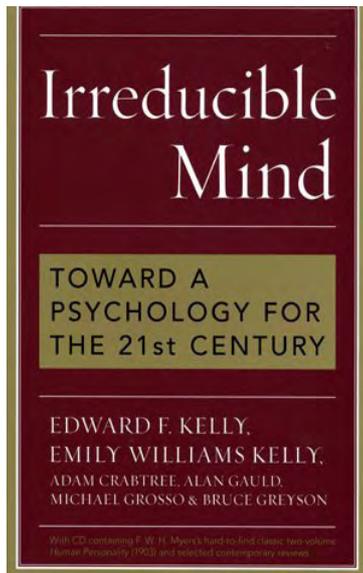


## BOOK REVIEW



Edward F. Kelly, Emily Williams Kelly,  
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and Bruce Greyson

*Irreducible Mind:*  
*Toward a Psychology for the 21st Century*

Lanham, MD: Rowman & Littlefield  
November 2006, 800 pp.  
ISBN: 0742547922

Includes a CD-ROM<sup>1</sup> containing *Human Personality and Its Survival of Bodily Death* by F. W. H. Myers.

*Reviewed by Ulrich Mohrhoff*

Current mainstream opinion in psychology, neuroscience, and philosophy of mind holds that all aspects of human mind and consciousness are generated by physical processes occurring in brains. *Irreducible Mind (IM)* demonstrates – empirically – that this reductive materialism is not only incomplete but false. The authors of this extensively researched and exhaustively referenced volume marshal evidence for a large variety of psychological phenomena that are extremely difficult, and in many cases clearly impossible, to account for in conventional physicalist terms. The authors further show that these rogue phenomena are more readily accommodated by an alternative “filter” theory of mind/brain relations advanced over a century ago by F. W. H. Myers and developed further by his friend and colleague William James.

The authors hope to catalyze nothing less than the emergence of a mainstream psychology that no longer systematically ignores many large bodies of evidence that are deeply relevant to the most central and abiding human concerns. In the interest of effectively promoting this sea-change, they have crafted their book for advanced undergraduate and early-stage graduate students of psychology, neuroscience, and philosophy, hoping to reach them before they suffer the “hardening of the categories,” that ubiquitous disease of aging academics. The book is nevertheless accessible to anyone who is sufficiently intelligent and educated, seriously interested in its subject matter, and willing to

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<sup>1</sup> This CD-ROM uses the proprietary Microsoft Reader e-book format (which Microsoft doesn't support any longer). LIT files can be converted with the open-source tool Convert Lit [↗](#).

make the necessary effort. It should command the attention of all open-minded persons concerned with the still-unsolved mysteries of the mind.

Unsurprisingly, given the scope of their project, the authors missed their original deadline — 2003 — by a full three years. That year was the centennial of the publication of *Human Personality and Its Survival of Bodily Death* (*HP*), the posthumously published work of a largely forgotten genius of scientific psychology, F. W. H. Myers. This undeservedly neglected classic was deeply admired by William James and other leading scholars of that period. In fact, much of James's later work, including *Varieties of Religious Experience* and *A Pluralistic Universe*, can be viewed as the systematic application of Myers's central theoretical ideas to problems in religion, epistemology, and metaphysics.

Myers was born at Keswick, England, in 1843, went up to Cambridge University in 1860 and lived in Cambridge until his death in 1901. In 1865 he was appointed to a fellowship and lectureship in classics at Cambridge, which he held until 1869. After the passage of the Education Act of 1870, he began work in 1872 as a government school inspector, and in 1875 he was appointed school inspector for the Cambridge District, a position he held for the next 25 years. Like many of the intellectual leaders of the mid-19th century, Myers rejected the Christianity in which he had been raised. However, the assumption that mind is a byproduct of purely material processes seemed to him just as gratuitous. To examine it along novel lines of empirical research, Myers helped found the Society for Psychical Research (SPR) in 1882, whose founders and early members included such prominent scientists and intellectual leaders as Arthur and Gerald Balfour, W. F. Barrett, W. E. Gladstone, Sir Oliver Lodge, Lord Rayleigh, John Ruskin, F. C. S. Schiller, Henry and Eleanor Sidgwick, Balfour Stewart, Lord Tennyson, and J. J. Thomson.

For the first two decades of the SPR's existence, Myers was one of its most active investigators and prolific writers. His model of human personality, which he began to formulate in the early 1880s and then presented in detail in the 1890s, became the theoretical framework for psychical research and remained so for decades.<sup>2</sup> Aldous Huxley (1961), comparing *HP* to better-known writings on the "unconscious" by Freud and Jung, justly wondered: "How strange and how unfortunate it is that this amazingly rich, profound, and stimulating book should have been neglected in favor of descriptions of human nature less complete and of explanations less adequate to the given facts!"

In *HP*, Myers wrote: "The truest success of this book will lie in its rapid supersession by a better" (*HP*, vol. 1, p. 9). By this criterion, *HP* was not a success, for it took 103 years to be

2 To dispel concerns about Myers's scientific qualifications, it suffices to quote from William James's review of *HP*: "I am impelled to say a word about this matter of Myers's 'scientific' ability. Reading him afresh in these two volumes, I find myself filled with an admiration which almost surprises me. The work, whatever weaknesses it may have, strikes me as at least a masterpiece of coordination and unification. The voluminous arsenal of 'cases' of which the author's memory disposes might make the most erudite naturalist or historian envy him, and his delicate power of serially assorting his facts, so as to find always just the case he needs to fit into a gap in the scheme, is wholly admirable. He shows indeed a genius not unlike that of Charles Darwin for discovering shadings and transitions, and grading down discontinuities in his argument."

superseded by *Irreducible Mind*.

What follows is a chapter-by-chapter summary of *IM*, with quotations of some highlights. Only while reviewing the last chapter do I need to raise a critical voice. Having demonstrated that the currently dominant physicalist theories of mind-brain relations are inadequate in principle, the authors make mention of their next project, beyond the intended scope of *IM* — that of finding an *adequate* theory of mind-brain relations. In this effort they appear to seek inspiration from A. N. Whitehead and present-day process philosophy, maintaining (i) that James’s unfinished program of constructing a metaphysical system grounded in experience of all forms “was taken up and integrated with developments in 20th Century physics” by Whitehead, and that the direction in which Whitehead was moving was “fundamentally consistent with the ontological implications of quantum theory.” What the authors mean by “the ontological implications of quantum theory” are the well-intentioned but misguided speculations of Berkeley physicist Henry Stapp. By taken their cue from process philosophy and by giving these speculations pride of place in a chapter entitled “Toward a Psychology for the 21st Century,” they do themselves a disservice, or so I will argue.

## Chapter 1

The first chapter of *IM*, written by Edward F. Kelly, provides relevant background in cognitive psychology and highlights the inability of the views currently prevailing in the field to account for important aspects of mind and consciousness. Having accepted John Searle’s critique of computationalism as thorough and devastating, Kelly then points out the inadequacies of Searle’s own biological naturalism. To this end he and (in subsequent chapters) his co-authors survey the entire body of evidence for psi phenomena. Here is how Kelly *et al.* express their attitude toward this still controversial subject:<sup>3</sup>

The irrational incredulity that remains characteristic of mainstream scientific opinion in this area seems to us a remarkable anomaly that will provide abundant and challenging grist for the mills of future historians and sociologists of science. Sufficient high-quality evidence has long since been available, we believe, to demonstrate beyond reasonable doubt the existence of the basic “paranormal” phenomena, at least for those willing to study that evidence with an open mind. (*IM*, p. xxvi)

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3 The anti-psi polemic recently advanced by philosopher Nicholas Humphrey (1996) is particularly startling: “Throughout his book Humphrey alludes to a supposed killer argument that he will later deploy to demonstrate the impossibility of psi. When we finally get there (Chapter 26), the argument turns out to be that he cannot imagine any possible scenario under which ostensible psi effects could be achieved by some combination of known physical mechanisms. Therefore the reported effects cannot and do not happen, Q.E.D. But whether we like it or not, such effects do happen, as a matter of empirical fact. . . That is the whole point, and what makes the phenomena theoretically interesting in the first place! Humphrey’s ‘argument’ amounts in my opinion to little more than an expression of his deeply felt wish that the phenomena should simply go away. In this he is of course adopting a strategy that has been widely practiced by contemporary scientists and philosophers.” (p. 30)

## Chapter 2

The second chapter (by Emily Williams Kelly) summarizes the theoretical and empirical contributions of Myers to the investigation of the mind-body relation. His huge body of published writings is essentially an elaboration of the view that certain phenomena of psychology, particularly of abnormal psychology and psychical research, demonstrate that human personality is far more extensive than we ordinarily realize. According to Myers, our normal waking consciousness (which he calls the *supraliminal* consciousness) amounts to a relatively small selection of psychological elements and processes from a more extensive consciousness (which he calls the *Subliminal Self*), and the biological organism, instead of producing consciousness, limits and shapes ordinary waking consciousness out of this larger, mostly latent, Self.

