

HUMAN RADIATIONS: CONCEPTS OF FORCE IN MESMERISM, SPIRITUALISM AND PSYCHICAL RESEARCH

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ABSTRACT

The literature of mesmerism, Spiritualism and psychical research presents ideas of forces projected from the human body to acquire information and affect the environment. Franz Anton Mesmer and other workers developed the concept of animal magnetism to explain phenomena such as the induction of trances and healing. Nineteenth- and twentieth-century authors such as Edward Cox, Eduard Von Hartmann and Joseph Maxwell developed ideas of force as an attempt to explain the physical phenomena of mediumship. The studies of physical mediums conducted by Julian Ochorowicz, W. J. Crawford and others did much to support the belief that telekinesis and materialization were produced by forces coming from the body of the medium. With the rise of the Rhinean paradigm many parapsychologists set these ideas aside and adopted a mentalistic model. A study of these concepts helps us to understand how prevalent these ideas have been in the past, how they have been related to the body's vital processes and to physical radiations, and how they have been used to explain psychic phenomena.

INTRODUCTION

Recent New Age, occult and frontier science literature is full of discussions about the role of little understood forces, radiations or fields in a variety of such phenomena as ESP, auras and healings (e.g. Benor, 2004). Furthermore, there are several organizations active today which are devoted to ideas of this sort.¹

It is common to hear talk about ideas of 'energies', 'radiations' or 'vibrations' that assume that human beings are virtual generators of vital force and that we live in a world of invisible forces intimately related to the phenomena studied by parapsychologists. Some, such as Guéret and Oudinot (1968), assume a continuum between the physical and biological forces accepted by modern science and ideas from occult traditions.

This hypothetical principle has been called a myriad of names: animal magnetism, magnetism, nervous force, neuric force, Od, psychic fluid, psychic force, vital energy and vital force, among other names. Since antiquity there have been discussions about subtle forces such as prana, chi, the mana, as well as the ideas of such individuals as Maxwell, Van Helmont, Paracelsus and others (Amadou, 1953). In this paper I will discuss selected historical attempts to explain psychic or parapsychological phenomena through recourse to the idea of forces or radiations. My purpose is to make contemporary readers aware of aspects of a forgotten and difficult-to-obtain literature so as to provide some

¹ Some examples are the International Society for the Study of Subtle Energy and Energy Medicine (<http://www.issseem.org/>) the BioEnergy Fields Foundation (<http://www.bioenergyfields.org/>), the International Center for Reiki Training (<http://www.reiki.org/>), Association for Comprehensive Energy Psychology (<http://www.energypsych.org/>), and the Center for Frontier Medicine in Biofield Science (<http://biofield.arizona.edu/>).

perspective for modern interests in similar topics. For pragmatic reasons I am focusing only on Western developments from the nineteenth century, with an emphasis on the literature published before the 1930s. I will not get into areas discussed outside of the mesmerism, Spiritualism and psychical research literatures, such as N-rays, mitogenic and other radiations from organic matter, Reich's orgone, radionics, or concepts from biology or from occult movements and philosophies (for overviews see Ungaro, 1992; Van Wijk, 2001). Furthermore, space considerations do not allow me to discuss force or field explanations of apparitions, auras, dowsing, luminous phenomena or psychometry, nor similar literature on 'Od' force or ESP. Instead, my focus will be aspects of the literature of mesmerism, physical mediumship and the instrumental detection of those hypothetical radiations.

HUMANS AS MAGNETS: MESMERISM AND THE MAGNETIC FORCE

In his *Mémoire sur la Découverte du Magnétisme Animal*, published in 1779, Mesmer presented 27 propositions about a universal fluid that could produce all kinds of effects (Mesmer, 1779/1970, pp.54–56). Mesmer called this principle animal magnetism and related it to physical and organic matter. The human body was affected by it through the nerves; it was not localized only in the body. Mesmer saw it as emanating from the heavenly bodies and present in nature in general. Animal magnetism produced healing effects and could be reflected by mirrors, transmitted by sound and stored on different bodies. In a further attempt to relate this force to other aspects of nature, Mesmer compared it to magnetism, arguing that it was polarized. It is clear that Mesmer had great expectations for this fluid; he did not think animal magnetism would simply produce cures, but that it would revolutionize the medical profession (on Mesmer and his magnetic system see Pattie, 1994).

