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BOOK REVIEWS

Dictionnaire des Miracles et de l'Extraordinaire Chrétiens [Dictionary of Miracles and the Christian Extraordinaire] edited by Patrick Sbalchiero. Paris: Fayard, 2002. 880 pp. €59.00. ISBN 2-213-61394-X.

The nineteenth century inherited a previous skepticism, embedded within the rationalistic tradition, in the actual occurrence of the miracles of Christianity. This is what historian William Edward Hardpole Lecky referred to in the opening chapters of the first volume of his *History of the Rise and Influence of the Spirit of Rationalism in Europe* as the "declining sense of the miraculous" (Lecky, 1887). Many intellectuals and scientists seemed to believe that the miracles of Christ, and the healings, levitations, bilocations, inedia, and luminous phenomena associated with saints were stories invented for the purpose of conversion, or had a variety of conventional explanations, such as suggestion, as in the case of stigmata. A later example of this tradition was James H. Leuba's *The Psychology of Religious Mysticism* (1925) where he stated that levitation was due to a loss of bodily sensation giving the illusion of floating.

Similar to the current state of the claims of parapsychology, the study of such miracles from the assumption that the phenomena were real in the sense of requiring more than conventional explanations was left to a small number of individuals, but not to the mainstream. Nonetheless, over the years there have been scholars who have taken seriously the reality of the phenomena beyond its purely historical and symbolic aspects. A nineteenth-century example was *Die christliche Mystik*, translated into French as *La Mystique Divine* (Görres, 1836–1842/1854–1855). This was followed in the next century by works such as *The Physical Phenomena of Mysticism* (Thurston, 1952), and by more recent works such as *Encyclopédie des Phénomènes Extraordinaires dans la Vie Mystique* (Bouflet, 2001–2003). The *Dictionary* reviewed here, although not a study by a single author, is an important reference book about the Christian literature on the topic.

Dictionnaire des Miracles et de l'Extraordinaire Chrétiens is edited by Patrick Sbalchiero, historian of religion, and author of other works such as *L'Eglise Face aux Miracles* (Sbalchiero, 2007). In the Introduction to the *Dictionary*, Sbalchiero refers to the "Christian extraordinaire," or a group of psychological and physical phenomena recorded throughout the history of Christianity. He classifies the phenomena in four groups: (1) Biblical manifestations (e.g., Jesus' virginal birth, and his miracles); (2) phenomena presented by Christian mystics, such as physical manifestations (e.g., stigmata and levitations), phenomena tak-

ing place around the moment of death or after (e.g., fragance, incorruptibility), and mental phenomena (e.g., bilocation, clairvoyance); (3) the "Christian marvelous," consisting of hagiographic accounts not included in the *Bible*; and (4) the diabolical (e.g., possession, and some visions). The *Dictionary* presents more than 800 entries written by more than 230 authors. In addition to many contributions by the editor, there are essays by theologians, historians, physicians, and, to a lesser extent, parapsychologists or individuals with knowledge of the field. They all bring interdisciplinary perspectives as well as a variety of viewpoints centering on the historical and religious aspects of the subject matter. The well-known student of Marian apparitions and other phenomena, Father René Laurentin, contributes the Preface in which he clearly states that the domain in question is one that has been neglected and marginalized. He writes: "For the sciences the 'extraordinary' does not have prestige. It is but an interference of accidental and spectacular causes" (p. xv, this and other translations are mine). The *Dictionary* reviewed here, Laurentin says, is an attempt to find a place for the topic in "scientific order as well as in the hierarchy of theological values, a place that is currently humble and marginal. . . ." (p. xvi). It seeks to throw light on the subject and to indicate in what measure we are dealing with illusions or with something deserving scholarly attention. But Laurentin also represents the religious worldview of other writers in the *Dictionary* when he says: "The supernatural is interior to nature, since it is a gift from God that gives rise to our own existence . . . from the vital extension of 'nature'" (p. xix).

The entries range from short ones, limited to a few sentences, to long ones going for a few pages. A good number of them focus on phenomena of different sorts. These include those written by the editor such as apports, exudation (of liquid substances from dead bodies and statues), fragrance, glossolalia, incombustibility, invisibility, odor of sanctity, prediction, and stigmata. Regarding the latter, Sbalchiero notices that "all genuine cases of stigmatization are accompanied by diverse mystical phenomena" (p. 755). He says that the most frequent ones are ecstasy, visions, and internal locutions such as messages received from Mary and Jesus. Less frequent phenomena, Sbalchiero states, include inedia, odors of fragrance, luminous manifestations, and the faculty of being able to distinguish a blessed object from non-blessed ones.

This tendency for mystics and saints to show more than one type of phenomenon is evident in writings about many figures. For example, in the monumental compilation of evidence for the beatification and canonization of Teresa de Jesús there are accounts of levitations, luminous manifestations, and apparitions, among other phenomena (Silverio de Santa Teresa, 1934–1935). However, this does not mean that all phenomena take place in every mystic and saint, nor that there is a one-to-one relationship between specific phenomena. The latter is illustrated in a list of Christian levitators compiled by Joachim

Bouflet in the first volume of his study of extraordinary phenomena in mystics (Bouflet, 2001–2003(1):67–70). My analysis of the list, which is limited to 66 individuals who lived during the nineteenth and the twentieth centuries, shows that 45% of them had stigmata. While this shows some overlap, there are certainly many cases where levitation did not coincide with stigmata. Hopefully, more detailed quantitative analyses may be conducted in the future with a large number of mystics and saints to increase our empirical knowledge of the patterns of interrelationship of these and other manifestations.

Essays about phenomena by other authors include bilocation (Philippe Wallon), clairvoyance (Paul-Louis Rabeyron), ecstasy (Philippe Lemairie), elongation of the body, levitation, precognition (all by Bertrand Méheust), incorruptibility (Pierre Delooz), inedia (Alexia Levrat), multiplication of food (Pierre Haudebert), mystical and near-death experiences (François Brune), hauntings, poltergeists, psychometry, raps (Djohar Si Ahmed), out-of-body experiences (OBEs) (Christine Hardy), telekinesis, telepathy (Pascal Ide), and xenoglossy (Bernard Peyrous). Many of the parapsychology-related entries are focused on old research (such as the one on precognition), and barely present any research findings (telekinesis and telepathy). The entry on xenoglossy does not include parapsychological research such as Stevenson's important (1974) study.

The high number of entries about phenomena does not mean that they are the main topic of interest in the study of Christian mystics. For example, Pierre Miquel stated about Christian mysticism: "The Christian tradition has never based sanctity . . . on extraordinary phenomena. Miracles . . . may accompany sanctity, they may confirm it, but they do not prove it" (p. 561). The author of the entry on sanctity (André-Mutien Léonard) made a similar point. He wrote that Christian sanctity "does not require any manifestation of miraculous supernatural phenomena" (p. 698). Léonard argues that sanctity is defined by an extraordinary life. While miracles are part of the life of many saints, they are not an integral part of sanctity.

Many other entries are about mystics and saints. Among them are Francesco d'Assisi (by Jean-Baptiste Auberger), Teresa de Ávila (Bernard Sesé), Yvonne Beauvis (René Laurentin), Hildegard of Bingen (Ventura Sella Barrachina), Juan de la Cruz (Bernard Sesé), Natuzza Evolo (François Brune), Gemma Galgani (Georges Daix), Padre Pio (Jean Derobert), Bernadette Soubirous (Bernard Billet), and Francisco Xavier (Sbalchiero). Furthermore, there are entries about many other topics. These include psychological and psychiatric concepts such as hysteria (Philippe Wallon), religious denominations such as the Amish (Sébastien Fath), phenomena in groups such as the Dominicans (Marie-Ancilla), events such as the miracle of the sun at Fatima (Sbalchiero), fields or areas of study such as eschatology (Guy Lobrichon), religious entities such as Satan (Dominique Cerbelaud), texts such as *Ars Moriendi* (Marc Zuili),

institutions such as the Medical Bureau of Lourdes (Patrick Theillier), and procedures such as canonization (Jean Évenou).

I particularly enjoyed the biographical entries about past students of saintly and mystical phenomena. One of them is Sbalchiero's essay about Herbert Thurston. There are many other students of the subject who need to be remembered but who are forgotten not only because their publications are old but also, in the case of current scholars operating in the English-language tradition, because they were published in languages other than English. I am referring to individuals discussed in the *Dictionary* such as Joseph von Görres (Pierre Deghaye) as well as the following (written by Sbalchiero): Pope Benedict XIV (whose name was Prospero Lambertini), Albert Farges, Antoine Imbert-Gourbeyre, Olivier Leroy, Jérôme Ribet, and Joseph De Tonquédec. Some of these authors, such as Lambertini, Farges, and De Tonquedec, were concerned with the distinctions between truly supernatural, parapsychological, and conventional causes (e.g., hallucinations, suggestion) to explain observed phenomena.

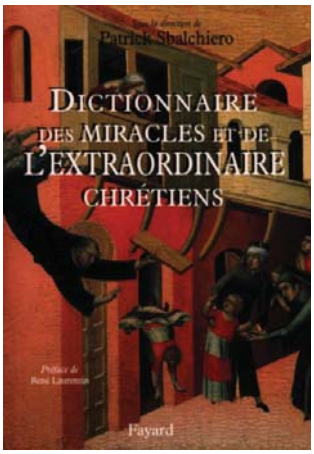
The *Dictionary* also includes some famous psychologists and psychiatrists. Among them are Jean-Martin Charcot (Pierre Morel), Sigmund Freud (Louise de Urtubey), and Pierre Janet (Philippe Loron). Furthermore, there are biographical entries about a few French psychical researchers such as Camille Flammarion (Pierre Lagrande) and Charles Richet (Sbalchiero). But why are so few psychical researchers discussed and why only French ones? There could have been entries about other figures whose writings touched on the relationship between parapsychological phenomena and religion. Two examples are Cesar de Vesme and J. B. Rhine.

Several entries are devoted to parapsychological concepts. Mario Varvoglis has some brief but very clear and informative ones about extrasensory perception, percipient, psi agent, and psi subject. There is an interesting article by Rabeyron about the anthropology of the paranormal. While he mentions classic authors such as Ernesto de Martino, the entry would have benefitted from the inclusion of later work (see, for example the review by Giesler, 1984).

Some of the topics discussed have more than one article. Examples are the entries about miracles. The first article is about general aspects of the concept, by René Latourelle. He sees miracles as a religious wonder, a special intervention of God, a "sign of the presence in the world of its word of salvation" (p. 531).

Răzvan Andrei Ionescu discusses miracles related to the Greek and Syriac Father of the Church, while others discuss miracles in the *Bible* (Hervé Tremblay), in contemporary culture (René Latourelle), and from contemporary perspectives (Pierre Delooz).

Other terms with more than one entry are supernatural and paranormal. The latter has two articles about general aspects (Paul-Louis Rabeyron) and about



spiritual dimensions (Éric Raulet). Rabeyron states that the term paranormal is a complex and controversial concept sometimes associated with the supernatural. This happens, he writes, due to lack of knowledge of parapsychological studies. Rabeyron argues for the consideration of the concept as one representing the "'non-ordinary natural'" (p. 599). Raulet's discussion focuses on near-death experiences. He argues that in our current state of knowledge we cannot affirm that the phenomenon is produced by any known brain mechanism and states that they "escape the definition of hallucination" (p. 599). Paranormal phenomena, Raulet says, deserve to be received with an open mind. They are indicative of the limitations of our current knowledge.

Another example of multiple articles are the essays about apparitions. Topics represented are general aspects (René Laurentin), biblical accounts (Pierre-Marie Delfieux), Marian apparitions in the Middle Ages (Sylve Barnay), and apparitions of saints (Sbalchiero).

There are several entries that I found particularly interesting. Sbalchiero presents a fascinating article about Eucharistic miracles involving the consecrated host. The manifestations are said to show the "supernormal power of the host on life and matter" (p. 540). They include healing and conversion effects, power over the elements, and the induction of such phenomena as ecstasy and levitation. In addition there are instances of hosts that fly, that bleed, that cannot be destroyed, and that show the semblance of Christ on their surface. After a brief discussion of the symbolism behind the host as the "presence of Christ in a sacramental mode" (p. 542), Sbalchiero discusses the theoretical difficulties: "Should we talk about unexplained wonders, or about authentic miracles . . . ? Can such wonders be produced from non-consecrated hosts?" (p. 542). He is also puzzled about the lack of reports of these phenomena from the Eastern Christian tradition.

Sbalchiero wrote other fascinating entries. One is about hemography, or the formation of "figures, drawings or names traced by one or several trickles of blood . . . discharged fortuitously from the skin of a person, without any human intervention" (p. 347). An account in English of some of these phenomena with the Italian Natuzza Evolo appears in Marinelli's (1978) pamphlet. Another entry written by the editor is the one about multilocation, or the "simultaneous presence of the same person in several places" (p. 556). Other interesting entries are those about possession and psychiatry (Michel de Boucaud),

and spiritism and literature (Patrizia D'Andrea). The author of the latter article presents a discussion of mediumistically produced writings. She points out that the ambiguity of the source of the material is the main problem regarding these literary productions. On the negative side, many well-known writings of this sort are not included in the entry, and Ernesto Bozzano's (1947/1998) study on the subject is not even mentioned.

There is no question that this is a very useful reference work. In fact, I would argue it is a unique one. I am not aware of another contemporary book that presents information about the above-mentioned phenomena and different aspects of the Christian literature on the subject. The bibliography about religion, theology, and mysticism presented at the end of most entries, mainly in French, is very useful, covering a variety of publications.

Nonetheless, some of the discussions are somewhat problematic. For example, the entries about OBEs (Christine Hardy) and decorporation (meant as OBEs, by Pascal Ide) do not cover the literature on the subject. It is possible that the writers of the entries were asked to limit their contributions to the topics they do cover. But the end result is a lack of information that weakens the book as a reference work.

While it is clear that most of the *Dictionary* is written from the point of view of Christian mysticism, theology, and hagiography, I believe that the book could have been improved, including more systematic discussions of the relationships between parapsychological studies and religion. Over the years a literature has developed about such interactions (e.g., Berger & Thompson, 1988). Aspects of this include discussions of the importance of psychic phenomena in the development and maintenance of religious concepts, a topic discussed by Andrew Lang in his book *The Making of Religion* (1898). Frederic W. H. Myers argued that psychical research brought an empirical approach to the main tenets of religion: "We do not seek to shape the clauses of the great Act of Faith, but merely to prove its preamble. *To prove the preamble of all religions*; to be able to say to theologian or to philosopher: "'Thus and thus we demonstrate that a spiritual world exists . . . .'" (Myers, 1903(2):297). Part of this effort has been the empirical study of phenomena suggesting survival of bodily death, such as mediumistic communications and apparitions.

Furthermore, some parapsychologists have defended the idea of a nonphysical mind. An example was J. B. Rhine: "The psi researches show the natural human mind can escape physical boundaries under certain conditions . . . Accordingly a distinct difference between mind and matter, a relative dualism, has been demonstrated by the psi experiments . . ." (Rhine, 1947:205). In fact, Rhine went on to suggest that these findings supported some of the tenets of religion regarding the existence of personal agency not recognized by science. In his view: "The relationship of parapsychology to the field of religion is,

theoretically at least, much the same as that of physiology to medicine, or that of physics to engineering" (Rhine, 1947:209).

In addition to the above, other topics deserving more detailed discussion in this work are the history of the involvement of the Catholic Church (Resch, 1989), and of specific clerics (Nicol, 1966), in the study of psychic phenomena. I also believe that a whole entry could have been devoted to the arguments of those—such as De Tonquédec (1955), Omez (1956/1958), and Gonzalez Quevedo (1996)—about the relationship between miracles and psychic phenomena, and their distinction. An example of the latter that could have been included are the ideas French Jesuit priest Joseph De Tonquédec presented in his book *Merveilleux Métapsychique et Miracle Chrétien* (1955). De Tonquédec regarded Christian biblical and hagiographical phenomena as superior and of a higher order than the parapsychological, which he called, in characteristic French usage, the metapsychic. In his view, metapsychic phenomena only showed simple and worldly concerns. In contrast, the miracles of Christ and his followers "are framed in an extremely high moral and religious plan" (De Tonquédec, 1955:48), that of issues such as the salvation of humankind through Christ, and virtues.

In contrast to the low character and limitations of mediums, Jesus was described by De Tonquédec as a "model of calm, simplicity, ease, of serene majesty sure of himself. Jesus does not enters into trance to exert his power. . . . For him, miracles do not require any preparation . . . any exceptional state . . .; he does not tire out nor get fatigued. . . ." (De Tonquédec, 1955:50–51). Compared to non-religious phenomena, the clairvoyance of Jesus and his followers shows constancy and control, as well as a "moral and religious purpose." They seem to be "ruled by a superior intelligence" (De Tonquédec, 1955:60, both quotes). Metapsychic phenomena were seen by De Tonquédec as deterministic, or related to "natural, physical, physiological or psychic causes and condition . . . ." (De Tonquédec, 1955:65). Regardless of how we feel about such comparisons, these ideas could have been discussed in detail in the *Dictionary* because they are part of both the history of the Catholic Church's interactions with parapsychology as well as of attempts to demarcate both fields and to keep the sacredness of the religious perspective.

Some of the entries are problematic because its authors seem more interested in presenting their religious views than in giving us a summary of the various concepts related to particular phenomena. Ide is a case in point when he cites Catholic theological dogma about the soul to support the idea that real decorporation, where the soul is supposed to leave the physical body, does not take place, because "the separation of the soul from the body is irreversible" (p. 212). This same author discusses telepathy and writes that the "immediate action of a human soul over another soul is impossible" (p. 786).

The one-sided content of some of the entries limits the value of this work. Nonetheless, the amount of information compiled by Sbalchiero is prodigious, even considering his statement in the Introduction that the work is an invitation to continue investigations on the subject. There is much to learn from this work not only about specific phenomena, but about the history of Christianity, and a variety of movements, concepts, and individuals.

Carlos S. Alvarado
Atlantic University, 215 67th Street, Virginia Beach, VA 23451, USA
carlos.alvarado@atlanticuniv.edu

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UFOs: Generals, Pilots and Government Officials Go on the Record by Leslie Kean. Crown, 2010. 352 pp. $25.99 (hardcover). ISBN 9780307716842.

"Militant agnosticism" is an unlikely pairing of loaded words, but the idea emerges from Leslie Kean's *UFOs: Generals, Pilots and Government Officials Go on the Record*, with a blue-chip gallery of advocates. And it may be the best hope for unclogging America's intellectual arteries of a pathological aversion to a legitimate policy debate since the Air Force officially terminated Project Blue Book 40 years ago.