In Myers's view, evolution has a subjective element from the start. It began with an undifferentiated sensory capacity, which

possessed the power of responding in an indefinite number of ways to an indefinite number of stimuli. It was only the accident of its exposure to certain stimuli and not to others which has made it what it now is. And having shown itself so far modifiable as to acquire these highly specialised senses which I possess, it is doubtless still modifiable in directions as unthinkable to me as my eyesight would have been unthinkable to the oyster. (Myers, 1889, p. 190)

Myers conceives of evolution as tending toward "constantly widening and deepening perception of an environment infinite in infinite ways" (*HP*, vol. 1, p. 96). That environment itself does not evolve, nor are "the specialised forms of terrene perception. . . real novelties in the universe, but imperfect adaptations of protoplasm to the manifestation of the indwelling general perceptive power" (*HP*, vol. 1, p. 118). For Myers, what was to be understood was not only the processes and stages by which the "general perceptive power" emerged but, in the first place, how it came to indwell.

All human powers, to put the thing broadly, have somehow or other to be got into protoplasm and then got out again. You have to explain first how they became implicit in the earliest and lowest living thing, and then how they have become thus far explicit in the latest and highest. All the faculties of that highest being, I repeat, existed *virtually* in the lowest, and in so far as the admitted faculties are concerned the difference between my view and the ordinary view may be said to be little more than a difference as to the sense which that word *virtually* is here to assume. (*HP*, vol. 1, p. 118)

Psychological anomalies, accordingly, come in two basic varieties — *evolutive* and *dissolutive*:

in studying each psychical phenomenon in turn we shall have to inquire whether it indicates a mere degeneration of powers already acquired, or, on the other hand, "the promise and potency" if not the actual possession, of powers as yet unrecognised or unknown. (Myers, 1885, p. 31)

Myers describes the evolution of consciousness as a process in which, in response to environmental demands, we become "more and more awake." Sleep is a reversion to an earlier stage of development, and "as sleep precedes vigilance, so do dreams precede

thought” (Myers, 1892, p. 363). It is therefore only logical that Chapters 2, 3, and 4 of *HP* (entitled “Disintegrations of Personality,” “Genius,” and “Sleep”) should be primarily concerned with these topics. Along with those of the remaining chapters (“Hypnotism,” “Sensory Automatism,” “Phantasms of the Dead,” “Motor Automatism,” “Trance, Possession, and Ecstasy”), they are extensively reconsidered in subsequent chapters of *IM*.

In his review of *HP*, William James (1903) wrote,

Myers’s theory, so far, is simple enough. It only postulates an indefinite inward extension of our being, cut off from common consciousness by a screen or diaphragm not absolutely impervious but liable to leakage and to occasional rupture. The “scientific” critic can only say it is a pity that so vast and vaguely defined a hypothesis should be reared upon a set of facts so few and so imperfectly ascertained.

Kelly *et al.* aim to carry Myers’s project forward in the context of relevant substantive and methodological achievements of the intervening century, and in this they succeed admirably. It becomes clear the relevant facts are no longer “so few,” and that a significant fraction of them are by now anything but “imperfectly ascertained.” Many of Myers’s observations have been powerfully confirmed, reinforcing the need for a theory of human personality which — like his — encompasses the full range of human experience.

### Chapter 3

The third chapter (also by Emily Williams Kelly) first reviews a number of familiar and readily reproduced phenomena demonstrating the influence of mental states on the body. It then moves from the level of commonly occurring global or systemic effects to phenomena of the more localized, dramatic, and uncommon sorts. As the chapter progresses, conventional biological terms become progressively strained, and in extreme cases the conventional approach breaks down altogether, because the brain and body demonstrably lack output mechanisms capable of producing the observed effects.

The sections and subsections of this chapter are as follows: Psychosomatic Medicine • Psychoneuroimmunology • Mind and Disease (Bereavement and Mortality; Sudden and “Voodoo” Death; Possible Mechanisms Behind Psychological Factors in Mortality) • Mind and Health (Postponement of Death; Religion and Health; Meditation and Healing; Faith Healing; Placebo and Nocebo) • Specific Physiological Changes Appearing Spontaneously (Sudden Whitening of Hair or Skin; False Pregnancy; Stigmata; Hysteria; Multiple Personality and Dissociative Disorders) • Specific Physiological Effects Induced Deliberately (Yogis) • Specific Physiological Changes Induced by Hypnosis (Autonomic Effects; Sensory Effects; Hypnotic Analgesia; Skin Conditions: Healing; Skin Conditions: Induction of Bleeding, Blisters, and Markings; Attempted Explanations of Hypnotic Skin Marking and Related Phenomena) • Changes in Another Person’s Body (Spontaneously Occurring Phenomena; Distant Mental Influence on Living Systems; Birthmarks and Birth Defects in Cases of the Reincarnation Type) • Conclusion

What follows is a sampling of the more striking cases discussed in this chapter. In the section dealing with the placebo effect we find the following account of a case reported

by Klopfer (1957, pp. 337-339):

[A] patient who was clearly near death from lymphosarcoma learned that his hospital was to participate in studies of a promising new drug, Krebiozen. Although he did not qualify for the study because he was so close to death, he was so insistent on receiving the drug that his doctor agreed. Within three days of his first injection, he was up and walking, and his “tumor masses. . . were half their original size.” In 10 days he was discharged, and he continued in “practically perfect” health for two months. At this time, he began to see in the media conflicting reports about the drug; as a result, “he began to lose faith. . . [and] relapsed to his original state.” His doctor decided to tell him not to believe what he had read because there was an improved, stronger version available, and “with much fanfare” he gave him an injection — this time, of water. The patient again recovered, the results “even more dramatic” than before, and the water injections were continued for another two months. When, however, the patient learned that further studies had shown the drug to be worthless, he almost immediately declined again and died within days.

The section on hypnotic analgesia contains the following report of an operation performed under hypnotic analgesia:

I performed one of the most severe and protracted operations in surgery. . . I put a long knife in at the corner of [the patient’s] mouth, and brought the point out over the cheekbone, dividing the parts between; from this, I pushed it through the skin at the inner corner of the eye, and dissected the cheek back to the nose. The pressure of the tumour had caused the absorption of the anterior wall of the antrum, and on pressing my fingers between it and the bones, it burst, and a shocking gush of blood, and brain-like matter, followed. The tumour extended as far my fingers could reach under the orbit and cheekbone, and passed into the gullet — having destroyed the bones and partition of the nose. . . The man never moved, nor showed any signs of life, except an occasional indistinct moan. (Esdaile, 1846, p. 148–149)

The patient later “declares most positively” that he remembers nothing of what has been done to him. Here is how T. X. Barber (1963, pp. 306–308) purports to explain hypnotic analgesia:

[He] has often formed a close relationship with the physician-hypnotist and would like to please him or at least not to disappoint him. . . [He] is aware that if he states that he suffered, he is implying that the physician’s time and energy were wasted and his efforts futile. . . this may at times be sufficient for him to try to inhibit overt signs of pain such as moaning, wincing, or restlessness.

It seems hardly necessary to point out the utter insufficiency of such “explanations” for cases like the above. Kelly adds:

Perhaps those who suggest that the pain is not as severe as we might imagine, or explain hypnotic analgesia in terms such as “role-playing” or “bravely” hiding their pain, would be willing to test their theories by submitting themselves to removal of a tooth, amputation of a leg, or probing of an exposed sciatic nerve without chemical anesthesia. The juxtaposition of Esdaile’s report and Barber’s explanation should demonstrate unequivocally the danger of relying too heavily, when theorizing about these or any other phenomena, on laboratory experiments divorced from real-life situations.

In the section on healing of skin conditions, Kelly quotes the biologist and physician Lewis Thomas (1979), who looked on phenomena such as hypnotic healing of warts as “one of the great mystifications of science”:

[it is] hardly enough for the mind to say, simply, get off, eliminate yourselves, without providing something in the way of specifications as to how to go about it. . . it wouldn't do to fob off the whole intricate business on lower centers without sending along a quite detailed set of specifications.

Thomas concluded that there must be a “Person in charge,” a “kind of superintelligence in all of us” that knows how to do this, one that is “infinitely smarter and possessed of technical know-how far beyond our present understanding.” Hence

there ought to be a better word than Unconscious, even capitalized, for what I have, so to speak, in mind. I was brought up to regard this aspect of thinking as a sort of private sanitarium, walled off somewhere in a suburb of my brain, capable only of producing such garbled information as to keep my mind always a little off balance. But any mental apparatus that can reject a wart is something else again. This is not the sort of confused, disordered process you would expect at the hands of the kind of unconscious you read about in books, at the edge of things making up dreams or getting mixed up on words, or having hysterics. (Thomas, 1979, p. 59)

The type of “Unconscious” that Thomas has in mind is precisely what Myers meant by his notion of a Subliminal Self. One of the central issues Myers was addressing was the problem of volition, and he specifically suggested that, just as it had been a mistake to identify mind with that portion of it of which we are aware, so it might be a mistake to limit volition to the supraliminal part of the total spectrum of consciousness. Volition should instead be considered the function of an individual's mind as a whole. A hypnotic suggestion is effective because the larger subliminal intelligence “carries out the idea as well as it can, unhindered by the mistakes or clumsiness of the conscious mind” (Myers, 1886, p. 448).

