Paranormality: Science Fiction’s Holy Grail

GEORGE SLUSSER

University of California Riverside

Somewhat in the way that a concept of ‘reality’ needed a firm sense of non-reality (or fantasy) in order to define itself as a distinct entity, empirical science has made use of paranormal phenomena as a means of defining and redefining its domain, invoking the paradigm of the known and the unknown as dynamic motor in order to expand its parameters — to ‘push the envelope’, as the current expression goes. At the time of the rise of the physical sciences and their cold equations, the paranormal emerged in France as a Cartesian reaction to this invasion of res extensa, which threatened to sweep away the privileged role of mind as opposed to matter. From Mesmer’s famous bucket and Balzac’s fascination with magnetism, to Maupassant at the other end of the century, paranormal powers are seen as forces emanating from the realm of mind. The fact that such powers, almost by definition, must remain inexplicable, acting in the physical realm but always just beyond the reach of its cherished laws, makes them the perfect means of reasserting this Cartesian otherness in the world of modern science.

Conventional wisdom sees American culture, and Anglo-Saxon culture as a whole, as non-Cartesian, rooted in a materialist world view. And true enough, the vision of science that emerged in SF magazines and culture has been dominated by the no-nonsense idea that science’s task is to ‘advance’ the knowledge of material nature, and nothing more. This bias explains, in the hierarchy of SF subgenres, the pre-eminence of ‘hard’ SF. Here we expect all claims to paranormal powers to be put to the physical test, ultimately proven to be false, and thus declared to be fantastical and irrelevant. If a figure as central as John W. Campbell, the influential editor of Astounding Science Fiction, during the ‘golden age’ of American SF from the late 1930s to the 1950s, was fascinated by paranormal phenomena, these remained (in ‘serious’ readers’ eyes) the ‘nightside’ of natural science, a kooky if symptomatic aberration on the part of an otherwise science-oriented editor. The other great twentieth-century scientific culture, the Soviet Union, has remained fascinated with paranormality, and has even conducted laboratory research into what Arkady and Boris Strugatsky, its most prominent SF writers, somewhat reluctantly call ‘spirit science’. In the post-war US, however, as reflected in the ideology of ‘golden-age’ American SF, the paranormal seems to have no place inside the scientific equation, devoted as it is to
a purely material balance sheet. If paranormal phenomena exist, their existence lies outside the sphere of science as human activity. Hence they should not in themselves suggest (as they did in nineteenth-century France) the existence of any special or privileged status for the human mind, in contradistinction to the physical universe at large.

How then do we explain the strong renewal of interest in such matters as telepathy and telekinesis in very recent American and Anglophone SF, beginning with the post-cyberpunk 1990s? This is an SF that sees itself as a 'second wave' of hard SF, work that puts science (indeed new post-Einsteinian science) back in the fiction. Moreover, in Anglophone cultures this same renewal of interest is seen in the domain of science itself. For both esoteric quantum theory and sophisticated research in the neurosciences are revisiting the question of paranormal phenomena, apparently feeling that their new visions of the natural world are ready to take on such 'mysteries' as telepathy, or action at a distance. In a Cartesian culture one can accept the paranormal as something that functions like science's pineal gland. This assures the interface between the material world and the unique qualities associated with the human mind, as opposed simply to a material brain. But what role might the paranormal play in a contemporary, materialist scientific climate, where science has gradually sought to efface the dualities of both the Cartesian and the Newtonian world views, successfully blurring boundaries between such oppositional categories as space and time, matter and energy, organic and inorganic, and, finally, the dichotomy between mind and matter itself?

The answer, in a sense, is that science still needs a holy grail. The grail search, by definition, must be always alluring, never ending. It thus sets limits and at the same time encourages endless search to exceed them. For example, neuroscience, when it seeks to explain telepathy in terms of interconnecting 'programs', inevitably raises the spectre of action at a distance as some ever-receding lure and horizon. In the very act of launching into such experiments, science is reflecting doubts as to its materialist credo, raising ghosts of the metaphysical in the very act of claiming to lay these to rest for ever, by reducing the paranormal to a problem of chemistry of the brain. Built into the parameters of these neuroscientific experiments is an almost neo-Cartesian desire to fail, to declare the extreme reaches of the human mind for ever beyond the reach of material explanation, as matter's mysterious 'last frontier'. Recent science, it seems, is relishing such an impossible quest. And Anglo-Saxon SF, in the age of multidimensional physics and neuroscience, seems to follow suit. This paper examines the role of the paranormal in examples of the 'second wave', hard science fiction of the 1990s.
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The French Nineteenth Century

First, however, we must see when — at what period and in what culture — did phenomena heretofore considered simply ‘magical’ actually become paranormal, in the sense that they are seen to run parallel to, thus to be of interest to, material science. The place and time seem to be France in the nineteenth century, in the context of the rise of Enlightenment and positivist materialism in a traditionally Cartesian culture, which places emphasis on the qualitative otherness of ‘mind’. In terms of what is now a radical schism between matter and mind, the latter (as fancy or imagination) becomes the sole refuge where phantoms and ghosts of the old ‘spirit’ world can continue to exist outside the jurisdiction of the laws of material phenomena. The enlightened eighteenth century strove to banish all such phantoms: witness Voltaire’s attacks on superstition. It is in this context, from ‘inside’ materialist science as it were, that counter-fascination with extrasensory or paranormal events emerges in the late eighteenth century and the early nineteenth. We see now, in tune with the temper of this formative time for modern science, a concerted effort to present formerly ‘supernatural’ happenings in material terms, to cast them as vital ‘forces’ or some such pseudo-scientific terms. Thus ‘magnetism’ is studied, in the age of Coulomb, Ampère, and Sadi Carnot, as a mental ‘fluid’ that allows its possessor to transport self or objects to far-off locations, coining neologisms like teleportation and telekinesis. A similar objectivity is found in the term used to describe another kind of transport, this time in time as well as space — the much-discussed phenomenon of déjà vu, where some event or place has been experienced before, in violation of the law of local causality, which says we are never in the same place twice. Even so, in France the material science that would describe what are now genuinely paranormal phenomena is invariably defeated by the resistance of such phenomena to explanation. Thus there arises a vision of two parallel and contiguous realms or ‘worlds’ that communicate but may never be fully resolved one into the other. It becomes convenient, in this Cartesian matrix of mind–body separation, to relegate the paranormal to the realm of mental phenomena, to powers hidden in this last bastion of human uniqueness in a world being conquered by rule and line. Somehow the product of physical forces, yet still separate and ‘other’ from extended matter, such phenomena remain a mystery to the ‘dayside’ realm of materialist scientific explanation.

