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Radical physics: science, socialism, and the paranormal at Birkbeck College in the 1970s

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Abstract: The 1970s saw a resurgence of interest in the paranormal. In the mass media, as well as in academic and popular conferences across the world, metal-bending, telepathy, clairvoyance, and remote viewing were avidly debated. In Britain, attention to the paranormal was sparked by visits of Uri Geller. Scientists, and physicists in particular, sought to explain the phenomena. This article explores the social life of paranormal science in Birkbeck College in the 1970s and its links to radical critiques of scientific norms and practices. It traces the scientific and political thinking of physicists as different as John Hasted and David Bohm. It explores the importance of quantum mechanics, as well as leftist politics (membership of the Communist Party of Great Britain). Paraphysics provided a small group of scientists with a way to reflect on the three crises of politics emerging out of capitalism, the Cold War, and Stalinism.

Keywords: Paranormal, paraphysics, physics, Birkbeck College, metal-bending, Uri Geller, David Bohm, John Hasted, quantum mechanics, Communist Party of Great Britain.

October 1974. Uri Geller—celebrated for his demonstrations of clairvoyance, telepathy, teleportation, and ability to bend spoons and keys through the power of thought alone—was holding a press conference at the Savoy Hotel in London. The room was buzzing with energy: it was like ‘a revivalist meeting’, observed one journalist.¹ Although Geller had summoned the press to the hotel in order to launch his new music record, those who turned up were more interested in his paranormal proclivities. Sensing scepticism, Geller was bullish, promising journalists that one day

¹ *The Times* (1974: np) and *Yorkshire Post* (1974: np).

he would host a ‘big television spectacular in front of all the top sceptics and scientists in the world’. This event would ‘settle once and for all the validity of his powers’. Unfortunately, Geller contended, ‘the presence of conjurors, professional tricksters, and other “negative” doubting Thomases’ were having an inhibiting impact on his psychic energies but

in the long run[,] criticism does not hurt, because scientific tests will eventually justify me. If you do not believe in what I do, that is your problem.²

At this point in the press conference, there was an unexpected interruption. John Hasted of Birkbeck College and John Taylor of King’s College London—both highly respected professors of physics—spontaneously rose from their seats to ‘give testimony to the genuineness of Mr. Geller’. Hasted admitted that ‘scientists should not do this sort of thing’, but, undeterred, announced that ‘the time has come to stand up and be counted’. He told the assembled journalists that he had personally tested Geller’s extraordinary talents in his laboratory at Birkbeck College and swore that Geller had not been ‘a phoney’. Hasted maintained that he had no explanation for ‘what causes the phenomenon, but I believe in what Uri Geller does. Science will discover how he softens metal, though science may be changed in the process’.³

For a respected scientist to make such a pronouncement in 1974 was brave but not particularly foolhardy. Paranormal shows were popular at the time. Numerous academic conferences showcased the phenomenon.⁴ On stage in France, Jean-Pierre Girard was wowing audiences by demonstrating his ability to lift objects without touching them; in Germany, the aptly named Professor Hans Bender was championing poltergeists and clairvoyants.⁵ Israel-born Geller was himself a global phenomenon, appearing on television in the United States, Japan, South Africa, and most European countries.⁶ Admittedly, there were some farcical incidents (in Sweden, for example, a woman who had watched Geller perform his metal-bending exploits on television accused him of causing the metal birth-control device in her uterus to straighten, resulting in her pregnancy),⁷ but there were many believers.

In subsequent decades, historians of science have also shown an interest in the phenomenon. Most notably, sociologists Trevor J. Pinch and Harry M. Collins used the phenomenon to reflect on the social construction of scientific knowledge. They received government grants to establish laboratories engaging in paranormal research,

² *The Times* (1974: np).

³ *The Times* (1974: np) and *Yorkshire Post* (1974: np).

⁴ Hackett (1983: 9).

⁵ Hackett (1983: 9).

⁶ Hasted (1981: 14).

⁷ Holroyd (1977: 105).

taking part in experiments as participant observers. Collins and Pinch maintained that there were no independent scientific criteria or practices capable of judging the ‘truth value’ of *any* scientific proposition, including paranormal ones. All scientific ‘facts’ were relative; known ‘facts’ about ‘nature’ were nothing more than dominant paradigms that were shared by members of an intellectual community. Collins and Pinch applied Thomas Kuhn’s concept of ‘paradigm conflict’ to the ‘paranormal v. science’ debate, noting that it was a classic example of two worldviews that were fundamentally ‘incommensurable’.⁸ The dominant scientific community was determined to ‘legitimate the present orthodoxy’. For Collins and Pinch, the central conundrum for parapsychologists was simply how to convince other scientists to abandon orthodox knowledge for their alternative.⁹

Another aspect of Collins and Pinch’s agenda involved pitting the ‘fraud hypothesis’ (that is, the belief that extraordinary scientific phenomena were the result of fraudulent practices) against the ‘paranormal hypothesis’ (the observed phenomena were real, despite not complying with any known scientific law).¹⁰ Pinch even insisted that it was the ‘fraud hypothesis’ that needed to be more thoroughly investigated, alleging that the accusation of fraud should be ‘rejected as unscientific for the same sorts of reasons that have been used to reject parapsychology’.¹¹

Although these arguments have been productive in drawing attention to the social life of science, this article takes a different approach to the paranormal. I focus primarily on parapsychics and psychokinetics, which involve phenomena as diverse as telepathy, clairvoyance, precognition, and telekinesis, the ability to move physical objects by mental power alone. This article begins by exploring the rise of paranormal beliefs and research within scientific communities in Britain from the 1970s. It looks at the prominent role played by scientists at Birkbeck College, the scientific reasons that made parapsychics plausible, and the subsequent attacks on their scientific rigour. The article then goes on to ask why parapsychics interested these scientists. I will argue that it is important to ask why this unfashionable scientific theory was attractive to these men *as scientists*.

⁸ Collins & Pinch (1982: 4 and 11).

⁹ Pinch (1979: 340).

¹⁰ The most notable examples are Pinch (1979), Collins & Pinch (1979), and Collins & Pinch (1982).

¹¹ Pinch (1979: 334–5).

PART ONE: INTEREST IN THE PARANORMAL

Geller arrived first in London in October 1972, two years before the press conference in the Savoy Hotel where he had attempted to launch his record. With the encouragement of his main champion Andrija Puharich, Geller had demonstrated his psychic powers at the Royal Garden Hotel. Witnesses, including quantum physicist Edward 'Ted' Bastin from Cambridge, were smitten. On 23 November 1973, people throughout the UK echoed Bastin's amazement when Geller appeared with Professor John Taylor on *The Dimbleby Talk-in* show. Geller bent spoons and engaged in other paranormal tricks on live television, making children, adolescents, and adults watching from their living room sofas suddenly discover their own hitherto unnoticed paranormal capacities to bend spoons. Almost overnight, metal-bending, telepathy, clairvoyance, and remote viewing became popular pastimes at parties throughout the UK.

This obsession for all things paranormal had a serious side. It attracted the attention of the CIA, the Pentagon, and defence laboratories, which were deeply embroiled in Cold War intrigue. The US Department of Defense, in particular, was nervous about reports that scientists in the Soviet Union had established scientific programmes devoted to mind-control and psychic research generally.¹² Nikolai Khokhlov, an agent of the Soviet secret intelligence service, contended that the Soviets had 'trained a corps of psychics who could erase information stored on the computer tapes which control nuclear weapons'.¹³ In the early 1970s, Sheila Ostrander and Lynn Schroeder (both members of the American Society for Psychical Research) were convinced that 'top-caliber Soviet scientists had already made significant breakthroughs in psychical research, a field usually ignored by Western science'. Referring to an article by Vladimir Mutshall in the *Foreign Science Bulletin*, they maintained that

If the Russian reports are even partly true, and if mind-to-mind thought transference can be used for such things as interplanetary communication or the guiding of interplanetary spacecraft, the reports will obviously have overwhelming significance.¹⁴

Anxious not to be left behind, the CIA conducted experiments with Geller, who managed to convince at least some that his psychic powers were real.¹⁵ As a result, American scientists found themselves awash with government funding to carry out parapsychological experiments.

¹² Kaiser (2011: 65).

¹³ Grove (1985: 228).

¹⁴ Ostrander & Schroeder (1977: 18).

¹⁵ Larimer (2017).

In other academic circles, as well, the paranormal was being taken seriously. It received a major boon in 1969 when eminent anthropologist Margaret Mead convinced the American Association for the Advancement of Science to bestow ‘Associate status’ on parapsychology. In her preface to a book by Russell Targ and Harold E. Puthoff, entitled *Mind-reach. Scientists Look at Psychic Ability* (1977), Mead maintained that the authors provided readers with a ‘clear, straightforward account of a set of successful experiments that demonstrate the existence of “remote viewing”, a hitherto unvalidated human capacity’. Her belief in the reality of psychic phenomenon had been bolstered by the fact that Targ and Puthoff were respectable, university-based physicists—they were, Mead reminded readers, experts in ‘the hardest of the hard sciences’. They also did not ‘appear to be ... true believers who set out to use science to validate passionately held beliefs’.¹⁶ This was a weighty endorsement from one of the world’s most highly respected anthropologists. Unfortunately, Targ and Puthoff’s CIA-sponsored project on ‘remote viewing’ (code named ‘Stargate’) was subsequently discredited.