Both Mesmer and later writers believed that animal magnetism emanated from the magnetizer's body and could be conveyed to others through passes, or hand movements. A follower of Mesmer (Deleuze, 1852, pp.1–2) wrote about this force:—

As we cannot comprehend how a body can act upon another at a distance, without there being something to establish a communication between them, we suppose that a substance emanates from him who magnetizes, and is conveyed to the person magnetized, in the direction given it by the will. This substance, which sustains life in us, we call the magnetic fluid. The nature of this fluid is unknown; even its existence has not been demonstrated; but everything occurs as if it did exist, and that warrants us in admitting it.

An influential early mesmerist, A. M. J. de Chastenet de Puységur (1807), argued in *Du Magnétisme Animal, Considéré dans ces Rapports avec Diverses Branches de la Physique Générale* for the importance of the will and the belief of the magnetizer to produce mesmeric phenomena. In addition, he thought that human beings were affected by surrounding forces such as gravity and magnetic currents. "The reciprocal influence between all bodies is called universal magnetism," (p.133; this and other translations are mine) while "the particular influence of animated bodies on one another is animal magnetism" (p.134). Humans are always surrounded and penetrated by the universal fluid. Their bodies behave like magnets in that the extremities are like poles, and this

magnetic force may be reinforced by air, friction and by other bodies. Chastenet de Puységur referred to the magnetic fluid as a hypothesis, not necessarily a reality.

In his *Physiologie, Médecine et Métaphysique du Magnétisme*, L. J. J. Charpignon (1851, p.15) proposed that electricity, light and heat were related to animal magnetism. This human magnetism, also described as a nervous fluid, was considered to be a modified form of the other physical forces, a process that operated through "additions and molecular combinations" (p.41). The implication was that this was a universal principle animating matter that could be organized in different ways.

Phenomena such as the induction of trance, mental contact with the mesmerizer to the point of obeying his non-verbal commands, clairvoyance and transposition of the senses (for example, feeling that one was seeing from the pit of the stomach), were attributed by many to animal magnetism. One writer argued that such transpositions of the senses were explained by the action of 'animal electricity', an agent that could transfer sensory impressions to the nervous system in the absence of receptor organs such as eyes (Petetin, 1808).

But perhaps the best known and the most practical phenomena were the so-called magnetic cures of all kinds of conditions. Mesmer (1779/1970) himself became famous in part through some of his reported cures. Fatigue was felt occasionally by the magnetizer after the healing session. Some writers argued that the magnetizer "imparted of his own vital power to sustain that of the invalid" (Newnham, 1845, p.148).

As late as the 1870s French mesmerist Baron J. D. Du Potet (1879) argued in the fourth edition of his *Traité Complet de Magnétisme Animal* (p.43) that magnetism was involved in bodily processes such as digestion and circulation. To some extent, such ideas were a normal outgrowth of neurophysiological ideas prevalent in the eighteenth century that held that fluids and vital forces flowed through the nerves, allowing for movement and for the processing of sensory impressions (Clarke & Jacyna, 1987).²

Following this tradition, British physician James Esdaile argued that a fluid of the nervous system carried the orders of the brain within the body and that this fluid was also involved in perception. This fluid could produce mesmeric phenomena. For example, Esdaile said that the fluid "is transmitted to the mesmerised person's brain through the medium of his nerves: and the consequence is that the *thought-modified* nervous fluid of the active brain is both reflected and understood by the passive brain of the patient, exactly as the passive end of an electric telegraph records the impulses received from the active extremity of the battery" (Esdaile, 1852, p.238). For Esdaile such ideas could account for the transmission of thought at a distance or the influence of the mesmerizer over the mesmerized without apparent conventional sensory commands.

For some, the fluid was not a mere physiological principle, but the instrument of the soul. Berruyer (1852) argued that the fluid emanated from Divinity, and hence to the human soul. "The human fluid . . . is the link by which the body

² On the interactions between electricity and animal magnetism see Sutton (1981). Charpignon (1854) discusses vitalism and mesmerism.

and the soul are united; it is the intermediary between spirit and matter." (Berruyer, 1852, p.170). Ordinaire (1852) thought that the soul ruled and directed the fluid. Chastenet de Puységur (1807, p.166) argued that in a mesmeric healing session the healer's compassion for the diseased person developed an intention or a will from the soul to help the patient. He intimated that the guiding principle of animal magnetism was a spiritual one (pp.165–167).

Esdaile (1852) and other mesmerists (e.g. Du Potet, 1845–1846, pp.392–393) believed that the mesmeric fluid could travel to distant places. The fluid was thought to be able to obtain information or to cause actions in these locations. One of these theorists, the American C. F. Durant, suggested that transference of thought could take place because the magnetic fluid travelled through physical barriers and great distances from the magnetizer to the magnetized person: "the magnetic fluid is composed of globular molecules which touch each other, and form strings or magnetic cords from one brain to the other brain" (Durant, 1837, p.79).