What fascinates the French, however, is the transition point between these two zones, the place of interpenetration of worlds. In a sense, Todorov’s definition of the ‘fantastic’ as an evanescent location between the realm of material law and the domain of the ‘marvellous’ codifies this interface between normal and paranormal. In this same context of fantastic occurrences, there arises at
the end of nineteenth century in France an interest in ‘sciences of the mind’. The method of Jean Charcot, and ultimately of the Freudian psychoanalysis that derives from Charcot’s work, does not explain the paranormal so much as locate these forces deeper and deeper in mysterious, materially unattainable, recesses of the Cartesian mind. Modern neuroscience purports to reject Charcot and Freud and their metaphysical ‘ghosts’, as it seeks to map, and thus exhaust, the labyrinths of the material brain. Yet there is a curious parallel between the Freudian-surrealist search to push exploration to uncharted depths of mind, and this strange quest of late twentieth-century neuroscience to ‘translate’ Descartes’s mind once and for all into a purely biochemical entity. For, in the fact itself that neuroscience recognizes the paranormal as a legitimate object of study, there lies the suggestion that one may still encounter, in some yet-to-be-discovered physical location, mental powers that remain greater than the sum of their parts. Even in the quantum universe of material forces and forms, we may yet come across something in the recesses of the brain that marks the presence of what science since Descartes has sought to deny, the cogito as uniquely human entity.

Let us look at a couple of proto-science-fictional responses to paranormal powers in nineteenth-century France. First, that of Balzac. In the ‘philosophical studies’ that he saw providing a scientific underpinning for his Comédie humaine, Balzac hoped to develop a totally materialist theory of mind and mental powers. Seminal to the development of his theory of ‘material will’ is his early novel The Centenarian (1822, published under the pseudonym Horace de Saint-Aubin), whose title character is a 400-year-old man with paranormal powers.1 Kept alive by a ‘vital elixir’ that he distils from living victims, in a laboratory as detailed as that of a Frankenstein film, Beringheld the Centenarian expends this fluid by apparently walking through walls, or instantly transporting a body as heavy as stone to far-off places. In contrast, however, to the novel’s more or less contemporary Napoleonic setting, this figure seems to belong to a mythical and, in his gothic setting, fantastical past. Balzac subsequently seeks to ‘domesticate’ his being by offering materialist explanations for (and thus limiting) his paranormal powers. In one instance where the Centenarian has appeared to pass through prison walls, we learn that the old man had in ancient times physically explored the place. He knows first hand the escape routes, and hence is able to move or replace stones in such a way that it seems as if he had walked through walls when in fact he did not. Moreover, in the course of the novel, his magnetic powers are co-opted by the more or less official ‘science’ of Mesmerism, whose

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1 For a recent edition see The Centenarian, or The Two Beringhelds, trans. and annotated by Daniele Chatelain and George Slusser (Middletown, CT: Wesleyan University Press, 2006).
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doctors formulate and pragmatically apply otherwise inexplicable forces of the
mind through the use of a medical form of hypnotism.

At the other end of the century is Guy de Maupassant. His stories are less
about displaying paranormal powers of the mind (although this is an obsessive
theme) than about attempts, and failures, to explain them in terms of a new
materialist vision of science — that of physiologist Claude Bernard. Many of
Maupassant’s stories have titles that are questions. In ‘Qui sait? (‘Who knows?’),
the protagonist returns home to find his furniture moving out of the door, appar-
ently of its own volition. Subsequent ‘investigations’ lead him to believe the
furniture was teleported by a strange dwarf, who later appears to return it, by
the same means, to its original place. The reader realizes, however, that this is a
first-person account, and that no one but the narrator has seen the events
recounted. The narrator, in the end, checks into an asylum. The question of the
title prevents us from comfortably proclaiming that the protagonist is mad, or
that what he has witnessed are mere delusions. Maupassant follows Claude
Bernard in positing (if only in an interrogative manner) the presence, ‘out there’,
of some material unknown, a domain perhaps where mental powers can and do
teleport furniture.

Maupassant’s characters exist at a crux between known and unknown,
between material and mental worlds; their existence, however, is generally
marked by irrational fear of physical invasion by unknown forces. In ‘Lettre d’un
fou’ (‘Letter of a Madman’) the narrator laments the absence, in his own person,
of those enhanced senses that Bernard wished the scientist possessed. These, he
reasons, would allow him to probe those unknown areas of the material world,
where what appears paranormal might be seen as a perfectly natural phenom-
emon. The protagonist senses the presence of some invisible force, but he is not
able to perceive it in any normal sense. His ‘perception’ of the other is a negative
perception; for whatever this ‘being’ is, it cannot be seen in itself, but only as
something that physically erases his own image as it passes. In scientific fashion,
he seeks to repeat this experiment, yet nothing appears to block his image.
Instead, as he stares obsessively at his mirror image night and day, he sees it
dissolve again. This time, however, it morphs into figures of superstition —
conventional monsters and demons. Snatching images from a mirror is the
Devil’s activity in E. T. A. Hoffmann’s tale ‘The New Year’s Eve Adventure’.
Maupassant, who surely knew this story, is trying to bring this phenomenon into
the age of science. But here, as in Hoffmann, where science fails, superstition
and madness lurk.