Kean, a former public radio investigative reporter who worked to expose human rights abuses in Burma during the 1990s, took a radical career jag in 1999 by plunging headlong into the pitiless UFO mystery. After a decade-long struggle for federal documents, of occasional victories in persuading corporate media to give the issue a fair hearing, and of banging against the inertia of mainstream science, Kean has produced the most important book on the phenomenon in a generation. *UFOs* delivers exactly what its full title promises. Hopefully, so-called "skeptics" who refuse to review this book will have the integrity to excuse themselves from the controversy it intends to provoke.

UFOs . . . on the Record is not merely a procession of authority figures reciting personal encounters and attitudes. It mines something far more abiding and insidious—the corruption of science in arguably the most bizarre incarnation of American exceptionalism on the books. With France leading the way, 13 nations from Europe to South America have published previously withheld UFO data since 2004; in 2007, 22 American and international pilots, scientists, and aviation experts signed a petition lobbying for the U.S. to start a new investigation of this global and potentially dangerous reality.

Washington failed to respond to that widely covered conference at the National Press Club. And as its rigid silence confronts mounting evidence for a high-technology component to the phenomenon, America finds itself the source of accelerating international exasperation. When retired Maj. Gen. Denis Letty, who organized a landmark French UFO study published in 1999, asked the U.S. to join its investigation, he and his colleagues received no reply. Retired Gen. Recardo Bermudez Sanhueza, who ran Chile's government UFO project from 1998 to 2002, requested U.S. assistance through its embassy. "To be frank," Bermudez writes, "we've had no response from the United States any time we've tried to enlist its cooperation" regarding UFOs.

This is not an academic exercise. Former NASA senior scientist Richard Haines founded the National Aviation Reporting Center on Anomalous Phenomena (NARCAP) in 2000 in response to concerns over aviation safety.

"According to our statistics," Haines writes, "in an average career of commercial flying, a pilot has about the same chance of seeing a UAP (unidentified aerial phenomena) as he does of striking a bird in flight or of encountering extreme wind shear." Haines goes on to cite three mysterious cases in which worst-case scenarios may have already occurred.

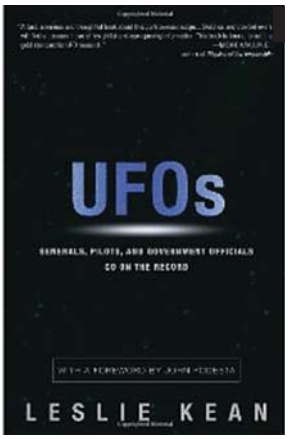
But without government channels to sanction the reporting of in-flight incidents, American pilots operate in a dysfunctional vacuum with implicit career risks. In one of NARCAP's most notable investigations—the 2006 Chicago O'Hare International incident, in which witnesses reported a UFO slicing a circular hole through a low cloud ceiling when it departed—not a single United Airlines employee dared to go on record with the story.

Contrast this with the more professional culture in Brazil, where retired Brig. Gen. Jose Carlos Pereira declares "Our civilian pilots are not afraid to speak up, and they always do, because they don't want to lose their jobs for *not* reporting unusual events." Or with active-duty Chilean Capt. Rodrigo Bravo Garrido, who was assigned by the Air Force to investigate a harrowing encounter reported by an Army aviation crew. Writes Bravo, "It was because of my involvement in this pivotal case that I was asked to study the unconventional topic of UAP in order to graduate from my pilot training program." And it never occurred to civilian airline pilot Ray Bowyer to shut up about his 2007 encounter with two massive UFOs over the Channel Islands, which he reported promptly to British authorities—without suffering repercussions.

Perhaps the more progressive attitudes outside American borders are best summarized by retired Maj. Gen. Wilfried De Brouwer, who staged a press conference in 1990 after Belgian F-16s proved incapable of intercepting triangular UFOs in its airspace. "It is not easy to admit that authorities in charge of air defense and airspace management are not capable of finding an acceptable explanation," he writes, "but in my opinion this is better than issuing false explanations."

In advocating a new government study designed to scrub the stigma of UFOs from American culture, Kean regards classified U.S. government research—the alleged X-Files stuff—as virtually irrelevant to the conversation. "Any behind-the-scenes endeavor would have to be so exclusive, so entirely covert, that in effect its existence would make no difference to our government or country, to the people who know nothing about it, which is essentially everyone." A clean slate, she argues, is the best way to proceed. Enter militant agnosticism.

Kean concludes with some thoughts from two political science professors, Dr. Alexander Wendt of Ohio State University and Dr. Raymond Duvall with the University of Minnesota. Revisiting a largely overlooked coauthored paper



called "Sovereignty and the UFO" published in a 2008 Political Theory journal, they examine the roots of America's refusal to confront the data in a public and transparent forum. And they offer a way out.

"By 'agnostic' here we mean that no position on whether UFOs are extraterrestrial should be taken until they have been systematically studied," write Wendt and Duvall. "Resistance must be agnostic because, given our current knowledge, neither denial nor belief in the extraterrestrial hypothesis is justified; we simply do not know." And then: "To be *politically effective*, however, resistance must also be militant, by which we mean public and strategic. Indeed, purely private agnosticism about UFOs, of the kind that people in the modern world might have about God, does nothing to break the spiral of silence that surrounds the issue and so in effect contributes to it."

That sort of middle-ground activism—between the conspiracy paranoia and the flat-earth ostriches—is responsible for the much-buzzed-about Foreword by former Clinton White House Chief of Staff John Podesta, who also steered Barack Obama's presidential transition team. It also generated book-jacket raves from the likes of theoretical physicist Dr. Michio Kaku, Dr. Rudy Schild of Harvard–Smithsonian Center for Astrophysics, and former Clinton White House Office of Science and Technology Director Dr. Neal Lane. If the U.S. hopes to overcome what Yves Sillard—former director of the French equivalent of NASA—described as its "intellectual blindness," more figures of their ilk will have to step up.

"We ask those on the two sides of this outmoded contest between unwavering believers and nonbelievers to realize the fallacy of both positions," Kean writes, "and to accept the logic, necessity, and realism of the agnostic view. Scientists must disavow the untenable claim that we have no evidence other than eyewitness reports, which are to them—of course—unreliable."

The stage is set for an adult conversation. Unfortunately, that means its fate is now largely in the hands of the ailing American mainstream media, whose sense of identity and purpose has never been in a more acute condition.

Billy Cox
Billy.Cox@heraldtribune.com

Controlled Remote Viewing for Scientific Investigations: Student Workbook by Michael Van Atta and Susan Van Atta, with Melvin L. Morse. Sacred Mountain Retreat, 2009. $34.95.

Michael and Susan Van Atta are remote-viewing enthusiasts who took a course in remote viewing from David Morehouse (a former military remote viewer) and then—with some assistance from Melvin L. Morse—wrote a how-to manual explaining their practices that they identify as "Controlled Remote Viewing." It is unclear what role Melvin Morse (whose research we have followed with great interest for many years) had in writing the book. Our review of this book is limited to the book itself, and our comments do not address the activities or teachings of Mr. Morehouse, who indeed may find this volume as problematic as we do.

The term *Controlled Remote Viewing* is normally considered a proper name, and it identifies a style of remote viewing that was developed by Ingo Swann in his work with U.S. government–sponsored, remote-viewing projects originally conducted at Stanford Research Institute (later renamed SRI International). A few retired military personnel who worked with Army Intelligence currently teach remote viewing to civilians, and these trainers often identify their style of remote viewing as "Controlled Remote Viewing" or "CRV." The methods of remote viewing that are described in this volume differ dramatically from what was developed for and used by the military, and it is profoundly unfortunate that the authors of this volume have identified their version of remote viewing as "Controlled Remote Viewing." Moreover, researchers committed to the scientific method will likely be very troubled with the approach to remote viewing that is described in this book. Make no mistake about it: Despite the title, this volume should never be used in connection with scientific investigations, in our opinion.

The problems with this volume from a scientific perspective are so many and so profound that a review such as this would be too long if we were to attempt a complete listing. Nonetheless, we point to some heuristic examples below that demonstrate the overall problems that we have with the book.

Few scientists would dispute that remote viewing is a form of nonphysical perception, where "nonphysical" means without the use of the normal five senses of hearing, touch, sight, taste, and smell. Some might also add that it is a nonlocal phenomenon that bears some resemblance to phenomena that occur on the quantum level, such as entanglement. In most scientific studies of which we are aware, remote viewing is described as a method that assists in the transfer of nonphysical perceptual data across time and space. For the authors of this book, however, the term "remote viewing" is used more as a catch-all phrase to refer

to many things of a psychological and/or psychic nature, including resolving emotional issues, canceling "Karmic contracts," visiting dead people and pets, building astral sites, visiting "vortices" to explore energy patterns, etc. This conflicts with the trend in the scientific literature to use terms with more narrow or specific meanings.

These authors also see a dark side to remote viewing that we feel many scientific researchers will find objectionable, even superstitious. According to the authors, one must approach remote viewing with the greatest of care in order to protect one's health. Here is a caution they offer: "[I]f the target is a virus or a harm causing vibrational substance the Monitor should never direct the Viewer to stand inside it or become the target, for that point of view may lead the Viewer to acquire the virus remotely and bring it back to the physical world. NEVER move a Viewer into a sensitive target, or have the Viewer become the target without protection because it may harm the Viewer" (p. 59). They suggest envisioning a 10-foot diameter "white light" around oneself when remote viewing to offer protection from harm's way. They also suggest that a viewer's "guides" (presumably spirit guides) patrol and guard the white light to keep one safe. Readers of this review should note that remote viewing as we understand it is normally supposed to be done "blind," which means that the viewer should have no knowledge of the target when remote viewing. It seems fully contradictory for someone to be considered "blind" to a target when they are told to go through all manner of protective ritual to avoid getting sick and while orchestrating white lights and patrolling spirit guides. Moreover, we do not know of anyone who has ever caught, say, HIV, or even a common cold as a result of remote viewing, although we admit that the authors may be able to find someone who believes he or she did so. With sufficient effort, it is often possible to find someone who believes just about anything.

These authors have similar worries about remote viewing people. According to the authors, if a remote viewer moves his or her "apparitional body" into a person, the remote viewer will assume some or many of the personality characteristics of the person. The authors state, "WARNING: If you become another individual, you bring home their memory, hates, angers, and fears into your psychological make-up. It will harm the Viewer to become the individual. Putting the Viewer inside the individual, the Viewer becomes that individual's personality—speaking as they speak, thinking as they think and causing the Viewer to take up the character flaws of the remote individual" (pp. 53–54). In general, a near-paranoiac fear of the remote-viewing process pops up in numerous places in this volume. It is hard to see how any remote viewer can attend to the matters of recording perceptions in a deliberate and emotionally neutral manner if the viewer is worried about catching both diseases and personality flaws during a session.

The authors do make a spotty attempt to connect with the scientific community in this book. In one instance, they include a complete copy of an article by James Spottiswoode titled "Apparent Association between Effect Size in Free Response Anomalous Cognition Experiments and Local Sidereal Time" that was published in the *Journal of Scientific Exploration* in 1997. The article is essentially used as a chapter in the book.

Among the most troubling procedural aspects of the entire volume is how the authors describe initial remote-viewing training. In their Appendix A, they go through what they call a "first remote viewing experience." They offer an exercise that they suggest will help the student grasp the difference between memory and true remote viewing. A monitor instructs the student viewer to close his or her eyes and then mentally move up 500 feet, and then move to the Washington Monument, staying at a 500-foot altitude. The viewer is then instructed to travel mentally to the San Francisco Golden Gate Bridge, and then to Mother Cabrini's Shrine in Golden, Colorado, all by name. Observations are recorded along the way. Again, the monitor is telling the viewer to go to these places by stating the names of the locations to the viewer. This violates the most basic rule of training in remote viewing of which we are aware, which is to keep the viewer blind to the target at all times. Identifying a target by name invites the viewer's imagination to control everything that happens in the session. Even if a person knows nothing about a target except the name, the name alone will evoke the imagination. For example, assuming that a viewer has never been to Mother Cabrini's Shrine, it nonetheless would not be difficult for the viewer to correctly guess many aspects of this target based on only the name. Impressing the student that he or she can accept such guesses as legitimate remote-viewing data conflicts with training procedures that are standard for scientific, military-derived, remote-viewing methodologies.

Some nitpicky points. The literature of remote viewing that is referenced in this volume is woefully incomplete. The writing is sloppy. For example, the name of one of the authors of this review is misspelled. When the authors reference the physicist David Bohm, they incorrectly identify him with Stanford University. Grammatical laxity is a problem throughout the volume. A list of such troubles could go on and on. The volume should have been sent to a good copyeditor before being published.

Again, if this were a volume written by remote-viewing enthusiasts for unscientifically minded remote-viewing enthusiasts, this could be seen as a fun book. We should always expect that people newly exposed to a phenomenon as interesting as remote viewing will want to write articles and books about it. We would have fewer objections to this book if the title did not identify it as an explanation of "Controlled Remote Viewing" and its application "for Scientific Investigations." In our opinion, this volume is not an optimal approach to

teaching remote viewing, nor should this style of remote viewing be used in scientific investigations without serious qualifications. Indeed, skeptics of remote viewing specifically, and psi functioning more generally, will find easy cannon fodder in using a book like this as an example of unscientific thinking and methodology. The title of this volume also makes it easier for skeptics of remote viewing to debunk the authentic military version of "Controlled Remote Viewing," ignoring the science surrounding the development of the latter and further confusing an uninformed public.

It is not an exaggeration to note that a number of scientists have risked their scientific reputations by conducting research into the remote-viewing phenomenon. Great strides in our understanding of psi functioning in general, and in the remote-viewing phenomenon more specifically, have resulted from this research. The military-derived procedures for remote viewing offer great potential for use in scientific studies. But scientists must exercise care with respect to the types of training and methodologies used in such studies. The volume reviewed here is an example of what scientists should avoid.

Courtney Brown
Director, The Farsight Institute, P.O. Box 601, Decatur, GA 30031
courtney4@farsight.org, http://www.farsight.org

Lyn Buchanan
Executive Director, Problems Solutions Innovations, 37 Camino Ranchitos, Alamogordo, NM 88310
lynbuchanan@beyondbb.com, http://www.crviewer.com

Out-of-Body and Near-Death Experiences: Brain-State Phenomena or Glimpses of Immortality? by Michael N. Marsh. Oxford University Press, 2010. 336 pp. $110 (hardcover). ISBN 9780199571505.

Michael Marsh is a British physician, a mainstream biomedical research scientist who late in his career took the unusual step of obtaining an advanced degree in theology. This book, based upon his D. Phil. thesis and published as an Oxford Theological Monograph, purports to provide an objective and critical examination of out-of-body (OBE) and near-death-experience (NDE) phenomena from these perspectives. Regrettably, it reveals instead a person so committed a priori to these divergent orthodoxies that he is unable to come fully to grips with the phenomena and issues at hand.

The central arguments are clearly foreshadowed in a brief Introduction. He will assess the state of things by examining eight popular books dealing with NDEs and OBEs (which he refers to collectively as "extra-corporeal experiences" or ECEs) and their putative implications for topics such as post-mortem survival, religion, and the nature of the cosmos. These books, which he refers to repeatedly and incorrectly as the "canonical" literature of the field, include two books each by Moody, Ring, and Sabom, one by the Fenwicks, and one by Margot Grey. Note that this is already a rather odd procedure for a supposedly scientific review, given that none of these books is less than twelve years old, and that the relevant literature now includes not only many additional books and book chapters but large numbers of peer-reviewed papers in refereed journals as well.

The bulk of the book will consist of his detailed response to the challenge by Ken Ring and others to provide a comprehensive neurophysiological explanation of ECEs, a task which Marsh clearly regards himself as better-equipped than all previous commentators to pursue. In contrast to previous misguided talk about dying or effectively dead brains, he will offer a "reviving brain" hypothesis which construes NDEs as brief and wholly illusory conscious accompaniments of the disordered and idiosyncratically patterned return to full normal competence of brains that have been subjected to prior cardiovascular trauma or other functional insults. The theological perspective he brings to bear later in the book will complement this analysis by showing that the narratives provided by ECE experients cannot be regarded as reports of genuine spiritual experiences.

In Chapter 1 he mainly introduces ECE phenomena along with the eight targeted books and their authors. However, he also begins to introduce his own very different point of view through brief commentaries on hellish NDEs (emphasizing their diversity, and sudden changes in affective tone), supposedly visual NDEs occurring in congenitally blind persons (which he uses to disparage the quality of NDE interviewing and reporting), and Sabom's celebrated case of Pam Reynolds (which he dismisses for transparently inadequate reasons as "most unimpressive" (p. 26; see also below)).

Chapter 2 provides an additional historical and cross-cultural sampling of ECE reports, apparently designed to emphasize their diversity, cognitive/cultural dependence, and dreamlike character while raising further doubts about the investigative and reporting techniques of NDE researchers. I will comment only that the small sample of cases provided is far from genuinely representative of NDE/OBE phenomenology.

In Chapter 3 Marsh continues these themes, attacking certain interpretations which he thinks the targeted authors have unjustifiably imposed upon their data. He faults Moody and Ring in particular for the suggestion that there is anything

resembling a canonical sequence of events, or a core NDE experience of meaningfully measurable "depth." This attack is largely unwarranted, however. For one thing, the artificiality of Moody's original scheme has long been recognized by practically everyone active in the field. More importantly, the meaningfulness of the concept of a core NDE experience has been abundantly confirmed through the development and subsequent widespread application of Greyson's reliable and valid NDE scale (Greyson, 1983). Greyson's original work has also recently been supplemented by a rigorous psychometric demonstration that this instrument provides a unidimensional measure of NDE depth or intensity with interval-scaling properties (Lange, Greyson, & Houran, 2004). The reality of NDE phenomenology, that is, is neither the unlimited idiosyncrasy claimed by Marsh nor the stereotypy suggested in some early popular books but something in between.

Marsh goes on to fault Ring, Grey, the Fenwicks, Sabom, and anybody else who takes seriously the idea that ECEs contain anything veridical (other than reflections of aspects of an experient's actual physiological state, such as pain or fever), or that they provide meaningful evidence of post-mortem survival, or indeed that anything *could* provide such evidence. These views, in my opinion, reflect the author's near-total ignorance of the larger context in which a truly scientific appraisal of ECEs needs to be framed, and they go to the heart of my dissatisfaction with this book.