Phenomena suggesting that mental activity in one person can produce physiological effects in another person clearly contradict the prevailing materialist conception of the mind-body system as a closed biological unit. They are thus unacceptable to, and dismissed by, most contemporary scientists, even though the evidence for them is in many cases as good as or better than the evidence for many other psychophysical phenomena which they do accept. As Kelly explains,

[t]he latter phenomena are currently more acceptable precisely because most scientists presume that they are at least potentially explainable within the prevailing conceptual framework of biological materialism. This presumption, however, is demonstrably unsound. Certain extreme psychophysiological phenomena that occur on a within-person basis. . . lie beyond the reach of current neurophysiological understanding, and seem likely to remain so. Yet these more extreme forms of psychophysiological influence, however unusual, are continuous with the many “lesser,” or more commonly encountered, forms catalogued in this chapter. This continuity thus casts doubt back on the conventional “explanations” for these lesser forms themselves, raising the question of how correct, complete, or adequate they in fact are. Moreover, these conventional ex-

planations, as we have seen throughout this chapter, are in fact typically not explanations at all, but at best redescriptions of the phenomena in vague biological terms, based on equally vague assumptions of mind-brain unity. We have, in short, not even begun to understand how an idea generates a physiological response, whether in one's own body or in another person's body. (*IM*, p. 238))

This continuity between the "lesser" forms of psychophysical influence and the more extreme forms suggests that we may not be able to understand the former without understanding the latter, in keeping with Wind's (1967) principle according to which "the commonplace may be understood as a reduction of the exceptional, but the exceptional cannot be understood as an amplification of the commonplace."

## Chapter 4

The fourth chapter of *IM* (by Alan Gauld) surveys the accomplishments and limitations of conventional approaches to memory. With regard to good old-fashioned memory traces (GOFMTs), Gauld's conclusion is that

while synaptic changes may well in many or all instances be essential to enabling conditions for the formation of memories, no full or adequate account of memory can be given in terms of the replaying of such stored traces of past events. And the proposed GOFMTs have nothing to say about such key questions as the "intentionality" of memory and the relations between concept possession and memory. Some recent writers, sensing these problems and aware of the decidedly fluctuating relations between memory processes and patterns of events in the brain, have. . . developed more dynamic and holistic views of the neural underpinnings of memory. But these views, even though no doubt an advance on GOFMTs, still offer us little enlightenment on intentionality, concept possession, and the precise role of synaptic changes, and do not as yet help us understand how it can be that the same memory can be supported by activity centering now in one brain region and now in another.

There is a good deal of evidence to indicate that normally the formation of memories is closely linked to minute structural and broader functional changes in the brain, mediated or initiated in some way by activity of the hippocampus and allied brain structures. However,

beyond this we know far less than most people imagine. We have very limited theoretical understanding of how, especially in the human case, the various changes and activities that take place in the brain during explicit remembering relate to conscious memory as we routinely experience and express it. The brain-based coding/storage/retrieval model that most contemporary workers accept without hesitation as the foundation of their efforts confronts widely ignored but very significant difficulties. Although the mainstream view of memory as purely a matter of brain function has for most persons hardened into a dogma that cannot be questioned, in my view it does not merit that status. It remains essentially a neurophysiological myth, appealing and widely shared and woven around an impressive collection of empirical findings, but unproven. . . the evidence adduced in support of this view consists for the most part simply of facts that may be harmonized with it if you already happen to think it true. (*IM*, p. 280)

To solve the problem of inner representations in conventional physicalist terms, one has

to take on three tasks. (i) One must devise a theory of inner representations that does not presuppose interpreters knowledgeable enough to comprehend them (i.e., homunculi equipped with concepts and memories). (ii) One must embed this theory in an overall account of brain functioning. (iii) One must so arrange things that a representation is not merely located in the brain but capable of acquiring phenomenal character and being put to use. "Alas, neither I nor anyone else, so far as I know or can judge, can find any way whatever of accomplishing these tasks, or at least any way that amounts to more than a mere neuroscientific fairy tale." (*IM*, p. 256)

The conceptual and empirical difficulties in modern memory work suggest to Gauld that a fuller understanding of human memory may ultimately require some radical change of perspective, and that some of the odd facts collected by Myers and his colleagues may have a bearing on such a change. These odd facts consisted principally (though by no means entirely) of detailed studies of "mediums" through whose organisms or by means of whose peculiar sensibilities the departed could allegedly communicate with the living. Since Myers's time, one further large and important category of evidence has been added, namely, the investigations by Stevenson and his collaborators of numerous cases of young children who, more or less from the time they begin to speak, ostensibly recall previous lives.

Conventional interpretations of the proposed "evidence for survival" mostly fall into one of three broad and rough categories:

- 1 Interpretations confining themselves to "normal" factors such as wishful thinking or fraud.
- 2 Interpretations that postulate "supernormal" factors not including survival of the pre-mortem personality. The most-discussed of such interpretations is the "super-ESP" hypothesis which has it that evidence for the survival of someone's memories is to be attributed to supernormal or psychic abilities, sometimes necessarily of enormous scope, exercised by or between persons still living.
- 3 Interpretations in terms of the post-mortem survival of the memories and character, or recognizable fragments or aspects thereof, of the formerly living individual concerned.

Explanations of the first kind carry us a long way, but they will not, in Gauld's opinion (based on a fair amount of practical experience and a considerable acquaintance with the literature), cover all cases.<sup>4</sup> Nor does Gauld lend credence to explanations of the second kind:

I find it difficult not to suppose that some of [these ostensible manifestations of post-mortem memory] are in varying degrees somehow linked to the original person (in ways we do not understand, but not to be thought of in terms of extant records and memo-

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4 It is regrettable that a solid number of really puzzling and carefully investigated cases has been overwashed by a sea of inferior evidence with which the popular market has been flooded in recent years.

rabilia, the effects of pre-mortem deeds, memories lingering in the minds of the still-living, or “super-ESP” directed on all or any of these). At any rate, whatever the best explanation of the best cases may be, I can see no satisfactory means of explaining them away. (*IM*, p. 297)

But if post-mortem survival of memories is a fact, then the purely brain-based mainstream approach to memory must necessarily fail. On the other hand, a functional memory is normally strongly dependent in some way on a working brain. What this confluence of discordant observations suggests to Gauld is that

we need to reconceptualize the nature of the linkage between memory and the brain in some fundamentally novel way. In this dilemma, the fact that we have rejected the conventional answers to the problem of memory and brain has certain advantages. It frees us to pursue less conventional lines of attack on the problem, lines which among other things may one day conceivably help to clarify how we should best interpret the ostensible evidence for survival after death. (*IM*, p. 298)

What are these lines of attack to be? Gauld lists several features “that any viable account of human declarative memory in relation to brain function (also of course any viable account of ‘intentional’ mental phenomena in general) will eventually turn out to have.” One of the them is that

[i]t will be a “top down” rather than a “bottom up” theory. That is to say, it will be a theory which proposes that the elements of a system sometimes act in conformity with laws characterizing the system as a whole and not derivable from the interactions of its elements. These principles (unlike the laws of neurochemistry or the quasi-computational rules of much cognitive psychological theorizing) might be described as emerging from or supervening upon interactions of the elements, not, one should emphasize, on a moment-by-moment basis, but gradually over time and having something like the status of psychophysical laws in part tailored to each individual. (*IM*, p. 298)

## Chapter 5

The topics of the fifth chapter (by Adam Crabtree) are psychological automatism and secondary centers of consciousness. Myers categorized psychological automatism under two heads: passive and active, or sensory and motor. Motor automatism included automatic writing,<sup>5</sup> automatic speaking, automatic drawing, and use of the Chevreul pendulum. Sensory automatism included apparitions, hallucinations, dreams, anesthetics, automatically manifested creative productions (such as literary or musical compositions), most hypnotic phenomena, as well as “idiot savant” performances. What all psychological automatism had in common was that they arose from some unknown inner conscious intelligence. Hence their close association with the subject of multiple personalities.

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5 James (1889) described a case in which the writer, with his face the whole time buried in his elbow on the side away from his writing, first writes out an entire page without lifting the pencil from the paper, and then goes back and dots each *i* and crosses each *t* “with absolute precision and great rapidity” (p. 44).

The following case appears to have been the first recorded instance of more than one center of consciousness operating at the same time in an individual.

William James (1889) himself described this case in an article on automatic writing. It concerned a woman, Anna Winsor, who had been under the care of a Dr. Ira Barrows of Providence, Rhode Island, from about 1860. The doctor's record of the case began when she was 19 and continued for several years. He described outbreaks of bizarre behavior and fits of self-destructive violence that made it impossible for the young woman to live a normal life. Shortly after he had begun treating Anna, Barrows noted a peculiar change. Her right arm suddenly became painful and then fell limp at her side. At the same time she looked at the arm in amazement, believing that it belonged to someone else and that her own right arm was drawn up behind her along her spine. Her right arm proved to be completely insensitive to pricking and other tests applied to it. Anna considered it a foreign object and a nuisance. She believed it was an arm and hand, but not hers. She also considered it intelligent and an intruder and tried to drive it away by biting it, pounding it, and pricking it. She called it "Stump" and "Old Stump."