When one is on the threshold of the unknown, extrasensory and paranormal
powers are needed. Yet for those in Maupassant who seem to possess and use
them, the result is self-loathing and, ultimately, madness, as is the case with
Jacques Parent in ‘Un fou?’ (‘A Madman?’). Parent demonstrates ‘magnetic’
powers, which attract animals against their will. He is even able to move inanimate objects by some ‘fluid’ that seems to emanate from his hands. He recoils, however, from using these powers, always keeping his hands out of sight. Parent dies in a madhouse. This is a place where the question of the title — it invites the reader to ask whether he really can move objects at a distance — is silenced by official science, in this case psychiatric medicine. Here, in the fate of Jacques Parent, we see the science of Claude Bernard being deflected inwards, in the process of becoming a science that locates the unknown not in the extended world, but within the pathological recesses of the mind. Such psychiatry claims to function as a science that limits itself to a rigidly (indeed socially codified) materialist view of the mind. In the Cartesian context of French culture, however, one senses that the purpose of such rigour — putting walls around those judged ‘insane’ in order to protect the material space of those who declare themselves sane — is to leave untouched any mysterious or paranormal zones that may remain hidden in that mind. By confining all those with psi powers as madmen, science effectively denies itself access to any new mental powers that might allow it to push further the investigation of Pascal’s terrifying material spaces. By this logic, such research only further diminishes the unique nature of the cogito within the infinity of extended matter. Maupassant’s questions open the door to science’s holy grail, only to throw up an institutional firewall, declaring the seeker of the paranormal a madman, a deviant from the norm. The endless lure of the paranormal is needed, if the cogito is to retain its particular identity in a world of quantifiable phenomena.

The American Golden Age

The French century ends in schism. On the one hand, the paranormal is given over to normalizing sciences of the mind. On the other, there is the path, pure Claude Bernard, of J.-H. Rosny aîné in his story ‘Un autre monde’ (‘Another World’) of 1896.² Here a mutant, produced by purely evolutionary forces, has the physical apparatus that enables him to perceive another, parallel ‘world’. Rosny avoids the Cartesian trap by making his protagonist the product of evolutionary mutation, with a mind that is explicitly other than human. Science, however, can and does use his mutated powers as a new instrument, employing them as experimental tool in order to supplement our human senses, in hopes of gathering data from this para-world. Science finds exploitable new lenses, which permit it to explore hitherto unknown realms, and make cogent observations and hypotheses. In Maupassant’s world, paranormal powers open vistas

that force the observer, in terror, back upon himself, plunging him (or her, but there are no ‘hers’ among Maupassant’s protagonists) into an inner chasm of mind. Science does not exploit these powers, but throws a protective wall around them — the insane asylum in which the visionary is interred. Rosny’s mutant fears such internment, yet is determined to find a scientist who will open his mental doors rather than closing them. The mutant has no Cartesian ghost to harbour or protect, merely different evolutionary faculties that can, indeed must, be used by science if it is to advance knowledge of the extended world.

Paranormal powers fascinated John W. Campbell and other golden-age architects. And because of this fascination, a schism formed as well. On the one hand, the ‘hard’ engineering sciences, as they rose to prominence, left no room for the paranormal in the realm of cold equations. Indeed, in Tom Godwin’s seminal story ‘The Cold Equations’ (1955), no telekinetic powers are available to free Marilyn Cross from the reality of the fuel/mass ratio. Once she is aboard the ship, the physical balance of forces cannot be changed; she can neither walk through walls, nor teleport herself to some other location, but must accept her physical destiny. On the other hand, to the extent that the golden age denies the physical existence of paranormal powers, these latter resurface at a different level, taking on a moral or figurative function.

In Maupassant, the ‘supernatural’ or paranormal operates as the night-side of rational science. In like manner, American SF of the golden age literally creates the twin genre of horror when it stigmatizes paranormal powers as something not just other than, but antagonistic or menacing to, scientific reason. We find many examples, among golden-age classics, where paranormal phenomena have shifted valence, where they are events no longer to be studied but feared instead. Van Vogt’s Slans, a race of telepaths, are persecuted for their powers, as is Sturgeon’s gestalt mind in More Than Human (1953). Sturgeon’s story ‘Need’ describes, in a manner reminiscent of that in Maupassant’s story ‘Un fou?’, the physical pain experienced as the telepath invades the deepest reaches of another’s mind. Later writers continue to consider telepathy in this moral context, less interested in the causes, material or otherwise, of such powers than in the horrific effect they have on human consciousness when they allow the person who wields them to violate the sanctity of the individual mind. Notable examples are Robert Silverberg’s Dying Inside (1972) and Samuel Delany’s story ‘Corona’.

nightmare caused by possession of telepathic powers remains central to a much later novel like Bruce McAllister's *Dream Baby* (1988), where precognitive dreams foretell a future — here the death of soldiers in Vietnam — which the dreamer finds himself powerless to stop. The all-out horror of telepathy and telekinesis is the stuff of power fantasies like Jerome Bixby's 'It's a Good Life' (1952), where a paranormally endowed child rules over a world literally of his own making, tyrannizing adults by reading their thoughts, and 'teleporting' them to their doom when those thoughts do not please its naive whims.5

In terms of its own dayside/nightside paradigm, the golden age creates a schism, this time between hard matter and perverted mind, between science's search for order, and the paranormal impulsion towards chaos. What emerges clearly as well is the fact that, however non-rational and threatening these paranormal powers become, they nonetheless continue to function (even if in a perverse fashion) as an avatar of mind in the Cartesian equation. For they clearly comprise an entity that, never explained in scientific terms, remains qualitatively different from the material brain it is said to 'invade'. This golden age dualism, however, is not always absolute, and in certain writers its terms can work in contrapuntal, ultimately interactive, fashion. Heinlein's work is a case in point. We see in his early stories, for example, an attempt to locate or construct some sort of interface between paranormal powers of the mind and the material world. We think of Heinlein as a thoroughgoing materialist. In this instance, though, he proves more a reluctant Cartesian, in so far as he openly recognizes dual realms of mind and matter, and keeps these domains distinctly parallel in his narratives. In his great early stories and novellas, he openly embraces paranormal powers (as in his novella 'Magic, Inc'), and considers them essentially irreducible to material laws of phenomena. In Heinlein's first published story, 'Lifeline' (1939), protagonist Hugo Pinero has precognitive abilities and simply accepts them, never seeking to explain them in scientific terms. His wish, however, is to build a machine that replicates this mental faculty, an analogue device that does not simply double but can surpass his native precognitive ability, able to measure with quantitative precision what Pinero's mind itself grasps only in figurative metaphors — the physical 'lifeline', or the 'pink worms' that form what he calls the 'vine' of a human life span. Pinero may seem an unscrupulous pragmatist who sells information to insurance companies in statistical form for profit. Yet what he sells is clearly more than the sole product of complex quantitative analysis. His knowledge of lifelines remains reliant on his innate and unquantifiable paranormal powers. His machine is described as simply a 'translating machine', one capable of mediating between unexplainable prescience

and the numerical laws of the physical world. To Heinlein, Pinero is a super-being precisely because he can live at this interface of mind and matter, neither horrified by his precognitive knowledge, nor abusive of the power it gives him. Proof of this is the fact that he can cast his own lifeline, look upon it, and consciously face his end.