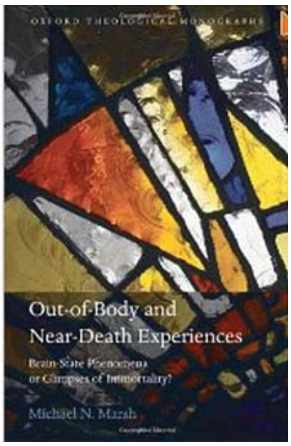
Take for example the many reports of spontaneous paranormal events in conjunction with ECEs. In my view the reality of psi phenomena has been demonstrated beyond reasonable doubt by a century-plus of high-quality experimental, case, and field studies, and what is unusual about ostensible paranormal events associated with ECEs concerns only the circumstances in which they occur. Marsh will have none of this, however; he summarily dismisses the entire history of psychical research (p. 65), and in that light regards the reported psi events as mere "anecdotes," each standing entirely on its own, and none sufficiently well-documented to deserve the slightest interest or respect. Like other determined psi-deniers, he offers alternative explanations for events he thinks he can explain in conventional terms—no matter how far-fetched those explanations—and dismisses or ignores the rest. Thus for example he asserts that Pam Reynolds actually heard the surgical saw (by bone conduction, even though she was already deeply anesthetized at the time), regards the Maria case as nothing but "hearsay," and neglects to mention van Lommel's case of the spontaneous cardiac-arrest patient who reported observing removal of his dentures by a particular nurse involved in the resuscitation procedures (nor does he ever describe or discuss the main results of that important prospective study itself (van Lommel, van Wees, Meyers, & Elfferich, 2001)).

We can certainly all agree that more and better documentation of veridical

psi events in NDEs is desirable, and it is true that attempts at controlled studies have so far largely failed (Holden, Greyson, & James, 2009, Chapter 9), but to dismiss the entire subject as Marsh repeatedly does in contemptuous fashion is surely unwarranted. He also seems unaware that a considerably larger amount of evidence, including some experimental evidence, already exists for veridical events in conjunction with OBEs (see for example Hart, 1954, and Kelly, Kelly, Crabtree, Gauld, Grosso, & Greyson, 2007, Chapter 6). More seriously still, he appears to be almost totally ignorant of the very large body of direct evidence for post-mortem survival itself, deriving principally from systematic studies of trance mediumship, apparitions, and cases of the reincarnation type (Braude, 2003, Gauld, 1982, Stevenson, 1977, 1997, Tucker, 2005).

Marsh's "objective" analysis depends at bottom upon the fact that in his scientific phase anyway he is a conventional reductive physicalist, committed a priori to the view that mind and consciousness are entirely the products of, or supervenient upon, or identical to, electrochemical processes occurring in the brain. He is candid about this in his Introduction (p. xx), where he acknowledges that it is a *premise*—not a conclusion—of his investigations, and numerous statements scattered throughout the book confirm that this is the case. Thus for example he asserts that Pam Reynolds could not have had conscious experience of any kind during the deepest part of her hypothermic cardiac arrest procedure, because "that, of course, is clearly impossible, viewed from any physiological perspective" (p. 25). More generally, nobody can have conscious experiences under conditions such as deep general anesthesia and/or cardiac arrest, and persons who report having had such experiences therefore must have had them at another time (as they awakened, he believes), notwithstanding anything they might report, veridical or otherwise. Similarly, all reported ECEs must be cerebral in origin, he declares repeatedly, simply because the experients *remember* them (pp. 25, 53, 72, 78, 261; but see also Kelly et al., 2007, Chapter 4). This of course all begs the central scientific question whether the standard mainstream "production" model of the mind/brain relation is correct.

From Marsh's conventional perspective, the task is now simply to figure out how the phenomenological properties of NDEs and OBEs might be explained in terms of known or possible brain mechanisms. This he proceeds to attempt in Chapters 4 through 9, and although this exercise constitutes the empirical heart of the book I can be mercifully brief in presenting and discussing it. Marsh is more systematic and thorough than his predecessors in pursuing this task (and this detail is welcome), but in fact very little of what he presents is new, and none of it compelling. The basic strategy, as usual, is to identify physiological agents, processes, or circumstances that result in phenomenological features analogous to features reported in NDEs and/or OBEs, on the presumption that the former must be causative of the latter.



Marsh begins in Chapter 4 by arguing that NDEs *must* occur just before the recovery of full consciousness by a previously disordered brain. In doing so, he simply ignores the large number of NDEs that have occurred in the absence of recognized brain injury or pathology, as for example in near-accidents and brief falls, and those containing verifiable time-anchors placing the experience at points remote from time of recovery, such as the reports of Pam Reynolds (Sabom, 1998), van Lommel's spontaneous cardiac-arrest patient (van Lommel et al., 2001), and many others.

Chapter 5 is mainly devoted to demonstrating the "projective" or virtual-reality character of some perceptual experience, using the phenomenology of phantom limbs as an illustration. Marsh's main point here is that human beings can have vivid and subjectively impressive hallucinations of things that aren't really there, in conjunction with specific types of brain malfunction. This is certainly true, and in fact it is true of ordinary perception in perfectly healthy persons as well, as argued in particular depth by Velmans (2009). It is not self-evidently true, however, as Marsh assumes, that the brain itself *produces* all such experiences. In fact, a large and diverse body of evidence strongly suggests that this conventional "production" model of the mind/brain relation is *false* (Kelly et al., 2007).

In Chapters 6 through 9 Marsh extends his analysis by examining a number of specific candidates for relevant neurophysiological mechanisms. Most of these, contrary to what he seems to think, have been proposed before. Chapter 6 focuses on the temporo–parietal junction (TPJ) and its role in normal and disturbed perceptions of the body and its location in phenomenological space, drawing heavily on the work of the Blanke lab (and consultations with Peter Brugger and Christine Mohr (p. ix)), but ignoring the many significant problems previously identified in this work (Kelly et al., 2007, Chapter 6). Chapter 7 compares NDE phenomenology to that of ordinary dreams and especially to hypnagogic/hypnopompic states arising at the border between sleep and wakefulness. Chapter 8 reviews supposed connections between NDEs/OBEs and disturbances in temporal lobe function, whether the result of overt pathology or various kinds of cortical stimulation. Here Marsh lays special emphasis on the potential of *latent* temporal lobe dysfunction to interact with other pathophysiological events and thus perhaps to explain why some people do have while many others do not have NDEs under what look to be

very similar conditions such as deep general anesthesia and/or cardiac arrest. Note, however, that this also conveniently provides him with a generalized escape mechanism for cases lacking evidence of overt pathology of any relevant sort. In addition, he again overlooks the many significant problems previously identified in this comparison (Kelly et al., 2007, Chapter 6).

In Chapter 9 he examines a variety of further topics already touched upon by the "canonical" authors, including the possible role of endorphins, the physiological basis of "tunnel" phenomenology (where he rejects Blackmore's analysis), blood–gas disturbances such as hypoxia and hypercarbia (which he downplays), anesthetic agents such as ether, nitrous oxide, and ketamine, and reductions of posterior and basal cerebral circulation known to contribute to certain hallucinatory experiences (peduncular hallucinosis). Surprisingly, given his general outlook, he specifically declines (p. 139, Note 30) to discuss psychedelics such as LSD, on grounds of (unidentified) phenomenological dissimilarities to NDEs.

Summing up his exertions, Marsh declares triumphantly (p. 262) that the neurophysiological challenge put forth by Ken Ring (and others) "has been completely neutralized, if not eradicated, by my pursuit and deployment of in-depth neurophysiological explanation and possibility." With all due respect I categorically disagree: In addition to the more general issues already raised above—his blanket dismissal of psychical research, and his generalization to all ECEs of forms of explanation that apply in principle only to some of them—there are additional serious problems in these phenomenology-driven comparisons themselves. First, the individual comparisons are in general very strained, and routinely ignore major phenomenological *dissimilarities*, good examples here being the experiences produced by centrifuging pilots (Whinnery) and TLE or electrical stimulation of the brain (Blanke, Penfield, Persinger). Second, the suggested mechanisms have to get strung together ad hoc in arbitrary combinations, and without supporting evidence, to "explain" the composite, integral character of real NDEs. Finally, and most importantly, none of the suggested neurophysiological models results in experiences having anything like the profound transformative impact routinely associated with genuine, deep NDEs.

It is especially ironic that Marsh overlooks this last objection to his reductive neurophysiologizing, because one of his main claims in the following three chapters, in which he examines NDEs from his newly acquired theological perspective, is that NDE researchers have signally failed to appreciate the impact such experiences have on recipients' subsequent lives! More work can certainly always be done along these lines, but his generalized claim here is simply false (e.g., Holden, Greyson, & James, 2009, van Lommel et al., 2001).

One can almost hear the gears grinding as Marsh makes the transition

from biomedical-scientific to theological critic of NDEs, and much of what he says in these final chapters seems to me not relevant to a scientific appraisal. Nevertheless, there are several interesting connections between these two main parts of his book that seem worth highlighting here.

The first appears in Chapter 10, where he suddenly adopts the viewpoint of Christian theology. Why Christianity should be privileged in this way is not discussed, but in any case it now becomes clear that he is not after all a thorough-going physicalist in the mold of people such as Dennett, Searle, the Churchlands, and most other contemporary philosophers of mind, neuroscientists, and psychologists. We are more than just "packs of neurons"—answering a question first posed but not addressed in Chapter 5—and some form of immortality now seems to him at least doctrinally possible. This subject has a long history in Christian thought, it turns out, involving ongoing controversy between two extreme positions, one favoring end-time resurrection of the body as the appropriate model, the other conceiving immortality as some form of continuing post-mortem existence of minds, personalities, or souls. NDE reports, of course—like the survival evidence generally—tend strongly in the latter direction; and for the same sorts of reasons driving his scientific evaluation of NDEs—at bottom, his acknowledged inability as a committed reductionist to conceive any credible way in which a mind or personality or soul could function in the absence of a working brain—Marsh feels driven to the resurrection model of Christian immortality, and to acceptance of the resurrection of Jesus as literal historical fact.

In Chapter 11 he addresses the further question whether NDEs can be regarded from a Christian point of view as genuine spiritual experiences. He of course wants to argue that they cannot, on grounds that they are nothing but endlessly variable brain-generated hallucinations, inconsistent with each other and with received Christian doctrine. But here he faces a problem: Many Christian mystical experiences, which he accepts as genuine, look as though they too might be explainable in reductive neurobiological terms, and many neuroscientists in fact presume they are (Saver & Rabin, 1997); so what's the difference? To address this, Marsh sets up a straw-man comparison between carefully selected examples of classic deep mystical experiences, as presented for example by William James and W. P. Alston, and "randomly" (?) selected bits of NDE narrative, emphasizing the idiosyncrasy, anthropomorphism, and banality of the latter. This procedure certainly makes garden-variety NDE reports suffer by comparison, but it utterly fails to do justice to the full range of NDE phenomenology, which clearly overlaps in particular with extrovertive mystical experiences of the sorts encountered by ordinary persons under a wide variety of precipitating circumstances (see especially Marshall, 2005). It is true, as Marsh points out, that mystical experiences typically lack certain

features such as barriers and tunnels that occur commonly in NDEs, but other and more significant features—for example, unusual experiences involving light (Kapstein, 2004), the sense of immediate contact with some sort of overpowering higher reality or *mysterium tremendum*, and transformative impact—are common to both.

Marsh's relentless trivialization of NDEs also has repercussions in the following chapter, in which he turns to their consequences for human lives and personalities. For if these experiences are really nothing but meaningless and banal brain-generated hallucinations, as he has argued throughout the book, why should they have the profound transformative power they so evidently do? Marsh never really faces up to this paradox and its implications, acknowledging it merely as "intriguing" (p. 243).

The book ends with an overview and recapitulation of the main arguments, followed by a glossary of technical terms in both neuroscience and philosophy (!), a very useful 29-page bibliography, and a not-so-useful index.

In conclusion, there is certainly some good here: The book is strongly written, and it contains a wealth of physiological information of which this review captures only a few highlights. Marsh also consistently and sensibly advocates for our need to acquire more and better information about what is actually happening to persons undergoing these powerful experiences, and about their effects on experients' subsequent lives. He also advocates—again correctly in my view—against premature and undisciplined speculation about the possible religious and cosmological significance of ECEs.

Despite these virtues, Marsh's analysis remains in my opinion fundamentally flawed by virtue of his pre-existing commitments to both scientific and religious orthodoxy. Indeed, it exemplifies all previously identified ways of evading full engagement with the NDE/OBE evidence plus some novel ones deriving from his added theological perspective. He firmly rejects any possibility of post-mortem survival of mind or personality, as suggested by ECEs, yet he has made no contact with the large scientific literature dealing with psi and survival, and despite his theological interests he is unable even to consider the possibility that alternative non-physicalist understandings of the mind/brain relation could potentially do justice not only to the full range of NDE/OBE phenomenology, but to post-mortem survival and to leading-edge neuroscience and physics as well (Kelly et al., 2007). He is certainly entitled as a private citizen to believe in the resurrection of Jesus as his only hope of immortality, despite the scanty evidence for that event, but he is not entitled as a scientific reviewer to dismiss out of hand the entire mass of far better evidence for post-mortem survival of ordinary humans. Moreover, I deplore his uncharitable and unseemly readiness to invalidate, because they fail to conform to the scientific and religious dogmas he has personally embraced, the life-changing experiences of thousands of his

fellow human beings. Readers seeking genuinely scientific appraisals of NDEs and OBEs, in short, will be better served elsewhere.

Edward F. Kelly

Division of Perceptual Studies, Department of Psychiatry and Neurobehavioral Sciences
University of Virginia, 210 Tenth St. NE, Charlottesville, VA 22902
ek8b@virginia.edu

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The Purpose-Guided Universe: Believing in Einstein, Darwin, and God by Bernard Haisch. New Page Books (Franklin Lakes, NJ), 2010. 222 pp. $19.99 (hardcover). ISBN 9781601631220.

This review must begin with a disclosure: I have in press a book (Batten, 2011) in which I cover much of the same ground as Haisch does. Our approaches are different, but we have the same basic message: There is nothing in modern science that precludes at least some forms of religious belief. We cite several of the same authors, sometimes the same passages from them, to which we react in similar ways. There are even some of Haisch's sentences that I wish I had written myself; on page 35, for example: "It is intellectually dishonest to discount out of hand that our Universe appears special because, well, it happens to be special." My prejudices in favor of Haisch may be tempered, however, by the fact that we are competitors!

Bernard Haisch hardly needs any introduction to long-time readers of *JSE*, since he was for many years its Editor-in-Chief. Although he was once a candidate for the Roman Catholic priesthood, this book shows that he has been heavily influenced by the Perennial Philosophy, especially as it is described in Aldous Huxley's (1944) book, and by the mystical tradition in all religions. His thesis can be fairly easily summarized: The physical universe does not constitute the whole of reality and is indeed subordinate to consciousness. Citing the Hindu identification of Athman (the individual consciousness) with Brahman (the universal and creative consciousness), he maintains that each one of us is a spark of God. Recent developments in quantum mechanics, he argues, show unequivocally that "reality" is created by our measurements. The properties of fundamental particles do not exist until a measurement is made. As Haisch himself puts it (p. 168): "Consciousness creates reality." Given this interpretation of science, and mystical rather than the organized religion which he has left, he sees no conflict involved in believing in Einstein, Darwin, and God. I can agree that "Consciousness creates reality," if that is not interpreted as our individual consciousnesses doing so. I do not believe that we ourselves create the universe, nor am I completely persuaded that we are "sparks of God." I think that there is a real physical universe independent of our limited minds, even if all we can say of it is what Eddington (1928:291) famously said of the electron: "Something unknown is doing we don't know what."

Although I neither cite Huxley's book nor refer explicitly to the Perennial Philosophy, I, too, argue that there is more to reality than just the physical universe revealed to us by our senses. I find it convenient to use the word "transcendent" to denote those aspects of the universe not revealed by our senses, a word that Haisch sometimes uses, too. The word is not entirely

satisfactory because of some of its connotations, but the same can be said of all other candidate words. Haisch sees evidence for the transcendent in the experiences of mystics, especially in the thought and writing of that great astronomer and mystic Sir Arthur Eddington. (Haisch is kind enough to refer to an article I wrote on Eddington.) Again, I agree, although I would suggest that music and the visual arts also provide us with such evidence.

I have sometimes thought that we need to rescue the word "God" from those who believe in God. Similarly, Haisch points to the distinction made by many mystics between "God" and "the Godhead" (pp. 120*ff*). He is clearly much impressed by the experience of unity with the Godhead that these mystics report. There is, however, another kind of mysticism, the so-called *nature mysticism*, in which the percipient experiences a sense of unity not with the Godhead, but with the whole created order. I rather suspect that Eddington's mysticism was of the nature variety. The evidence is not clear-cut, but a sentence in *The Nature of the Physical World* (Eddington 1928:321) seems to me to support that interpretation.

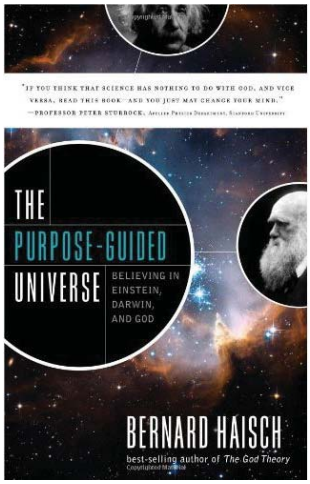
My quotation in the first paragraph of this review from page 35 will alert readers to the prominent role played in Haisch's arguments by the so-called fine-tuning of the universe. He contrasts two possible explanations: Either there are many "universes," some of which will, by chance, be suitable for the development of life; or this universe has been deliberately created to be special by God. He points out, correctly in my view, that the latter explanation is by far the simpler. (A third possible explanation, that our universe is just one tremendous fluke, is dismissed, again I think correctly, as far too unlikely to be taken seriously.) Although they do not affect the argument in any important way, I could not help noticing two technical errors, or at least obscurities, in that Chapter. On page 69, it seems to be implied that the Moon is only 180,000 miles from the Earth, about three-quarters of the correct value, and on pages 75–76 figures are given for the amount of dark matter in the universe that, on the face of it, appear to be inconsistent. Dark matter is said to constitute 25% of the universe on one page, while on the next we are told that there is about six times as much dark matter as ordinary matter. I suspect the first figure takes account of both matter and energy, while the second refers to matter alone, but the point could have been made more clearly.

While Haisch has no difficulty reconciling mystical religion and the Perennial Philosophy with modern science, he states on page 31 that he believes organized religion cannot be so reconciled. Here I do not agree, having managed (sometimes with difficulty) to stay within organized religion, while recognizing its many faults, which frequently include abuse of power. Nevertheless, churches, synagogues, and mosques are often the loci of many good works, and, on the whole, I believe that our society would be the poorer

if they did not exist. The vast majority of us, after all, do not have mystical experiences, however much we may aspire to them, and organized religion helps to fill the gap. Presumably, living a disciplined life and regularly engaging in certain modes of thought, whether we term them prayer, meditation, or spiritual exercises, will predispose people toward the mystical experience, but many who do those things never have the experience, while, as Haisch points out (p. 148), that experience sometimes comes out of the blue to others who have never prepared for it.