PART TWO: THE PARANORMAL AT BIRKBECK

This was the context in which two of the most highly respected physicists in Britain and based at Birkbeck College decided that the ‘Geller phenomenon’ was worth exploring. We have already been introduced to the first: John Barrett Hasted, the man who announced at Geller’s 1974 press conference that ‘the time has come to stand up and be counted’. Hasted was born into a distinguished, albeit tragic, family. His mother, who died when he was three weeks old, was the daughter of Field Marshal Sir Arthur Arnold Barrett. His father was in the army, but committed suicide early in the Second World War.¹⁷ Hasted must have been a lonely child. He boarded at Winchester College and then studied at New College, Oxford. He specialised in experimental physics, particularly atomic physics and the dielectric and electromagnetic properties of water. His intellectual reputation took off in 1964, when he published *The Physics of Atomic Collisions*. It quickly became a major textbook in the field. Four years later, in 1968, he was appointed Professor of Experimental Physics at Birkbeck and, in 1971, was elected a Fellow of the Institute of Physics. He remained in Birkbeck’s Physics Department until he retired in 1986.

Hasted was more than just a distinguished physicist. He was also a fervent communist, active peace campaigner, and prominent folk musician who was widely

¹⁶ Mead (1977: xv–xvi). Also see Gardner (1989: 185) and Grove (1985: 226).

¹⁷ *The Times* (2002: 35).

credited with having brought skiffle music to Britain. As we shall see, these four passions—physics, communism, peace, and folk music—are important elements in this story.

The other distinguished paraphysicist at Birkbeck was David Bohm. He was a protégé of Albert Einstein.¹⁸ During his lifetime, he was a serious contender for the Nobel Prize and is still widely thought to be one of the greatest physicists of the 20th century and a pioneer of the theory of quantum mechanics and the unified theory of physics.¹⁹

Like Hasted, Bohm had been a communist. Indeed, he had been forced to flee the United States after refusing to give evidence before the House Un-American Activities Committee. In 1961, after many unsatisfactory years working in physics departments in São Paulo, Haifa, and Bristol, Bohm was appointed Professor of Theoretical Physics at Birkbeck, where he remained until he retired in 1987. Like Hasted, he had an obsession that informed his science: he was fascinated by debates about the nature of consciousness, influenced by the Indian guru Jiddu Krishnamurti.²⁰

Hasted and Bohm set out to see whether psychic phenomena were ‘real’ and, if so, what this meant for science. In this, they were following their revolutionary and paradigm-changing approach in more established physics research. Although their quest would result in public ridicule and humiliation, Hasted and Bohm were intellectually committed to unravelling this scientific mystery. Of the two, Hasted was unquestionably the most committed. He insisted that ‘I don’t care if the world believes me or not. ... I only want to get to the bottom of it.’²¹ He contended that he wanted ‘to find out and test the accepted laws [of physics] and see whether they need changing’.²² For him, the issue was simple: ‘I encountered a physical phenomenon which I could not explain’, and so he set out to make sense of it.²³ As Hasted wrote in his *Alternative Memoirs* (1992),

If we accept what has always seemed more likely, namely that the universe behaves as a closed system, then we must be continually watchful for unexpected phenomena, that is to say, for miracles. It is such discrepancies which offer clues to any deficiencies in existing theory.

He observed that, in the past, unexplained phenomena were typically ‘attributed to the action of God’, but that would no longer suffice. Instead, psychic phenomena

¹⁸ Freire (2005: 2).

¹⁹ Hiley (2013: 13).

²⁰ Bohm (1975: np).

²¹ Owen (1978: np).

²² Robins (1979: np).

²³ Hasted (1992: 181).

offered ‘a possible channel for enlargement’ of knowledge through the construction of hypotheses, rigorous testing, and careful observation.²⁴ Hasted and Bohm admitted to being ‘Baffled Boffins’,²⁵ but they were confident that through scientific experimentation and observation they would find the answer.

Their investigations into the paranormal began in earnest in 1974. On 21 June that year, Geller walked into their rooms at Birkbeck. Also present were Bastin and Brendan O'Regan from the Institute of Noetic Sciences, a parapsychological research institute, author Arthur Koestler, science fiction writer Arthur C. Clarke, physicist Keith Birkinshaw,²⁶ and theoretical physicist Jack Sarfatti, who had been a research fellowship at Birkbeck but was also a member of the American counterculture Fundamental Fysiks Group. Under close scrutiny, Geller bent four keys and a molybdenum disc. He caused half of a disc of vanadium carbide, a substance as hard and brittle as thin glass, to disappear.²⁷ He also triggered a Geiger counter to jump dramatically and deflected a compass needle while at the same time producing a pulse on a magnetometer.²⁸ Hasted found in these experiments ‘strong evidence that the energy bursts were electrical in origin’. Geller, he believed ‘was not producing radio-activity but electrical pulses. In fact, Uri himself seemed to suffer some kind of electric shock. I’m convinced the effects were genuine. We have gone well beyond bending keys.’²⁹ Hasted announced that ‘these observations are consistent with the hypothesis that Mr Geller could by concentration produce occasional and rather unpredictable pulses of electromotive force’.³⁰

Bohm was impressed, but much more cautious. ‘Unfortunately, there were a lot of people in the room’, he conceded, adding that ‘as far as the key bending is concerned, we had much better conditions in his hotel room [in February 1974] where it was much quieter’. He acknowledged that he could not be certain that ‘there were no tricks’ because Geller ‘works in a very high state of excitement which communicates to the experimenter, and that makes it hard to keep your mind on what is happening’.³¹ In a statement that was to be echoed repeatedly by proponents of paranormal activity, Bohm reminded sceptics that paranormal effects required a particular state of mind. Subjecting Geller to a body-search prior to the experiments would be counterproductive, Bohm believed, because ‘it would put him off’.³² Geller also ‘tends to get

²⁴ Hasted (1992: 181).

²⁵ Hasted (1992: 181).

²⁶ He was present according to Sarfatti (1974: 46).

²⁷ Holroyd (1977: 107).

²⁸ *New Scientist* (1974: np).

²⁹ Stockdill (1974: np).

³⁰ *New Scientist* (1974: np).

³¹ *New Scientist* (1974: np).

³² *New Scientist* (1974: np).

discouraged by complicated set-ups', he noted, adding that 'We had some set-ups that would have given stronger proof, but he was never in the right state of mind.'³³ All in all, Bohm concluded, 'My attitude is that whatever he requires, we must accept.'³⁴

The following day, Geller was subjected to yet more tests. The room was crowded. Not only were Hasted, Bohm, Clarke, Sarfatti, and Koestler present, but also distinguished rocket engineer Arthur Valentine Cleaver, engineer and president of the Society of Psychical Research Arthur Ellison, and American concert pianist Byron Janis with his wife, the artist Maria Cooper Janis. Once again, Geller elicited a 'very strong burst from a Geiger counter tube that he held in his hand'.³⁵ Koestler was reported to be visibly shaken after the burst because he had felt a 'strong sensation simultaneous with the Geiger tube burst'.³⁶ Sarfatti concluded that

My personal professional judgment as a Ph.D. physicist is that Geller demonstrated genuine psycho-energetic ability at Birkbeck, which is beyond the doubt of any reasonable man, under relatively well controlled and repeatable experimental conditions. While the experimental conditions were not perfect, the events at Birkbeck do represent a major step forward in the new field of experimental psycho-energies.³⁷

Clarke belligerently 'challenged any magician to "put up or shut up" in regard to duplicating Geller's feat under identical conditions'.³⁸

Hasted also conducted experiments with Geller in the stately home of Langley House in Wiltshire, where Geller's powers were so great that one of Hasted's cufflinks broke.³⁹ In another experiment, a 'crystal of vanadium carbide, a rare and very hard metal, was placed inside a cellulose capsule and laid on a piece of metal in front of witnesses'. Hasted swore that

Geller never went nearer than eight inches to it, and I put my hand between his hand and the crystal. As Geller moved his hand above mine, I felt a tingling sensation in my hand. Suddenly the capsule gave a little jump. We looked at the capsule—and only half of the crystal was there.⁴⁰

Hasted confessed that domestic tensions arose when Geller visited his home. In the presence of Hasted and his wife, objects moved between rooms and a clock that had been silent for thirty years suddenly chimed. Hasted's wife (who had been 'deeply dismissive' of the paranormal prior to Geller's visit) became 'increasingly frightened'

³³ *New Scientist* (1974: np).

³⁴ *New Scientist* (1974: np).

³⁵ Sarfatti (1974: 46).

³⁶ Sarfatti (1974: 46).

³⁷ Sarfatti (1974: 46).

³⁸ Sarfatti (1974: 46).

³⁹ *Birmingham Post* (1975: np).