A more interesting example of this material ‘translation’ of paranormal powers occurs in Heinlein’s early novella ‘Waldo’ (1942). Protagonist Waldo, at the beginning of the story, is quite literally a detached mind, a being floating in space, in a weightless bubble that neutralizes the myasthenia gravis that has previously held his body prisoner. All at once, in the story, the material world at large begins to undergo a fate analogous to Waldo’s. A mysterious loss of radiant energy causes planes and other mechanical devices that depend on this energy to fall to earth. Now, at this point, just when the mechanical and physical science seems to fail, paranormal powers enter the picture. The ‘deKalb’ motors that propel these planes and machines, it seems, can be ‘hexed’ back into functioning by a certain Gramps Schneider. Gramps ‘thinks’ a set of deKalb reactors back into operation by stroking them, letting magnetic energy flow from his hands into the ‘fingers’ of these generators. Waldo accepts this, but, as the genius engineer, he is driven to find a material analogue to Gramps’s paranormal powers. To do so he posits an interface between mind and matter that is much like Descartes’s pineal gland. But theory is not enough for Waldo. Neither are the figures of paranormal discourse. He is driven to reconstruct this interface physically, to make a mechanical device that not only links the two parallel universes, but acts as a ‘pump’ that retrieves the energy leaking into the other world from ours, reversing the entropic curve by drawing ‘free’ energy from that world to ours. Waldo sees the neurological system of his own brain as physically ‘lying in both spaces’. He can therefore use his ‘waldoes’, the nano-tools he has devised for other tasks, to engineer a physical bridge between his own synapses — the physical points from which he sees his own energy ‘leaking’ — and the other, invisible world that he not only conceives but brings into being by his actions. Waldo admits he does not have paranormal powers in the conventional sense: ‘He could not see the Other World; only through the Schneider treatment had he been able to contact it.’

But because his instrumental mode of thinking is able to encompass Schneider’s paranormal ability, he designs instruments with which he can study Gramps’s world, and finally enter and exploit it to his mechanical advantage. This is not simply an act of material colonialism. Neither is Waldo’s goal that of ‘explaining away’ the paranormal. Instead, he succeeds in building its mechanical analogue. Proof that these states remain parallel is the fact that, once Waldo engineers his machine, he turns back to the pure mind

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power that inspired it, in order to cure his own debilitating illness. His approach
on the individual level is the same: he devises a practical method of positive
thinking, an application of Schneider’s ‘hexing’, which allows him, in his
personal mind–body sphere, to draw back the energy that restores his own body.
One can say that Heinlein, like his character Waldo, draws fictional power from
this position at the interface between ‘magic’ and science. In doing so, he not
only repositions the Cartesian mind–matter duality, but re-engineers it in terms
of story, by creating a working narrative connection between the normal and
paranormal realms, realms that remain distinct, untellable to each other, in
Maupassant.

After Cyberpunk: The Hard SF of the Nineties

The cyberpunk ‘ethos’ and the information sciences that sustain it represent a
renewed attempt to reduce paranormal phenomena to purely material
that run them, leave little room for the paranormal, for a Cartesian ‘ghost’ that
cannot be downloaded or replicated. What is more, the ‘new physics’ (as Gary
Zukav termed it) and concomitant information sciences that underlay the cyber-
punk period seem to leave little room for the paranormal in its search for unitary
theories beyond conventional boundaries like the speed of light. Sweepingingly, in
the wake of such thought experiments as Bell’s theorem and the Einstein-
Podolsky-Rosen postulate, telepathy comes to be seen as an instance of ‘super-
luminal connection’, as simply the transmission of information at speeds greater
than light. Already in his early juvenile Time for the Stars (1956), Heinlein’s space
twins (who are identical particles of a sort) defeat the tau-barrier by a telepathic
transfer of information that is faster-than-light. As Gary Zukav puts it: ‘Super-
luminal quantum connectedness seems to be [. . .] a possible explanation for
some types of psychic phenomena. Telepathy, for example, often appears to
happen instantaneously, if not faster.’

Physicist David Bohm takes this a step
further, seeing such ‘connectedness’ as abolishing not only the duality of animate
and inanimate, but the ultimate division between mind and matter: ‘There is a
similarity between thought and matter. All matter, including ourselves, is deter-
mined by “information”. “Information” is what determines space and time.’

This seems to underlie the cyberpunk ethos.

More recent experiments, such as those of neuroscience, not only take a more
particular focus, but in doing so seem obliged to give paranormal phenomena
a more specific presence. For example, contemporary neuroscientists such as

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8 Zukav, p. 309.
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John Chapin of SUNY, or Richard Andersen at Cal Tech, are currently experimenting with software-based telekinesis, where an individual’s brain waves are programmed into a computer, allowing him or her to move the cursor by simply thinking about it. But these remain localized connections, whereas conventionally, in the case of paranormal phenomena, locality fails. Even so, neuroscientists speak of transcending local situations by seeking general codes, or lexicons of codes, on the assumption that brains may communicate telepathically if they share like codes, though again by means of some kind of translation software link. The implications of this may seem to go further yet. For if it is possible that the medium of ‘information’ is shared by mind and matter alike, as Bohm suggests, then there may be a physical explanation not only for communication, but for action at a distance — telekinesis. In all such experiments, however, right up to their evocation of theories such as that of Bohm, the last (and still secure) refuge of the Cartesian ghost remains individuality itself, the non-translatable complexity of those individual brain patterns that comprise what we call personality. Indeed, in the case of telepathy, as neuroscientist Joseph Miller admits: ‘We just don’t know how many “dictionaries” are going to be needed; worst case could be a separate dictionary or brain code for every person on earth!’. Brains may imply languages, but ‘mind’, it seems, still demands the status of idiom.