The right arm did indeed appear to be governed by a secondary intelligence. When Anna in her delirium tried to pull her hair (with her left hand), Old Stump stopped her. Old Stump, whose intellectual development seemed more advanced than that of Anna, also wrote poetry, some of it partially in Latin (of which she "has no knowledge" [p. 553]), produced messages ostensibly from deceased individuals, made drawings, and communicated in writing with those around her — all while Anna was asleep or doing other things and not seeming to notice what Old Stump was up to. Barrows stated that when Anna was raving, Old Stump was rational, asking and answering questions in writing. Also, Old Stump seemed never to sleep, but watched over Anna during the night, seeing that she remained covered and rapping on the headboard to awaken Anna's mother when Anna experienced spasms or other problems. (*IM*, p. 315–316)

After discussing Myers's views on automatism and related views of some major contemporaries (Pierre Janet, William James, Morton Prince, T. W. Mitchell, William McDougall, Sigmund Freud, and Carl Jung), Crabtree turns to more recent work on automatism and multiple personalities by Ernest Hilgard and by Stephen Braude. Particularly noteworthy is Braude's analysis of the reasons for accepting the notion of a unifying self beyond multiplicity, which for Crabtree provides one of the most persuasive arguments to date for the reality of Myers's Subliminal Self.<sup>6</sup> Although Braude's supporting data are drawn principally from the experiences of individuals with multiple personality disorder (now more generally called dissociative identity disorder), "the same conclusions could be reached from a similar examination of the production of hypnotic personalities and other secondary personalities of automatism" (*IM*, p. 340).

Crabtree holds that cognitive psychology, having embraced a one-consciousness view of

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6 Myers (1887, p. 260) considered it erroneous to think that the analysis of personality into many components means that there is no ultimate unity behind it. He insisted on the clear distinction between "Individuality" or "Self" — "the underlying psychical unity" which he postulated "as existing beneath all our phenomenal manifestations" — and "personality" or "self," by which he meant the "more external and transitory" chains of memory, including the ordinary supraliminal self, as well as the potentially infinite number of selves that may be formed from "the elements of our being" (Myers, 1892, p. 305; 1888, p. 387).

mental functioning, is essentially unable to deal with the data of psychological automatism. “Many cognitive theorists have an almost superstitious fear of the notion of ordinary consciousness itself, and if they are so spooked by this ‘ghost in the machine’. . . they respond to the possibility of secondary centers of consciousness as to a veritable band of demons” (*IM*, p. 346). Which is why

[w]e have hardly begun to look at how multiple conscious centers manifest concretely in ongoing human life, an undertaking that was already well underway at the beginning of the 20th century. We have yet to carry out the serious and thorough examination of the whole spectrum of human experience that Myers and James said was so sorely needed, paying attention to phenomena that today, as at that time, remain unpopular to establishment science. (*IM*, p. 348)

Between the formation of the SPR in 1882 and his death in 1901, Myers and his colleagues published in their *Proceedings* and *Journal* something over 10,000 pages of reports on supernormal phenomena, including not only extended field observations with mediums and heavily documented studies of spontaneous cases, but early attempts to study telepathy and kindred phenomena experimentally and quantitatively. “The industry, thoroughness, and care manifest in these publications is unsurpassed in any scientific literature known to me,” writes Gauld, echoing James (1910, pp. 304-305): “were I asked to point to a scientific journal where hard-headedness and never-sleeping suspicion of sources of error might be seen in their full bloom, I think I should have to fall back on the *Proceedings of the Society for Psychical Research*.” Further hundreds of articles, monographs, and books written with similarly high standards were published during the same time period in continental Europe and the United States.

One of the great contributions of *Human Personality* is that it distills this enormous mass of material into an orderly, coherent, and accessible scheme of presentation. The book itself is thickly documented with case reports and summaries of observations, and it repeatedly refers the reader to other reports, additional documentation, and more detailed reports on the same or related subjects. This vast literature, to which *Human Personality* itself is only an introduction, remains an unrivaled archive of information with which anyone who intends to render judgment on the phenomena must become familiar. Collectively it provides impressive — and in my view, compelling — evidence for the reality of supernormal phenomena. Any serious examination will dismiss this literature at its peril. (*IM*, p. 353)

In the remainder of the chapter Crabtree discusses the connections between automatisms and supernormal performances and abilities.

The physiologists who originally developed the notion of automatism were struggling to explain, among other things, the subjective descriptions of the creative process given by some of the greatest literary and musical masters, who spoke of their productions as sometimes coming to them fully formed, as though they had been fashioned in some hidden workshop by artists unknown. These historical geniuses described feelings of not being part of the process that produced their greatest works, acting more like scribes than anything else. (*IM*, p. 354)

Myers suggested that genius should be regarded as a power of utilizing a wider than nor-

mal range of faculties that in some degree are innate in all — “a power of appropriating the results of subliminal mentation to subserve the supraliminal stream of thought” (*HP*, vol. 1, p. 71). He described the “inspiration of genius” (Meyers’s own quotes) as

a subliminal uprush, an emergence into the current of ideas which the man is consciously manipulating of other ideas which he has not consciously originated, but which have shaped themselves beyond his will, in profounder regions of his being. I shall urge that there is here no real departure from normality. . . but rather a fulfilment of the true norm of man, with suggestions, it may be, of something supernormal; — of something which transcends existing normality as an advanced stage of evolutionary progress transcends an earlier stage. (*HP*, vol. 1, p. 71)

The subject of genius is further developed in Chapter 7.

## Chapter 6

The sixth chapter (by Emily Williams Kelly, Bruce Greyson, and Edward F. Kelly) deals with the so-called near death experiences (NDEs) and related phenomena. There is no universally agreed on definition of NDEs, but they are generally understood to be the unusual, often vivid and realistic, and sometimes profoundly life-changing experiences occurring to people who have been either physiologically close to death, as in cardiac arrest or other life-threatening conditions, or psychologically close to death, as in accidents or illnesses in which they feared they would die. Recent studies suggest that NDE-like experiences may occur in about 10–20% of patients close to death. The following is a quite typical experience from the authors’ collection at the University of Virginia, reported by a woman who was in surgery after suffering massive pulmonary emboli:

Some time after entering the operating room, I found myself above the scene looking down on myself, and the doctors and nurses around me. I could, of course, hear everything they were saying, and I wanted to tell them not to feel so bad, that I couldn’t stand the pain any more and I liked it where I was. I was somewhere where it was so beautiful and peaceful that I wanted to stay there forever. I did not actually see anyone I knew, or anything in particular. There was a bright, but soft light, and I felt the most comforting sense of peace. Suddenly I thought “Ben [her husband] can’t possibly bring up Molly alone; I had better go back,” and that is the last thing I remember. I am absolutely positive that I decided to come back. Since that time I have no fear of dying. (*IM* p. 370)

Frequently recurring features in NDEs include

feelings of peace and joy; a sense of being out of one’s body and watching events going on around one’s body and, occasionally, at some distant physical location; a cessation of pain; seeing a dark tunnel or void; seeing an unusually bright light, sometimes experienced as a “Being of Light” that radiates love and may speak or otherwise communicate with the person; encountering other beings, often deceased persons whom the experimenter recognizes; experiencing a revival of memories or even a full life review, sometimes accompanied by feelings of judgment; seeing some “other realm,” often of great beauty; sensing a barrier or border beyond which the person cannot go; and returning to the body, often reluctantly. (*IM*, p. 372)

Most near-death experiencers are convinced that during the NDE they were temporarily separated from their physical bodies, and therefore that they may also survive the more permanent separation at death. It comes as no surprise that there have been numerous attempts to explain NDEs in terms of conventional biochemical or neurobiological mechanisms, acting either alone or in conjunction with other putative mechanisms. The inability of any one conventional physiological or psychological hypothesis to account for all NDEs, or even all features of NDEs, has led many researchers to propose theories that combine psychological and physiological mechanisms *ad lib*.

The need, however, for increasingly complicated and composite explanations, together with the lack of an adequate empirical foundation for any of them, has led us to suggest that we should not rule out categorically that NDEs are essentially what many experiencers think they are — namely, evidence that they have temporarily separated from their body and, moreover, may survive the permanent separation that occurs at death. . . . When each is examined alone and in isolation, the features [of NDEs] may seem potentially explainable by some psychological or physiological hypothesis, despite the paucity of supporting evidence. When several features occur together, however, and when multiple layers of explanation must be added on *ad hoc* to account for them, these explanations become increasingly strained. (*IM*, p. 391–392)

A recent analysis of cases in the authors' collection showed that 48% of the respondents reported seeing their physical bodies from a different visual perspective, and many of them reported witnessing events going on in the vicinity of their body, such as the attempts of medical personnel to resuscitate them.<sup>7</sup> Another challenge to ordinary psychological or physiological theories of NDEs comes from cases in which experiencers report that, while out of the body, they became aware of events occurring at a distance or that in some other way would have been beyond the reach of their ordinary senses even if they had been fully and normally conscious. The greatest challenge, however, lies in accounting for one central feature that in the authors' opinion makes NDEs uniquely important in any contemporary discussion of the mind-brain problem: the occurrence of vivid and complex mentation, sensation, and memory under conditions in which current neuroscientific models of the mind deem conscious experience of any significant sort impossible.

The stark incompatibility of NDEs with current models of mind-brain relations is particularly evident in connection with experiences that occur under two conditions — general anesthesia and cardiac arrest. In both of these situations much more is at issue than the mere incompatibility between the characteristics of the mentation that occurs and the physiological conditions under which it occurs.

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7 Sabom (1982, pp. 87–115) interviewed 32 patients who reported NDEs in which they seemed to be watching what was going on around their body. Most were cardiac patients who were undergoing cardiopulmonary resuscitation (CPR) at the time of their NDE. Sabom also interviewed 25 “seasoned cardiac patients” who had *not* had an NDE during their previous cardiac-related crises. He asked them to describe a cardiac resuscitation procedure as if they were watching from a third-person perspective. Among all these patients, 80% of the “control” patients made at least one major error in their descriptions, whereas *none of the NDE patients made any*.