⁴⁰ Rolph (nd: np).

when poltergeist-type phenomena took place.⁴¹ Hasted admitted that it was ‘a hard time for my wife and myself—we nearly fell out. We really had quite serious emotional troubles about it’.⁴²

Domestic tensions aside, Hasted and Bohm announced that the ‘human mind’ was capable of ‘distorting matter on the atomic and molecular level through activity patterns of the brain’. They were confident that the data they and other physicists were collecting would eventually be so extensive that there would be ‘no room for reasonable doubt that some new process is involved here, which cannot be accounted for or explained in terms of present known laws of physics’.⁴³ Bohm’s earlier caution was also thrown to the wind. When he was finally allowed to return to the United States in 1977, he told a packed Berkeley physics audience of the results of these Birkbeck experiments with the ‘psychic wunderkind, Uri Geller’. As one commentator noted, the ‘much-revered quantum physicist held up several pieces of bent metal for his audience of fellow physicists to eagerly peruse’ and ‘For a moment the unthinkable seemed thinkable—that the paradoxes of quantum mechanics might be connected to the field of parapsychology’.⁴⁴

Unfortunately for the two Birkbeck scientists, Geller was more interested in his lucrative career as a media personality than serving as an unpaid experimental subject for university physicists. Luckily for them, others proved willing. Hasted and Bohm turned their keen intellects to ‘mini-Gellers’ (in Italian, known as ‘Gellerini’),⁴⁵ young people who claimed to be able to replicate Geller’s paranormal feats. These ‘mini-Gellers’ were able to bend metal, scrunch paperclips, levitate, move objects, view objects in remote places, take ‘thought-photographs’ (that is, produce photographic images on light-sensitive film by paranormal means), communicate with people in other countries as well as in UFO spaceships, read minds, predict future events, and summon poltergeists.⁴⁶ Hasted and Taylor eventually identified forty-six people with metal-bending powers in Britain,⁴⁷ and Hasted was able to document psychic capabilities in at least eighteen children.⁴⁸

Fifteen-year-old Julie Knowles and ten-year-old Stephen North were two of these extraordinary children. Julie was a pupil at St. Augustine’s Roman Catholic School in Trowbridge. Like nearly all ‘mini-Gellers’, she had discovered her psychic powers while watching Geller on television.⁴⁹ Initially, she caught the attention of researchers

⁴¹ Margolis (1998: 213).

⁴² Margolis (1998: 213).

⁴³ *Daily Mail* (1975: np).

⁴⁴ Pinch (2011: 435).

⁴⁵ Hasted (1981: 29).

⁴⁶ For details, see Hasted (1981: throughout).

⁴⁷ Holroyd (1977: 108).

⁴⁸ Hasted (1981: 30).

⁴⁹ *Reveille* (1976: np).

at the nearby University of Bath. However, under experimental conditions, Julie failed to bend any spoons, despite the fact that her mother swore that Julie had bent two spoons just prior to entering the laboratory. Her mother explained the discrepancy by maintaining that her daughter ‘didn’t like the conditions in the laboratory. She can’t bend things on demand, she has to feel in the mood.’⁵⁰

This was where Hasted stepped in. He contended that a ‘genuine spontaneous physical phenomenon’ was ‘being killed off by the continued insistence by psychologists and others on “performance” under video tests with complicated protocol’. He believed this was unnecessary since ‘all that is really needed is to record instrumental data’ in the relaxed environment of a home.⁵¹ He invited Julie into his home to meet Geller: in that relaxed environment, she was easily able to complete a psychic test, which was ‘witnessed carefully by a number of scientists’.⁵²

Under Hasted’s casual experimental conditions, Julie flourished. After all, she explained, ‘I have to be in the mood to do it and it holds me back if I sense there is someone pesant [sic] who does not believe it.’⁵³ In one experiment, a ‘T-shaped strip made of drinking straws was placed on a plastic base floating in a glass of water’ and the whole ‘apparatus was covered by a sealed glass dome’. In front of six witnesses, Julie ‘concentrated from a distance’ and ‘slowly, she swivelled the strip through 85 degrees’.⁵⁴ A few minutes after picking up a teaspoon, Julie

said she had a ‘feeling’... she had a pain at the top of her right arm and then felt water and wax as she was rubbing the spoon. The moment she said wax, the bowl of the spoon bent downwards sharply.⁵⁵

Julie’s powers extended beyond revolving drinking straws and bending spoons. She claimed to be able to ‘listen in to the conversations extraterrestrial beings have in their flying saucers’, although she confessed that ‘it didn’t make any sense’.⁵⁶ On one occasion, she ‘even met *herself* in the street’ and, looking down, observed that ‘it was all misty round my feet’.⁵⁷ Julie also had premonitions. She predicted ‘major world events’, specifically the Chinese earthquake in the summer of 1976 and the Moroccan invasion of the Spanish Sahara.⁵⁸ After such feats, she would be ravenously hungry.⁵⁹

⁵⁰ Greenwood (1976: np).

⁵¹ Hasted (1977: np).

⁵² Greenwood (1976: np).

⁵³ Greenwood (1976: np).

⁵⁴ *Reveille* (1976: np).

⁵⁵ Greenwood (1976: np).

⁵⁶ *Reveille* (1976: np).

⁵⁷ *Reveille* (1976: np).

⁵⁸ *Reveille* (1976: np).

⁵⁹ Greenwood (1976: np).

Hasted maintained that he was ‘absolutely convinced [that] she is absolutely genuine’, although he admitted that he was struggling to find any scientific explanations for her powers. He did speculate, however, that ‘it involves the dematerialisation of matter—rather like the transporter system on *sicence* [sic] fiction films’.⁶⁰

Stephen North, from Cranley Gardens, Highgate, north London, was another talented youngster.⁶¹ Stephen was ten-years-old when, while eating dinner, he saw Geller performing on television. Suddenly, he later recalled, his spoon snapped in his hand. Imitating Geller, Stephen began stroking his fork, which also promptly cracked into two pieces. His father, Arthur, a university senior lecturer in architecture, initially believed that Stephen was ‘playing a joke on us. … But when we stood him in the middle of the room, watching him every minute, he still bent every piece of cutlery we gave him’.⁶² While writing a school essay on the Queen’s Silver Jubilee, Stephen used thought alone to bend a piece of metal to resemble a crown; he also used his mind to bend three strips of metal into a bracelet for his mother.⁶³ Stephen professed to be bewildered about his newly found powers. He bragged that

In the first year everything around me seemed to bend, whether I wanted it to or not. … We didn’t have a straight door key in the house. My mother wasn’t a bit pleased when her egg-whisk twisted up and when all the pins in her sewing box curled around one another.

Gradually, Stephen gained some control over his powers, but ‘even so, if I have a row with my mother, a few things in the kitchen tend to curl up!’⁶⁴

Stephen worked with Hasted for around five years. It was found that he could remove money from sealed boxes, making it reappear in his back pocket although ‘neither of them saw it vanish or re-appear’.⁶⁵ Stephen could also ‘create electrical interference in television sets’. He was telepathic, communicating with a young German girl living in Russia.⁶⁶ Even Geller conceded that Stephen might have ‘stronger teleportation powers than I have. … I think the younger you are, the less sceptical you are. If you believe you can do these things, then it makes the power you have stronger.’⁶⁷

⁶⁰ Greenwood (1976: np).

⁶¹ A clip of Stephen North can be seen in ‘Psychokinetic Metal Bending’, on the Discovery Channel: a section is available on YouTube at <https://www.youtube.com/watch?v=QPrJ1pSP2UI>.

⁶² Robins (1979: np).

⁶³ Robins (1979: np).

⁶⁴ Robins (1979: np).

⁶⁵ Robins (1979: np).

⁶⁶ McShane (1979: np) and Robins (1979: np).

⁶⁷ McShane (1979: np).

PART THREE: QUANTUM MECHANICS

But what could be the explanation of such strange powers? Here, Bohm and Hasted turned to quantum mechanics. They believed the clue lay in the famous paradox elucidated by Albert Einstein, Boris Podolsky, and Nathan Rosen in 1935. Known as the EPR paradox (after the first initial in their names), it postulated that, theoretically at least, quantum information could ‘be transferred instantaneously from one part of the universe to another part, no matter how remote: in brief, an action at a distance is in principle possible’.⁶⁸ In his book *Mind-benders*, Hasted explained how this might work. He began by making a distinction between mind and brain. ‘Unlike the rest of matter’, Hasted believed, mind has ‘characteristics which are apparently trans-spatial and trans-temporal’.⁶⁹ He alluded to Bohm’s theory of ‘hidden variables’, which ‘determine the indeterminate quantities but at the same time conform to the probability distribution’.⁷⁰ Although no one had found these ‘hidden variables’, Hasted believed that ‘we are now coming increasingly to believe that the mind is the only remaining undiscovered hidden variable’.⁷¹ Quantum theory allowed for ‘the reality of simultaneous universes’ which ‘cannot communicate physically with each other, because the vectors are mutually orthogonal’.⁷² These simultaneous universes were constantly ‘splitting … into an infinite (or very large) number [of other universes] each time an observed quantum transition occurs’.⁷³ This was Bryce DeWitt’s proposition. For DeWitt,

The universe is constantly splitting into a stupendous number of branches, all resulting from the measurement-like interactions between its myriads of components. Moreover, every quantum transition taking place on every star, in every galaxy, in every remote corner of the universe is splitting our local world on earth into myriads of copies of itself.⁷⁴

These two ideas were ‘uncomfortable’ for physics. As Hasted admitted, ‘We do not like the idea of countless … doppelgängers of ourselves, increasing in number all the time, even if they can never communicate physically’ (although he held open the possibility of telepathic communication).⁷⁵ This ‘many-universes theory’ suggested that ‘each

⁶⁸ Grove (1985: 227).

⁶⁹ Hasted (1981: 2).

⁷⁰ Hasted (1981: 240).

⁷¹ Hasted (1981: 240).

⁷² Hasted (1981: 241).

⁷³ Hasted (1981: 241).

⁷⁴ Hasted (1981: 241).