The literature of SF seems to parallel these shifts in scientific focus. However confident cyberpunk writers may seem that all aspects of mind can ultimately be reduced to material connections, we see in post-cyberpunk writers of the 1990s questions increasingly being raised both about the unique nature of the mind and about the complexities of this interface between individual minds and the general infosphere. These questions are signalled, in large part, by the somewhat unexpected reappearance of paranormal phenomena as serious players in the fictional equation. What we find in works of post-cyberpunk writers like Dan Simmons and Greg Egan is an almost neo-Heinleinian need to accept, in the macro-universe of the fictional story, parallel states, normal and paranormal phenomena. It does not matter if these parallel states, in accordance with new physical theories, may be said to exist in infinite profusion, where ‘reality’ in fact is a riot of ‘para-probabilities’. For, underlying all such theories, we sense a re-emergence of the old mind–matter duality, with the mental radically dominating the physical pole of the equation. Mind is now present as the force that ‘participates’ in nature, having the power to locate or determine the shape of the material world by ‘collapsing’ reality waves. and so forth, acts that bear suspicious resemblance (though now on a universal scale) to paranormal deeds of old. The obvious assumption in any narrative under the

sway of this generalized paranormality is that mind holds the power to determine, at each instant of thought, the nature and direction of the narrative 'line'.

And indeed, the narratives of Simmons and Egan are pervaded by the paranormal, in the sense that the old Newtonian material reality now gives way either to the individual reality of a mind choice, or to some form of consensus reality, where a group of minds agree to agree that what they perceive and experience is in fact 'real'. These newer writers conduct their experiments in paranormality in terms of such theoretical or graphic analogues to the mind–matter interface as fractal geometry, 'standing wavefronts', string theory, and the like. This is a different era, and much different science from that of Heinlein. And like Heinlein, these writers seem eager to reinvent the pineal gland that allows mind to act on the material world. But unlike Heinlein, who ultimately sought to reduce paranormality to feats of repeatable engineering prowess, they seem driven to explore new and strange ways by which mind exceeds or eludes material closure. As post-cyberpunk writers, they cultivate interfaces for their sheer perversity and beauty, in order to marvel at the possibility of the new fictional arabesques that ensue, born of quantum science's new quest for the holy grail of paranormality.

Dan Simmons's *The Hollow Man* (1992) revisits the old problem of telepathic union and teleportation in light of a host of complex theories: quantum theory, Everett’s many-worlds theory, chaos theory. As with the latter and its 'butterfly effect', all suggest possible interfaces between the universe of mind and that of matter. The ultimate location of the grail, however, the place where a possible explanation for telepathy and telekinesis might lie, seems, for Simmons' protagonists, to be neuroscience and its procedure of 'consciousness-mapping'. In the novel, the collaboration between protagonist Jeremy Bremen, a mathematician, and neuroscientist Jacob Goldmann produces a virtual 'map' that seems the key to a unified field theory that might once and for all explain the elusive links between mind and matter that subtend paranormal happenings. As is common in SF novels, Simmons offers detailed technical description of various complex theories as his scientists 'advance' towards an explanation. There is nothing new here. What is new is that Simmons seems aware of the glaring disparity between his scientists' theoretical quest, where increasingly untellable situations are posited, and the necessity of telling this story, which remains a story of individuals living in the reader's consensus world of material and narrative 'reality', with its conventions of linear time and causality. In this world the mind–matter duality is not an abstraction; the Cartesian problem becomes, as with Pascal, the human condition, a state of being where the individual mind cannot exist separately from matter. To the degree that *The Hollow Man* remains a novel, a series of pages to be sequentially turned, with conventions that accept material laws of locality, it is bound to recount a personal adventure, which eventually must
absorb any theoretical quest, much as the physical body subsumes the mind. At this level the ‘adventure’ is one of individual minds and bodies, of particular acts of paranormal communication that are ultimately beholden to the destinies of specific people, causal actions. Simmons takes the old schism in SF novels between the discourse of theory and the narrative of action, and makes the possibility or impossibility of reconciling these para-levels the theme of his novel.

The theoretical quest to understand the nature of things approaches its object from two complementary directions: quantum physics and neuroscience. Jeremy mentions the work of the Fundamental Physics Group, ‘hunting down all those smaller and smaller particles and studying the properties that rule them to get a hook on what’s real’.

If and when these researchers finally ‘glimpse’ physical reality on its most basic level, ‘they get a series of probability equations that show standing wavefronts’. The breakthrough comes when he realizes that ‘they get the same squiggles and jiggles that Goldmann gets when he looks beyond the brain and finds the mind’. Jeremy however can come to this unifying vision only because of his personal telepathic experience with Gail. The analogy between physical and mental realms can be made only because two individual telepaths communicate mind to mind. If the ‘out there’ and ‘in here’ are said to mirror each other, it is because, beyond the visible boundaries of each, there is a like, intercommunicating, paranormal phenomenon at work: ‘Out there, he shares with Gail. And in our minds. Different, and the same. The universe as a standing wavefront, as fragile and improbable as a baby’s dreams.’ If up to now paranormal experience helps scientists to reason ‘outside the box’, as they are fond of putting it, these scientists, and the narrator, still live in a world of the conventional categories of inside and outside, mind and matter, and must rely on them in order to reach this conclusion. In the world of the narrative, we never know what the paranormal is, other than that it serves as a guide, an imponderable to pursue. However close we seem to the unifying theory, there are always more walls to be breached by telepathy; unity remains as fragile and improbable as a baby’s dreams.