Following on Tardy de Montravel's (1785) early observations, Charpignon (1851) noticed that some entranced individuals "say they see coming out of our hands, our eyes, our mouths, trails of light" (p.32). He conducted tests to study this visual perception of the fluid. In one such test he used four bottles of clear glass, 'charging' one of them with magnetic fluid. Charpignon mixed the bottles and presented all of them to the mesmerized person, who correctly identified the magnetized bottle, saying that there was a luminous vapour inside it. On another occasion, according to Charpignon (1851): "A flask was charged by three magnetizers immediately one after the other, and the somnambulist said she saw three fluids superimposed in layers, and she indicated their exact order." (p.60).

While belief in magnetism became less fashionable as the century progressed, it is also true that it continued in some circles well into the late nineteenth century and beyond. Prominent examples include the work of Baréty (1887) and Boirac (1908/1917).

PHYSICAL MEDIUMSHIP

Influential books such as Rogers's *Philosophy of Mysterious Agents* (1853) and Dods's *Spirit Manifestations Examined and Explained* (1854) postulated an externalized force to account for the mental and physical phenomena of Spiritualism. For Rogers the basic principle was nerve force, and the movement of objects in poltergeist cases or in séances could take place through unconscious direction of this force by the living agent or in an automatic way with no direction at all. Dods argued that the body's 'electro-magnetic' forces were related to the "involuntary powers in the back of the brain" (Dods, 1854, p.33), the section of the brain thought to control involuntary body functions.

The phenomenon of table-turning was particularly important because it provided a focus of attention for the development of theoretical concepts such as those discussed in this paper. In France, Count Agénor de Gasparin studied the problem, as reported in his book *Des Tables Tournantes* (1854). The movements and liftings of tables experienced by De Gasparin convinced him that some physical agent was involved. As he had more sittings he postulated the

existence of a fluid that acted through the hands of the chain of sitters around the table. De Gasparin wrote that "a physical agent . . . similar to terrestrial magnetism, light, heat, electricity . . . under the . . . provisional name of hematonervous fluid" could explain table-turning, as well as other spiritualistic and mesmeric phenomena (Vol. 2, p. 407). This fluid was considered to be both physical and psychological; physical because of the effects it produced, and psychological because it depended on the (not always conscious) will of the sitters. As he wrote, the fluid "communicates to physical objects the movements determined by our will" (Vol. 1, p. 90).³

British Sergeant-at-Law Edward W. Cox named this principle 'psychic force'. Cox described his idea mainly in two books: *Spiritualism Answered by Science* (1872) and *What Am I?* (1874). Like previous writers, Cox argued that a force emanated from the nervous systems of psychics (his term). This force, directed by the psychic's intelligence, produced the physical phenomena of Spiritualism. He wrote:—

The Psychic is a person in whom there is an abnormal capacity for dislocation in the normal relationship of Soul and body. In such a condition, the Soul (or Psychic) Force ceases to flow through its usual channels and therefore manifests itself without them, as does the magnetic force, in disturbing effects upon molecular structure. Psychic Force . . . penetrates and permeates molecular matter; and . . . neutralises in matter the force of gravity. [Cox, 1874, pp. 417–418]

According to Cox this force is normally related to such body processes as movements. But the mediumistic trance is a catalyst in breaking the normal balance of the force and allowing it to leave the body. In another book, he wrote: "As the organism is itself moved and directed within its structure by a Force . . . it is an equally reasonable conclusion that the Force which causes the motions beyond the limits of the body is the same force that produces motion within the limits of the body" (Cox, 1872, p. 101; on this issue see Alvarado, 1981).

Cox influenced English physicist William Crookes, who performed experimental studies of the psychic force with D. D. Home (Crookes, 1874). Crookes explored the ways in which this force interacted with the physical world. Telekinetic movements of an accordion were reported to occur inside a wire basket. To see if the hypothetical force was affected in some way, Crookes sent an electrical current around the wires. In other tests Home was able to use his psychic force through water. These tests reveal Crookes's training as a physicist, as he explored the characteristics of the force and its relationship to the physical world as opposed to seeking solely to prove the existence of this force.

