luminous, are inseparable: this is the dharmakaya of the buddha. This mind of yours is inseparable luminosity and emptiness in the form of a great mass of light, it has no birth or death ... (Freemantle and Trungpa 1992, p.87).

One might then hypothesize that this elemental identity contributes in some way to the missing "dark" aspects of the inferable universe. It is also noteworthy that this element-like description of the soul does not seem consistent with Buddhism's no-self theories.

3. Discussion

3.1. The Religion and Science Context

The standoff between science and religion is quite a one-sided stalemate. Since science - and certainly its bedrock position of materialism - has achieved overwhelming acceptance within the intellectual and secular circles, the current impasse reflects at best a polite dismissal of religious perspectives. As discussed in a *Hole in Science* (Christopher [2015] 2016, pp.115-128) that polite dismissal is pretty well characterized by the coverage of the *New York Times*. For many secular individuals it appears that questioning materialism is not an option, and further consideration of religious perspectives is even less likely.

One way to appreciate this skewed situation is to consider some of the highlights from the contemporary front lines of science versus religious or alternative views of life. A sampling of these highlights include Thomas Nagel's philosophical *Mind and Cosmos* (Nagel 2012), Bernard Haisch's physics-oriented *The God Theory* (Haisch 2006), and Stephen C. Meyer's intelligent design treatise *Darwin's Doubt* (Meyer 2014). Do any of these works, though, really present more than nuanced critiques of materialism? How much would it matter if there was some other ingredient present to explain consciousness - perhaps a novel particle? What meaning is provided by nodding our heads to very speculative quantum-based reasoning so that we can ask ourselves "[w]hat greater purpose could there be for each of us humans than that of creating God's experience?". Additionally, if there was some divine guidance which helped establish the current status of the biosphere - but that biosphere was itself simply defined by the ongoing "jiggings and wiggings of atoms" - would that really matter?

Perhaps the most widely respected questioning of scientific materialism comes from the so-called "hard problem" of consciousness which asks how could consciousness have a physics-only basis? But how much significance does this abstract question have (beyond keeping some

philosophers occupied)? An alternative hard problem is explaining the differences between the two elderly identical twins previously described - in particular one healthy and the other under enormous ill health-duress - and then try to explain it. If this were a rare occurrence you could write it off as simply a result of random events. But it isn't, it is symptomatic of the unfolding DNA deficit. Explanations based on the heavily leveraged linchpin of the scientific understanding of life, deoxyribonucleic acid, are striking out in a big way. Here is a hard problem that matters, even if you could not pay a philosopher to consider it.

The fundamental questions that drive many of our deeper yearnings seem to pertain to two questions - 'Who am I?' and 'What is going to happen to me?' - and of course generalizing these to others. Unless one directly tackles scientific materialism the answers to those questions are very limited. If religions and the religious want to gain a foothold in this scientific era, what else can they effectively do?

As a relative outsider I view the deeper perspectives offered by religions as characterized by two modern heretical concepts. The first is the concept of a higher power (or powers). The second is the concept of a soul. One can think of these as representing top-down and bottom-up deeper aspects of reality, respectively. I think objectively arguing for the first of these is very difficult, although the innate aspect of this belief does offer an initial foothold. I think that arguing for the existence of a soul, on the other hand, is not difficult. To get started on the second argument - and also indirectly the first - it is probably best to argue against the bio-robotic vision of life.

3.2. Modern Buddhism: Science-ification as a Dead-end

One way of maintaining a religious perspective in the Science Era is to simply go with the flow and try creating bridges to science. At least in the West, Buddhism appears to have largely gone that route. This movement has a quite a history as pointed out in Donald Lopez's academic treatment, *The Scientific Buddha: His Short and Happy Life* (Lopez 2012) and also indirectly in a contemporary context in a *Tricycle* magazine article, "10 Misconceptions about Buddhism" (Buswell and Lopez, Fall 2013). In *A Hole in Science* I started with references to the latter and then added some personal observations (Christopher [2015] 2016, pp.131-142).

Let me begin my brief commentary here by offering a quote from another recent *Tricycle* article. In that article the author pointed out that he and many other modern Buddhists experience "profound embarrassment" over Buddhism's rebirth belief, but satisfaction over Buddhism's apparent "resonance with quantum physics, cutting edge neuroscience, and modern rationality" (Spellmeyer Fall 2015). I think this aptly characterizes the cutting edge, modern intellectual wannabe-ism that has arguably become fundamental to the appeal of westernized Buddhism (along with enlightenment wannabe-ism). The recent history of that movement - including the plunger-ing of quantum speculation, the prominent usage of a fake Einstein quote, and lately an imagined scientific endorsement for the efficacy of mindfulness meditation by neuroscience - has in fact furthered the decline of sincere Buddhist practice, as well as (ironically) serious secular variants.