Jeremy’s depiction of the universe as ‘a sort of superhologram containing a few million smaller holograms’ suggests Joseph Miller’s dictionary, a book as vast as the myriad individual brain codes it must contain. The irreducible presence of these individual holograms, however, leads necessarily to reinstatement of the mind–body problem, which in turn returns the problem to the world of thermodynamics and material causality: ‘the intricate holographic wavefront that’s us [...] needs energy to support it just like everything else does’. Throughout,
the personal quest of the novel’s characters is little more than a restatement of the Cartesian dilemma: the desire that mind, as the personal hologram that abides in the hollow man, might survive the death of the body, much as the paranormal powers of the two protagonists exceed the limits of space and time. Jeremy and Gail share a mind world. Upon her death, Jeremy embarks on a journey that combines Dante’s inferno and the American road novel, guided by a Virgil that is none other than Gail’s telepathic voice. Instead of acting out some new quantum-mechanical scenario, Jeremy ends up re-enacting this old, oft-told tale. We even have the possibility of Gail becoming Beatrice when these two choose to enter, out of all probable worlds, the mindspace of a dying, deaf-mute child. Earlier, the scientist Goldmann’s suicide is described as the ‘ultimate two-slit experiment’. But as a story it is seen as a variation on Alfred Bester’s ‘jaunting’.14 Because Gail is an SF fan, she can command a concrete example from this body of human stories. Seen in this concrete light, Goldmann’s beautiful theory — a willed hope of teleportation to some probable better world where the holocaust never existed — becomes a desperate, futile act. In the midst of the myriad probable worlds of physical theory, is it possible for any individual to find his or her ‘best’ world? In the face of theoretical improbability, the paranormal is called upon (in fantastical manner) to suggest that an individual mind can make its world or ‘probability variance’ a shared place, through a willed action that ‘collapses’ chaos into an island of order. If all minds mirror universal order as probabilistic standing wavefronts, then no minds do; extremes cancel. In the novel, however, we deal with some minds, specific telepaths who appear to possess greater powers (hence something more than quantifiable properties) than others to collapse the wave. Jeremy’s theory of history is, in fact, a history of ‘ultimate perceptives’, minds like those of Einstein, Gandhi, Newton, ‘whose new vision of physical or moral laws were so powerful [. . .] that they caused a paradigm shift for the entire human race’.15 The theoretician can quibble that Newton’s physics did not work before Newton. But in the material realm beyond logic, the visions of these special people did change the physical world. Jeremy and Gail, because of their special gift, may be able to do what other ‘variances’ cannot — give us back the possibility of a story.

Like Goldmann earlier, Jeremy, on the last page of the novel, uses the pistol shot that kills him to ‘force the experiment’. But now his reasoning openly follows the way of the paranormal. Jeremy realizes that he cannot, like Bester’s characters, physically travel from one parallel world to another. Neither can he, like Heinlein’s Waldo, engineer a synaptic interface between worlds that remain, in

15 Simmons, p. 193.
the conventional physical universe of the story, for ever separate from each other. But is it then not possible for him to collapse his own wave or ‘lifeline’ into another world at the very microsecond before the brain dies, and thus forcing the ‘Everett counter-reality’ into physical existence? Here, if the description remains theoretical, the act itself, in relation to the world of the story, is teleportation pure and simple. His so-called two-slit experiment is merely a paranormal act, in which mind takes instantaneous control of the physical universe, thus allowing two telepathic minds to reunite beyond death. Again we have Dante rather than Everett. In the physical world that Dante’s pilgrim trod, locality fails only because God is absent, and the paranormal (telepathic contact with a higher order — God) offers the way to restore it.

Greg Egan’s Quarantine (1992) can be characterized, in terms of narrative conventions, as a mystery story; it is also a paranormal mystery, reminiscent of Poe’s ‘Murders in the Rue Morgue’. The mystery that science sets out to solve in Egan’s story is how a woman is able to walk through walls. The action is set in a future world where (apparently) some unknown higher power has ‘quarantined’ Earth by placing a ‘bubble’ around it that (shades of Asimov’s ‘Nightfall’) blots out the stars. There is again an attempt to ‘explain’ this traditional paranormal phenomenon in terms of sophisticated quantum physics. Laura is said to escape the mental institution in which she was held through the quantum-mechanical act of ‘smearing. By doing so, she causes herself to become an indeterminate entity, simply by remaining ‘uncollapsed’, that is, in the state that undulates between particle and wave. The narrator goes on to explain, in quantum terms, how she passes from the state of indeterminacy to one of action, in other words, how she passes through walls: ‘She was left unobserved long enough to smear to a degree of complexity which enabled her to mount expeditions.’ Egan is urging the reader to see its world, the world of its bodily journey, which is the world of conventional narrative, as something that exists only as a consensual collapse of quantum possibilities, a consensus that Laura dangerously violates. Order as we perceive it holds only because the collective mind concurs in it, wishes it so and not otherwise.

If this is the basic premise for the ‘world’ of Quarantine, Laura’s paranormal activities are a clear threat to it. The danger (from which the Bubble Maker apparently would protect us) lies in the proliferation of such activities. For were each individual consciousness to follow suit and seek to ‘smear’ the consensual reality, chaos would ensue. There would be, as Egan’s narrator puts it, ‘one

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16 In Isaac Asimov’s 1941 story ‘Nightfall’ (subsequently expanded into a novel with the same title in collaboration with Robert Silverberg), scientists on a distant planet that has been constantly illuminated by the stars prepare for an impending nightfall by constructing a protective dome.

isolated consciousness per eigenstate, like the many-worlds model brought to life’ (p. 253). The result of ‘bringing to life’ such quantum realities, in the midst of the consensus reality upon which all narratives rely, would be non-narratability. Logically, in Egan's endlessly smearable world, there can be no 'individuals', for all beings are capable of changing all variables of their existence at any instant. But Laura must be an individual in the conventional sense. Otherwise, what is the problem of her remaining 'unobserved'? And who might be the observers here? Nonetheless, as the narrator explains, the danger is great because:

smearing is an exponential process. Within a day or two, remaining unobserved would have required her to suppress the collapse of everyone on Earth. And after a day or two of that [. . .] the depleted region would be filled. Humanity would tunnel through the Bubble and make contact with the rest of superspace. What would happen then is hard to predict, but one possibility is that the wave function in this region would never be collapsed again. (p. 233)

What again emerges from such convoluted descriptions is a clear schism between the mind constructs of quantum physics and the Newtonian conventions that govern the telling of a story about people, such as they might exist under hypothetical conditions like 'smear' realities. As his particular narrative progresses, Egan finds himself relying on such conventions to tell his story. The quantum-physical descriptions of ever-smearred realities, whose purpose is to 'explain' the paranormal phenomenon of teleportation, are forced to evolve, by narrative necessity, into a cloak-and-dagger story. The intrigue here leads in turn to a tale of Clarkean transcendence. On the level of story, the protagonist Nick is a private detective. He is investigating Laura's 'disappearance', which, it seems, is connected to certain shadowy groups, creators of software and brain 'mods' that allow individual minds to 'smear'. Their goal, he discovers, is to create a supermind out of superpossibility.