Haisch devotes some space to the thought experiment that has come to be known as "Schrödinger's Cat." Schrödinger was no more willing than Einstein to accept the Copenhagen interpretation of quantum theory, and his thought experiment, which he himself described as "diabolical," was intended as a *reductio ad absurdum* of that interpretation every bit as much as the EPR experiment which Haisch also discusses. Walter Moore (1989) gives an insightful account of the connection between the two thought experiments in his biography of Schrödinger. In the experiment, the cat's life depends on whether or not one radioactive atom decays within a given time. The Copenhagen interpretation implies that the cat was neither alive nor dead until an observer opened the sealed box in which it had been ensconced. Schrödinger thought that conclusion absurd. We can only speculate whether or not he would have changed his mind if he had lived to see the modern experimental results to which Haisch refers. Most quantum physicists, however, now embrace the uncertainty, as Haisch does. Moreover, he goes on to say that not only is the cat neither alive nor dead until the observer opens the box, but even the atom upon which the cat's life depends neither decays nor remains stable until the box is opened. In other words, the observer causes the decay of the atom although the observation comes after the decay! This kind of backward causation in time is also discussed by Paul Davies (2006) in the context of the two-slit experiment; Davies goes on to suggest that, similarly, our presence in the universe has caused it to have a history that makes it "fine-tuned" for the emergence of life. Interestingly, in another recent book, J. Scott Turner (2007) also suggests that this kind of backward causation can occur in biological evolution. This is the kind of consideration that leads Haisch to his conclusion already quoted, that "Consciousness creates reality."

Haisch also quotes from Schrödinger's (1944) well-known little book *What Is Life?*, the Epilogue to which reads almost like a précis of Haisch's. In his opening chapter, Schrödinger stated his commitment to a reductionist explanation of the material processes of life and his belief that quantum uncertainty had no biological relevance, both positions disputed by Haisch, yet the two men experienced rather similar spiritual developments from organized Christianity (in Schrödinger's case Lutheran) to an appreciation of



the Perennial Philosophy and of Indian religion with its insistence on the identity of Athman and Brahman. (Huxley's book had not been published when *What Is Life* was first published, but Schrödinger commended it in later editions.) Haisch would probably not entirely approve of my own reaction to this aspect of his book. I feel that the Christian doctrine of the Trinity has something to be said for it, since it tries to hold in balance three incompatible ideas about the Godhead: transcendence, so important in both Judaism and Islam, incarnation in human form, that recurs over and over again in Hinduism, and immanence, important in mystical religion.

I agree with Haisch that some of the criticisms brought by people such as Dawkins and Hitchens against the traditional notions of God are justified. Those who insist on the literal sense of the Bible do not seem to understand the moral conundrums it often poses. If, instead, the Bible is understood as a record of one particular people's evolving understanding of God, those moral problems largely disappear. Once again, Haisch's distinction between God and the Godhead is useful. On the other hand, Haisch borrows the title of his earlier book *The God Theory* (which I have not read) for one of his chapters in this book. I think that this phrase is a little unfortunate. For many believers, God is not a theory but a reality they have experienced. This was particularly true of Eddington and must, I suspect, be true of mystics in general. There is a helpful discussion of this point in a book by Mikael Stenmark (2004).

Another chapter is provocatively entitled "Staying out of Heaven." Haisch does not like the idea of everlasting bliss, maintaining that anything that goes on forever will sooner or later cloy. There is, of course, some ambiguity as to whether "everlasting" and "eternal" mean quite the same thing. Eternity may be more like "timelessness," of which Haisch writes quite approvingly. The traditional imagery of Heaven and Hell does not carry very much conviction these days except, again, to those who suppose that the Bible must be taken literally. That imagery, however, was an attempt to describe the Beatific Vision (or its absence), which surely can be a dynamic process. Still, I sympathize with Haisch's dislike of the idea that one short lifetime—at most about a century—will determine our fate for all eternity. His solution is again to revert to Eastern religions and adopt the notions of *karma* and reincarnation, and to suppose that we shall have several lifetimes until we are eventually reunited with the Godhead of which he believes we are a part. The idea of reincarnation is not without its

attractions and, like Haisch, I have been impressed by the sheer quantity of data amassed by the late Ian Stevenson, much of which has been published in *JSE*. Nevertheless, repeating all the frustrating experiences of infancy and childhood is not a very appealing prospect to me. I hope for an existence after death in which one can continue to develop and to learn almost indefinitely. Of course, one must also expect to atone for what we have done amiss. If the universe has a purpose, it must surely be a moral one—Haisch and I agree totally on that. Even a Hitler or a Stalin, however, should not, it seems to both of us, be condemned to *everlasting* torment. Monstrous as their crimes were, they were necessarily finite. I oscillate between one of two solutions: Either Hitler and Stalin were so evil that they killed off all within themselves that was capable of surviving the death of the body, or third-century Alexandrian Origen was correct in his belief that, in the end, all people would be saved.

Toward the end of his book (Chapter 9), Haisch discusses the future importance of the physical and biological sciences. He sees physics as having had its golden age, at least for the time being—perhaps a rash prediction with Large Hadron Collider just coming on line! Yet he is undoubtedly right in saying that biology is currently the most productive area. This, of course, is partly because advances in molecular biology and genetics are likely to have direct effects on our everyday lives. I am not sure, however, that this is going to transform science as much as he suggests. He argues, for instance, that the "seemingly indispensible requirement of repeatability [of experiments] will have to yield" (p. 177). This would certainly be true if we were talking of old-fashioned field biology—natural history—but is less obviously so of molecular biology. Moreover, it was somewhat surprising to see this remark being made by a fellow astronomer. Astronomical observations have *never* been repeatable, and astronomers have long known that they have to do the best they can with unique observations often made under less-than-ideal circumstances. The controversy that has surrounded Eddington's original demonstration of the gravitational deflection of light predicted by Einstein arises, I believe, partly because physicists have never fully appreciated the difference between controlled experiment and observation.

Haisch also appears to think that the increasing importance of biology will lead scientists away from reductionism, but many who work in molecular biology and neuroscience adhere to something very like the nineteenth-century version of materialism, determinism, and reductionism. Francis Crick's *The Astonishing Hypothesis* (1994) is a good example. Haisch and I each quote the same passage from that book, which illustrates my point nicely. It is an interesting paradox that physicists, who work with inanimate matter and have come to understand how elusive its true nature is, are much more open to arguments such as the fine-tuning of the universe than are biologists, who work

with living organisms. At least this appears true of the majority of those in each discipline who write books for the general public.

My reservations, however, are few and are far outweighed by my agreements with Haisch. This is a book to stimulate thought—the length of this review shows how much it has stimulated me—and that is the most important test of a good book. I strongly recommend it. Unfortunately, those who most should read this book, namely, those who are certain that they know the truth, whether they believe that truth to be revealed religion or scientific materialism, are the least likely to read either this book or mine. Richard Dawkins is a very successful popular writer and deserves the success and fame that his books have brought him, but it is a poor reflection on our media that this book by Bernard Haisch, better informed on religion than anything Dawkins has written, will not receive the sort of publicity that the latter can immediately command.

Alan H. Batten
Victoria, BC, Canada
ahbatten@telus.net

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Authors of the Impossible: The Paranormal and the Sacred by Jeffrey J. Kripal. University of Chicago Press, 2010. 332 pp. $37.50 (hardcover). ISBN 9780226453866.

Jeffrey Kripal is the J. Newton Rayzor Professor of Philosophy and Religious Thought at Rice University; he has written a book one may choose to take as medicine meant to revive a mortally ill academic discipline. It is generally known that departments of religious studies in university life are run by atheists, materialists, and Marxists, folks who pretty much share the same stultifying assumptions about the divine, the sacred, the afterlife, the spiritual life, psychical research, mysticism, extraordinary healing, the super-rational, the creative power of the imagination, and a whole spectrum of ignored, damned, and forbidden branches of human experience.

In direct opposition to that form of exclusive reductionism, Kripal has written a book that insists on bringing the psychical dimension into the discourse about religion and spirituality. He wants to open up religious studies to the extraordinary, the fantastic—*the impossible*. What Kripal means by his title—on the surface it is merely enigmatic or ironical—the reader discovers in context. His peculiar notion of "the impossible" needs to be exhibited in its living context, if one hopes to grasp its meaning.

Crucial to Kripal's argument, as it was for James, Lang, Myers, and DeVesme, was the claim that as you reach back to the origins of what we call "religion" you are likely to arrive at a point of origin in some extraordinary, psychical experience, mystical, paranormal, or both. The origins of all the great religions are replete with tales of supernormality in action. For historically intelligible reasons, however, there is little research or writing on the psychical origins of religion.

There is of course a problem with the idea of studying "religion" objectively and rationally; people are emotionally invested in their religious views and anti-views. What happens when ideology undermines the objective standpoint demanded by academic standards? For example, it seems reasonable to think that the academic study of religion requires a well-rounded sensitivity, a feel for the subject matter, for the stories, the concrete phenomenology, and for the accounts of the exceptional, often strange or bizarre, events that drive religious belief systems. Suppose, for example, your main passion is the political, racial, and gender side of any story? Harold Bloom kvetches about "The School of Resentment" in English studies. Professional studies of literature become battlefields for partisan politics, and the poetics of spirit, miracle, adoration, ascetic self-mastery, and mystical rapture are damned. Or consider the academic study of psychology (now called neuroscience): The notion of psyche

is reduced to an item of folklore; the neuron and the computer are deified. With a faint glimmer of hope, consciousness lingers on as mysterian irritation. Finally, I might mention professional philosophy, no longer interested in "love of wisdom"—which is what the word *philosophy* means. What's going on here? Are these items of self-alienation symptoms of what Vico called the "barbarism of reflection"—the perversions that arise from the inhuman use of reason and rationality—the ultimate disenchantment of life?

Kripal's animating thought, as I read it, is that there is a way to fight this psychical disenchantment, this decay of vital imagination. The way back to the lost dimension of the sacred is through the portal of the paranormal. (The subtitle of the book is *The Paranormal and the Sacred*.) Kripal emphasizes throughout the need for a bifocal view, "The One in Two" ethos of coinciding opposites: The scholar, any pilgrim of the impossible, must be a delicate receiving apparatus with, at the same time, the eagle's critical eye at all times scanning the great horizon. In solemnly willed acts, one must lay aside reductive biases, advert to pure consciousness, and look to the moments of extraordinary experience: the sacralizing, energizing, expansive, exalted—*the most transformative experiences*—as the starting points for one's scholarly, rational, imaginative response to the great issues of religion. (Scholarly loathers of religion typically begin with the most degrading.)

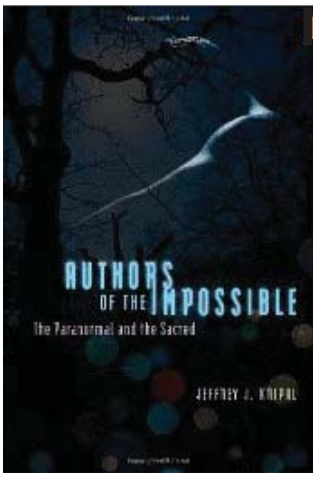
Now, these moments of creative advance that constitute the soul of "religion" sometimes crystallize with special vividness in and around certain individuals. Kripal considers four case histories that point to models of spiritual evolution for the future. Four authors of the "impossible" are presented and discussed. This is a book for people interested in re-imagining and re-ensouling some of the life-serving ideas of "religion." Jeffrey Kripal, like William Blake, wants to restore not just imagination but the majesty of the imaginal to the old gray house of religious studies. He would have religious scholars hone their visionary skills. He would rouse them to erotic participation with their subject matter, urging them to graduate from Apollonian episteme to Dionysian gnosis. Kripal quotes in a kindly vein Henri Bergson's jolting utterance that the universe is a machine for creating gods.

Kripal's four authors of the impossible are Frederic Myers, Charles Fort, Jacques Vallee, and Bertrand Meheust. These are authors whose work aids Kripal in authoring himself, and he is happy to make the process of that as transparent with detail and nuance as possible. One of Kripal's *topoi* that he keeps returning to is postmodern, even for that matter a theme central to analytic and linguistic philosophy. Perhaps it goes back to Heidegger who said that *Die Sprache is das Haus des Seins*, "Language is the house of being" (Heidegger, 1957). So, Kripal reminds us, we must ask, Who is writing our story? Are we not being written, written over, written off? Are we not in thralldom to prevailing concepts,

assumptions, scripts, codes, symbols, thus cornered in our little cultural niche. What writes us is the merely possible; to write ourselves, tell our own story, we have to break free from the dead weight of history, and accomplish the impossible. This, if I understand our author, is what "religion"—the aspect of it in tune with evolutionary advance—is most authentically about.

Each of the four authors contribute something to the larger process that interests Kripal, namely, the authoring of the impossible, which is Kripal-code for inducing breakthroughs of consciousness beyond the mundane to the sacred. Myers' contribution is to build a "spectrum" psychology that ranges from the normal to the abnormal and supernormal. Myers is a fitting ally for Kripal's impossible authorings; Myers was a poet, a classical scholar, and a literary critic. One of his great contributions was the terminology he invented for the study of consciousness. Myers invented (or brought to prominence) the terms *telepathy*, *supernormal*, *subliminal*, *preversion*, *mythopoeic*, *imaginal*, *secondary personality*, *phantasmogenetic*, and so forth. These terminological additions are tools for registering, ordering, and integrating impossible realities. Myers was not only a poet but also a romantic psychologist and erotic thinker. The eroticism and romanticism of Myers come together in his creation of a new science, a new psychology that stretches our conception of the human personality to quite impossible (and therefore fascinating) dimensions; the human personality that emerges from the crucible of Myers' spectrum psychology is steeped in transcendent heights and depths, reaching into unknown worlds even after the death of the body. According to Kripal, Myers was inspired to create this new science of consciousness because of his dead lover, who embodied for Myers a Platonic vision of eternal beauty and creativity. Myers lived an impossible life, impeccably married to his wife, Eveleen, while madly in love with the image of Annie waiting for him in the beyond. Some might regard this as more of a danger than a plus, but Myers' "subliminal Self" is a conceptual tool that permits us to imagine impossible love, and the complexities of passion in the metaphysical world of Andrew Marvell. In general, says Kripal, Myers's vastly enlarged model of the human psyche, unlike Freud's and even Jung's, helps us "explain religious experiences without explaining them away" (p. 62).

Kripal's discussion of evolution and the paranormal in Myers is useful; Myers' challenge was to incorporate evolutionism without swallowing materialism. He rejected the idea that telepathy arose from some juggling of hereditary factors; rather, evolution led to a "revelation" of telepathy when it rose from the subliminal to the supraliminal level of consciousness. Kripal underscores the spiritual and erotic dimensions of telepathy as Myers understood and lived them. Myers' intense love affair with Annie Marshall sheds light on his passionate pursuit of the psychical as the key to the mysteries of existence. Looking for the authentic roots of religiosity in the erotic and



psychical dimensions of consciousness marks an important trend toward a more full-bodied, anti-dualist conception of religious reality. It might well turn out to be the crucial step toward new forms of self-conceived religiosity. Kripal keeps pushing the envelope, alerting us to the need—and the possibilities—for world-re-enchantment.

Kripal's second exemplar of authoring the impossible is the American philosopher and collector of scientific anomalies, Charles Fort (1874–1932). Fort caught the imagination of several literary figures in the early twentieth century (Booth Tarkington, Theodore Dreiser, etc.), and one can see why: The Bronx original, at his best, wrote scientific criticism that sometimes sounded like the poet Arthur Rimbaud. (We might perhaps call him the Walt Whitman of the Impossible.) Fort, I would say, wrote the kind of surrealist narratives that Breton imagined, seamless fusions of dream and reality. Here is the first sentence of *Lo!* "A naked man in a city street—the track of a horse in volcanic mud—the mystery of reindeer's ears—a huge, black form, like a whale in the sky, and it drips red drops as if attacked by celestial swordfishes—an appalling cherub appears in the sea—*Confusions*."

It goes on like this for a while, and we read: "A naked fact startles a meeting of a scientific society—and whatever it has for loins is soon diapered with conventional explanations" (Fort, 1974:541). Kripal writes a searching account of the four main books of Fort, highlighting a number of imaginative ways of viewing the world conducive to the possibility of the sacred, naming it "Scattering the Seeds of a Super-Story." Kripal's chapter title reminds us of a point of contention in current intellectual life. It is fair to say that in the postmodern mood, one is obliged to look askance upon all talk of grand historical laws, trends, or destinies; no one great, all-powerful point of view that explains and fancies it can control everything. So the idea of a "super-story" may seem suspect to many. Kripal, I am sure, is not interested in foisting some one super-story, sacred or profane, on the wild diversity of humankind.

As individuals, however, we may need to form, however fallible and makeshift, some one, or several, super-stories for ourselves. We all need rafts, as the Buddha said, to ford the sea of existence; it must, however, be our own raft. Kripal thinks that a good way to free yourself from the deadening script you have been given is to write your own script, arming yourself with the widest possible range of facts, including the wildest of anomalies, but insisting

upon your own reading, interpretation, and reconfiguring. The point is to live our super-story. ("Religion" is always intensely personal when it's authentic.) While not coming off as preachy, Kripal, an adversary of spiritual dullness, invites us to freely rewrite the story imposed on us (in the double sense of *imposed*). It was a great day when Jefferson verbalized our inalienable right to life, liberty, and the pursuit of happiness. Kripal, speaking loud and clear to all fanatics, fundamentalists, and reductionists, is now telling us that we each have a right to author our own impossible lives. Jefferson would have approved.

Among the many ideas discussed in this chapter, I'll mention one that speaks to the current scene. Fort imagines three Dominants or Eras. The first Era is that of traditional religion, exclusive, and creed-driven; second, today's Dominant is scientific materialism, obsessed with explanation and control. And beyond now there is *tertium quid*. The New Dominant, Kripal writes, "he (Fort) associates with the epistemology of expression or acceptance and the professionalism of a new brand of individuating wizards and witches" (p. 113). A mark of the New Dominant is its spirit of radical inclusiveness. According to Kripal, "it (the New Dominant) builds an open-ended system and preserves it through the confusing inclusion of data, theoretically *all* data, however bizarre and offending, toward some future awakening" (p. 113). Kripal seems intent on opening new pathways from the paranormal to the sacred. The last extraordinary sentence points to a model of peace arrived at by the road of creative chaos—a road that travels toward fusion through fructifying confusion. Fort provides the second exemplary opus for authoring the impossible.

The remaining two authors are contemporary Frenchmen. Jacques Vallee is a scientist, novelist, computer entrepreneur, and leading figure in ufological studies. The UFO phenomenon is linked in many ways to the psychical and the sacred, and, as Vallee showed, to the realm of folklore. The religious connections are confusing. I have a written account of an American artist who joined her religious friend on a pilgrimage to Medjugorge. In an area where the Virgin appeared to certain young visionaries in the 1980s, Miss X observed a structure of lights hovering in space that appeared to her like a spaceship; she drew a picture of it, a geometric pattern of lights; it certainly looks like the classic light-grid craft of ufology. It turned out that others in the group also saw the strange lights, but were at first too disturbed to discuss it. In the literature of alien abduction (Mack, 1999), abductees invariably describe telepathic communication with the aliens. The vast UFO lore and literature is saturated with reports indicative of all kinds of psychic hijinks.