I consider here a recent statement from this science-ification of Buddhism. In a November 2014 *Scientific American* article, "mind of the meditator", by Mathieu Ricard, Antoine Lutz, and Richard J. Davidson the neuro-scientific efforts to characterize apparent brain changes associated with meditation (in particular mindfulness, focused attention, and compassion and loving kindness) were described (Richard et al 2014). The article opened with an acknowledgement of the Dalai Lama's foundational contributions to these efforts. The confident article worked its way up to proclaiming:

[a]bout 15 years of research have done more than show that meditation produces significant changes in both the function and structure of the brains of experienced [10,000 hours or more] practitioners. These studies are now starting to demonstrate that contemplative practices may have a substantive impact on biological processes critical for physical health.

And additionally that:

[t]he ability to cultivate compassion and other positive qualities lays the foundation for an ethical framework unattached to any philosophy or religion, which could have a profoundly beneficial effect on all aspects of human societies.

The support for these glowing proclamations was, however, overstated. The article is only loosely quantitative and the one graph which purports to show enhancement in neural features derived from meditation shows small effects with significant overlap between the measurements of experienced meditators and those of controls. The authors also failed to respond to a published follow-up letter from a meditator regarding the possibility that selection bias distorted their results. Furthermore, how many lay people have a chance of joining the 10,000 hour club (and thus the likelihood of selection bias)?

Even more seriously, though, why didn't the authors point out that similar and often secularly-packaged meditation has been quite widely available in the West for at least 40 years? If such meditation was as self-help productive as presented in Richard *et al's* article then why didn't it sell itself - akin to an effective dieting routine - without the need for neuro-scientific re-packaging? Any sober assessment of contemporary meditation movements would emphasize that these have largely been secular and that sustained involvement is a big challenge.

It turns out that the contemporary participatory status of Buddhism, as well as derivative meditational efforts, is pretty well represented in the vicinity of Rochester, New York. Southeast of Rochester in Ithaca, New York is Namgyal Monastery which is the "North American Seat" of the Dalai Lama. As I have personally observed, they offer Tibetan Buddhist programs which are open to the public that are taught by very qualified Tibetan monks. These programs are presented in a very friendly atmosphere and are not expensive. Ithaca certainly appears to be a potentially supportive community as it contains Ithaca College, Cornell University, and also a sizable alternative community. Also in terms of a potential link between Buddhism and science, Cornell University happens to be one of our top universities in terms of their National Science Foundation (NSF) funding support. But in fact - over at least the last decade or so - when Namgyal runs one of their monthly weekend teaching programs (which open with a free Friday evening session) they end up e-advertising until the opening Friday in order to try to fill their venue. That venue, up until a recent move to a new facility, was a modest-sized living room, in a modest-sized house. Despite - or perhaps in part due to - the science-ification efforts of Buddhists like the Dalai Lama, those lonely programs offer a pretty good feel for the status of the religion of Buddhism in the modern world.

For a complementary feel on the status of serious secular meditation today one can travel 60 miles west of Ithaca to Springwater, New York. Springwater is home to the Springwater Retreat Center which got its completely secular start 35 years ago when Toni Packer left the Rochester Zen Center and dropped all adherence to Buddhism (she apparently didn't need to read Sam Harris' *Waking Up* which purportedly "start[ed] the conversation" about meditation sans religion). Despite Springwater's cutting-edge secular history (at one point in the eighties Toni Packer even labored through some early relevant neural literature) their (inexpensive and friendly) retreats appear to enjoy a comparable lack of participation as Namgyal's programs. One might then wonder if the latest secular re-packaging of meditation - mindfulness or whatever - will simply pan out as another superficial trendy episode.

Beneath the limited appeal of sustained involvement with meditation is the minimally-discussed rarity of significant enlightenment or transformational experiences. A succinct, well grounded assessment of that likelihood was given at the end of the Zen classic, *Zen Teaching of Huang Po*, by John Blofeld (Blofeld 1958). In it the Zen teacher Huang Po commented that:

Ah be diligent. Be diligent! Of a thousand or ten thousand attempting to enter by this [Zen enlightenment] Gate, only three or perhaps five pass through. If you are heedless of my warnings, calamity is sure to follow. Therefore it is written, "Exert your strength in THIS life to attain! Or else incur long aeons of further [karmic] gain!"

Even in a much much less distracted era, a practice very much focused on this life in a Zen monastery saw very limited success. By comparison, how many modern Western meditational outfits - nominally Buddhist or derivative - do not grossly oversell the return on meditation?

The traditional appeal of Buddhist practice - certainly for lay people - was to make better use of one's life within an interconnected sequence of lives. Thus a key commitment was to the betterment of "all beings". Without looking for an objective basis for that traditional Buddhist perspective - as with other religious perspectives - I doubt that it will last long.

4. Conclusions

It is not difficult to question scientific materialism, even in a big way. The associated mysteries are well worth our attention. One possible explanation is that there is some kind of non-material continuity happening between sequential lives. Along those lines, premodern beliefs in reincarnation could offer a number of specific explanations. Serious consideration of the reincarnation perspective appears to be overdue. Perhaps the results of simple observations long ago can provide some helpful insights to life and its challenges.

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