At this juncture the SF tale of the transcendent artificial intelligence generates its formulaic opposite, the nightmare dystopian scenario, the creation of a monstrous and oppressive monolith born, as in Nineteen Eighty-Four, of ‘smearing’ all sense of factual history and causal timelines. It is at this level of narrative specificity that Nick, the narrator, hopes to reclaim his dead wife Karen, who has been his telepathic partner (by means of a brain mod) throughout the novel: 'Once the world stops collapsing, anything is possible [. . .] The collapse is the source of time asymmetry; you might be able to tunnel back to a time before [your wife's] death' (p. 266). Another well-known SF scenario takes over here: the time-travel story, where manipulation of 'timelines' by the individual invariably involves a fatal rendezvous with his or her inexorably set biological 'lifeline'.

Wherever the reader turns, the known patterns of narrative formula or convention act to concretize the theoretical possibilities of quantum theory.
Even so, none of the formulas mentioned appears adequate to describe Laura’s abilities to exceed known physical boundaries. Her actions remain what conventional fiction called paranormal actions. And significantly, Egan’s ultimate explanation abandons quantum theory for another well-known SF scenario. What arises here is the possibility that such random occurrence might ultimately take form as a god-mind, at some hyper-location where ‘all these smeared selves might have circled the globe, might have already linked, intermittently, into a mind more complex than Earth has ever known’ (p. 274). Nick is told: ‘You know what one smeared human can do — don’t you think an amalgam of 12 billion would be able to tunnel itself into existence?’ (p. 275). In fact, in a twist of narrative irony, Egan’s ‘novel of quantum catastrophe’ itself tunnels into a storyline that reaffirms the mind–matter duality, this time in the form of a cosmic cogito. What is more, this post-quantum cogito is once again presented as a paranormal grail, in this case simply an ever-further-reaching act of teleportation; for Nick the quantum detective must now consider the possibility of this self-created supermind walking through the wall of the Bubble itself: ‘Maybe smeared humanity reached the edge of the Bubble — and didn’t recoil […] Maybe the planet is still smeared. One consciousness per eigenstate, branching out endlessly, the many-worlds model come true’ (p. 280). Clearly, even in this brave new mind-world, which claims the wave/particle option as the function of the individual mind, the personal destinies of the novel’s ‘characters’ remain bound to material process. Just as we seem to glimpse the endless possibilities of theory, we again encounter Pascal’s human condition, where the human mind or reason remains ultimately powerless to free itself by physical means (including quantum physical) from the material dilemma of the two infinities. Nick concludes: ‘Every dream, every vision […] half-way between infinite happiness and infinite suffering’ (p. 281). In essence, at the conclusion of this novel of endless possibility, the mind–matter duality holds. The only choice for Nick, faced with this realization, is retreat. And the retreat is, specifically, into Descartes’s stove of doubt: ‘So here I am, gazing up into the darkness, unable to decide if I’m staring at infinity, or at the backs of my own eyelids’ (p. 280).

Conclusion: Paranormality and Survival

In a sense, Egan does not succeed in turning the conventional world of fiction inside out. What he does is merely invert the accepted relationship between the known and the unknown, hoping to create a form of narrative where the paranormal has simply become the norm. To make this so, Nick, in an act of negative reason, ‘unsmeared’ as it were, simply chooses not to choose between mind and res extensa: ‘I don’t need to know the answer. I just recite to myself, over and over . . . It all adds up to normality’ (p. 290). Yet, far from abolishing the
mind–matter duality, the quantum-reality novels of Simmons and Egan prove unable to totalize the mental pole, to create a working narrative entirely of mind probabilities. If anyone and everyone, in Egan’s world, is able to walk through walls, the protagonists still have to agree to agree that these walls do not exist. In the meanwhile, other walls, those of literary conventions that obey the demands of cause and effect, rise up in their stead. At the same time that theory is abolishing walls, these walls of convention reinstate the mysteries of the paranormal that still cry out for answers, for solutions. As characters, Nick and the others are bound to progress along their story lines, from cover to cover of those same books in which they strive so hard not to exist in any ‘normal’, material sense. What is more, as Egan’s novel demonstrates, the new vision does not abolish the lure of things paranormal, the world outside the bubble. If anything, a character that at any instant can violate the laws of the consensual world remains as lonely as a Maupassant protagonist in his solitary struggle against the horla. Finally, this solitude becomes a narrative solitude as well; for, in the end, discussion of ‘smeared’ entities only calls attention to the inability of narrative conventions to render such theoretical possibilities in terms of story. The minute a character has chosen his or her particular wave path, or eigenstate, or whatever one wishes to call it, he or she is in thrall anew to material and conventional patterns, such as war and peace, life and death, patterns that are the very essence of narrative.

Whereas nineteenth-century France wanted to ‘explain’ paranormal phenomena in terms of material extension, the post-cyberpunk millennium seems to wish to do the opposite: abolish ‘hard’ reality in favour of universalizing fictions of the mind. Lost perhaps is the balance and literary promise of Heinlein’s two-world vision, where magic and engineering, mind and matter, work together at their pineal interface to generate stories that remain, in the American tradition of Huck Finn, parables of individual survival. For Waldo, the paranormal is more than a grail; it provides a means of reprieve, if not total escape, from the cold equations of thermodynamics and conservation of energy.