[T]he current mainstream doctrine of biological naturalism has coalesced neuroscientifically around the family of “global workspace” theories. Despite differences of detail and interpretation, all of these theories have in common the view that the essential substrate for conscious experience. . . consist of synchronous or at least coherent high-frequency (gamma-band, roughly 30-70 Hz) EEG oscillations linking widely separated, computationally specialized, regions of the brain. An enormous amount of empirical evidence supports the existence of these mind-brain correlations under normal conditions of mental life, and we do not dispute this evidence. The conventional theoretical interpretation of this correlation, however — that the observed neuroelectric activity itself generates or constitutes the conscious experience — must be incorrect, because in both general anesthesia and cardiac arrest, the specific neuroelectric conditions that are held to be necessary and sufficient for conscious experience are abolished.

## Chapter 7

The first topic covered in the next chapter (written by Edward F. Kelly and Michael Grosso) is the “savant syndrome,” in which islands of sometimes spectacular ability appear in the midst of otherwise generalized and profound disability. In addition to prodigious calculators, there are prodigious mechanical, artistic, and musical savants, all of whom characteristically display narrow but deep attention coupled with extraordinary memory. Treffert (1989), echoing Penfield (1975), acknowledges misgivings as to whether the brain alone can provide the full answer. Both Treffert and Sacks (1987) are skilled clinicians with long and first-hand experience of the savant syndrome, and both remain openly awed by it.

Equally awe-inspiring are the intuitions or inspirations that impel the genius. William Blake wrote his prophetic poem *Milton* from immediate dictation, sometimes twenty or thirty lines at a time, without premeditation and even against his will. The distinguished mathematician Jacques Hadamard (1949, p. 8) has this report:

One phenomenon is certain and I can vouch for its absolute certainty: the sudden and immediate appearance of a solution at the very moment of sudden awakening. On being very abruptly awakened by an external noise, a solution long searched for appeared to me at once without the slightest instant of reflection on my part — the fact was remarkable enough to have struck me unforgettably — and in a quite different direction from any of those which I had previously tried to follow.

This is how Thomas Wolfe (1952, p. 187) describes the onset of the process that generated three enormous novels in 4½ years:

It seemed that I had inside me, swelling and gathering all the time, a huge black cloud, and that this cloud was loaded with electricity, pregnant, crested, with a kind of hurricane violence that could not be held in check much longer; that the moment was approaching fast when it must break. Well, all I can say is that the storm did break. It broke that summer while I was in Switzerland. . . It was exactly as if this great black storm cloud. . . had opened up and, mid flashes of lightning, was pouring from its depth a torrential and ungovernable flood. Upon that flood everything was swept and borne along as by a great river. And I was borne along with it.

Nietzsche (1952, pp. 202–203) recounts in similarly extreme terms how he was “invaded” by *Thus Spake Zarathustra*.

[S]omething profoundly convulsive and disturbing suddenly becomes visible and audible with indescribable definiteness and exactness. One hears — one does not seek; one takes — one does not ask who gives: a thought flashes out like lightning, inevitably without hesitation — I have never had any choice about it. . . There is the feeling that one is utterly out of hand, with the most distinct consciousness of an infinitude of shuddering thrills that pass through one from head to foot; there is a profound happiness in which the most painful and gloomy feelings are not discordant in effect, but are required as necessary colors in this overflow of light. There is an instinct for rhythmic relations which embraces an entire world of forms. . . Everything occurs quite without volition, as if in an eruption of freedom, independence, power and divinity. The spontaneity of the images and similes is most remarkable; one loses all perception of what is imagery and simile; everything offers itself as the most immediate, exact, and simple means of expression.

A chapter on genius would be incomplete without an account of the extraordinary and well-documented life of the modern mathematical genius Srinivas Ramanujan:

There were no recognizable mathematicians in Ramanujan’s family, and he received only a patchy formal training in the course of a generally unhappy educational experience in the schools of his native south India. Nevertheless, between the ages of 16 and 26, ignited by what amounted to little more than a dry compendium of some 5000 known mathematical equations, this largely self-taught prodigy managed not only to recapitulate single-handedly a sizeable fraction of the history of Western mathematics but to generate an astonishing volume and variety of novel results in number theory as well. Discovered in 1913 by the distinguished British mathematician G. H. Hardy, Ramanujan continued this prodigious outpouring until his untimely death in 1920 at the age of 33. Some of his most important theorems have already taken decades to prove, and his crammed notebooks will continue to occupy mathematicians for generations to come. His work has found application in areas as diverse as blast-furnace design, manufacture of plastics and telephone cables, cancer research, statistical mechanics, and computer science. On Hardy’s informal scale of natural mathematical ability, on which most of us would rate close to a 0 and Hardy placed himself only at 25, the magnificent David Hilbert ranks an 80, and Ramanujan stands all by himself at 100. (*IM*, p. 488)

In the second part of the chapter Kelly and Grosso discuss the manner in which scientific psychology subsequent to Myers has dealt with such matters. The computational theory of mind in its classical symbol-processing form scarcely touches these subjects at all, with one exception — analogy.<sup>8</sup> Two leading exemplars of recent analogy work are the structure-mapping theory of Gentner (1983), implemented primarily in the form of a “structure-mapping engine” (SME), and the “multiconstraint” theory of Holyoak and Thagard (1995), implemented primarily in the form of their “analogical constraint mapping engine”(ACME). Like many other AI projects, SME and ACME engender a strong

8 Most of the remaining work involves attempted computer simulations of processes of scientific discovery, musical improvisation, or the creation of simple stories, poems, and the like. The authors of these various programs have been widely faulted for setting things up in advance in such a way as to make their “discoveries” inevitable, a criticism with which Kelly and Grosso largely agree.

“ELIZA” effect.<sup>9</sup> And according to Douglas Hofstadter, who with his “Fluid Analogies Research Group” (FARG) has pursued a radically different and highly innovative approach to analogy, that’s about all there is to these projects (Hofstadter & FARG, 1995). SME and ACME are in reality “hollow,” semantically empty; they operate entirely syntactically, in terms of the forms employed in the notation. To underscore this last point, Hofstadter suggests replacing all English words and expressions of the original notation with letters or numbers. In that case everything would work exactly as before, except that the specious atmosphere of meaningfulness would be dispelled.

Kelly and Grosso regard Hofstadter’s critique of these high-level analogy programs as fair, thorough, and devastating. If meaning cannot successfully be captured by standard forms of high-level symbolic cognitive architecture, how then are we to deal with it? Hofstadter believes that he has the answer, and that his radically different approach salvages the fundamental connectionist faith that “human cognitive phenomena are emergent statistical effects of a large number of small, local, and distributed subcognitive effects with no global executive” (Hofstadter & FARG, 1995, p. 291). Here Kelly and Grosso concur with Hofstadter only in that “the question ‘what is a concept?’ could be said to lie at the crux of cognitive science, and yet concepts still lack a firm scientific basis” (Hofstadter & FARG, 1995, p. 294).

Whereas Hofstadter claims that his own analogy-problem solving program *Copycat* can survive the label-substitution test which SME and ACME fail, Kelly and Grosso argue that the claimed contrast is superficial, and that Hofstadter’s reasoning is specious. Like SME and ACME, *Copycat* itself “knows” nothing, and the problems of meaning and intentionality in knowing subjects remain unsolved. “Cognitive science has a serious ‘inattentive blindness’ problem, we believe, and meaning is the unseen gorilla in the room” (IM, p. 492).

All attempts to explain genius as a completely rule-bound process conflict with a deep intuition, shared by many, that genius is inherently creative; by definition, it breaks old rules and makes new ones, and this neither at random nor according to “metarules”<sup>10</sup> but in service of a deeper fidelity. Kant (1951, p. 150) put the point most clearly: “genius is a talent for producing that for which no definite rule can be given; it is not a mere aptitude for what can be learned by a rule. . . Genius is the talent (or natural gift) which gives the rule to art.”

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9 ELIZA is a computer program by Joseph Weizenbaum, designed in 1966, which parodied a Rogerian therapist, largely by rephrasing many of the patient’s statements as questions and posing them to the patient. Named after a working-class character in George Bernard Shaw’s play *Pygmalion*, who is taught to speak with an upper class accent, ELIZA worked by simple parsing and substitution of key words into canned phrases. The illusion of a human correspondent was sometimes so convincing that some people became emotionally caught up in dealing with ELIZA for several minutes before the machine’s true lack of understanding revealed itself. The ELIZA effect is people’s tendency to attach meanings to words which the computer never put there.

10 “[T]here can be no rules for ‘creatively’ violating rules” (Black, 1990, p. 55).

Having demonstrated (i) the inadequacy of all existing computational models and (ii) “our persisting inability even to recognize, let alone explain, the ubiquitous phenomena of intentionality, seeing-as, and insightful grasping of meanings as central aspects of human mental life,” the authors return to Myers’s conception of genius as successful cooperation between supraliminal and subliminal forms of mentation, which has been strongly confirmed by subsequent research, with significant ramifications even for contemporary mainstream cognitive science.