Gracis Gerry Fairfield in his book, *Ten Years with Spiritual Mediums* (1875), also attempted to relate psychic forces to the human body, in this case the nervous system. Fairfield defended the existence of a 'nerve-aura', a force he defined as "an emanating atmosphere having the molecular properties, motor and sensory, of nervous tissue itself, though of lessened intensity" (Fairfield,

³ I have not discussed here many other writings about table-turning (such as Marc Thury's), conveniently summarized by Crabtree (1993) and Wantuil (n.d.). These and similar ideas were challenged by those who argued that table-turning could be explained by postulating unconscious muscular movements produced by the persons sitting around the table (e.g. Faraday, 1853/2000).

1875, p.122). Such a substance, Fairfield thought, could account for both the mental and the physical phenomena of Spiritualism. The author believed that the release of this force was associated with molecular disturbances of nerve-centres. Fairfield discussed epilepsy as an example of the pathological excitation of the nerve-centres, and as a disease involving the same molecular disturbance as that involved in the release of nerve force from the body.

Like Fairfield, the Reverend Asa Mahan explained spiritualistic phenomena as resulting from a force generated by the human body, rather than by a discarnate agency (Mahan, 1855, 1875). The force could be intelligent or not according to its locus in the nervous centres:—

When such centre is not immediately connected with the brain, then the action of this force, like that of magnetism, is simply that of a repulsive and attractive power, without the characteristics of intelligence. When that centre is the brain, then the direction of the action of this power bears, in many important particulars, the characteristics of intelligence, the action of the force, in such cases, being not only in accordance with, but evidently directed by, mental states. [Mahan, 1875, pp.96–97]

Similar to previous writers, philosopher Eduard von Hartmann also attempted to explain mediumistic phenomena as a nervous force from the medium's body, and sometimes from the body of other persons around the medium (von Hartmann, 1885). This agent was said to produce 'lines' of force that could pull and push so as to cause movement of objects, direct writing and other phenomena. This process was related to the medium's state of consciousness:—

This liberation of directive radiation of nerve force is under all circumstances . . . not a function of those parts of the brain which serve as support to the conscious will, but of deeper-lying layers of the brain which either coincide with those supporting the somnambulant consciousness, or are more approximate to them than to the first. It is, therefore, no wonder that the development of a magnetic-mediumistic nerve force is stronger in the somnambulant than in the waking state. [p. 442]

Of course, most of this literature was criticized by spiritualists. They generally argued that ideas of force without spiritual interpretations did not explain anything and were not supported by the evidence (Aksakof, 1890/n.d.; Force v. Spiritualism, 1867). But spiritualists also believed in these forces. What they objected to was the assumption that these forces were always directed by the conscious or unconscious mind of the medium. In their view, the spirits of deceased individuals directed the medium's energies.

One case in point was the ideas of Allan Kardec (the pseudonym of Léon Hyppolyte Denizard Rivail), considered by many as the codifier of spiritist doctrine. Kardec popularized the concept of the perispirit, "a fluidic envelope, which is semi-material, and constitutes the link between the soul and the body" (Kardec, 1876, p.53). He followed the teachings of the spirits as 'dictated' through mediums. Similar to previous ideas of subtle bodies and fluids (Poortman, 1954/1978), these teachings asserted that human beings consisted of the soul or spirit, the physical body and the perispirit. The perispirit was the "means by which the spirit acts upon its fleshy organs and transmits its will to all that is exterior to itself" (Kardec, 1876, p.54). This fluid was described as universal (Kardec, 1875, pp.9–10). As Kardec wrote, this principle "is drawn from the surrounding atmosphere, from the universal fluid; it participates at

once in the nature of electricity, of the magnetic fluid and of inert matter" (Kardec, 1875, pp.113–114). According to Kardec, it is through the perispirit that discarnate spirits can appear as apparitions, or materializations, and can move objects. In a physical medium, the fluid of the perispirit is strong and emanates from the body.

The idea that materialization phenomena were caused by an invisible force was common among many writers. Such ideas were consistent with the speculations that "invisible exudations from the human organisations" were used by spirits to create visible and tangible forms (Owen, 1871, p.404). The spirits, according to another writer, "through the exercise of their united will-power attract and gather certain magnetic and material elements from the medium, the persons present and the atmosphere" (Crowell, 1879, pp.181–182). Similarly, Brackett (1886, pp.126–127) referred to luminous vapour as the matter from a medium's body used to create materializations.