⁷⁵ Hasted (1981: 241). For a largely positive review of this idea of ‘many selves’, see Parker (1981: 13).

atomic transition in our own insignificant bodies causes the remotest galaxies to split into an infinite number'.⁷⁶

In attempting to understand psychic phenomena, these scientists believed that 'non-material, or at least trans-spatial minds' were productive.⁷⁷ Hasted speculated that 'the unconscious mind possesses the faculty of receiving "trans-spatial" information from the corresponding minds in other "universes".' Because, in Euclidean space, two vectors are orthogonal (their dot product is zero), 'physical signals cannot pass from one universe to another', so the 'unconscious mind' must be assumed to possess 'trans-spatial properties' and be 'able to communicate with physical reality in other universes only through other unconscious minds'. He asked scientists to consider the possibility of 'parallel universes', in which there are 'millions of copies of each individual', all conducting 'parallel existences, but ... entirely isolated physically from each other by orthogonality, which prevents the passage of physical signals between universes'. Concretely, what would this mean? Hasted provided an example:

Let us propose that each one of these individuals possesses his own mind, and that communication between these corresponding minds is sometimes possible. No individual knows of the existence of his many *alter egos*. But if he were able to adopt the mind of one of these *alter egos*, he would then take the other universe to be his reality, without knowing that any change had occurred. Moreover, at the moment he successfully does this, one might suppose that his neighbours' minds (the observers' minds) could also come to be dominated by those of their own *alter egos*, so that they could also take the other universe to be their reality. All observers could now notice whatever physical differences there might be between the two universes. The differences could be that psychic phenomenon, metal-bending, psychokinesis or teleportations have taken place.⁷⁸

This was the simplified model. After all, there was no need to assume that there were only two universes. It was also possible to 'propose that we all pass through life in a continual state of subtending many universes at the same moment of time' and 'since these universes are in nearly all respects identical, we have hitherto imagined them to be a single universe'. On extremely rare occasions, this illusion could be breached when, for example, 'a unique universe forces us to notice it, and it is then that we say that an atomic physical phenomenon has occurred'.⁷⁹

Accordingly, teleportation could be understood by 'using the hyperdimensional character of the many-universes model'.⁸⁰ The 'reorganizational forces which must

⁷⁶ Hasted (1981: 244).

⁷⁷ Hasted (1981: 244).

⁷⁸ Hasted (1981: 244).

⁷⁹ Hasted (1981: 245).

⁸⁰ Hasted (1981: 245).

occur in the creation or annihilation of atoms at the inter-universe boundaries' could explain metal-bending.⁸¹ Other 'quasi-forces' could be interpreted 'in terms of a rapid series of local transformations into universes, each one with its own individual momentum, each slightly greater than the last. The rate of change of momentum would then have the appearance of a force acting on the transformed subject.'⁸²

It was a complex model that also helped explain phenomena like teleportation. As Hasted explained,

when metal bends, atoms move about in the metal, and if enough atoms move around, then the whole object could jump, and this would be teleportation—which I now believe to be merely another branch of metal-bending. In fact, teleportation is probably the more fundamental event.

In other words, teleportation was 'another demonstration of quantum non-locality' or 'being in two places at once, things not moving, but just appearing, going through walls'. Even if the science was not fully understood yet, he insisted that teleportation was possible: it has 'been my experience. I have seen it happen.'⁸³

PART FOUR: CRITICS AND DEFENCES

Neither the experiments nor the theory convinced sceptics. In 1977, a Committee for the Scientific Investigation of Claims of the Paranormal was established. The committee was criticised for 'gnat-killing by sledgehammer'.⁸⁴ However, the scientists, science reporters, and magicians who joined deemed it necessary, given the number of respected physicists who were publicly endorsing paranormal phenomena.

Journalists also began registering their doubts. In 1974, the *New Scientist* published an attack by journalist Joseph Hanlon, who had a doctorate in physics. How could John Taylor seriously inform the audience watching *The Dimbleby Talk-in* that there was no scientific explanation for Geller's ability to bend the forks, he asked? After all, Geller had unguarded access to the forks prior to the programme.⁸⁵ Hanlon maintained that 'so long as a good magician could do what Geller does, then the Geller effect is not scientifically validated'.⁸⁶ Fraud 'permeates psychic research', Hanlon insisted. Hasted's comment that 'I have no personal interest in proving that the

⁸¹ Hasted (1981: 245).

⁸² Hasted (1981: 245–6).

⁸³ Margolis (1998: 214).

⁸⁴ *Science News* (1977: 118).

⁸⁵ Hanlon (1974: 314).

⁸⁶ Hanlon (1974: 314).

phenomena produced by Uri Geller are genuine. ... My only intention is to inquire and see whether or not we can learn something' was, at best, naïve and, at worse, duplicitous.⁸⁷

Hasted was unrepentant. He chided Hanlon for basing his article on a preliminary report which had not been intended for publication. If Hanlon had talked to him, he would have been informed that the room in which the experiments had taken place was not always crowded. A 'sleight of hand' on Geller's part would 'not have been possible' on every occasion.⁸⁸ Hasted reminded Hanlon that he was a highly trained physicist, with well-honed observatory skills: how dare Hanlon attempt to 'bring into disrepute the whole process of laboratory training'. 'Unlike Dr Hanlon', Hasted dryly commented, 'I am prepared to comment only on events I have personally witnessed'. He was 'confident of the abilities of scientists to make observations [and] to avoid writing [Geller] off as a subject because some of his performances are suspect'.⁸⁹

If Hasted thought that this would end the matter, he was wrong. Worse was to come. Popular science magazines smelled blood. *Scientific American* called Hasted a 'self-deceiver', who was starring in a 'Mathematical Circus'. The author of the article mocked Hasted for experimenting with

young people who can, if they are not watched, somehow pass distorted paper clips into a sealed glass globe. Well, not quite sealed; you do need to leave a small hole, or curiously the parapsychological effect does not work!⁹⁰

It was a point picked up by Martin Gardner in *Science. Good, Bad and Bogus* (1989). He ridiculed Hasted for claiming that one of his 'mini-Gellers' could 'scrunch up' paper clips that were inside a glass globe. The problem, Gardner scoffed, was that the globe had a hole in the top. He asked whether 'anyone [has] actually *seen* paper clips in the act of bending, or recorded it on a videotape?' The answer was clearly 'No'. A 'mini-Geller' was allowed to take the globe home 'and comes back with the scrunch'. 'Mysteriously', Gardner noted, 'clips never scrunch in globes without holes or when someone other than the child is watching'.⁹¹ Gardner accused Hasted of 'boundless gullibility and bumbling experiments'. He was 'embarrassing ... his Birkbeck colleagues'.⁹² Unfortunately, the latter comment seems to have been true.⁹³

⁸⁷ Hanlon (1974: 314).

⁸⁸ Hasted (1974: np).

⁸⁹ Hasted (1974: np).

⁹⁰ Morrison (1981: 41).

⁹¹ Gardner (1989: 205).

⁹² Gardner (1989: 205).

⁹³ Hasted (1975: 4) and personal interview with Hiley (29 June 2018).

When a group of physicists defended the experiments in *The New York Review of Books*, claiming that these physicists' research demonstrated 'a possible connection between quantum mechanics and parapsychology',⁹⁴ Gardner responded with yet more ridicule. Hasted's research was 'hilarious', he contended. At the very basic level, Hasted had 'failed to take into account amplification by his sensitive strain gauges of slight static charges produced by body movements'. Gardner asked readers to 'judge for themselves whether Hasted is a competent psychic investigator'.⁹⁵

Magicians joined in the debunking. After all, they were perfectly capable of replicating the 'tricks' of Geller and co.⁹⁶ The fact that Geller was never able to perform if he knew that a magician would be present was widely considered to be suspect.⁹⁷ This reticence on Geller's part led magician Michael Nass to call for a 'battle of the psychics', confident that magicians would 'easily win'.⁹⁸

Illusionist James Randi was a particularly dogged opponent. He promised a substantial sum of money to anyone who could demonstrate verifiable paranormal capabilities.⁹⁹ Randi also set up a simple spoon-bending experiment with 'mini-Geller' Julie Knowles: she failed. To Randi's astonishment, he then discovered that no one had actually *seen* Julie execute her psychic powers despite the fact that her feats had been widely publicised for more than three years.¹⁰⁰

In 1975, Randi was responsible for Sarfatti's very public retraction of his endorsement of Geller's 'psychoenergetic authenticity', which he had made at Birkbeck just the previous year. Randi had showed Sarfatti how conjurors were able to 'fracture metal and move the hands of a watch in a way that is indistinguishable from my observation of Geller's "psychokinetic" demonstrations'.¹⁰¹ Sarfatti remained convinced that 'the ambiguity in the interpretation of quantum mechanics leaves ample room for the possibility of psychokinetic and telepathic effects'. However, he maintained that the psychic effects he had witnessed at Birkbeck had not occurred 'under controlled and reproducible conditions'.¹⁰²

Most damningly, evidence of fraud began to emerge. Collins and Pinch set up paranormal experiments at the University of Bath (where Julie had *failed* to bend a spoon), but a one-way mirror (which was there without the knowledge of the

⁹⁴ de Beauregard *et al.* (1980: np).

⁹⁵ Gardner (1980: np).

⁹⁶ Wolansky (1974: 78).

⁹⁷ Gerrish & Okulewicz (1974: 78).

⁹⁸ Nass (1974: 79).