For Myers the subliminal realm has a complex hierarchical organization marked by successively higher levels of integration, each with its own characteristic functional properties. Myers pictures the subliminal tentatively and broadly as comprising three such levels: The lowest involves the “minimal psychic concomitant, whatever that may be” (*HP*, vol. 1, p. 74), of bare vegetative functions as well as mechanical effects due to habit, adaptation, stimulus inputs that escape conscious detection, and the like. A middle region, the “hypnotic stratum,” is associated with automatisms such as the dissociative phenomena of hysteria and deep hypnosis, but it also supplies the content of ordinary dreaming, daydreaming, and imagining and is the source of the “mythop[oe]ic” function, an incessant “strange manufacture of inward romances” (*HP*, vol. 2, p. 130). The deepest region is the least known and hardest to describe, but is above all the locus of various forms of supernormal contact with the outside world, including both psi phenomena and the intuitions and inspirations of genius. (*IM*, p. 431)

For Myers, as mentioned, genius is “evolutive.” It represents the norm of the future, a condition of enhanced psychic integration. Ordinary supraliminal perceptual and cognitive processes reveal only relatively superficial aspects of a far wider and deeper environment, mostly unknown, in which we are continuously immersed. The subliminal reaches further into this complex reality and can report what it finds using its own characteristic modes of symbolic expression. Genius provides means for discovery of this hidden environment. Evolution consists “not only of gradual self-adaptation to a known environment, but of discovery of an environment, always there, but unknown” (*HP*, vol. 1, p. 95). This process of discovery leads to progressive mobilization of faculties initially latent in the subliminal, including faculties (such as telepathy) which Myers believed cannot be regarded as products of ordinary Darwinian evolution. “Man is in course of evolution,” Myers wrote, and “it may be in his power to hasten his own evolution in ways previously unknown” (*HP*, vol. 1, p. 23).

## Chapter 8

“No philosophy of human personality is worth very much unless it takes full account of the data of mystical experience,” H. H. Price (1954, pp. 52–53) wrote. So far modern mainstream psychology has had comparatively little to say about what is arguably the most extraordinary of all human experiences. The central aim Chapter 8, also by Kelly and Grosso, is to help restore the topic of mystical experience to its proper place in the foreground of a worthy scientific psychology. Traversing the enormous worldwide literature pertaining to mysticism in a selective and focused manner, the authors marshal evidence and argument demonstrating the deep consistency of mystical experience with the ex-

panded scientific naturalism pioneered by Myers and James and advocated throughout *Irreducible Mind*.

Having described the principal psychological characteristics of mystical experience, Kelly and Grosso respond to the “constructivism” of Steven Katz (1978), which has become dominant among contemporary scholars in comparative religion. Katz and his allies seem to be driven by an unexamined a priori commitment to the relentless “postmodernism” that abhors absolutes and universal narratives of any kind. On their view,

if one is a Christian one necessarily has a distinctively Christian experience, a Taoist’s experience will be structured by Taoist assumptions, a Jew can never escape from the shaping power of his Jewish upbringing, and so on. There can therefore be no ultimate type or universal core of mystical experience, independent of factors such as time, context, gender, race, and culture. There is only a multiplicity of distinctive, culturally conditioned states of consciousness. (*IM*, pp. 511–512)

Kelly and Grosso believe, and argue persuasively, that this doctrine is seriously flawed, both psychologically and philosophically. The central objective of mystical teachings and practices everywhere is to overcome conditionings and attachments of everyday life that get in the way of mystical receptivity. The great systematizer of Yogic practices Patanjali, for example, defines Yoga succinctly as “inhibition of the modifications of the mind” (Taimni, 1972, p. 6). Mircea Eliade (1958) characterizes these practices as processes of systematic deconditioning resulting in “rebirth to a nonconditioned mode of being” (p. 4). This “rebirth,” moreover, constitutes “one of India’s greatest discoveries: that of consciousness as witness, of consciousness freed from its psychophysiological structures and their temporal conditioning” (p. xx). The ultimate goal of Yogic training, in short, is specifically to overcome the conditionings that keep us culturally and psychologically bound, and that prevent us from experiencing what we can become in a deconditioned state. The same principle is also evident in the various forms of Buddhism.

Several related observations further undermine the alleged causal potency of cultural conditionings in shaping all details of mystical experience. There is first an abundant historical record. . . of tensions resulting from the tendency of mystical experiences as actually lived to break through the crust of local ecclesiastical culture. Happold (1970, p. 249), for example, points to Sufism as a prime example of this tendency; indeed, several Sufi mystics are known to have been put to death for heresy after reporting their unitive experiences with unguarded candor and enthusiasm. Meister Eckhart got into trouble with the Catholic Church for similar reasons. . . At a lower level one can find many instances of the phenomenon of “redogmatization” (Neumann, 1970) in which a mystic’s initial report is subsequently altered, whether by himself or by someone else such as a secretary or ecclesiastical authority, in order to bring it into better alignment with local doctrinal requirements. (*IM*, p. 515–516)

Moreover, powerful mystical experiences have often occurred spontaneously in “naive” persons who previously had no commitment to, or involvement in, any particular religious or mystical tradition.

After a series of further empirical arguments supporting the view that mystics do in fact

make contact with reality in novel ways, Kelly and Grosso canvas the principal attempts to say something meaningful about aspects or patterns of brain-body activity associated with mystical experience. They all exemplify in varying degrees several characteristic faults of the existing literature, in particular: (i) failure to come to grips with the full-blown phenomenology of mystical experiences; (ii) paucity of directly supporting empirical data; (iii) excessive willingness to spin out elaborate neurophysiological just-so stories that purport to “explain” mystical experience in terms of currently understood neuroscience.

The best way forward, the authors believe, is not through any sort of minor adjustment of traditional clinically based psychodynamic models nor by uncritically embracing “perennialist” psychologies but by building upon the conceptually more adequate and empirically more secure foundation created by Myers and built upon by James. In mystical experiences we come into contact with something in ourselves that is wiser than the ordinary self yet somehow of the same type or quality. In *The Varieties of Religious Experience* (1958) James states as one of his principal conclusions that “we have in the fact that the conscious person is continuous with a wider self through which saving experiences come, a positive content of religious experience which, it seems to me, is literally and objectively true as far as it goes” (p. 388).

The profound theoretical gulf between conventional mainstream conceptions of human personality and the radically different conception advanced by Myers and James expands to its fullest extent when we approach the innermost subjective core of James’s hierarchical scheme, which stands revealed in a state of pure, undifferentiated consciousness — a state in which consciousness takes itself as its own intentional object and self gives way to Self. It is here that the roots of intentionality and selfhood may be found, and this may be the reason why they are so hard to find. On the conventional view we are encapsulated within our skulls: everything in mind and consciousness is generated by the electrochemical activity of our brains. For Myers and James we are in some way profoundly interconnected with each other and with the entire universe, and what we consciously experience is somehow selected or filtered by our brains from a much larger field of conscious activities.

Be that as it may, mystical experience is a real and vitally important facet of human psychology, and we must somehow come to terms with it. As the authors point out, “[r]estoring the mystical to its proper place will go far toward restoring the humanity of our science. The mystical roots of conscious experience also reveal a deep human identity, transcending all national, racial, personal, and theological differences. What better reason to investigate these remarkable, transformative experiences?” (IM, p. 574)

## Chapter 9

Having summarized the key points of the earlier chapters, the final chapter (by Ed Kelly) next takes a brief look at the issue of postmortem survival. *HP* contains detailed and specific information suggesting the possible continued existence in some form of previously

living persons. In the best such cases the potentially viable explanations appear reduced to two principal candidates – survival itself or some sort of extreme supernormal process involving only living persons. A considerable amount of additional evidence suggestive of survival has accumulated in the subsequent century, some of it of very high quality. The net result of this accumulation of evidence has been to bring the conflict between survival and “super-psi” interpretations into ever-sharper relief. The totality of the evidence now available seems to have tilted the balance in favor of the survival hypothesis. What matters most, however, is that both post-mortem survival and super-psi are fatal to the current mainstream materialist synthesis.

Kelly *et al.* predict that the psychology of the 21st Century will be a “psychological filter theory of the Myers/James sort.” The term “filter” suggests selection, narrowing, and loss: “by thinking of the brain as an organ which somehow constrains, regulates, restricts, limits, and enables or permits expression of the mind in its full generality, we can obtain an account of mind-brain relations which potentially reconciles Myers’s theory of the Subliminal Self with the observed correlations between mind and brain” (*IM*, p. 607). James himself spoke variously of the brain as straining, sifting, canalizing, limiting, and individualizing the larger mental reality existing behind the scenes. “Matter is not that which produces Consciousness, but that which limits it, and confines its intensity within certain limits” (James, 1900, pp. 66-67).

The mind is “irreducible” in a stronger sense than that intended by epiphenomenalists, including Chalmers, or even by those like Searle who are at least committed to salvaging mind and consciousness as causal factors in behavior, but cannot explain how to do so in conventional physicalist terms. There is apparently at least one fundamental bifurcation in nature that cannot be accounted for in these terms. (*IM* p. 605)

The arguments most commonly made against a fundamental bifurcation in nature (of the interactive-dualist kind) essentially boils down to “I don’t see how.” Such arguments are readily diffused, for we *never* “see how.” Newton “framed no hypotheses,” Hume reduced causality to consistent covariation, and quantum physics reduces consistent covariation to statistical correlations between measurement outcomes. Physicists don’t know how the actual outcome of one measurement influences the probabilities of the possible outcomes of another measurement, they only know that it does. So how can we expect a psychologist to see how a nonmaterial mind influences the brain?