So the connections with psi and religion are present. Vallee's account of what is going on in UFO-land provides a conceptual apparatus we can use to deconstruct the prevailing worldview and reconstruct the space of the possible. For one thing, the multi-dimensionality of existence must be a shock to people

of flatland sensibility. In the ancient world, Socrates administered shock therapy to the prevailing consciousness through a new form of language use called dialectic. Later on, not that far away, another shock was administered to human consciousness; the news spread relentlessly—a man was raised from the dead by a divine power. In the Resurrection, a new belief was created, which promised eternal life. This became the nucleus of a movement still going strong. And now what? Jung relates UFOs to the death of the gods, the return of the repressed. The UFO phenomenon—a devastating form of Socratic *aporia*—imposes itself upon witness or abductee. But what is it? One's sense of reality is attacked. One is forced to ask fundamental questions about what is—*really* is. One is forced to enroll, as it were, in Jacques Vallee's Invisible College. What is the UFO phenomenon? A creature of the twilight zone, betwixt and between, on the border between fact and fiction? Inner or outer? Super science or science fiction? A hyphenated mode of being? Either? All? None? Confusion, as Fort said.

To describe this edge of reality demands a new syntax, a new koan, a new *Finnegan's Wake*. Here is how Kripal broadly suggests we consider our cognitive vapors: "The point is not to reduce one 'false' register to the other 'true' one. It is to confuse and destabilize *both* registers. Put more radically, the point is not to adopt this or that symbolic system as somehow literally true. The point is to be simultaneously sympathetic to and suspicious of *all* symbolic systems, and then finally to entertain the impossible possibility that the controlling intelligence communicating with us through all these systems is a human one, that is, a form of human consciousness far beyond our present, hopelessly materialistic and restrictive notions. We are not who we seem to be."

In reflecting on Kripal's vision of the self-authoring–authorizing process, it must be hard if you suffer from a fundamentalist cast of mind, one feature of which is the obsession with disjunctive logic. Kripal's fourth model of instigating psychical revivalism is Bertrand Meheust, who pursues his impossibilities in the multiple, unpredictable depths of somnambulism—dream walking, ambulating in sleep. The title of the chapter is clear enough: "Returning the Human Sciences to Consciousness." Kripal writes of the "naïve objectivism of the scientific method with respect to paranormal phenomena" (p. 227) whose unfortunate effect is to kill the phenomena. Nietzsche of course was right; "God is dead; *we* have killed him." The objectifying approach of the rational scientist probably creates the milieu that is lethal to paranormality.

In studying the variety of dissociated, "magnetic," or mesmerized states—with a special focus on Alexis Didier—Meheust observed that the phenomena are anarchic and fugitive. Many will find this discomfiting. However, there is a vital point that Kripal wants to make: The "phenomena, this boundless reservoir of potentialities, should profoundly transform our image of the human being,

and consequently render any final model of human nature, and so any general or universal method of therapy, impossible" (p. 227). On the same page, Meheust is quoted as stating this key point for practicing authors of the impossible, " . . . the phenomena of somnambulism are not invariable manifestations of the human soul, but . . . they should be thought of as the actualization of hidden virtualities—an actualization rendered possible in certain contexts, and therefore variable." This elasticity of effect ought instantly to enlarge confidence in our latent powers. However, beside the erotic and the numinous, there is a dark side somnambulism, or walking into the world of dreams. The Fortean and ufological dimension, along with somnambulism, nightmare, and hagging, enlarge but also darken ambiguously our understanding of the repressed sacred. Myers of course knew that the subliminal self housed a dark side, but believed, some would say with Victorian overconfidence, the light of intelligence would show the way. In any case, Kripal is right to pay attention to the dark, subterranean, deceptive side of the sacred world. One cannot get very far there without bumping into all sorts of shadow figures, adversaries, and devils of all stripes. All this new, edgy personnel is grist for authoring and self-authorizing. It seems almost common sense to say that any conception of the evolution of self without integrating the Shadow will fall short.

This book, despite an occasional extempore breeziness, is densely scholarly, well-argued, and boldly intuited. Kripal is interested in bringing literary studies into paranormal hermeneutics. Above all—and here he seems to be addressing his comrade "religion" scholars—there is a Blakean call for Imagination. He is also interested in reading the signs of popular culture for their sacred or profaning events, images, and trends. Isn't that what the prophets of old did? Since popular culture, its many worlds and personae, is a creation of the human psyche (no matter how many clever machines mediate that creation), *its* products also have religious significance. In Kripal's generous vision, a more wildly motley crew of possibles will be allowed to enter into the world of conversation.

Besides hermeneutics and imagination, Kripal respects the neurophysical challenge to his theory of religion, which relies on consciousness and some of its stranger effects. Kripal is armed and ready to deal with this, and throughout refers to, and sometimes elaborates on, a theory of the mind–brain relationship that several writers have expounded upon. Sometimes referred to as the transmission model, or "filter" theory, the main appeal is that it's consistent with psychical data; whereas, if we accept the mainline views the whole enterprise that speaks of the mental, the conscious, and the spiritual is more or less dead in the water.

So Kripal interprets the brain as an instrument for focusing the flow of consciousness on the business of biological survival (brain doesn't

create consciousness); surrounding this narrow, contracted field of profane consciousness is an indefinitely vast zone of possible experience. It is traffic with this vast, circumambient mind at large that constitutes the well of "religious" experience. So, in light of this mind–brain theory, when Augustine said "If you seek the Truth, go within," we can take him to mean lower your defenses, dismantle the filters, and let the higher spirit and intelligence overflow into waking consciousness. This squares with Eastern thought, as when the Taoist advertises the virtues of *wu wei* or "non action"; i.e. an invitation to drop one's normal intellectual and emotional defenses in a very radical and deliberate way. Wisdom here is to do nothing to support the habitual repression, the narrowing and filtering of one's consciousness.

Influx may occur spontaneously, as it did in a famous case of a neuroscientist who had a stroke that wiped out her left-brain functions. Or one may try to induce the onset of influx, gradually, by techniques of meditation, fasting, or controlled breathing. Jeff Kripal's book provides a vision and a proliferation of concept-juggling exercises, all designed to inject new life into the sagging, academic bones of religious scholars. For friends of the fantastic, and daring devotees of the impossible, this book might serve as a breviary for metamorphosis.

Michael Grosso
Division of Perceptual Studies, University of Virginia,
Charlottesville, VA 22902 USA
gross.michael@gmail.com

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Mind Before Matter—Visions of a New Science of Consciousness edited by Trish Pfeiffer, John Mack, and Paul Devereux. O Books, 2007. 224 pp. $24.95. ISBN 9781846940576.

A century ago Quantum Physics began breaking down the classical view of reality by which most of us live our lives. In this view, reality is external and "objective." We observe it but our observation does not affect it. The discovery of quantum physics led to the "Copenhagen Interpretation" by which the observer "collapses the wave function." This was the first admission by science

that the observer can affect a scientific measurement.

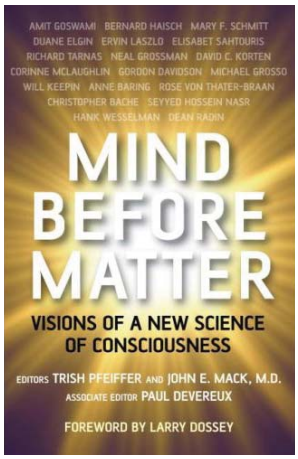
In this description, a quantum system is described as a superposition of basis states. A quantum system is said to be partially in each of the several possible states. Only if an observation is made does the scientist know which state it was "actually in" at a given moment. However, it was still assumed that the relative probabilities of the various basis states (eigenfunctions or eigenstates) were not affected by the observation (if many measurements are made). In this way, consciousness may be said to exert a "weak" influence on an experiment. Observation was assumed to cause "wave function collapse" but not to change the relative probabilities of the various basis states making up the wave function.

Recent experiments are finding that consciousness can exert much stronger effects than this. Experiments with highly trained Qigong masters, and other experiments in highly "conditioned" spaces in which the energy of consciousness has been accumulated, indicate that consciousness can exert much greater changes on a physical system (Yan, Lu, & Tiller, 1997).[1] The basis states which make up a physical system can themselves be altered by conscious intention. In some experiments, radioactive decay rates have been altered (Yan, Lu, & Zhu, 2000, Yan, Lu, Ren, Zhu, & Hu, 1990, Yan, Lu, Zhang, Wang, & Zhu, 1988). In others, the properties of water bonding have been changed. In others, chemistry has been altered (Yan, Lin, Li, Traynor-Kaplan, Xia, Lu, Fang, & Dao, 1999), while in still others, laser propagation has been affected (Yan, Li, Yu, & Lu, 1988).[2]

These effects of consciousness cannot be explained by the mere collapse of the wave function. They imply the alteration of physical conditions leading to wave functions which are themselves profoundly altered. Such experiments elevate consciousness itself to the level of a "force." In Professor William Tiller's terminology, consciousness has "raised the gauge," which implies that the physical conditions are altered. The basis states of a quantum system can change. In such a circumstance it is no longer sufficient to say consciousness "collapses the wave function." In these cases, consciousness alters the wave function in a profound way. The laws of physics themselves are changed by the presence of a conscious, active observer.

If consciousness can exert such profound changes on a scientific process, then it is no longer valid to separate it from the experiment, as traditional physics has done. The experimenter is truly an active component of the system.

These discoveries are leading to a new paradigm, as science continues the dialog begun a century ago between Einstein and Bohr. Consciousness can play a much deeper role than they imagined. Protocols and philosophy must adapt to this deeper understanding of the role of the conscious observer. These changing conditions represent an unfolding scientific revolution.



This book edited by Trish Pfeiffer, John Mack, and Paul Devereux makes a valuable contribution to this important dialogue. It presents thoughtful and thought-provoking essays by a variety of experts on the emerging new paradigm. As we move beyond the old Newtonian (and Einsteinian) view of an objective external reality, what issues must be resolved as consciousness is elevated to take its rightful place as an equal or perhaps even dominant component of scientific knowledge? How do we think about the role of the scientist when, instead of standing apart making his "objective measurement," his role may more closely resemble the shaman "dreaming the dream?" For the past century mainstream science has avoided these questions, but in view of new experiments these issues must be faced.

In a collection of essays by various leading thinkers, *Mind Before Matter* considers these implications from many viewpoints. Physicist Bernard Haisch observes that mainstream science is very conservative on this issue: "The perspective on consciousness within the mainstream community of physical scientists is in direct opposition to the possibility that consciousness may be primary, rather than being merely an epiphenomenon of the brain." Yet, even in this community he observed "glimpses are beginning to be seen. . . ."

On the other hand, what if consciousness is primary and the perceived physical world merely a secondary consequence, as suggested by Ann Baring: "Could the idea that consciousness rather than matter is the ultimate reality—the ground of all being—initiate a metaphysical revolution which would shake the foundation of human thinking?" And if this is true, then our consciousness has enormous and unguessed power. She quotes Paul Coelho: "We have the power to change the collective dream." And if consensus reality is based upon our collective consciousness, there is virtually no limit to what consciousness can accomplish.

And if this is true, then is science even possible at all? And finally, what are the consequences to society, as our view of ourselves expands to absorb these insights? Non-local consciousness appears to be one consequence. The continuance of consciousness beyond the physical body is another. And the secondary, almost illusory nature of matter in these theories is another possible consequence. These are some of the questions to be addressed as the issue of integrating consciousness with science proceeds.

Mind Before Matter offers a rich selection of observations on these topics.

It contains essays by approximately two dozen contributors whose backgrounds are wide-ranging. Among the contributors are Bernard Haish, Amit Goswami, John Mack, Dean Radin, Duane Elgin, Michael Grosso, Elizabet Sahtouris, and Paul Devereux, as well as many others.

In the Introduction, Devereux notes:

> I have placed each of the essays . . . into one of four sections—Science, Philosophy, Psi, Communion—as seems best fit its content. However, let it be noted that the essays tend to be so wide ranging that this has had to be something of a token exercise. . . .
>
> Perhaps the most generally underlying thought is that mainstream Western science will simply have to find room for the subjective, for human experience. It needs to understand consciousness as being "inside" of the objective universe. Without it our Western model of reality will forever be incomplete, and dangerously so.

Devereux further observes:

> Those who already believe that consciousness is the prime foundation of reality will find that the visions in these pages broaden that understanding; skeptics are urged to read all the essays in this anthology before hardening their viewpoint. This book represents the start of a discussion, not some kind of "last word." What it is intended to do is inspire, challenge, and provoke the reader, leading to further, ever-deepening discussion.

Anthropologist Hank Wessel notes that the public is increasingly aware that ". . . consciousness, not matter, is the ultimate reality and thus the ground of all being. . . ." He compares the new evolving view to that of tribal peoples he studied in Africa:

> . . . the perception that the multi-leveled field of the dream is the real world; that we human beings are actually dreaming twenty-four hours a day; and that the everyday physical world came into being in response to the dream, not vice-versa.
>
> Through my ongoing participation in these groups. I came to conclude that the different levels of reality on which the shaman operates are simultaneously levels of consciousness as well as levels of experience. By intentionally expanding their conscious awareness, shamans are able to transcend the physical world and change their level of experience, effectively shifting from one level of reality to another.

The shamanic idea of many parallel realities may play an important role in the evolving model of consciousness, since these realities can also correspond to possible quantum states or to various theories of "multiverses." Such a viewpoint may play a crucial role in the eventual unification of physics and consciousness.

Ann Baring sums up these themes:

> It seems that whatever name we give this ground, whether we use scientific or metaphysical language—Quantum Vacuum, Zero-Point Field, Creative Energy, Universal Intelligence, Ground of Being, Sacred Mind, Cosmic Soul, God or Spirit—the Primal Consciousness is the origin or source of our being. All aspects of life, visible and invisible, are interconnected and interdependent: All life is one. Death is an illusion born of our fragmented consciousness: There is nothing beyond death but life. In the light of this new understanding, the physical brain or even the entire mind/body organism is not the source of consciousness but the exquisitely fine-tuned vehicle of an invisible reality in which we all exist, the means through which it can come to awareness of itself in this material dimension. It could be said that this new vision marks the return of a very ancient insight known to the Vedic seers of India and summed up in the words in the Bhagavad Gita: "All is the Divine Being."

The great challenge of the integration of consciousness with science is that it is truly profound and far-reaching. It brings into question and into focus how we know anything. It leads us to examine the roots of all knowledge, and even the basis of how we observe and the nature of awareness. In this way, it will lead us to a more profound understanding of who we are and to our place in the universe. For the reader wrestling with these important questions, *Mind Before Matter* is an excellent source of wisdom and ideas.

Claude Swanson
Author of The Synchronized Universe*, and* Life Force, the Scientific Basis

Notes

[1] For a more complete bibiography, see Swanson, 2010, Lu, Zhu, Ren, & Hu, 1993, Tiller, Dibble, & Fandel, 2005, Tiller, Dibble, & Kohane, 2001, Tiller, Dibble, Walter, & Kohane, 2002, Tiller, 1997, 2007.

[2] An excellent summary of many of these citations, as well as further discussion of consciousness models, is found in Swanson, 2010.

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Consciousness and Its Objects by Colin McGinn. Oxford University Clarendon Press, 2004. 272 pp. $35.00 (hardcover). ISBN 9780199297634.

Here we have a collection of papers written by McGinn over the period 1993–2001. It is intended as a followup to his 1990 book *The Problem of Consciousness*, in which he argues that the philosophical problem of the relation of mind to body can never be solved due to an inherent limitation of the human concept-forming capacity, which he refers to as *cognitive closure*.

McGinn calls this position *epistemic mysterianism*. It is not to be confused with ontological mysterianism, which holds that the problem would require a supernatural explanation. In McGinn's view, the relation between mind and body must be a natural one even though the human cognitive closure prevents us from understanding it. Therefore he also calls his view *transcendental naturalism* (p. 182). The mind–body relation transcends human cognitive capacity but nonetheless "the world itself is as smoothly natural and seamless as one could wish" (p. 64).

While the papers gathered here are very much in the context of professional philosophical discourse, the thesis impinges on the borders of neuroscience, cosmology, biology, and psychology. Aside from its possible interest to philosophers and scientists, those who would feel spiritual or metaphysical interest in the idea of profound universal mystery may find his arguments compelling. McGinn writes in a particular philosophical style with clever turns

of phrase and a variety of approaches, making the text (hopefully) accessible to a wide spectrum of readers.

We find, for example, a fantasy scenario in which McGinn has a humorous dispute with an alien being whose views are opposed to his own, a methodological excursion aiming to show that his theory predicts the sorts of dilemmas characteristic of the most knotty philosophical problems, a curious thought experiment outlining a theory of mind on the analogy of ancient Greek atomism, and a journey to the more recent past, where the basis of the argument rests largely on a recitation of Bertrand Russell's sense-data–oriented views of 1912.

In this review I will undertake particularly to develop a sense of the philosophical context within which I believe McGinn is operating, and suggest a remedial way of looking at things.

McGinn's Account of the Problem

For McGinn, the mind–body problem is the problem of explaining how conscious states are caused by the brain. It is actually a mind–brain problem (pp. 56–57). The argument below is, I think, a fair distillation of his theory.

(1) We know that conscious states cannot be reduced to brain states.
(2) But conscious states *are* caused by brain states.
(3) Therefore we feel a sense of an inescapable philosophical problem.
(4) The concept-forming ability of the human brain is limited by a cognitive closure.
(5) The mind–brain causal relation is outside that limit.
(6) Therefore we can never solve the mind–body problem.

This argument has two parts. The first two premises yield (3), while the fourth and fifth yield (6). If we compare (3) and (6), it would appear that we are in a kind of ongoing existential crisis, because we feel a sense of an inescapable problem that can never be solved. On the other hand, McGinn seems to think that this acknowledgment of a fundamental limitation of the mind may have a kind of liberating effect: "We need simply to accept our deep ignorance" (p. 69). This has been the advice of skeptics at least as far back as Pyrrho (ca. 360 BC–ca. 270 BC). We can't solve the problem, so why worry? But rather than adopt either a skeptical or an existentialist viewpoint, perhaps we should probe a bit further.

Essential to McGinn's argument is (2). The basis for this premise is the evidence supplied by neuroscience for correlations between activity in the brain and conscious states: "Brain states cause conscious states—that is what observation suggests" (p. 57). But (2) is contradicted by (1). So (1) is the source

of our sense that there is a mind–body—or rather mind–brain—problem. And (1) is supported by an argument which invokes the view of perception put forward by Bertrand Russell in 1912.