⁹⁹ Hackett (1983: 9).

¹⁰⁰ Randi (1977: 44–5).

¹⁰¹ Sarfatti (1975: 355). The endorsement had been published in *Off the Beat* (1974: 46).

¹⁰² Sarfatti (1975: 355).

‘mini-Gellers’) showed all of them, except Julie, cheating.¹⁰³ The ‘mini-Gellers’ were bending metal with the help of table tops and chair-legs.¹⁰⁴

Hasted and Bohm remained defiant, but the relentless tsunami of ridicule must have been painful. As early as April 1975, Hasted, Bohm, Bastin, and O’Regan hit back in the pages of *Nature*. They implored scientists to maintain an open mind as to whether there was some ‘force, energy or mode of connection’ that was ‘at present unknown’.¹⁰⁵ After all, they reminded critics, ‘when magnetic and electrostatic effects were first observed’, it had also been ‘impossible to account for them in terms of the known forces’.¹⁰⁶

While admitting that their experiments with Geller and the ‘mini-Gellers’ were not ‘loop-hole-free’, they nevertheless insisted that ‘the experiences we have gained may be of value to other physicists interested, like ourselves, in the interactions between mind and physical systems’.¹⁰⁷ They repeatedly stated that paranormal research could not be conducted along conventional lines because ‘the phenomenon under investigation’ had to ‘be produced from the minds of one or more of those who participate’.¹⁰⁸ Therefore, the relationship between *all* participants was crucial if anything extraordinary was to be observed.¹⁰⁹ This did not mean that everyone in the laboratory had to be believers, but they *did* have to ensure that their minds remained ‘open to all possibilities’.¹¹⁰ Rigour was crucial but, equally, any ‘preconceived pattern of tough-mindedness’ could ‘destroy the very possibility of the phenomenon that we wish to study’.¹¹¹ The ‘entire process’ was more likely to succeed ‘when all those present actively want things to work well’ and when the ‘experimental arrangement is aesthetically or imaginatively appealing to the person with apparent psychokinetic powers’.¹¹²

Hasted, Bohm, Bastin, and O’Regan pleaded with fellow scientists to remember that negative energies, such as ‘tension, fear, hostility’, had no place in the laboratory. They observed that any

¹⁰³ Pamplin & Collins (1975: 8). Collins & Pinch (1979: 259–62) showed that parapsychological communities were open in exposing fraud within their own midst.

¹⁰⁴ For Hasted’s view, see Hasted (1981: 28). He used it as an argument against testing the ‘mini-Gellers’ in a laboratory because it may them too anxious to ‘achieve success’.

¹⁰⁵ Hasted *et al.* (1975: 471).

¹⁰⁶ Hasted *et al.* (1975: 471).

¹⁰⁷ Hasted *et al.* (1975: 470).

¹⁰⁸ Hasted *et al.* (1975: 470).

¹⁰⁹ Hasted *et al.* (1975: 470).

¹¹⁰ Hasted *et al.* (1975: 470).

¹¹¹ Hasted *et al.* (1975: 470).

¹¹² Hasted *et al.* (1975: 470).

attempt to concentrate strongly in order to obtain a desired result (the bending of a piece of metal, for example) tends to interfere with the relaxed state of mind needed to produce such phenomena. It appears that what is actually done is mainly a function of the unconscious mind, and that once the intention to do something has been firmly established, the conscious functions of the mind ... tend to become more of a hindrance than a help. Indeed, we have sometimes found it useful at this stage to talk of or think about something not closely related to what is happening.¹¹³

They pointed out that this was akin to what happens when people tried too hard to get to sleep. Concentrating on falling asleep was similarly guaranteed to inhibit it.

Of course, they conceded, there was no point denying that fraudsters existed. And it may have been easier for cheats to fool physicists rather than trained magicians. However, in answer to the criticism that they should therefore allow professional magicians into the laboratory, they gave two responses. First, magicians were generally hostile to psychics, so they created tension in the laboratory that would inhibit unusual energies.¹¹⁴ Second, the ‘corpus of tricks’ available to a skilled magician was always evolving, so inviting comments by magicians would never remove the possibility that the person claiming paranormal abilities had simply invented a trick to which other magicians were not yet privy.¹¹⁵ They insisted that it was more rational to trust the vigilance of scientists who had extensive training in close observation.

Meanwhile, Hasted braced himself for being ‘cold shouldered by the academic top dogs’.¹¹⁶ He claimed that his treatment amounted to a ‘witch-hunt’.¹¹⁷ Bohm eventually dropped away, persuaded by fellow physicists at Birkbeck that paranormal research was damaging his reputation. His friend and collaborator, Basil Hiley, recalled attending protracted meetings at Birkbeck where colleagues debated whether Hasted should be silenced. Hiley believed that Hasted’s experiments were ‘sloppy’ and lacked rigour. He was also ‘worried about the potential damage to the well-being of the children involved particularly with the surrounding publicity’. In the end, however, the department concluded that academic freedom should be defended even in the face of the most uncomfortable mockery.¹¹⁸

It was patently obvious that Hasted’s views could never be reconciled with those of the vast majority of other scientists. As Collins and Pinch put it in their Kuhnian-informed analysis in *Frames of Meaning* (1982), the scientific paradigm emerging from research on paranormal metal bending was incommensurate with that of

¹¹³ Hasted *et al.* (1975: 470).

¹¹⁴ Hasted *et al.* (1975: 472).

¹¹⁵ Hasted *et al.* (1975: 471).

¹¹⁶ Kretzmer (1981: 19) and Cowley (1981: 199). The quotation is from the *Horizon* programme.

¹¹⁷ Hasted (1975: 4).

¹¹⁸ Personal interview and email exchange with Hiley, 29 June 2018 and 8 October 2018.

orthodox science.¹¹⁹ Hasted accepted his outsider status. With dogged chutzpah, he accepted invitations to speak at seminars about ‘Scientific Controversies’,¹²⁰ defended the proposition that ‘parapsychology is a proper subject for scientific investigation’ on *You the Jury* (Radio 4),¹²¹ and even appeared on the *Horizon* programme ‘No One Will Take Me Seriously’ (BBC2).¹²²

Hasted was not the only one who felt that his ‘star was waning’. He observed that the number of people with psychic powers was also in a steep decline. Metal-bending, Hasted was later to reflect, was becoming ‘an endangered talent, at risk of dying out in the world’.¹²³ How could this be explained? Obviously, the relentless sneers were powerful disincentives to ‘coming out’. Absurd claims by enthusiasts such as Andrija Puharich that Geller had been transported to Earth by extraterrestrials also didn’t help.¹²⁴

In addition, and much to Hasted’s dismay, the ‘mini-Gellers’ seemed to be ‘growing out’ of it. Bending spoons and keys were not glamorous adolescent pastimes. When Julie Knowles entered her teenage years, she became increasingly uncomfortable about being stopped in the street by strangers asking her to bend their keys. She was indignant about accusations that she was making money from her notoriety.¹²⁵ Julie had been ‘a real Top of the Pops girl before it all happened’, recalled her mother, adding that, since revealing her paranormal talents, people were looking at her as though she was ‘not quite normal’. There was ‘tremendous pressure on her to prove herself’, her mother noted. Was it really surprising that she ‘gets really cross when people disbelieve her and sometimes she has got so fed up that she doesn’t want to do it any more?’¹²⁶ Stephen North underwent a similar transformation. At the age of fifteen, five years after discovering his powers, Stephen became weary of attempting to prove this authenticity to his disbelieving school friends. Strumming his guitar was a much more agreeable pastime.¹²⁷

The political context was also changing. After Mikhail Gorbachev came to power in 1985 and the Cold War started to wind down, there was less need to cultivate paranormal energies capable of stopping The Bomb in its tracks. The McCarthyist witch-hunts that had brought men like Bohm to Birkbeck were over. Hasted remained

¹¹⁹ Collins & Pinch (1982: 5 and 11).

¹²⁰ Review (1984: 36).

¹²¹ *The Times* (1984: 31). The programme was *You the Jury*, chaired by Geoffrey Robertson. Professor Eric Ash opposed the motion.

¹²² *Horizon*’s ‘No One Will Take Me Seriously’ (BBC2), reported in *The Times* (1981: 23).

¹²³ Hasted (1981: 255).

¹²⁴ Parker (1981: 13).

¹²⁵ Greenwood (1976: np).

¹²⁶ Greenwood (1976: np).

¹²⁷ Robins (1979: np).

a believer until the end of his days, but Bohm moved the focus of his attention to the ideas of Krishnamurti, which provided a parallel way of making sense of multiple universes, non-locality, and the enfoldment of all life.

PART FIVE: OUTSIDER STATUS, PERSONAL AMBITION, AND INSTITUTIONAL LOCATION

Why did paraphysics become prominent in the first place—and especially in institutions like Birkbeck College? To answer this question, we might mention three things: the proponents' outsider status, their ambition, and the institutional milieu. Although each have some validity, I will go on to argue that it is more convincing to see paraphysics as providing these scientists with a radical, dialectical solution to the three crises of politics emerging out of capitalism, the Cold War, and the Stalinist International.