It may not be amiss to mention at this point that whereas cognitive models cannot function without a homunculus, inasmuch as they lack minds with their capacities for semantics, intentionality, and suchlike,

no homunculus problem is posed by the structure of our conscious experience itself. The efforts of Dennett (1991) and others to claim that there is such a problem, and to use that to ridicule any residue of dualism, rely upon the deeply flawed metaphor of the “Cartesian theater,” a place where mental contents get displayed and I pop in separately to view them. Descartes himself, James, and Searle, among others, all have this right; conscious experience comes to us whole and undivided, with the qualitative feels, phenomenological content, unity, and subjective point of view all built-in, intrinsic features. I and my experience cannot be separated in this way. (*IM*, p. 44)

Another common argument against dualism appeals to supposed violations of conservation laws by mental causation. I'll return to it in a moment.

The chief obstacle to reconciling the Myers/James filter theory with cognitive neuroscience appears to be the localizationism inherent in much recent research and theory. However, while the modularity doctrine holds up well with regard to early-stage sensory functions, the association of such "horizontal" capacities as memory, thinking, and imagination, with brain activity appears to be global and nonspecific. Each region of the brain appears to mediate many cognitive processes, and each cognitive process appears to be correlated with activity in widely distributed brain regions.<sup>11</sup>

Another serious difficulty for "neuro-localizationism" arises from the ambiguous definition of the putative mental components that are to be localized. There is little agreement on what are the components, modules, faculties, or traits of human thought. Indeed, one of the great unanswered questions of psychology is whether these proposed subdivisions of the "mind" actually exist in any biological sense.

Modern neuroimaging findings also seem conspicuously more consistent with the authors' "global" view of mind-brain interaction, as are neurophysiological studies of the consequences of brain injury, considering that the higher mental functions seem rarely if ever to be totally destroyed (short, that is, of death or permanent vegetative states). There is enormous and largely unexplained variability both between and within individuals who have suffered serious injuries of any particular type. Indeed, it is hard not to be impressed by the degree to which the core of self and mind can be preserved.

The idea that the mind is a system of quasi-independent modules that can be localized in narrowly circumscribed regions of the brain is therefore "at least questionable and probably unsustainable" (Uttal, 2001). The broad consensus that has recently emerged around the family of neurophysiological "global workspace" theories in part reflects an increasing recognition that this is the case. As Kelly sees it, global workspace theories match up rather well with the views of Myers and Bergson, who regarded the brain as predominantly a sensorimotor device, an instrument adapted by evolution to enable the mind to gain information about, and to act upon, the everyday physical environment.<sup>12</sup> In fact, on a view that is currently emerging, perceptual synthesis is achieved not from the input but with its aid.

Something within us, a sort of cosmogenic, world-generating, or virtual-reality system, is continuously updating and projecting an overall model of the perceptual environment

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11 Technical and conceptual difficulties also abound in the effort to localize high-level cognitive functions to narrowly circumscribed regions of the brain. When Cabeza and Nyberg (2000) compared the results for higher cognitive processes such as "working memory" or "problem solving," the data from different laboratories were broadly distributed. The reported peaks of brain activity associated with this kind of cognitive activity were spread over at least a quadrant and, more typically, half of the brain.

12 Mainstream global-workspace theorists of course invariably accept the orthodox conception that the underlying brain activity itself, whatever its form, produces or in some sense is the corresponding mental activity.

and our position within it, guided by very limited samplings of the available sensory information.<sup>13</sup> (*IM*, p. 40)

Having disposed of the main obstacles to a filter theory à la Myers/James, Kelly contemplates the road ahead. The “radical empiricism” that James was systematically developing during the last years of his life involved far more than a methodological principle; James was driving toward a comprehensive metaphysical system grounded in experience of all forms up to and including mystical experience. James’s unfinished program was taken up and integrated with developments in 20th Century physics by Alfred North Whitehead.

According to Whitehead, the fundamental stuff of the universe is not lifeless bits of matter moving in fields of force, but “occasions of experience.” At least to this reviewer’s mind, a fundamental stuff consisting of or in a plurality of occasions of experience is not essentially better than a fundamental stuff consisting of or in a plurality of lifeless bits of matter. If at all there is such a thing as a fundamental stuff, it cannot be a *plurality*. It can only acquire the aspect of a plurality. For this it must enter into self-relations. A plurality of relations implies a plurality of relata, even if the relations are *self*-relations and the relata are numerically identical as a result. While this demotes the plurality of the relata to an apparent or effective plurality, it saves us the trouble of having to bridge apparently unbridgeable gulfs, such as seem to exist not only between minds and bodies but also between any two minds and any two bodies.

For Whitehead, the root cause of our present mind-brain difficulties was the ontological bifurcation originally imposed on nature by Descartes and his 17th-century supernaturalist allies. By attributing to his world-constituting “occasions” both a subjective interior and an objective exterior, Whitehead universalizes the bifurcation without bringing it closer to an understanding. Kelly of course recognizes that Whitehead’s theory “has problems of its own” (*IM*, p. 639), as have more recent panpsychist/panexperientialist proposals inspired by Whitehead (e.g., Hartshorne, 1991; Griffin, 1998). As a remedial measure he recommends

incorporating elements of a complementary top-down tradition (represented in the West by historical figures such as Plato, Plotinus, and the German idealists, and in the East by the higher schools of Hindu philosophy and the wisdom traditions) that sees consciousness itself as the fundamental reality in nature, flowing outward or downward to its most matter-like aspects, and then back up again in the course of cosmic evolution. (*IM*, p. 637)

To the best of my knowledge, the most systematic effort to date to elaborate a comprehensive metaphysical system that is consistent with present-day physics as well as with every available fact of human experience has found expression, not in Whitehead’s work, as Kelly suggests (*IM*, p. 633), but in the writings of the Indian nationalist, freedom fight-

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13 See Simons & Chabris (1999) and Tart (1993). Neuroscientist Rodolfo Llinás and his co-workers have even advanced the view, which Kelly regards as “profoundly correct” (*IM*, p. 40), that dreaming represents the fundamental form of this projective activity, while ordinary perceptual synthesis amounts to dreamlike activity constrained by sensory input (Llinás & Pare, 1996; Llinás & Ribary, 1994).

er, scholar, poet, evolutionary philosopher, yogi, and mystic Sri Aurobindo, particularly *The Life Divine* (Sri Aurobindo, 1972) and *The Synthesis of Yoga* (Sri Aurobindo, 1999). As Kelly and Grosso have pointed out in the preceding chapter, the extreme developments of mystical experience are “most concisely encapsulated by the famous Vedic [actually, Upanishadic/Vedantic] formula ‘Sat-Chit-Ananda’ — pure being or existence, pure awareness or consciousness, and pure bliss, amplified without limit” (IM, p. 510). Sri Aurobindo makes use of the conceptual framework of “the original Vedanta of the Upanishads” (Sri Aurobindo, 1997, p. 340), in which *Brahman* (Ultimate Reality) is described in these triple terms,<sup>14</sup> and he adopts Myers’s concept of the subliminal, of which he (Sri Aurobindo) was himself a singularly intrepid and fastidious explorer and cartographer.

Within the top-down framework recommended by Kelly,

human personality would be pictured as a complex system made up of the same kind of ‘stuff’ throughout. The system consists of a hierarchy of levels or strata of the types recognized in particular by Myers, James, and the wisdom traditions. Each level is characterized by its own form of psychophysical organization and has both interior and exterior aspects that allow it to participate in some form of experienced world appropriate to itself. The activities of these different strata are somehow interconnected, and coordinated in greater or lesser degree, by something like Myers’s Subliminal Self, or by a consciousness that somehow underlies or pervades the whole structure. . . We need to chart more fully and accurately the natural history of these “higher” or “deeper” subliminal realms. How many meaningfully distinguishable states or levels of consciousness actually or potentially exist within us, with what properties and what relationships to each other? Under what sorts of conditions do they occur, and what sorts of consequences do they have? Can we harness the benefits of potentially useful states by developing improved means of facilitating their occurrence? (IM, p. 637–638 )

Given the fact that many of these questions are answered in considerable detail in the writings of Sri Aurobindo, it is peculiar that not a single reference to his work occurs anywhere in IM. It can only be hoped that in their next book Kelly *et al.* will take advantage of his detailed cartography of the inner realms.