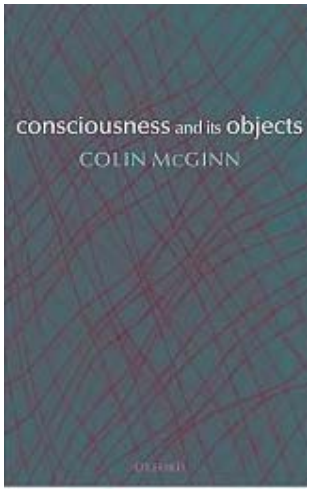
According to Russell, when we see and touch a physical object such as a table, we don't really see or feel the table. What we really see is variously shaped patches of color, and what we feel are various sensations of touch, etc. These are sense-data. We infer that there is a table on the basis of these data. And we know the sense-data *directly* by "acquaintance" rather than *indirectly* by "description." Now the special quality of things that are known by acquaintance is that you just *know* them, and that's that. "I know the color perfectly and completely when I see it, and no further knowledge of it itself is even theoretically possible" (p. 6, McGinn quoting Russell).

McGinn seizes on this to point out that since we have knowledge by acquaintance of our conscious states, we must know these states in the way Russell describes, perfectly and completely, with no further knowledge of them being "even theoretically possible." McGinn then makes the remarkable assertion that our perfect and complete knowledge of our own conscious states tells us that the brain cannot cause consciousness.

> . . . if we know the essence of consciousness by means of acquaintance, then we can *just see that* consciousness is not reducible to neural or functional processes. (p. 9, my italics)

This then is the justification for (1) and, when confronted by (2), the source of the mind–brain problem. And I have to confess that I really don't know how to take this statement. McGinn appears to be justifying (1) by appealing to some kind of direct intuitive knowledge similar to the untenable rationalist position of Descartes regarding "clear and distinct ideas." What McGinn *can just* see "perfectly and completely" by introspecting his own states of consciousness seems little removed in lack of verifiability from the rationalist intuitions of Descartes.

Against this idea I would point out that over the course of history many individuals have spent a great deal of time pursuing direct knowledge of consciousness by introspective meditation, and frequently such individuals report just the opposite. The dualism of mind and body disappears and instead a profound unity embracing all of existence, physical, mental, and spiritual, becomes clear. Why is McGinn a better source of information about the nature of pure consciousness than, say, a Buddhist monk? The answer is that when one appeals to truth as revealed by personal introspection, there is no objective standard. (It is for this reason that I rather suspect McGinn's underlying justification for (1) is conceptual rather than intuitive, i.e. based on a presupposition of mind–body dualism to begin with.)



However for the time being let us put this aside and instead yield the point to McGinn, that by introspection he knows the essence of consciousness, which means he knows perfectly and completely that consciousness cannot be reduced to brain states. If so, why wouldn't that be the end of the matter? Conscious states are not caused by the *brain*. Premise (2) is false. I heartily agree with this, although not because I accept (1). But McGinn wants to hang on to (2). After all, if he loses (2), what does he do then about the observations provided by neuroscience, that when certain conscious states occur, these are associated with activity in certain regions of the brain, which proves that the brain causes consciousness?

The Mediatory Brain

Well, one would have to conclude that a large body of neuroscientists and cognitive scientists are mistaken. This indeed is what a growing number of philosophers and cognitive scientists are thinking (Rockwell, 2007, Noë, 2009, Chemero, 2009, Shapiro, 2010). These individuals happen also to be the sort of philosopher who is not enamored by the sense-data theory. They, like myself, agree that conscious states are not caused by the brain—at least not in the sense of a one-to-one or "atomistic" causality (one single physical state of the brain causes one single mental state). And McGinn ought also to agree with this, except for those pesky neuroscientists who keep telling him otherwise.

Suddenly it begins to look as though the ground is trembling a bit beneath McGinn's (philosophical) feet, and the tremors are increasing. To make the point in depth let us take a look at McGinn's concept of memory.

> We know perfectly well how it is possible for the brain . . . to harbor as large a memory store as it does. . . . the number of memories is identical to the number of a (subset of the) brain's states. (p. 13)

McGinn here espouses the data-storage theory of memory. Inside the brain (metaphorically) there are a number of pigeonholes for memories, and the number of these pigeonholes that are filled is equal to the number of memories one has. This theory, despite its wide acceptance among neuroscientists, has been decisively shown to be deeply flawed. (If you are not sure of this, ask a neuroscientist to tell you how many memories you've got.) Anyway, the more

probable alternative is that the role of the brain in memory is mediatory. As one critic puts it,

> . . . it's one thing to say that the brain *mediates* the capacity to remember, and another to say it *stores* memories. The former view (more likely the correct one) takes the brain to be an *instrument involved in the expression of memory*; the latter view turns out to be deeply unintelligible. (Braude, 2006, my italics)

McGinn ridicules such an idea. He assumes this must imply that the brain is an "interface" between the "real basis" of consciousness and "bodily behavior." This is apparently because he believes that the memories must be "stored" *somewhere*. The "real basis" must be some sort of *realm* which is "nothing like anything we have ever encountered in nature," and furthermore where can it be? Perhaps it is "up in the sky," or "underground," and so on (p. 57). To hold that the brain's role in consciousness is mediatory is to subscribe to this sort of absurd fantasy.[1]

This is of course a "straw man" argument, but now McGinn says something quite revealing. He argues that this would put consciousness in a strange *location*. Conscious states would be located where the real basis is located, "since the location of the mind is parasitic on the location of the physical basis" (p. 57). And of course if the real basis is underground, or in the sky, then that's where the mind is located. Ergo, *reductio ad absurdum*.

I will return to this point later. First however it is necessary to deflate McGinn's restrictive idea of what might be meant by calling the brain's role mediatory. To do this is to reject that aforementioned narrow idea of causality, in which some single event in the brain stands in a direct causal relation to some single mental state. W. T. Rockwell for example argues against this atomistic causality, citing Mill's view that causes cannot be separated from their context of conditions (Rockwell, 2007:54).

What then is the proposed context of conditions within which the brain has an important, but not atomistically causal, function? We are moved here into the realm of the contemporary theory of Extended Cognition (EC), which is the theory that the physical basis of mind includes not only the entire nervous system and the body that supports it, but also a person's engagement with the world through activity in the world. Alva Noë, citing "evidence that the brain gives rise to consciousness by *enabling an exchange* between the person or animal and the world," (my italics) says

> What emerges . . . is a new conception of ourselves as expanded, extended and dynamic. . . . Where do you stop, and where does the rest of the world begin? There is no reason to suppose that the critical boundary is found in our brains or our skin. (Noë, 2009:67–68)

Someone might object to this on the ground that even if the "real base" of consciousness is such a larger nexus, it is still "physical" and so the problem remains. What the critic is missing here is the term "dynamic." Rockwell speaks of such a dynamic system as a "behavioral field" involving environmental interactions, time, and energy (Rockwell, 2007:86). This kind of system is of a different order than that of the brain by itself. McGinn's point is well-taken: Consciousness would somehow be *located* in such a dynamic system, which perforce overlaps with multiple other such systems and may extend over a very wide field in space–time. In such a scenario the concepts of "cause" and "location," and even perhaps the concept of "physical basis," may well be irrelevant to the issue or at least in need of revision. (A fundamental problem of the sense-data theory is that it excludes the role of *action in the world* from its concept of cognition and substitutes a kind of passive observer, i.e. the philosopher sitting at his desk looking at patches of color inside his brain.)

But it is not my purpose here to attempt to account for the way in which a dynamic interactive spatiotemporal system of this sort involves the existence of consciousness. The direction I am going is rather different. What I hope to make clear is the radical difference between McGinn's perspective and that of the proponents of a quite different line of thought exemplified by the nondualistic views of American Pragmatism and particularly the views of John Dewey, whose philosophy is a key inspiration for EC theory. To put it succinctly, it is more or less a waste of time to try to deal with McGinn's convoluted argumentation within his own frame of reference. The cards are stacked against you in advance. Really to understand what is going on one must move to a quite different frame, one which Dewey referred to refreshingly as the "open out-of-doors air and light of day" (Dewey, 1930).

McGinn's Conceptual Straitjacket

The actual cognitive closure involved in McGinn's epistemic mysterianism, I believe, is not the limiting factors which everyone might agree must exist for human knowledge relative to any given time and any given state of science. It is instead a closure resulting from the set of concepts which McGinn himself utilizes in adumbrating the problem and subsequently arguing that it cannot be solved. And this set of concepts is nothing new. It has persisted in philosophy, in science, in religion, and in the popular mind. McGinn is operating within a conceptual framework that might even be called a kind of "folk metaphysics." And what it is, is mind–body dualism.

McGinn himself agrees to this interpretation. He refers to the "conceptual dualism inherent in our introspective and perceptual concepts" (p. 21). He thinks dualism lies at the foundation of our consciousness, and by including *perceptual concepts*, he reveals that he believes there is an inescapable dualism here as

well. Indeed, the extreme subjectivism of the Russellian view of perception, to which McGinn subscribes, divides the perceiving subject from the world and puts perception and knowledge of a physical (outer) world into irreconcilably separate categories. All of McGinn's argumentation and conceptual structuring is characteristic of an underlying dualistic view of things. Not only does he not deny this, he relies entirely upon it in order to make his argument stick. So if it weren't for those darned neuroscientists with their mind–brain correlations, we would have no problem. We would just be dualists.

His resolution of this dilemma is to invoke cognitive closure and transcendental naturalism. *We* can never escape the dualism, but somewhere within another conceptual framework the existential problem of (3) must be resolved. With this I heartily agree; except that what appears to McGinn to be "transcendental" may not be so far away after all, as I will suggest momentarily and as may be implicit in his chapter on "Consciousness and Space."

Cognitive Closure and Hints of Rehabilitation

We have yet to look more closely at the general idea of cognitive closure, the subject of the last three premises. The fourth premise, that the human cognitive capacity has an absolute limit beyond which it cannot go, lies at the heart of McGinn's thesis. The notion of a limit to human knowledge is one which few would want to deny. Surely it is presumptuous to say there is no problem, now or in the future, that we cannot eventually solve. It is palliative to espouse a philosophical humility.

On the other hand, it seems to me to be equally presumptuous to assert without qualification that this or that problem is beyond some absolutely determined cognitive limit—except for one very important factor. For it turns out that premises (1), (4), and (5) really collapse into a single premise. The introspective knowledge by acquaintance of consciousness, in telling McGinn that his conscious states cannot be caused by the brain, and the sense-data analysis of perception, are seen by McGinn as establishing that a dualistic mindset is fundamental to human consciousness itself (p. 21). We can never escape it. So the argument is really something more like this.

(1a) Our knowledge by acquaintance of our own conscious states, and our analysis of the process of sense-perception, tells us that our concept-forming capability is fundamentally dualistic.
(2a) A fundamentally dualistic mind can never conceive of any nondualistic reality.
(3a) Therefore we can never solve the mind–body problem.

Even though in his view premise (1a) is pretty much self-evident, McGinn turns his attention from Bertrand Russell to Noam Chomsky in a somewhat different argument to support his thesis of cognitive closure. In his

chapter "The Problem of Philosophy" he outlines Chomsky's combinatorial view of language and argues that this implies an absolute limit to cognition. "Cognitive accessibility . . . turns upon the applicability of the combinatorial paradigm supplied by language" (p. 189). When a system begins with some pre-programmed set of principles (or units, or atoms), there must be a limit to the applicability of the possible combinations thereof. But Chomsky's ideas are also highly controversial, and in any case given (1a) the argument from Chomsky is unnecessary.

However, at this point McGinn offers a possible solution to the entire cobweb. He has held throughout, that despite our inability to conceive of how the brain can cause consciousness, the brain nevertheless does so. Therefore McGinn suggests two possibilities. The first of these is that the production of conscious states may lie hidden within "subconscious self-monitoring representations employed by the brain as it goes about its business." He kindly spares us the agony of having to cope with an explanation of whatever this means by saying it would take too long to expound. Instead he offers a second possibility. The ability of the brain to produce consciousness must be founded on the biological basis of life: the genetic code.

> Since . . . the genes work symbolically, by specifying programmes for generating organisms from the available raw materials, they must contain whatever information is necessary and sufficient for this feat of engineering. . . . They must, that is, specify instructions adequate for creating conscious states out of matter. (pp. 193–194)

In bringing up the gene possibility, McGinn is looking for a conceptual framework outside the ordinary capability of the human brain that will allow accounting for consciousness. He is suggesting that such a conceptual framework is somehow contained as information within the genes. He does not consider pushing the origin further back in evolutionary time. Genes, after all, have come from matter and energy over the course of cosmic evolution. So what is preventing us from speculating that the information necessary to create the consciousness-creating genes is not somehow embedded in the fundamental structure of matter (i.e. energy) itself? This may be thought of as implying some sort of panpsychism, but that is just a name at this point.

Another option however is implied by McGinn's discussion of "Consciousness and Space" (Chapter 5). In this chapter, which in my opinion is the very best chapter in the book, he undertakes an analysis of our conception of space, and of consciousness as being non-spatial. Within the common conception of space, "Clearly, the space of perception and action is no place to find the roots of consciousness!" (p. 112, his punctuation). His conclusion is that "we need, at a minimum, a new conception of space" (p. 105). McGinn is

asking for a paradigm shift, but because in his view that our consciousness is structurally dualistic he believes a paradigm shift of this order is impossible for human cognition (pp. 21–24).

It is significant that in speaking of space, McGinn only pays lip-service in a parenthetical afterthought to time (p. 113). But "the space of perception and action" perforce involves time. Contrary to his assumption that such a space is no place to locate consciousness, space *is* the place. A dynamic spatiotemporal field, or "behavioral field," is precisely where the proponents of EC theory *do* locate the roots of consciousness. Furthermore, the subjectivistic encapsulated ego implicit in the sense-data theory of knowledge is just what theorists such as Rockwell and Noë reject in favor of the notion of an "expanded, extended and dynamic" self. It is precisely *action*, and action in a spatiotemporal energetic field, that generates all our scientific knowledge in any case.[2] The move away from introspective, private perceptual space into the active space of scientific inquiry is what has generated our rapidly evolving cognitive capabilities and allowed us to solve problems such as those that Pyrrho, for example, thought could never be solved because of what appeared to him at the time to be an inherent limitation of our perceptual capacity.

Indeed, McGinn's speculation about information contained in the genes could equally be applied to Alva Noë's suggestion that the purpose of the brain is not to cause consciousness directly, but to allow for the higher-level interactions between persons and the world that make possible our cognitive capacity.

Long ago Dewey was calling for precisely the paradigm shift that McGinn is, in effect, asking for. Speaking of the gulf that under the dualistic paradigm separates *experience* and *nature*, Dewey wrote

> To many the associating of the two words will seem like talking of a round square. . . . I know of no route by which dialectical argument can answer such objections. They arise from associations with words and cannot be dealt with argumentatively. One can only hope in the course of the whole discussion to disclose the meanings which are attached to "experience" and "nature" and thus insensibly produce, if one is fortunate, a change in the significations previously attached to them. (Dewey, 1929/1958:1a–2a)

At this point, then, I leave it to the reader to decide which way may lead to a richer, more productive reality.

Stan V. McDaniel
Professor of Philosophy Emeritus
Sonoma State University

Notes

[1] Something like what McGinn suggests here is Ervin Laszlo's theory that memories are stored in the quantum vacuum by means of "quantum holograms" and are accessed by the brain (Laszlo, 2007).

[2]The earmark of contemporary scientific investigation is that it is collective in nature. Communication, peer review, experimentation are necessarily collective enterprises. In these enterprises various safeguards against self-centered egoism are accepted as de rigeur. A recent study documents the existence of collective intelligence among groups of people who cooperate well, showing that such intelligence extends beyond the cognitive abilities of the group's individual members (http://www.physorg.com/news205076011.html). McGinn's introspective conclusions would seem irrelevant and even false when considering this kind of collective cognition.

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Carl Sagan: A Biography by Ray Spangenburg and Kit Moser. Prometheus, 2009. 145 pp. $16.98. ISBN 9781591026587.

Arguably, Carl Sagan was the premier science popularizer in the world in the second half of the twentieth century. His monumental PBS TV *Cosmos* episodes were seen around the world by millions of people. He motivated countless young students to follow the sciences, and many important scientists today credit Sagan for inspiring them to make their careers in scientific fields such as astronomy, geology, and biology. Unfortunately, Carl Sagan died young, and the world lost his gift and pathos to explain the universe the way it is and not the way we wish it to be.

Several biographies have appeared describing his life, but I find the recent book *Carl Sagan: A Biography* by Ray Spangenburg and Kit Moser a concise, well-written, easy-to-read, and uncomplicated treatise of his life. The book correctly emphasizes Carl Sagan's two most important life questions, "Is there

life on other planets?" and "What is the rest of the solar system made of?" His research work took him from biology to physics and astronomy and contributed greatly in the quest of planetary exploration, he being a leader in many of NASA's early planetary missions.

His academic affiliations included the University of Chicago, where he received his Ph.D., Berkeley, Harvard, and from 1968 Cornell. At Cornell he did most of his productive work in laboratory experiments in exobiology and planetary exploration, as well as authoring several books and popularizing astronomy and space sciences. The author of this book review was Chair of the Department of Astronomy and Space Sciences at Cornell for most of Sagan's tenure until his untimely death in 1996. Sagan and I were close friends and colleagues, and I agreed with and applauded his efforts in science education.

In his youth Sagan was sympathetic to the claims of UFOs and wanted to find any evidence that would prove their extraterrestrial origins. He never did, and he remained a skeptic. Perhaps his greatest scientific work was to recognize that the planet Venus has a large greenhouse effect that keeps the surface of the planet at about 800°F, too hot to sustain life. He then turned his focus to the planet Mars, but the Mariner Mission that landed on Mars only showed a vast reddish desert. Prior to that Sagan was hoping to see the photos of Martians dancing in front of the Mariner cameras. Yet he was at once in front of the TV cameras providing exciting commentary to the public.

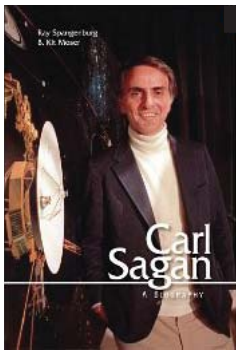
He enthusiastically participated in trying to send messages to other extraterrestrials by producing various messages, some attached to spacecraft such as Pioneer 1 and 2, which are now so distant that they have left the solar system.

The book also details the many discussions that Sagan had with other SETI (Search for Extra Terrestrial Intelligence) enthusiasts and describes how one can estimate the number of intelligent communicative civilizations in our galaxy. Our galaxy alone has some 200 billion stars—Sagan liked to emphasize that as "Billions and Billions of stars." Just based on probability arguments, we may not be alone in the galaxy. Today it would be appropriate to say "Billions and Billions of Galaxies."

His many TV appearances made him a celebrated public figure, but a trusted one.

In 1988 we hosted the Society for Scientific Exploration at Cornell University where the keynote speaker was Carl Sagan. He was an entertaining speaker, but had a strong message that the public needs to be skeptical about paranormal phenomena. He said extraordinary events need extraordinary evidence. Soon after, he published the important book *The Demon-Haunted World: Science as a Candle in the Dark*.