Hasted and Bohm were professional, social, and political outsiders. Both physicists struggled with a tension between identity and power. They were the embodiment of powerful, highly educated, white male elites. But by immersing themselves in scientific, cultural, and political subcultures not endorsed by dominant paradigms, they also epitomised subaltern identities.¹²⁸ Their *orthodox* scientific research at the frontiers of existing knowledge familiarised them to incredulous responses from fellow scientists. They believed passionately that nothing should be 'off limits': they sought to move the boundaries of what it was possible to think. This was why Bohm never censored Hasted, even after he became embarrassed by his obsessiveness. In this sense, they represented the modernist belief not to leave anything unexamined and to test all theories, conjectures, and refutations.

Their politics followed their scientific radicalism. Hasted's communist involvement cost him a job in Oxford: the politically conservative physicist Frederick Alexander Lindemann was happy to support him in junior roles, but would never promote him.¹²⁹ Bohm was literally a political refugee. Despite strong support from Robert Oppenheimer, Bohm's leftwing views meant that he was not given security clearance to work on the Manhattan Project. At Princeton University, Bohm worked closely with Albert Einstein, but the university failed to renew his contract after he refused to give evidence before the House Un-American Activities Committee. He had been forced to leave America, for São Paulo, Haifa, Bristol, and then Birkbeck.

¹²⁸ Chakrabarty (2000: 101).

¹²⁹ Hasted (1992: 84).

Socially, too, Bohm and Hasted were often on the ‘wrong side’ of fashionable trends. Hasted was a leading promoter of skiffle at a time when ‘pop’ was on the rise. Similarly, Bohm’s infatuation with Krishnamurti raised eyebrows.

Their radicalism was fuelled by excessive ambition. On the first page of *The Metal-benders* (1981), Hasted puts himself in the same company as scientific luminaries such as the founder of modern chemistry Robert Boyle, Michael Faraday (the greatest experimental physicist of the 19th century), the influential Victorian naturalist Alfred Russel Wallace, German physicist Heinrich Friedrich Weber, chemist and physicist Sir William Crookes, Lord Rayleigh (Nobel Prize in Physics, 1904), and French physicist Paul Langevin.¹³⁰ Cynics gossiped that Bohm and Hasted were hopeful of becoming Nobel Laureates. Indeed, Hasted openly admitted to this ambition.¹³¹

More important was the institutional milieu they worked in. Birkbeck’s intellectual tradition cultivated radical thought. Only three years after the establishment of the London Mechanics’ Institution (now, Birkbeck) in 1823, ‘alternative’ scientific teachings such as phrenology had a prominent place in the college. Johann Caspar Spurzheim’s 1826 lectures were intensely popular and, despite being denounced for being ‘atheistic’ and ‘dangerous’,¹³² phrenological science continued to be taught at the institution well after it had been dismissed as ‘quackery’ elsewhere.

Spiritualism also had a long tradition at Birkbeck. Hasted, as well as many others, acknowledged that paraphysics was the late-20th-century successor to spiritualism.¹³³ Both ‘sciences’ believed that remote viewing, levitation, poltergeists, and communication across time and space were plausible. The 19th and early-20th-century spiritualists had attracted the interest of major scientists of the time, including William Ramsay (who won a Nobel Prize in Chemistry, 1904) and Sir J. J. Thomson (Nobel Prize in Physics, 1906), as well as three of the scientists Hasted viewed as his precursors (Wallace, Crookes, and Rayleigh).¹³⁴ Like Hasted and Bohm, these scientists were all obsessed with the ‘laws of nature’ that science had yet to discover. Indeed, the Society for Psychical Research, which had been established in 1882 by spiritualists in Cambridge,¹³⁵ published and promoted the paranormal research of both Hasted and Bohm.¹³⁶

From the mid-20th century, Birkbeck had also been the home to Samuel George Soal, mathematician and then Honorary Fellow in Birkbeck’s Psychology Department

¹³⁰ Hasted (1981: 1).

¹³¹ Hasted (1992: 182–3). He makes an identical statement in Margolis (1998: 213).

¹³² *Fraser’s Magazine for Town and Country* (1840: 511–13).

¹³³ Hasted (1981: 25–6).

¹³⁴ Grove (1985: 225).

¹³⁵ Grove (1985: 226).

¹³⁶ Grove (1985: 226).

from 1954 to 1958. Soal and Kathleen M. ('Mollie') Goldney (President of the Society for Psychical Research and midwife) carried out experiments claiming to prove the existence of extrasensory perception (ESP).¹³⁷ Unfortunately, what subsequently became known as the Soal/Goldney controversy was a reference to the fraudulent nature of their evidence. At Birkbeck, Soal continued to conduct paranormal experiments, desperate to prove that the phenomena existed. When spiritualism was bolstered by tsunamis of grief arising out of the First World War, prominent Birkbeck academics (such as Helen Gwynne-Vaughan, first female Professor of Botany, and Cyril Joad, first Head of the Department of Philosophy and Psychology) were keen followers.¹³⁸

Birkbeck's receptivity to alternative science was matched by its long-standing encouragement of radical politics. From its conception, the college was a centre for Marxist social science. Indeed, the writings of Thomas Hodgskin—one of its founders in 1823—were crucial in the development of Karl Marx's labour theory of value in the third volume of *Capital*.

In Hasted's and Bohm's time, the Departments of Physics and Crystallography were the 'stomping ground' of J. D. Bernal, one of the most influential scientists of the century and a fervent Communist. It is often claimed, incorrectly, that to be appointed to a position in either of these departments at Birkbeck, a person had to be a signed-up member of the Communist Party. In fact, one of the reasons both Hasted and Bohm accepted positions in the college was because of 'The Sage'. They were particularly inspired by Bernal's *The Social Function of Science* (1939).¹³⁹ As Hasted noted, Bernal was 'centrally connected with the material origins of life': he was a 'scientist's scientist'.¹⁴⁰ Birkbeck's Common Room during this period was dominated by the likes of great, radical scholars such as Bernal, crystallographer Alan Mackay, historian Eric Hobsbawm, classicist Robert Browning, and art historian Nikolaus Pevsner.¹⁴¹

PART SIX: CRITIQUING SCIENCE AND POLITICS

Hasted's and Bohm's outsider status, personal ambition, and institutional location are relevant to an understanding of their paranormal enthusiasms, but are insufficient in themselves. To understand their interest in paraphysics, we need to take seriously their ideas and philosophies of life.

¹³⁷ Hawkes (1954: np).

¹³⁸ For example, see *Daily Mail* (1937: 9) and Prince-White (1933: 7).

¹³⁹ Hasted (1992: 17).

¹⁴⁰ Hasted (1992: 175).

¹⁴¹ Hasted (1992: 178).

Two factors are paramount: first, paraphysics challenged the dominant practice of science and of scientific evidence; second, it opened up new possibilities for a radical, dialectical solution to the crises of the modern world. These two explanations overlap, but I will examine them in turn.

Paranormal scientists held beliefs about the status of science and scientific evidence that were incompatible with those of mainstream physics. They emphasised the importance of emotions, insisted on the effect of the observer on the observed, recognised the co-production of knowledge, and extolled the power of the people or ordinary ‘folk’.

For Hasted and Bohm, emotions did *and should* play a pivotal role in physics research. Hasted upbraided skeptics for accusing paranormal scientists of being ‘emotionally committed to the phenomenon’. Surely they were forgetting their own emotional desire ‘to finding ... no phenomenon’, he asked?¹⁴² He urged everyone with a sincere interest in the natural world to develop a ‘sense of wonder’.¹⁴³ The awesomeness of unexplained phenomena should excite curiosity, which must be allowed free rein. As Taylor rhetorically asked his readers in *Nature* (before his cynicism for paraphysics set in): ‘Do we necessarily have to doff the garb of scientist when satisfying our curiosity about such events?’ If this was required, then science would be ‘circumscribed in a very peculiar way’.¹⁴⁴

Paraphysics also held to the fundamental tenet of relativity theory that the ‘observer’ changes the ‘observed’. Bernal’s *The Social Function of Science* (1939), which had proven so influential in both Hasted’s and Bohm’s life-philosophy,¹⁴⁵ proposed wide themes about the social ‘construction’ of science: science *itself*—that is, the way humans strive to make sense of and give meaning to the world—was implicated in the creation of these worlds. This approach to science and evidence was influenced by Marxist historical materialism. Scientific laws explain society and its progressive historical movements, but the intervention of the political subject (that is, the proletariat and its representatives in the Communist Party) accelerates the movement towards socialism and eventually changes the laws of society. The political subject observing the process is participating at the same time in its change.

Bohm, in particular, espoused a complex, constructivist philosophy in his concept of ‘enfoldment’. For Bohm, everything in the universe was enfolded into everything else. The ‘Birkbeck School’ of physics¹⁴⁶ was a fundamental challenge to classical physics. Firstly, quantum theory gives us ‘entanglement’ where two entangled particles

¹⁴² Margolis (1998: 212). Hasted makes this comment in Hasted (1981: 4).

¹⁴³ Hasted (1992: 182).

¹⁴⁴ Taylor (1975: 470).

¹⁴⁵ Hasted (1992: 17).