Both Waldo’s world and Waldo’s individual being are faced with a survival situation. The crisis that besets Waldo’s world is a generalized paranormal phenomenon, a loss of energy that defies all known laws of physics. This occurrence, at the same time, assumes an aura of apocalypse every bit as ominous as the mysterious ‘white mist’ that invades Scott Carey’s world in the quintessential 1950s atomic disaster film The Incredible Shrinking Man. What is happening to Waldo is in fact happening to the natural world at large, an ever-accelerating

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18 Guy de Maupassant’s 1887 story ‘Le Horla’ describes the haunting of a Norman gentleman by an invisible, vampire-like being.
19 The Incredible Shrinking Man (1957), based on Richard Matheson’s 1956 novel The Shrinking Man (New York: Fawcett, 1956), describes how the protagonist begins to shrink after passing through a mysterious white mist.
loss of energy, a ‘heat death’, of which Waldo, it seems, is the fallen angel and harbinger.

At this point, Waldo’s actions, a struggle to overcome this disaster at the level of his personal world, become an experiment in survival much like Thoreau’s concerted actions at Walden Pond. Thoreau here devises an experiment in which an individual being strives, in a condition of self-controlled solitude, to make itself (as described by Emerson) the dynamic centre from which the renewal of the circumference, the material world at large, must emanate. Out of more physical necessity than Thoreau, Waldo has constructed his own Walden, the zero-gravity space station Freehold (or Wheelchair, as the sceptical non-survivalists call it). Here, as with Thoreau in the first chapter of his account entitled ‘Economy’, Waldo has ‘simplified’ his existence by severing all ties both with society and with the debilitated physical environment that society has apparently created. In his solitary world Waldo is free, first of all, to contemplate the apocalyptic promise of this generalized loss of energy. Energy is leaking into an apparently paranormal world. Moreover, it seems retrievable only by paranormal means — Gramps Schneider’s ‘hexing’. Secondly, Waldo is free to conduct the experiments that enable him, in a sense, to take charge of the paranormal circuit. If he cannot physically walk through the walls of his universe, he can locate and construct a physical interface between worlds that allows him to reverse the general and individual energy slope, drawing power from the other world back into his own space and time.

The language that describes Waldo’s end-of-space-and-time experiment is apocalyptic. The possibility, however, of terminal disaster and world collapse is conflated into Waldo’s individual experience, as he maps the way of survival in the synapses of his own brain, creating a link between normal and paranormal worlds that in fact any individual, just like any reader of Thoreau’s Walden or Heinlein’s story, can hope to exploit. There are no institutional solutions here; for Waldo, as for Emerson, institutions are nothing more than the lengthened shadow of the individual man. Neither is there a theoretical solution, as with Simmons’s ‘ultimate perceptsives’. Instead, we have a dramatization of Emerson’s ‘Man Thinking’. When Waldo decides he will ‘set the pace’ by performing his experiment, and thus bring order out of chaos, he is not collapsing a wave but rather living out Emerson’s dictum in ‘Experience’ that ‘inevitably does the universe wear our color, and every object fall successively into the subject itself’.20 Confronting in his private sphere the apocalyptic or end-game nature of the public plight, Waldo’s ability to survive diverts the

disastrous end into what Emerson calls a 'galvanic circuit'. We think of Emerson's own deflation of all tragic endings:

Do you see that kitten chasing so prettily her own tail? If you could look with her eyes you might see her surrounded with hundreds of figures performing complex dramas, with tragic and comic issues, long conversations [...] many ups and downs of fate — and meantime it is only puss and her tail.21

Waldo's story may, to some readers, seem no more significant than a children's story — puss and her tail. Yet it is his survivalist fantasy that takes otherwise paralysing dualities — Emerson's tragedy and comedy, Descartes's mind and matter, or normal and paranormal worlds — and creates from them a dynamic undulation between centre and circumference. As with Thoreau, it is for the sake of his own personal survival (and only by extended analogy the survival of the physical world at large) that Waldo restores and exploits Emerson's galvanizing circuit of power and form.

In the novels of Simmons and Egan a schism remains between paranormalizing theory and the norms of conventional story and narrative. In Heinlein this very schism is the place, the terrain of private experiment, where the menace of paranormal apocalypse, so prevalent in the new physics of Egan and Simmons, is actually converted into a functioning survival machine. Waldo's world could have accepted the paranormal, and simply used Gramps Schneider's 'hexing' to restore its order, never inquiring how and why it worked. Or, as in Simmons and Egan, his world could have subjected the phenomenon of hexing to endless theorizing, spinning out ever more 'speculative' models of physical laws until these laws become the stuff of chaos itself. This is the path of the mad Dr Rambeau in the Heinlein story. The 'science' of Egan's novel, as it weaves its theoretical arabesques around a single act of walking through walls, devolves in like manner into a discourse of madness, from which the protagonist must retreat into his personal Cartesian stove, preserving his humanity (in this sense not some abstract cogito, but more what Emerson calls the 'mid-world') by hiding it away from the probabilistic world that engulfs him. This huddling place is, as an act of survival, the very opposite of Waldo's active experiment.

It may seem curious to see Heinlein as a transcendentalist. The reading stands, however. Furthermore, I would argue that use of this transcendentalist dynamic allows Heinlein to lay to rest the Cartesian ghost of mind that drives SF's ongoing fascination with paranormal phenomena. This ghost haunts paranormal happenings in works from Maupassant to the present quantum age. In Heinlein, however, the confrontation of mind and matter, of known and unknown, does not, as in Maupassant, lead to madness and commitment to the asylum. Neither does it lead to the moral isolation and horror of writers who

21 Selections from Ralph Waldo Emerson, p. 271.
work the night-side of the golden age’s positivist materialism. Nor does it produce the schizophrenic narratives of Egan, where incongruities between mind inventions, on the one hand, and ‘consensual’ (one dare not say material) events, on the other, lead to a schism at the level of our ability to be able to tell stories at all. Heinlein, in contrast, in ‘Waldo’ has successfully negotiated the interface between normal and paranormal worlds, producing one of the most successful accommodations of science fiction’s holy grail that exists to date. By turning the quest at the confines of known physical law (which is, after all, the essence of SF) into a story of personal survival on the brink of apocalyptic possibility, Heinlein has transposed the paranormal of Mesmer, Maupassant, and John W. Campbell into the American mainstream. For with Gramps and Waldo he gives us, in the deepest sense of Thoreau’s Walden experiment, an imagination of disaster that is at the same time a compelling story of human resilience. In Waldo humanity survives, not as some mind ghost in the machine, but as dynamic fusion of power and form.