Later in life, working with his colleagues, he described "Nuclear Winter,"



the devastating scenario that could result from a global nuclear war that may bring the end of our civilization. He advocated an end to nuclear weapons. A global nuclear war will spread ashes in the earth's upper atmosphere, blocking sunlight for a long time and cooling the surface of the earth, preventing any food production.

Among his many books, in 1977 he published *The Dragons of Eden: Speculations on the Evolution of Human Intelligence*, where he explored the brain and how it evolved, a subject clearly connected to intelligent life on other planets. He was honored with the Pulitzer Prize for this work. Later in his career he also wrote a fiction called *Contact* (naturally to do with contact with another extraterrestrial civilization) that later became a successful movie.

This book on Sagan describes his private life in some detail with his three marriages and five children and makes it clear that he was most happy with his third wife Ann Druyan.

One shortcoming of the book is the abbreviated discussion on the PBS TV 13 episodes of *Cosmos*. There is little, if any, about the contents of the subject matter in this spectacular series that was Sagan's most important contribution to society. Yet the book gives an excellent account of Sagan's life and personality.

Yervant Terzian
Cornell University, Ithaca, New York
yt28@cornell.ed

La Télépathie: Recherches Expérimentales by René Warcollier. Préface by Charles Richet. Paris: Alcan, 1921. 363 pp. (63 figures). Free at http://books.google.com/books?id=XR5WAAAAMAAJ&printsec=frontcover&dq=La+Telepathie:+Recherches+Experimentales+by+Rene+Warcollier. Nabu, 2010. 394 pp. $33.75 (paperback). ISBN: 9781142292607.

Before presenting this work, a few words about the author and the context of his writings within the tradition of French psychical research or "métapsychique" (Richet, 1905). Born in 1881 in Ormonville-La-Rogue, on the northwestern coast of France, René Warcollier successfully combined two careers, as a chemical engineer and a "métapsychiste." Well before the creation

of the Institut Métapsychique International (IMI), he was in close contact with French psychical researchers and collaborated in the Review *Les Annales des Sciences Psychiques* (founded by Dr. X. Dariex and Professeur C. Richet in 1891). So, he had belonged to the small circle of scholars and scientists who, in 1919, founded the IMI in Paris. While he did not appear in the initial IMI Board, he soon became IMI treasurer and later editor of *La Revue Métapsychique*. From 1946 until 1950, he was IMI's vice-President, and from 1950 up to his death in 1962 he held the position of President.

Warcollier obtained a degree in chemical engineering in 1903, and became a brilliant and prolific inventor as well as head of a major corporation. His patents include the synthetic manufacture of artificial pearls and gemstones (sapphires, emeralds, and rubies), the first super-luminous cinema screen, and an original method for the extraction of potassium permanganate.

It is tempting to see in his early personal and professional interests in light and in the shimmering of colors (in precious stones and in images on a movie screen) the roots of his psychical research, which focused on the characteristics of visual mental imagery implicated in all its forms in telepathic communication. No doubt his attraction to visual impressions may have influenced his psi research and his focus upon cognitive processes, specifically in those underlying telepathic transmission of drawings.

His early colleagues and collaborators were illustrious figures in paranormal research, including Richet, Flammarion, Bozzano, de Vesme, C. Lombroso, Lodge, Maxwell, etc. Most of them were on the editorial committee of *Les Annales des Sciences Psychiques* and published regularly in it, such as Geley (1914) and Osty (1914), the later directors of IMI. Many of them were psychologists or physicians sharing a fascination for human abilities that appeared in association with somnambulism and hypnotism. In such states of consciousness, it was observed that individuals could mobilize and upgrade resources and reveal psychic capacities inaccessible in the ordinary awakening state. These functions were indeed well-described by Myers (1892, 1903) in his theory of the subliminal self. In addition, *Les Annales des Sciences Psychiques* was echoing the questions of survival and spiritualism (Bozzano, 1906) in line with mainstream SPR researchers.

Both personal psi experiences and intense curiosity contributed to the young Warcollier's strong involvement in psychical research. He wrote his first articles on the subject in *Les Annales des Sciences Psychiques* in 1905 and 1906 (Warcollier, 1905, 1906a, 1906b). Later, he made an analysis of the "fluid motor" device discovered by Count de Tromelin, which consisted of a paper cylinder suspended from its central axis by a needle, so that it is stable but easy to rotate. De Tromelin's experiment supposedly demonstrated that the cylinder could be moved at a distance by a hypothetical "fluid" emanating from human

hands. Warcollier's analysis was quite critical of this experiment, arguing that the movement could be attributed to ordinary thermal currents (1908). Three years later, he published an article entitled "Conditions expérimentales dans l'étude de la télépathie" (1911a), in which he critically discusses the theory of Usher and Burt, English researchers who had proposed a physical explanation for telepathy via some sort of waves radiating from the brain.

In fact, Warcollier had serious doubts about all theoretical models of telepathic phenomena, which relied on a supposed physical medium. He claims: "It is best to abandon any theory to deal only with facts and to study successively the experimental conditions."

Another article (Warcollier, 1911b), with reference to Duchâtel's study of psychometric cases, is about 52 psychometric experiments with four psychics that Warcollier co-organized with de Vesme from 1910 to 1911. According to Warcollier, misperceptions are due to contamination by the shape of the object, and the successes are the result of thought transmission. It emphasizes the extremely low number of successes and the considerable amount of errors and inconsistent results from one medium to another. Nevertheless, he sees in psychometry an interesting method to quantify paranormal perception.

His intuition about the importance and function of imagination on our body and mind led him to co-author (with Edmond Duchâtel) *Les Miracles de la Volonté* (Duchâtel & Warcollier, 1912), which presents a number of phenomena intensively studied in the nineteenth century, and still popular in the early twentieth century: auto-suggestion, collective hallucinations, dreams, materializations, thought photography, etc.

As we see, the cultural, theoretical, existential, and experiential background in which Warcollier evolved has three aspects: discoveries about psychology and the unconscious (Myers, Janet, and Freud), a strong passion for spiritualism and the question of survival, and finally a great interest in these enigmatic phenomena grouped under the name of métapsychique. All these subjects were regularly treated in *Les Annales des Sciences Psychiques.*

Because of his fundamental interest in the visual, Warcollier centered his research on the mental image. This fitted well with the ideas of his time and was directly or indirectly linked to the emerging disciplines of the period—including those dealing with the psychology of form and perception, and the psychology of the subconscious and the unconscious.

La Télépathie was actually already complete by spring 1914; but with the advent of World War I, Warcollier had to postpone its publication. It finally was published in 1921, two years after the foundation of the IMI. Warcollier writes in his short prologue:

> This research was practically entirely conducted in 1914. But, among the ru-

> ins of an epoch it seemed anachronistic to me. Those investigations were left behind, when I saw with surprise the public mind coming back to psychical research, even more eager than before the war, as if it distinguished there darkly the moving forces able to elevate Human being in its wholeness.

La Télépathie starts with a Preface from Warcollier's friend, Charles Richet, who says: "Here is a book of science, true science. Telepathy, which is one of the core chapters of the métapsychique, has been treated (here) very methodically, as a scientific monograph." Amid all other psychical phenomena, Warcollier chooses to present in this volume his long experience of more than ten years research on Telepathy (this word is used by him in its broadest meaning: transmission of sensations, thoughts, ideas, emotions, etc.). This work is dedicated to specific questions, questions that Warcollier intends to be scientific: What is telepathy? What are the mechanisms of transmission from agent to percipient, or from a group of agents to a group of percipients? "Lift every corner of the veil of the Universe . . . discovering in the darkest parts (of the psyche) the key to the enigma . . . exploring the depths of human thought" (p. XIII). These are some of Warcollier's proposals that had a high interest for him.

As a chemical engineer and as a scientist, he focused on the data, and the experimental surroundings under which these phenomena can be obtained, trying in a way to separate the pure telepathic transmission from the "noise ratio," i.e. what prevents a clear reception, by distortions or disturbances of the message. Like any learned man of his time and facing a relatively unexplored field of investigation, he collects the facts, sorts and categorizes them, and finally offers interpretations in which the "subconscious" and neurophysiology held a special place. He does not fail to note like Myers had already noticed (1903) that sleep or drowsiness has a positive role. From this point of view, and surprisingly for an engineer, Warcollier was very aware of contemporary theories of consciousness, perception, and memory.

The book is divided into three big sections and ten chapters.

The first section, devoted to spontaneous telepathy, begins with a review of inquiries on spontaneous telepathy (Chapter 1). Warcollier refers to the numerous cases collected by the SPR in England (reported in the voluminous book *Phantasms of the Living*, 1882) and in France by Camille Flammarion (1914). On the basis of a personal telepathic case (pp. 15–17), as well as the cases published in France and in England, Warcollier objects to the negative conclusions of Vaschide (1908) who discussed and denied the accuracy of some of these results. He then puts forth several conditions favoring the emergence of spontaneous telepathy, according to the percipient's or agent's states of consciousness (sleep or awareness).

In Chapter 2, Warcollier tackles the problem of unintentional telepathic transference. Establishing his argument on the psychological theories of memory of his time (Abramowski, 1914, Bergson, 1919, Janet, 1889), he postulates the unconscious origin of telepathy, noting that it can be expressed not only through words or images, but also through bodily sensations (pain in the heart, throat contractions, etc). Yet, he adds:

> To avoid the complication of involving the Intelligence or the subconscious will, admitted by Myers in *Human Personality* (1903), by Geley in de *L'Inconscient au Conscient* (1919), I prefer to accept the temporary hypothesis that the telepathic transmission occurs as light, heat, electro-magnetic waves or sound, in all directions. The section "collective hallucinations" in *Phantasms of the Living* (Gurney, 1886, 1891) allows admitting this. (pp. 38–39)

According to this model, Warcollier postulates that the psychic waves are produced by brain neurons, even if there is not a specific center of telepathic emission.

He then moves on, in Chapter 3, to a classification of mental images. Agreeing with the English authors (Gurney, 1886, 1891), he notices that in spontaneous telepathy we find more visual than auditory hallucinations (271 vs. 85). Even though clumsily, Warcollier, in these early writings, is already bringing up the probability of a link between unconscious memory and telepathy. He writes:

> We must admit, as a starting point, that the images which appear to the mind of the percipient under the form of hallucinations, dreams, or more or less well-formed images, spring exclusively from *his own mind*, from his own conscious or subconscious memory. *There is no carrying of the visual impression from the agent to the percipient*, anymore than there is actual carrying of a letter of the alphabet from the sending apparatus of a telegraph office to the receiving office. The transmission of the message consists in making the same letter of the alphabet *appear*, but it already exists at the receiving apparatus, along with the others, before the transmission takes place. (pp. 46–47, italics in original text)

The deployment of extrasensory messages is thus analogous to the recollection of repressed memories from the depths of memory: Representations and skills unavailable in the ordinary waking states of consciousness re-emerge through a kind of resonance between the telepathic message and memories.

Warcollier then classifies visual imagery according to its relevance and usefulness to spontaneous telepathy; he distinguishes nine types of imagery, ranging from those that are quite frequent for habitual states of consciousness, but of little use for the emergence of telepathic information, to those that are more likely to help the percipient receive a message: dreams, positive or negative illusions, hypnagogic and hypnopompic illusion, hallucinations.

Of course, to contemporary psychologists or parapsychologists this may seem to be obvious, but we must recall that we are talking about ideas developed between 1906 to 1914, by a chemical engineer who had devoted a large part of his life to psychical research.

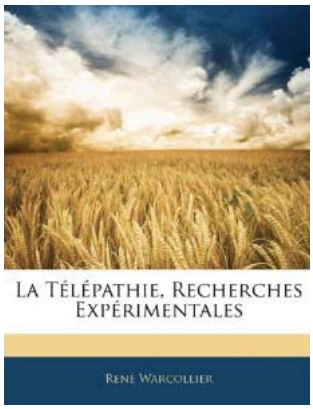
Following these chapters on spontaneous telepathy, Warcollier analyzes, in some detail, ways to provoke artificial imagery: stimulating the eye mechanically or electrically, utilizing magnets, crystal-gazing, and the action on nerve centers of alkaloids such as mescaline, or peyote (based on the work of Havelock-Ellis, 1898, and Rouhier, 1919).

In Chapter 5 he returns to spontaneous telepathy during the normal sleep state. Based on his own experiences, and experiences of friends and relatives, he seeks to outline differences between dreams that are mistaken as telepathic vs. those that most likely to be genuinely telepathic. Here's an example of one of his wife's telepathic dreams:

> One morning, when my mother came into our bedroom, my wife wakes up. She told us the following dream: She saw our housemaid introducing a young man in the house, and this man left the house about 2 a.m. During the day, my mother reminds me of this dream, which impressed her very much. In fact, a neighborhood person had warned her yesterday that the maid had brought a young man home. She never suspected the housemaid to whom we entrust the baby. Very moved by this news, she had been thinking about it all night and was so surprised this morning to hear my spouse telling her dream. We found that the maid had really brought into the house a butcher the previous day. (pp. 116–117)

Curiously, Warcollier concludes this section stating that dreams are "unfit to prove the existence of telepathy" although sleep is seen by him as a good state facilitating the emergence of extrasensory messages.

Starting with Chapter 6, the second section is dedicated to experimental telepathy. It begins with a description of transference and reception of so-called "daily telepathy," when for example two persons concomitantly express the same ideas. Warcollier gives a comprehensive summary of all possible experimental protocols exploring this kind of telepathy, including playing cards (Richet, 1884), automatic writing, dowsing, lottery balls (Schrenk-Notzing, 1891). Following a detailed analysis of positive and negative results obtained by each of them, he concludes: "Telepathy is not an intellectual power. . . . When intellectual activity is at its height, neurons communicate by contiguity: The lines are busy, according to the expression devoted in telephony" (p. 186). This is no doubt intended as a mere metaphor, rather than neurophysiologic reality, but Warcollier did attach much importance to the parallel between telephones and "mental radio," as did Sinclair (1930). Like other scientists of his time, he was fascinated and amazed by the technological prowess of the wireless



transmission. It is therefore normal that this model compels recognition for everything regarding the transfer of information from one mind to another or from one brain to another brain.

To illustrate telepathy during sleep-onset, he relates his early experiences, in 1906, trying to develop "inner vision" by observing his hypnagogic imagery (Chapter 7). This leads him to suggest how to develop paranormal capacities by relaxing mind and body. Then he makes a statistical and comparative analysis of his own results of seven trials, especially with Mr. Archat as an agent and Warcollier as a percipient. These series include short and long (790 Km) tests, from September 1906 to July 1907 (pp. 192–208).

The third section is devoted to an interpretation of the results. After contrasting his results with those obtained by Usher and Burt (1909) in their investigation of long-distance transmission of card symbols, he examines the different components of telepathic transmission: ideas, sensations, visual or kinesthetic feelings, numbers, concepts, states of mind, moods. He concludes that it is not the representations themselves that are transmitted, but rather the affective states associated with them. He describes characteristics of "positive" drawings, which could be good targets, such as those with contrast and strong feeling. This positive quality is related to the idea of movement and moods, in the drawing, as well as in the personality of the agent. In the same context, representations, which are too abstract, based on numbers, general concepts, and symbols, are considered to inhibit transmission and reception.

For Warcollier the *primum movens* of telepathy is the transmission of sensation and the possibility for the message to enter into resonance with images stored in the percipient's memory. The message sent by the agent emerges in the percipient's mind by successive waves, a process which is responsible for message fragmentation. As we said before, Warcollier argues against the hypothesis of direct transmission of the image, through some form of mental projection—viewing this as impossible as the transference of a "pure idea." He gives far more credence to the hypothesis of resonance, and attempts to illustrate this again by the physical phenomenon of sound waves and radio transmission. He concludes that "only the elements common to the agent and percipient" are transmitted, a bit like the vibrations from a tuning fork will vibrate in resonance to another tune. "No transfer of new knowledge occurs from the agent to the percipient, but rather an awakening, a phenomenon of resonance, vibratory

states similar or identical" (p. 288). In this context, distance between agent and percipient does not affect the transmission/reception of telepathy.

Warcollier points very often in this book to similarities and differences between TSF (wireless telegraphy) and radio waves: The latter are clear and direct, but sensitive to distance, while telepathic transmission is less direct, but independent of distance. He tries to analyze, through this approach, the case of Leonie, who was remotely hypnotized by Janet at a distance of two kilometers (in 1893).

Warcollier ends this chapter with reflections about the relationship between mind and matter, and expresses his intuition that the riddle of what is going on between agent and percipient will be resolved at the subatomic level.

In the next chapter, Warcollier summarizes the difficulties that may be encountered in telepathic transmissions. The frequently observed distortions of messages are due to the conditions of the experiment and the flow of free thought association in both the agent's and the percipient's minds.

Warcollier, who had extensive experience with telepathy, was able to pinpoint the conditions of its transmission, conditions opening the psyche of the agent and percipient to the subconscious, thus promoting access to the "subliminal self" of Myers who said that "the telepathic message generally starts from, and generally impinges upon, a subconscious or submerged stratum in both agent and percipient" (Myers, 1903(2):5). Among those facilitating conditions are the role of surprise, the hypnotic state, the focus of attention, the emotional aspect of the message, sympathy between senders and receivers.

Mentioning the works of Abramowski (1898) on paramnesia and Claparède (1903) on free association, Warcollier shows, in the Conclusion**,** that we find the same difficulties in experimental telepathy as in experimental psychology.

Against a spiritualist interpretation of telepathy, he shows the plausibility and efficiency of a hypothesis that telepathy is a phenomenon occurring between human minds. Speculating about the consequences of telepathy on groups and society, he concludes, in a very lyrical way:

> Telepathy is the natural law which we unconsciously obey when we seek to form groups, to assist one another, to join together. We communicate, we do not excommunicate. . . . We are the same man, I am you and you are me. Or to express it in modern terms, we are the electrons of the atom of Humanity. (p. 353)

I hope it is apparent by now that *La Télépathie* is an impressive work, a patient and sustained collection of cases, tests, hypotheses, and analyses, focused on both spontaneous and intentional telepathic phenomena. For the next forty years of his life up until his death in 1962, Warcollier continued his telepathy investigations—confirming, modifying, retracting, developing,

improving, and deepening his early and "anticipatory" visions, as expressed in *La Télépathie.* His elaborations on telepathic phenomena, through thousands of trials, contributed to a more comprehensive understanding of the process underlying the sending and the receiving of drawings.

Certainly, there were a number of conflicting or contradictory ideas in Warcollier's work: This is understandable, given the richness and complexity of the mechanisms he sought to describe over the course of several decades. But that notwithstanding, *La Télépathie* must be considered as a major precursor to the scientific investigation of this subject. Warcollier succeeded in establishing in this book the foundations for a psychological study of telepathic transmission of drawings. His research contributed to the recognition of telepathy as a clinical reality—so much so that he could propose an entire nosology, thus preparing the way for later researchers, whether scientists or (as he hoped) psychologists.