¹⁴⁶ Sharpe (1993: 23).

appear to have a ‘direct interaction between them’ irrespective of their distance apart. Bohm’s notion of the quantum potential, implicit in Schrödinger’s equation, directly encapsulates ‘entanglement’ and puts quantum non-locality into sharp focus'.¹⁴⁷ Secondly, Bohm’s quantum potential ‘has within it information on the physical situation over a wide region of space. In principle it encodes information on the whole universe.’ This means that, ‘as the system changes’, so too the ‘relation between two particulars in the system changes’.¹⁴⁸ The crucial difference was that while classical physics paid attention to the ‘microscopic world of the atom and smaller’, Bohm and his collaborator Basil Hiley suggested that quantum laws applied equally to the macroscopic world.¹⁴⁹

Bohm’s worldview, then, was fundamentally a critique of Cartesian dualism, in which consciousness or thought was distinct from matter. Descartes had postulated that God was the force that facilitated relationships between mind and matter. For Bohm, however, there was no dichotomy between consciousness and the physical world: the two could not be distinguished because they were enfolded into each other in one single movement. In Bohm’s words, ‘we do not say that mind and body causally affect each other, but rather that the movements of both are the outcome of related projections of a common higher-dimensional ground’.¹⁵⁰ Because of this fundamental entanglement, it was wrong to speak in terms of ‘the’ or ‘it’. According to Bohm’s quantum physics, the only correct way to speak was to avoid all nouns and to use only verbs, connoting temporality, movement, processes over time. Bohm called this verb-based language ‘rheomode’, from the Greek ‘rheo-’ to flow. In his words,

the notion of a permanent object with well defined properties can no longer be taken as basic in physics. ... Rather, it is necessary to begin with the event as a basic concept, and later to arrive at the object as a continuing structure of related and ordered events.¹⁵¹

Physicist John S. Bell (who had been inspired by Bohm) formulated ‘Bell’s theorem’, which claimed that ‘quantum objects that had once interacted would retain some strange link or connection, even after they had moved arbitrarily far apart from each other’. Both Bohm and Bell developed concepts such as ‘nonlocality’ and ‘entanglement’.¹⁵² As David Kaiser explained,

¹⁴⁷ Sharpe (1993: 24).

¹⁴⁸ Sharpe (1993: 24).

¹⁴⁹ Sharpe (1993: 24).

¹⁵⁰ Quoting Bohm in Peters (2003: 108).

¹⁵¹ Bohm (1963: 6).

¹⁵² Kaiser (2011: xxiv).

Bell's theorem and quantum entanglement seemed to suggest that one could use quantum theory to act at a distance, instantly. Nudge a particle here and its partner would instantaneously dance over there, regardless of whether it was nanometers or light-years away.¹⁵³

This, combined with the thought that it might (contrary to Einstein) be possible to travel faster than the speed of light, encouraged the question: 'Was acting at a distance really so different from clairvoyance, psychokinesis, or the Eastern mystics' emphasis on holism?'¹⁵⁴

Another inference from such ideas was that the 'mini-Gellers' were not isolated, docile, or disciplined bodies. They drew upon unconscious forces within their *entire* environment in order to harness their psychic powers. There was nothing 'supernatural' about the process. Rather, the 'Geller kids' seemed to be 'drawing their strange power from another dimension in a reservoir of energy that is all around us but inaccessible to all but a few'.¹⁵⁵ In an attempt to simplify these arguments, Hasted, Bohm, Bastin, and O'Regan drew analogies to the relationship between a partially paralysed man and his physiotherapist. In order to

regain the use of his hand, he must somehow activate new nervous pathways. How he is to do this, he does not know. All he can do, with all his energy, is to feel out the possibilities of movement and to observe with great attention and alertness what movements actually take place. He cannot describe or even think about just what it is that he does in getting his hand to move. ... The contact between brain and hand is brought about almost entirely by unconscious functions of the mind, which tend to be erratic and fortuitous.¹⁵⁶

Crucially, too, in order for the hand to move, the physiotherapist *also* had to profess faith in the patient's capabilities. The 'necessity of open-ness to the possibility of an ultimate result must be maintained in the minds of *all* concerned', they contended.¹⁵⁷

This meant that knowledge was co-produced. Unlike most scientific experiments, the distinction between 'scientist' and 'subject' was blurred, even eradicated altogether. Paraphysicists pleaded with their fellow scientists to remember that the 'person who produces these [psychic] phenomena is not an instrument or a machine', and even less is he or she an '“object” to be observed with suspicion'. Indeed, 'cold and impersonal' interactions as well as 'any attempt to treat him [sic] as such will almost certainly lead to failure'.¹⁵⁸ Hasted lashed out at people who criticised paraphysicists on the grounds

¹⁵³ Kaiser (2011: xxiv).

¹⁵⁴ Kaiser (2011: xxiv).

¹⁵⁵ Owen (1978: np).

¹⁵⁶ Hasted *et al.* (1975: 470–1).

¹⁵⁷ Hasted *et al.* (1975: 471, emphasis added).

¹⁵⁸ Hasted *et al.* (1975: 470–1).

that such researchers ‘wanted the events to happen’. Of course, Hasted scolded, this was ‘in some degree true, *and it may be that this is why they did happen*'.¹⁵⁹ Hasted’s argument was critical of the dominant scientific regime and its conception of truth, particularly ‘objectivity’.

The breach of the ‘detached objectivity’ norm of scientific experimentation is movingly depicted in a short film-clip of Hasted’s interactions with Stephen North. In the film, the older scientist and the young Stephen are depicted sitting companionably together in a laboratory in front of a vast array of complex recording devices. Hasted is being interviewed, but, as he speaks, he repeatedly nods and gestures towards Stephen, making reassuring grunts and friendly interjections, while seeking Stephen’s consent and inviting his involvement. His fatherly demeanour is most evident when he jests that sometimes ‘we’ can’t make the experiment work and have to break for a cup of tea—whereupon, they both chuckle. Tea in hand (and, cynics might add, suitably distracted), Stephen *and Hasted* succeed in harnessing Stephen’s paranormal energies. What is clear in this film-clip is that the distinguished physicist is *enjoying himself*, proudly acknowledging the interpersonal nature of science. He is also gesturing towards the leftist commitment to collective work which, in theory, values all participants equally. It was an unorthodox model of science in which experimental praxis and reasoning are fundamentally shared.

The final challenge to the status of science and scientific evidence was the paraphysicists’ unshakable belief in the ‘folk’—people like Julie from Trowbridge and Stephen from Highgate. Power resided in the People. Literally. Any person capable of tuning into Geller on television or simply being receptive to paranormal energies could harness these abilities within themselves. Admittedly, Hasted did privilege youth, maintaining that he ‘preferred to deal with child metal-benders’ because he believed that they were ‘less likely to cheat than adults’, as well as being more accepting and therefore receptive.¹⁶⁰ Of course, this was yet another target for ridicule, with opponents sneering about Hasted and Bohm’s experiments with ‘innocent young girls’ and ‘11-year-old innocents’.¹⁶¹ Nevertheless, Hasted repeatedly insisted that psychic abilities had nothing to do with intelligence, social background, or gender (although girls outnumbered boys in a ratio of three to two).¹⁶² All that was required was the will to believe in their own power.

For both Hasted and Bohm, science had meaning; and that meaning was political. For Hasted, in particular, all his passions—physics, communism, peace, and folk

¹⁵⁹ Hasted (1981: 4, emphasis in the original).

¹⁶⁰ Owen (1978: np).

¹⁶¹ Morrison (1976: 134).

¹⁶² Owen (1978: np). The ratio between girls and boys is from Holroyd (1977: 108).

music—were about forging better worlds. As he expressed it in his *Alternative Memoirs* (1992), his principle was

Sing me a song of significance,
No other song will do.¹⁶³

The ‘armies of Kings and Emperors’ could be overthrown by ‘folk’ loudly singing The Marseillaise and the Carmagnole;¹⁶⁴ the Cold War could be halted if other ordinary ‘folk’ sang peace songs. Even the atom bomb (whether American or Soviet) could not be detonated if a significant number of psychically sensitive people ‘concentrate[ed] on the trigger mechanism’.¹⁶⁵ The psychic energies of ordinary ‘folk’ could change the world.

PART SEVEN: CAPITALISM, THE COLD WAR, AND STALINISM

The attraction of paraphysics was not only in the way it challenged the dominant paradigm of science; it also opened up new possibilities for radical, dialectical responses to three crises: capitalism, the Cold War, and Stalinism.

Capitalism’s failure was self-evident to these parapsychologists. Hasted had turned to leftist politics as a consequence of witnessing the hunger marches of the 1930s and reflecting on the ineffective remedies (‘Buy British!’) proposed by Prime Minister Stanley Baldwin.¹⁶⁶ During his time at Oxford, he began

to understand just how isolated from the real world scientific research had become. This was surely a political problem. Scientists did not seem to have any contact with the social and economic problems of the world. ... They just persevered with own academic tasks, having apparently despaired of the rest of mankind, particularly the politicians, ever taking them seriously. This syndrome had become known as ‘the frustration of science’.¹⁶⁷

Both he and Bohm had also been profoundly shocked by the financial crash of 1973–74. Radical solutions seemed to be both necessary and possible.

The second crisis was the Cold War. Nuclear war was a real possibility, which Hasted addressed directly in a book he wrote with physicist E. H. S. Burhop, entitled

¹⁶³ Hasted (1992: 1).

¹⁶⁴ Hasted (1992: 37).

¹⁶⁵ This was a statement on a Discovery Channel programme, uploaded onto YouTube under the title ‘Psychokinetic Metal Bending’: <https://www.youtube.com/watch?v=QPrJ1pSP2UI> (viewed 15 May 2018).

¹⁶⁶ Hasted (1992: 17).

¹⁶⁷ Hasted (1992: 17).