Kelly claims that the direction in which Whitehead was moving is “fundamentally consistent with the ontological implications of quantum theory” (IM, p. 635). But what *are* the ontological implications of quantum theory? Before venturing into this semantic quagmire, we did well to heed the words of Dennis Dieks, Professor of the Foundations and Philosophy of the Natural Sciences at the Institute for History and Foundations of Science, Utrecht University, and Editor of *Studies in History and Philosophy of Modern Physics*:

Most physicists have no clear conception of the interpretation of their most basic theory, quantum mechanics. They are largely unaware of the exact nature of the problems in giving a detailed and consistent account of the physical meaning of the theory; and if they are aware, they often don’t care very much. . . Very different ideas have been put

14 The Vedantic *Sat-Chit-Ananda* is a description not of *Brahman*, which is ineffable, but of how *Brahman* relates to the world: as a substance or being that constitutes it, as a consciousness that contains it, and as an infinite bliss that expresses and experiences itself in it.

forward, none of them supported by great numbers of physicists. (Dieks, 1996)

A similar caveat was expressed by Piet Hut, Mark Alford, and Max Tegmark (2006) in a joint paper discussing the nature of reality from three different perspectives: “A key message for non-physicists reading this paper is. . . that they should be deeply suspicious of any self-proclaimed popularizer or other ambassador claiming to speak on these matters on behalf of the consensus of the theoretical physics community.” Dieks again:

The difficulty of developing a convincing interpretation of quantum mechanics can easily be understood. First, the rigorous results which have been achieved preponderantly have a negative character: they are “no-go theorems.” No-go theorems show the impossibility of certain interpretations, but do not themselves provide a new interpretation. . . More generally, the outcome of foundational work in the last couple of decades has been that interpretations which try to accommodate classical intuitions are impossible, on the grounds that theories that incorporate such intuitions necessarily lead to empirical predictions which are at variance with the quantum mechanical predictions. However, this is a negative result that only provides us with a starting-point for what really has to be done: something conceptually new has to be found, different from what we are familiar with. It is clear that this constructive task is a particularly difficult one, in which huge barriers (partly of a psychological nature) have to be overcome. . . The sheer difficulty of the situation, in which the only thing that is certain is that familiar concepts do not work, surely is one central element of the particular situation in quantum mechanics. This by itself is probably already sufficient to explain that very different, sometimes exotic, suggestions have been made about how to proceed. But the situation is certainly much aggravated by the already-mentioned fact that. . . very few scientists have the opportunity to do serious full-time work on these problems — something which facilitates a certain amateurism that can occasionally be detected in publications dealing with the subject.

What Kelly means by “the ontological implications of quantum theory” are the speculations of Berkeley physicist Henry Stapp. By giving Stapp’s ideas pride of place in their final chapter entitled “Toward a Psychology for the 21st Century,” the authors of *IM* do themselves a disservice. Stapp’s theory of the brain-mind interface is built on metaphysical quicksand.<sup>15</sup>

The quantum formalism consists of algorithms that serve to calculate the probabilities of the possible outcomes of (as yet) unperformed measurements on the basis of the actual (or assumed) outcomes of performed measurements. The rest is metaphysical embroidery. The formalism is consistent and, despite its far-ranging predictions, has never been refuted by a single “white crow.” As Dieks (1996) put it, “[p]aradoxes and bewilderment only occur if one wonders about *how* the calculated and predicted experimental outcomes can be realized by natural processes.” This should not come as a surprise, for while the deterministic correlations of classical physics can be interpreted in terms of causes and effects, the probabilistic correlations of quantum physics do not admit of causal interpretations. So much for Kelly’s belief (courtesy of Stapp) that quantum theory “explains everything explainable in classical terms, and a vast number of additional

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15 For a detailed analysis of Stapp’s fallacies see my (2002a).

things as well" (IM, p. 611).

One of the formidable interpretational challenges posed by the quantum theory is its inevitable reference to measurement outcomes. What earns measurements this special status in the fundamental theoretical framework of physics? Under the influence of positivism, measurements and their outcomes had come to be known as "observations," and since the advent of the theory of relativity in 1905, frames of reference were called "observers." So when the founding fathers of the quantum theory were searching for an answer to the above question in the mid to late twenties, what was more obvious than to attribute the special status of measurements to the *consciousness* of the observer? Like a *deus ex machina*, consciousness saved the day. Stapp's theory is an elaboration of this red herring.

In its support Stapp invokes Niels Bohr:

The founders of quantum mechanics made the revolutionary move of bringing conscious human experiences into the basic physical theory in a fundamental way. In the words of Niels Bohr the key innovation was to recognize that "in the great drama of existence we ourselves are both actors and spectators." (Stapp, 2005)

What Bohr actually meant was that by choosing between alternative, mutually exclusive measurement contexts the experimenter in part determines the properties of a quantum system.

The revolutionary idea of [Bohr's] doctrine of complementarity is that physical objects do not possess a fixed set of properties, which is given once and for all. . . Different, complementary and mutually exclusive, contexts are needed to obtain a full description of what a quantum object is. . . Bohr essentially says that physical systems do not possess properties completely of their own, regardless of the circumstances in which they find themselves. . . Bohr never spoke of measurements as necessarily involving human observers; the presence of macroscopic objects recording the behaviour of micro-systems is enough. (Dieks, 1996)

So much for Kelly's claims that "[o]rthodox quantum theory is intrinsically a psychophysical theory" (IM, p. 612) and that "[c]onsciousness itself. . . is needed to complete the quantum dynamics" (IM, p. 613).

On the subject of the alleged violation of the principle of energy conservation by mental causation Kelly writes,

it is hardly self-evident that this principle applies without restriction to a world that also contains minds. It assumes precisely what we are challenging, that classical physicalism is correct and complete, and can fully explain both brains and minds. (IM, p. 611).

By "classical physicalism" Kelly means physicalism with regard to the laws of classical physics. What about physicalism with regard to the laws of quantum physics? Kelly apparently accepts Stapp's (2004, p. 23) claim that his metaphysical elaboration of the quantum formalism not only "makes consciousness causally effective" but also "is compatible with all known laws of physics, including the law of conservation of energy." It is understandable that Stapp, a physicist, prefers his libertarian account of mental causa-

tion to be free from violations of known physical laws, but if were so,<sup>16</sup> then Stapp's model would be just physicalism with a subjective side slapped on. If Kelly suddenly perceives an advantage in advocating a libertarian free will that does not violate physical laws, I perceive a trace of the physics envy that so often afflicts the psychologist.

It seems to me that Kelly *et al.* would be in a better position to argue their case if they pointed out that physicists do not understand the processes that underpin the quantum-mechanical correlation laws any better than psychologists understand libertarian free will or parapsychologists understand PK or ESP.

Kelly's closing section begins with the words:

For an enlarged scientific picture of human mind and personality to emerge, two things need to happen: First, it must be demonstrated that the currently dominant physicalist theories of mind-brain relations are inadequate in principle; and second, an alternative theory must be found that remedies these defects. The present volume has sought mainly to address the first of these tasks, by assembling in one place large amounts of credible evidence for a wide variety of empirical phenomena that appear difficult or impossible to explain in conventional physicalist terms. (*IM*, p. 639)

The evidence presented in this ground-breaking book is cumulatively overwhelming and likely to persuade most open-minded readers. Whether a satisfactory alternative *scientific* theory can be found is less certain, and will depend, *inter alia*, on the extent to which the label "scientific" bears revision. For example, would an in principle omnipotent, yet deliberately self-constraining force, such as that inherent in the Vedantic *Brahman* or *Sat-Chit-Ananda*, qualify?

There is, in fact, much about contemporary physics that points in the direction of a Vedantic ontology. For example, in the quantum domain everything is possible — that is to say, every conceivable measurement outcome has a probability greater than zero — *unless* it violates a conservation law. This means that in the domain in which the validity of the laws of quantum physics is well-established, we never have to explain why something is possible. We only have to explain why certain things are *not* possible. What else does this indicate but the self-constrained working of an omnipotent force?

If we accept this conclusion, then the relevant questions no longer concern the underlying mechanisms or processes, inasmuch as it would be absurd to try and explain the working of an omnipotent force. The relevant questions instead are: why, and to what extent, does that force subject itself to those laws?

Suppose that the answer to the first question is: in order to set the stage for the drama of evolution. In this case we cannot expect the drama itself to be directed by the same laws. Is there evidence in favor of this answer? It has been shown that the existence of objects that (i) have spatial extent (they "occupy space"), (ii) are composed of a (large but) finite number of objects without spatial extent (particles that do not "occupy space"), and (iii) are stable (they neither explode nor collapse as soon as they are created) requires

16 It isn't so (Mohrhoff, 2002a). Libertarian free will implies such violations, regardless of the physics involved (Mohrhoff, 1997, 1999).

the theoretical framework of physics to have exactly the form that it does (Mohrhoff, 2006). Moreover, since this framework presupposes measurement outcomes, its consistency requires their occurrence, and it is eminently plausible that this in turn requires the validity of all empirically tested physical theories — namely, the so-called “standard model of elementary particles and forces” plus Einstein’s theory of gravity — at least as effective theories<sup>17</sup> (Mohrhoff, 2002b). Thus the validity of these theories is guaranteed *provided* that spatially extended objects are composed of objects that lack spatial extent. This is the sole nontrivial input and the only real mystery. Why are things that “occupy space” made of finite numbers of things that don’t?

Basing myself on the work of Sri Aurobindo (1972), I have proposed the following answer: the creation of a world of particles that lack spatial extent (because they are *formless*) is the final stage of the *involution* that sets the stage for the drama of evolution (Mohrhoff, 2004, 2007). As Myers wrote, “[a]ll human powers. . . have somehow or other to be got into protoplasm and then got out again. You have to explain first how they became implicit in the earliest and lowest living thing, and then how they have become thus far explicit in the latest and highest” (*HP*, vol. 1, p. 118). Involution, according to Sri Aurobindo, is the process by which all *divine* powers became implicit in the earliest and lowest *existing* things, while evolution is the process by which they have become thus far explicit in the latest and highest.

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17 Effective theories are theories that are valid over many but not all scales of length.

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