When he joined IMI in 1919, he naturally continued his investigations. In this Institute during this period between the two wars we find three personalities conducting psychic experiments over long periods of time: Gustave Geley (1919–1924), Eugene Osty (1924–1938), and Rene Warcollier (1921–1962). In the field of qualitative parapsychology, Warcollier rapidly became a figure as eminent as Rhine in the field of quantitative parapsychology. In 1922, after an appeal to 500 persons, he managed to obtain a stable and highly motivated group of 20 persons who agreed to participate in "methodical experimentation." They met regularly once a week for at least two years, participating in experiments that involved transmission of feelings, printed words, and playing cards, but above all of drawings. Then, Warcollier held a telepathic training group until the end of the 1950s.

During his psychology studies at the University of Colombia, Gardner Murphy (American psychologist and parapsychologist) had heard of Warcollier and his work and groups. In 1923, he decided to take advantage of a Congress of Psychology at Warsaw to meet René Warcollier in Paris. In his obituary of Warcollier, Gardner wrote: "I had the privilege and pleasure to read *La Télépathie*, by Rene Warcollier. It was obviously the important work in the field of experimental studies in telepathy" (1962). Their meeting was the beginning of a great friendship and long collaboration, through transatlantic telepathic experiments between New York and Paris. Thanks to Murphy, a part of *La Télépathie* and some articles (of the 56 published by Warcollier in *La Revue Métapsychique* between 1924 and 1962), were made available for the English-speaking world (Gardner, 1938, 1948, Warcollier, 1938, 1948).

He was also ahead of his time by situating telepathy within a functional model of memory, a model some parapsychologists use today to explain the ESP process (Irwin, 1979, Roll, 1966). Warcollier postulated a resonance between the message sent and subconscious information in the mind of the

percipient. This hypothesis introduced some difficulties for Warcollier, in the way he dealt with telepathic information and the role of feelings and emotions. It seems obvious today that strong affect has an impact on the transmission, which allows or distorts the contents of the message; Warcollier wanted to underestimate the role of affect in this dynamic of sending/receiving, devoting his attention to more "controllable" aspects, such as color, movement, contrast, etc. Indeed, the use of drawings in telepathic sessions generally allowed him to keep strong emotions at a distance.

Very soon in his career as a metapsychiste, his experimental method and what he found made Warcollier a pioneer who opened the way to further discoveries: His own he recounted in *La Revue Métapsychique*, as well as those of other parapsychologists. Some researchers today consider him as the *true father* of remote viewing, which owes many, if not most, of its techniques to his work, but also to others (Targ & Harary, 1984, Targ & Katra, 2001, Swann, 2001). Regarding the nature of the telepathic transmission (its essence, its substratum, or its *motus operandi*), Warcollier can only offer speculative assumptions. He was however an astute observer and has demonstrated a great relevance in the study of the emergence and deployment of message in the percipient mind and drawings. Similarly he could point out the conditions for this emergence and deployment and show the similarities between telepathy functioning and the psychology of perception.

In France, following Warcollier's work, Henri Marcotte (1977) has facilitated training groups in telepathy. Instead of drawings, Marcotte proposed stories and scenarios, introducing the time dimension. In parallel, he refined the techniques of transmission and reception. Following him, I went further by introducing in the group telepathic training (Si Ahmed, 1990, 2006), a psychoanalytic understanding of the dynamics and the processes involved in sending and receiving messages.

To end this review, I would like to quote Eileen Garrett: Warcollier "had never wavered from his preferred area of research, and current trends indicate a re-examination of the work in which he had been a pioneer" (1962).

Djohar Si Ahmed
Psychoanalyst, Holotropic Breathworker
ICLP, 15 rue Bargue, 75015 Paris, France
djoharsiahmed@orange.fr

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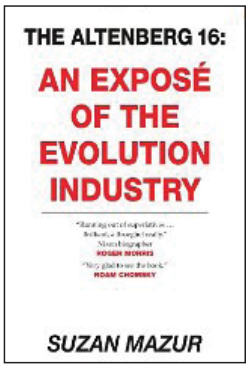
Further Books of Note

The Altenberg 16: An Exposé of the Evolution Industry by Suzan Mazur. Scoop Media (New Zealand), 2009; North Atlantic Books, 2010. 343 pp. $25 (paperback). ISBN 9781556439247.

This is a profoundly disappointing book. Its genesis is an article of March 2008 (which forms Chapter 2 of this book) breaking the news of an impending meeting of "16 biologists and philosophers of rock star stature—**let's call them 'the Altenberg 16'**—who recognize that the theory of evolution which most practicing biologists accept . . . is inadequate in explaining our existence."

That promised much, and when this followup book was announced I was eager to read it. Unfortunately, the book doesn't deliver on the article's promise. As a result, the author really has nothing useful to add to the article, and the book is replete with expressions of resentment that she was not invited to the actual meeting. Apart from the reprinted article, the book consists of interviews Mazur had at various times with some of those at the meeting and also with other evolutionists. Trivialities of email greetings are reproduced; there was apparently no effort to edit out irrelevancies. Nowhere are things pulled together to deliver a meaningful message. Chapter 7, "The One and Only Richard Lewontin," illustrates that there is actually nothing startlingly new going on.



Despite that, the book's Introduction suggests a major intellectual breakthrough: "the scientific community . . . knows that natural selection has little to do with long-term changes in populations. And that self-assembly and

self-organization are real, that is, matter can form without a genetic recipe." But nowhere does a lay reader discover what those "self-" things actually are, how they are supposed to work. And the official statement issued at the end of the conference (http://j.mp/a7yh0S) doesn't mention self- anything: It describes ideas for incremental improvements in esoteric details of the theory within which natural selection plays the same role as it has been said to do for decades; there is no abandonment or overthrow of a paradigm:

> The new concepts include (but are not limited to): evolvability, developmental plasticity, phenotypic and genetic accommodation, punctuated evolution, phenotypic innovation, facilitated variation, epigenetic inheritance, and multi-level selection.
>
> By incorporating these new results and insights into our understanding of evolution, we believe that the explanatory power of evolutionary theory is greatly expanded within biology and beyond.

I heartily dislike writing such negative reviews, but potential readers enticed by the hype, as I was, deserve to be forewarned.

Henry H. Bauer
Professor Emeritus of Chemistry & Science Studies
Dean Emeritus of Arts & Sciences
Virginia Polytechnic Institute & State University
hhbauer@vt.edu
www.henryhbauer.homestead.com

The Lost City of Z: A Tale of Deadly Obsession in the Amazon by David Grann. New York: Vintage Departures, 2010. 428 pp., illus., maps, refs., index. $15.95 (paperback). ISBN 9781400078455. Random House, 2009. $27.50 (hardcover). ISBN 9780385513531. [Review reprinted from *Pre-Columbiana: A Journal of Long-Distance Contacts,* 4(3&4), 2008–2010].

Col. Percy Fawcett (1867–ca. 1925) was the quintessential English amateur explorer of the first half of the twentieth century, a man of incredible personal toughness and persistence—and an impossibly exigent taskmaster, brooking no weakness from his subordinates in the field. He became fascinated by Spanish-colonial chronicles of the search for El Dorado in Northwest South America and was further stimulated by the American politician Hiram Bingham III's (1875–1956) 1912 rediscovery of the Incan "lost city" of Machu Picchu in Peru's

eastern Andes (Heaney, 2010). Having himself seen a manuscript in Brazil's National Library that spoke of a ruined city of stone near high mountains in the interior of the country, viewed in 1753, Fawcett was inspired to search for this reported mysterious abandoned settlement. He dubbed the supposed site "Z," and his quest to find Z occupied most of his middle years, ultimately leading to the loss of three lives: his own and those of one of his sons and the son's best friend.

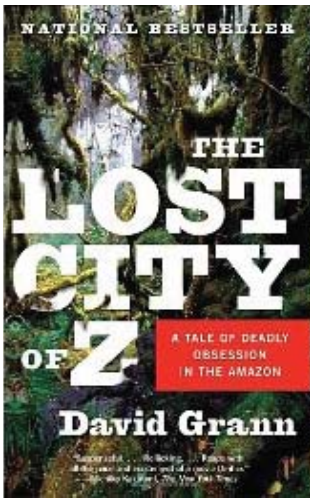
Fawcett's fascination with forgotten treasure had been first sparked by an experience as a young military man in Ceylon (Sri Lanka). There, a local man presented him with a treasure map that led him to seek a purported cache of uncut gems and gold hidden in a cave in the interior. Fawcett found the cave but nothing of interest in it; nevertheless, his fire had been ignited.

Fawcett served as a Lieutenant Colonel in combat during World War I, and after experiencing that conflict's horrors he took up Spiritualism. Two Spiritualist mediums assured him that Z existed and that the lost city was full of jewels. It may be noted at this point that Fawcett was a friend of H. Rider Haggard (1856–1925), the enormously popular author of fantastic adventure novels such as *She* (1887), which involved discovery of the lost African Kingdom of Kôr. Haggard's more famous novel, *King Solomon's Mines* (1885), involved the search for, and discovery of, the ancient Jewish monarch's fabled mines with their heaps of gemstones.

Fawcett clearly suffered from narcissistic personality disorder, with paranoid and delusional tendencies. Over time, his early efforts as a simple field surveyor and scientist along the Bolivian border were replaced by obsessive treks into Brazil's notoriously resistant Matto Grasso jungles. As his brutally difficult expeditions turned up no Z, and as he aged, Fawcett's initial vision of modest scientific investigation evolved into one focused on imagined treasures and then into one in which he perceived his elusive Z as being an Atlantean cradle of civilization and one of Theosophist Madame Helena Blavatsky's "White Lodges" where one could attain transcendence. (Beginning in the late twentieth century, Fawcett's handful of occult writings have aroused a number of cultic and individual seekers of this alleged magical portal.)

The New Yorker staff writer David Grann became intrigued by the Fawcett story, which had been a journalistic big deal at the time of the explorer's vanishing in back-country Brazil in 1925. A number of others had endeavored to ascertain what had ultimately happened to the Englishman during his final expedition, but all had failed. Grann decided to take up the task once again. He took into account the fact that Fawcett had deliberately falsified coordinates of his routes in order to prevent potential "claim-jumping."

In the 1950s, Fawcett's son Brian had flown over the area of his father's disappearance and had spotted a "stone city" on a ridge; but the "city" turned



out to be merely naturally eroded sandstone formations. On Grann's expedition decades later, that writer traveled northward from the Brazilian frontier settlement of Cuibá and then eastward into the upper Rio Xingú drainage, making local inquiries and following his reconstruction of the Fawcett route. At one point, he arrived at a plateau reminiscent of the mountain mentioned in the report of 1753. Atop, his guide showed Grann natural rock columns and a natural arch; these could have inspired the eighteenth-century tale of a ruined city.

The Kalapalo Indians of the region came to admit that they had killed Fawcett, his son, and the companion. But later they denied this, alleging instead that the party of Englishmen had gone on eastward from Kalapalo territory, toward the Rio das Mortes ("River of the Dead Ones"), a tributary of the upper Rio Araguaia. It was in these neighboring lands, occupied by hostile natives, that the killing had been perpetrated, now said the Kalapalo. At any rate, it seems clear that the Fawcett party was indeed murdered by Indians in this general part of Brazil, presumably without their ever having found Z or any other abandoned city.

Was there such a city out there? If one is thinking of a Machu Picchu–like community featuring monuments and dwellings in stone masonry, the answer is almost certainly no. However, large sites of human settlement involving extensive earthworks have, for decades, been coming to be recognized in regions of South America that earlier had been perceived as always having been sparsely populated by relatively primitive peoples. Such earthworks—ridged fields, canals, causeways, and mounds—were mostly in low-lying plains subject to periodic flooding and were difficult to detect on the forested ground. They were first recognized from the air, in the Mojos of eastern Bolivia, more than 40 years ago (e.g., Denevan, 1966, Mann, 2005:3–12). Remarkably, such works have also been discovered in the upper Xingú drainage (Grann, pp. 310–14, Heckenberger, 2005, Mann, 2008), particularly surprising in view of the fact that in post-1500 times that region has been a refugium for some of the most primitive tribes of the Amazon Basin. More recently still, vast areas of the upper Purús drainage of Brazil near the Bolivian border have been recognized as displaying huge, precisely geometrical, human-made, ditch-and-embankment "geoglyphs" as well as arrow-straight roads (Pärssinen, Schann, & Ranzi, 2009). These all are regions in or near which Fawcett explored; but, ironically,

he (like everyone else at the time) never recognized that he was traveling past striking manifestations of an advanced ancient culture.[1]

Notes

[1] These rainforest societies seem to have depended on raised fields in the flood-prone flats and, atop the bluffs, on the recently archaeologically recognized *terra preta do indio*, a dark, partially artificial soil that had resulted from past peoples' augmenting the natural low-nutrient lateritic soil with nutrient-absorbing charcoal and other organic materials.

Stephen C. Jett
Professor Emeritus of Geography and of Textiles and Clothing
University of California, Davis
scjett@hotmail.com

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Articles of Interest

Creation of a Bacterial Cell Controlled by a Chemically Synthesized Genome by D. G. Gibson, John I. Glass, Carole Lartigue, Vladimir N. Nosko, Ray-Yuan Chuang, et al., *Science, 329*(5987), July 2, 2010, 52–56.

Researchers led by J. Craig Venter (a pioneer in genome sequencing) recently published a landmark paper in the journal *Science*. While Dr. Venter himself was very precise when speaking about this advance in interviews, the popular press has claimed the "Creation of Life." It's important to discern

precisely what has, and has not, yet been accomplished. What the group did was to take the text of an entire bacterial genome, residing on a computer, and use this information to synthesize a long piece of DNA corresponding to this data sequence. They then took the DNA out of another bacterial strain, and instead put in the synthetic DNA they had made, showing that the resulting hijacked organism is viable, and, as expected, takes on the behavior of the donor bacterium as the host's proteins are replaced over time with the products of the newly inserted DNA. Alongside the numerous tricky practical details that their work had to overcome to make the procedure work, the major advance here is the ability to create a whole, functional genome, from scratch, using the information contained on a computer.

The ability to construct working genomes from a computer-stored sequence is hugely important. This proof-of-principle application paves the way to the near future where genetic material is readily manipulated by computer-aided tools in silico, and then produced as real DNA for use in real organisms. While the former is already routine, the latter will really take off when the arduous steps described in this *Science* paper are inevitably encapsulated into a turnkey system that can make any arbitrary DNA sequence of genome-length. This is somewhat analogous to the ability to manipulate text in a word processor and print it out as books, or define mechanical parts in a computer-aided-design software package and download the information to a 3D printer to have them manufactured for use in the real world.

As important as this advance is, it is not creating life. First, the genome used (stored on the computer) was not designed from scratch—it was obtained by sequencing an existing organism (the donor bacterium). Second, the genetic material was inserted into an existing cell, with all of its unimaginable complexity of physiological processes necessary to interpret the DNA and carry out its instructions to perform the functions of life. The fundamental efforts of workers in this field are akin to reverse-engineering a complex artifact arriving from an advanced civilization. We are learning about how the information and matter–energy streams of living systems work, but are not yet at the point of building everything from first principles. The advance is similar to finding a set of alien supercomputers, and figuring out how to copy the software from one, store it on a disc, make minor changes to remove/add a few pieces of known function, and download it to another of their computers. A superb advance no doubt, but not yet equivalent to writing the code oneself, or building one of the advanced machines in our own workshops.

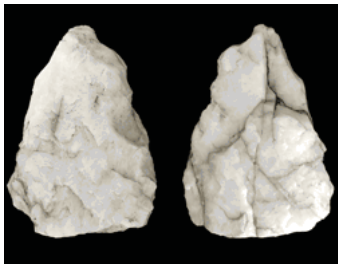
Richard Feynman said that we really only understand something when we can make one ourselves. Thus, the two fundamental hurdles which must still be pursued are 1) the ability to put together an organism from scratch—not merely rearranging and making minor edits to an existing genome, but

rationally designing the contents of the genome to produce an organism with desired functionality, and 2) the ability to assemble an environment within which a piece of DNA can be anything more than "static code"—to make a cell that can read, and carry out, DNA. Both of these (especially #2) are well beyond current possibilities, facing important (but likely not insurmountable) barriers of technology and fundamental limits imposed by complexity theory and dynamical systems theory (chaos). Truly creating life requires the ability to understand and manipulate the genetic and epigenetic information networks that control biological systems, and the capability to put together "devices" of astounding complexity in three-dimensional space. While existing living beings are operated by genetic material that is the result of the progressive tinkering of evolutionary processes, a fundamental shift in the biosphere will result from the ability to rationally design information sequences that can be carried out by a massively parallel distributed system such as the cell and give rise to predictable (and desired) behavior. Pursuit of these efforts will enable fascinating advances in basic biology and unimagined advances in biomedicine.

Michael Levin
Biology Department, Tufts University
Suite 4600, 200 Boston Ave., Medford, MA 02155-4243
michael.levin@tufts.edu

Bon Voyage, Caveman by Brendan Borrell. *Archaeology 63*(3), May/June, 2010, 9, 54.

In recent years, a revolution has been taking place in our understanding of the antiquity of the use of seagoing watercraft on the part of humans—not only behaviorally modern *Homo sapiens* but also more primitive species of hominens. Archaeology and genetics now support the scenario that groups of *H. sapiens* were moving out of Africa and along the southern coasts of Asia by boat before 70,000 years ago, reaching Australia in but a matter of a few millennia. Up until recently, the earliest known clear traces of human presence on Mediterranean islands such as Crete was about 12,000 years ago. Now, however, that date has been pushed back 117,000 years.



This quartz hand-ax, which was left on the island of Crete between 130,000 and 700,000 years ago, shows that pre-modern humans boated across open seas. (Photo: Thomas Strasser)

Stone hand axes, scrapers, and cores found on Crete are Acheulean in style, representing types of tools that are associated with *sapiens* predecessor *Homo erectus*. Geological dating puts the manufacture of these tools at no less than 130,000 years ago, with the possibility (on the basis of style) that they may be as much as 700,000 years old. To reach Crete, a minimum water crossing of 64 kilometers (40 miles) of open sea would have been required, strongly suggesting use of watercraft. Flores, Indonesia, furnishes even older evidence of *H. erectus* waterborne travel, at circa 840,000 years ago. To make the crossing from the closest other Indonesian island, *erectus* would have required either watercraft or a freak accidental drift on a natural raft of vegetation. The fact that many non-human creatures did not cross Wallace's Line, the first maritime water gap on the way from the low–sea-level Asian mainland to Flores, makes the accidental drift hypothesis less likely (Strasser, Panagopoulou, Runnels, Murray, Thompson, et al., 2010).

Stephen C. Jett
Professor Emeritus of Geography and of Textiles and Clothing
University of California, Davis
scjett@hotmail.com

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