The Challenge of Atomic Energy (1951).¹⁶⁸ In it, they argued that Britain would become a ‘smoking, radioactive ruin’ if there was a nuclear war.¹⁶⁹ Much of Hasted’s early life was devoted to anti-war activism.¹⁷⁰ As a musician, he used to perform ‘Talking Atomic Blues’.¹⁷¹ He led the singing on CND marches.¹⁷² His second wife was Lynn Wynn-Harris,¹⁷³ the secret ‘Voice of Nuclear Disarmament’ radio station, which broadcasted on BBC and ITV channels after they signed off at midnight.¹⁷⁴ The fact that the Western powers (particularly the United States) were engaged in psychic research worried him. In 1975, he explained that ‘one reason for our staying in the parafield is in order that it does not become a military monopoly’.¹⁷⁵

The third crisis was Stalinism. Bohm’s leftwing beliefs were rapidly subsumed by Eastern mysticism, but a substantial part of Hasted’s life was spent in the Communist Party. In 1949, he had been elected ‘Commandant’ of the Third Brigade, consisting of around 100 young British leftists who volunteered to help build a road from Belgrade to Zagreb.¹⁷⁶ Thanks to his prodigious energy and charisma, his unit was dubbed the ‘Shock Brigade’.¹⁷⁷ He had been Secretary of the Oxford University Communist Party and while at Birkbeck was active (along with Bernal, Hobsbawm, and Browning) in the London University branch of the Communist Party of Great Britain (CPGB). At the same time that fellow nuclear physicist Eric Burhop was being hounded for his communist and internationalist beliefs, Hasted and his wife Elizabeth were energetic members of the Notting Hill branch of the CPGB, selling copies of the *Daily Worker* door-to-door and writing slogans on walls, a crime that could have committed them to prison for three months (their favourite was ‘OUT WITH THE TORIES’).¹⁷⁸ It was Hasted who used his physics training to reveal that the CPGB headquarters in King Street was being bugged by the security services.¹⁷⁹ Later in life, he admitted to having been pro-Stalin. He had boasted about ‘our adored Uncle Joe’. He had loudly sung ‘Joe Stalin was a Mighty Man’¹⁸⁰ and

¹⁶⁸ Hasted (1992: 111).

¹⁶⁹ Burhop with Hasted (1951).

¹⁷⁰ Bonnett (1961: 13). He noted that neither of them were actually members of the Committee of 100.

¹⁷¹ Hasted (1992: 111).

¹⁷² Hasted (1992: 155–7).

¹⁷³ He married her in 1958.

¹⁷⁴ Bonnett (1961: 13).

¹⁷⁵ Hasted (1975: 4).

¹⁷⁶ Hasted (1992: 103).

¹⁷⁷ Hasted (1992: 106).

¹⁷⁸ Hasted (1992: 96–7).

¹⁷⁹ Hasted (1992: 102).

¹⁸⁰ Sims (2000: 2).

Your Uncle Joe's a worker
 And a very decent chap.
 Because he smokes a pipe
 And wears a taxi-driver's cap.¹⁸¹

Like many British communists, he discounted rumours of oppression and murder 'right up to the time when Kruschev [sic] lifted the lid off the whole can of worms'.¹⁸² The 'shock of the revelations' was recalled with poignancy at the end of his life.¹⁸³

The exposure of Stalin's purges shattered the communist hopes of party members like Hasted. This did not mean, though, that they had to forsake all hope in the power of the 'folk', the physical-force of 'spectars' (Latin for 'that which is not seen'), and the inexorable march of history (although given their repudiation of time-as-forward-movement, they would have preferred 'the irresistible laws of a new physics'). In the opening lines of *The Communist Manifesto* (1848), Marx and Engels contended that 'A spectre is haunting Europe—the spectre of communism. All the powers of old Europe have entered into a holy alliance to exorcise this spectre.' For Hasted and many of his comrades, the spectre of communism had been tarnished by Stalinism, but they had an idea of another spectre—one that was equally invisible but had incredible power. Paraphysics provided a way to think about an invisible, invincible spectre that haunted both the past-in-the-present and the future-in-the-past.

The impact of these three crises should not lead us to assume that paraphysics was simply 'something to believe in'.¹⁸⁴ That is far too simplistic. Hasted and Bohm did not simply repudiate capitalism, the Cold War, and Stalinism. They embraced a praxis that took economics, war, and Marxism/Hegelianism to a new level. These three crises encouraged them to embrace paraphysics as a form of radical, dialectical, and scientific utopianism. Marxism (for Hasted) and Hegelianism (for Bohm) provided them with the assurance that they would be at the vanguard of a revolution in physics; it also provided them with an ideological 'frame of meaning' which demystified science as bourgeois.

However—and crucially—Hasted and Bohm went far beyond dialectical or historical materialism, as well as other processual ways of thinking (such as the belief in progress or evolutionary mechanics). For them, *process* itself was the wrong way to frame the world because it was based on a notion of time-as-linear, forward movement and place-as-location. Instead, their revolutionary, new interpretation of quantum mechanics taught them that the historical present was effectively to be transcended,

¹⁸¹ Hasted (1992: 103).

¹⁸² Hasted (1992: 103).

¹⁸³ Hasted (1992: 80).

¹⁸⁴ This was a common interpretation. For example, see Morrison (1976: 134).

folded into the future. The future was also always folding into the past. What this meant was that the future could be reclaimed (for the Marxist); it could also be fore stalled through the unconscious energies of ordinary people. The ‘folk’ could literally stop the Cold War from heating up. There was no need to counter bourgeois economics or the liberal marketplace, because power *resided with the people* (literally). As Hasted insisted time and again, the ‘social consequences of such an understanding [of physics] could be very great’.¹⁸⁵

As should now be obvious, utopian paraphysics was concerned with much more than identifying and explaining a set of scientifically inexplicable phenomena: it was centrally about political change. Although Hasted believed that ‘a practical application is a long way off’, he was equally confident that ‘one day these kind of powers could be used for healing’.¹⁸⁶ Hasted did admit to feeling anxious about whether there might be ‘social dangers’ associated with possessing extraordinary abilities such as metal-bending. Although he could find no ‘experimental evidence’, he did speculate that there might be a ‘built-in safety-catch on psychokinetic phenomena, ensuring that we cannot bring about anything which will harm ourselves or our friends’.¹⁸⁷ Admittedly, there was room for ‘playful misdemeanours’ (for example, one of his ‘mini-Gellers’ bent his grandmother’s knitting-needles ‘when she was at a critical stage of purl and plain’), but it was rare for his subjects to suffer even a ‘skin abrasion by metal-bending’.¹⁸⁸

PART EIGHT: CONCLUSION

Paraphysics appealed to physicists like Hasted and (for a shorter period) Bohm because it provided a way to develop the idea of a radical break with time and space—that is, the realisation of a new form of human subjectivity that was cooperative, shared, and universal. Theirs was a philosophy that literally transcended geopolitical space, opening up the possibility for unity across the globe. True solidarity with other peoples, whose space and locality was far away and unknown, was a possibility after all. Knowledge of physics could be mobilised for political ends; science itself was political praxis.

Neither scientist was afraid of radical disruption, exceptionality, unexplainability, or spectacle. They defied orthodox physics, challenging theories of time (linearity),

¹⁸⁵ Hasted (1981: 1).

¹⁸⁶ Robins (1979: np).

¹⁸⁷ Hasted (1981: 249).

¹⁸⁸ Hasted (1981: 249).

space (effects are weaker at a distance), and energy. They showed little interest in what Slavoj Žižek called a ‘performative reconfiguration’ of their discipline. They were subversive, but in a way that stepped outside the ‘hegemonic field’ of mainstream physics. They sought nothing less than a ‘thorough reconfiguration of the entire field which redefines the very conditions of socially sustained performativity’, such as conventional ideas of time and space, observed and observer.¹⁸⁹

Paraphysics has become nothing more than a footnote in the history of physics. It is usually mentioned as a warning to other intrepid souls or as a way of introducing a little humour to an otherwise wholly earnest science. But this should not blind us to its perceived radical potential.

Hasted remained a believer to his dying day. In his old age, speaking from his bungalow in St Ives, Cornwall (a home, incidentally, that overlooked Virginia Woolf’s lighthouse), he mused poignantly about his collaborations with ‘his’ mini-Gellers. ‘Are we supposed [to believe] that it was just a one-off?’, he asked. He admitted that his paraphysics experiments

may not be a significant part of knowledge, but that is not to say it didn’t happen. I stand by what I reported, although I don’t know whether it will ever happen again or not. What is left of those metalbending days is a collection of specimens, chart-records and literature reports; things of the past.

As Hasted repeated: ‘nothing beside remains. ... I could not even weep. I was reminded of my bent spoons. Did it all really happen?’¹⁹⁰ He concluded his book on *The Mind-benders* with the verse:

Now, reader, that our tale is told,
Canst thou the riddle guess?
Such things in simpler days of old
Were heard with faithfulness.

But we, it seems, are wiser grown
Less willing to believe.
And till we see the causes shown
Can scarce effects believe.

But if these pages serve to show
A truth, their moral brings
How much imperfectly we know
Even in trivial things;

¹⁸⁹ Žižek (1999: 264).

¹⁹⁰ Hasted (1992: 182).

If you our sense of wonder call
 From where it's idle lain,
 Why, then, good METALBENDERS all,
 You'll not have bent in vain.¹⁹¹

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¹⁹¹ Hasted (1992: 182). This is also cited (with some minor difference) at the end of Hasted (1981: 257).

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