There were many nineteenth-century speculations about materialization phenomena as the transformation of matter from the body of the medium and the sitters. In the words of an anonymous writer in *The Spiritualist Newspaper*, probably the editor:—

The power by which these duplications are effected seems to have something of the nature of a single force, and not of a complicated mixture of vital actions, because not merely are portions of the human body duplicated, but in some instances, the clothes also The law of conservation of energy points out that power cannot be gained in one direction without being lost in another, consequently the power which moves a visible or invisible spirit hand must come from somewhere, and on the hypothesis laid down in this sketch the power comes from the medium. On the withdrawal of much vital force from the whole or a particular part of the body of the medium, it would seem that of necessity that there must be a loss of heat to that part; such is actually the case in practice, for at all, or nearly all, materialisation *séances* for full forms, the medium becomes cold shortly before the manifestations begin.

[Speculations, 1875, p.135]⁴

While most of the materializations reported during the nineteenth century did not show a visible connection to the medium's body, there were exceptions which supported the speculation of projection of forces from the mediums. These consisted of actual observations of emanations or projections such as limbs from the body of the mediums (e.g. Spirit Faces, 1873) and forms such as clouds, drapery and other non-human shapes. The latter was reported on occasion with two extremely controversial British materialization mediums: William Eglinton (Farmer, 1886) and the so-called Dr Monck (Francis Ward Monck: Oxley, 1876). An example with Monck was reported in a *séance* that took place on May 3, 1876. Observers had seen a spirit materialized named Lillie with no obvious connection to the medium:—

He [the medium] next stood close to the table . . . and from his right side there issued a thin white vapour, which gradually assumed a form, at first as of gossamer outline like a garment or a robe, which became more dense or opaque; then appeared

⁴ There were also observations of cold winds in the *séance* room (e.g. Crookes, 1874, p.86). For later observations—generally assumed to be related to the functioning of a force or with the transformation of power from ambient temperature—see Maxwell (1903/1905, pp.114–115) and Price (1925, pp.33–38). For a theoretical discussion see Dudley (1926).

the head with a crown adorned by a luminous lily; and finally the full materialised form of Lillie . . . and while thus standing Dr. Monck . . . handled the drapery. . . . This was repeated three times, the materialised form gradually dissolving each time before our eyes.
[Oxley, 1876, p. 222]

The Russian Imperial Counsellor to the Czar and psychical researcher Alexander Aksakof argued that the matter used in materializations was taken in an act of dematerialization from the body of the medium (Aksakow, 1894–1895/1896).⁵ Aksakof believed there were three stages of materializations. The first consisted of movement of objects and touches caused by an invisible force. The second consisted of the creation of visible and tangible but incomplete forms such as hands, heads and busts. Finally, the third stage was complete materialization, with the production of whole bodies (on stages of materialization, see De Rochas, 1897; and Richet, 1922/1923, p. 478). These stages—in Aksakof's view—were related to forces coming from the medium's body, a point he illustrated in his book with the case of the partial dematerialization of the body of medium Elizabeth D'Esperance (see also D'Esperance, 1897, and the criticism of Carrington, 1907).

Spiritualists' interests in forces also extended to a variety of physical processes such as magnetism and electricity. Many of these were limited to reports of current scientific developments (e.g. *Electricity in the Body*, 1875; *Weaving by Electricity*, 1854). These discussions did not mention Spiritualism or its phenomena. However, their inclusion in spiritualist publications indicated spiritualists' interests in dynamic ideas about the physical world. It was as if they felt that their phenomena—particularly mediumship—were a special case of mind- (or spirit)-matter interaction. In a world full of not completely understood forces, as seen in the nineteenth-century physics literature (D'Agostino, 2000; Harman, 1982), could there not be room for 'new' imponderables?

Many twentieth-century researchers thought so. Astronomer Camille Flammarion (1907) referred to "an invisible prolongation of the organism of the medium" (p. 423) to account for physical phenomena. He compared this process to other natural emanations such as magnetism, electricity and heat. In Germany, physician and psychical researcher Albert F. von Schrenck-Notzing (1920/1925) referred to "energetic psychophysical emanations" (p. 63) coming from the medium's body. Charles Richet wrote that: "Materialization is a mechanical projection: we already know that projection of light, of heat and of electricity; it is not a very long step to think that a projection of mechanical energy may be possible. The remarkable demonstrations of Einstein show how close mechanical and luminous energy are to one another." (Richet, 1922/1923, p. 468).

In Italy, William Mackenzie (1923) argued in his *Metapsichica Moderna* for the "disaggregation (probably atomic) of the medium's organic substance" (p. 252). This process, considered by Mackenzie to be the central problem

⁵ I am grateful to Eberhard Bauer for informing me about the original publication date of this work. The published works of this author use different spellings of his surname. In the text I have used the spelling presented in the cited work. I am grateful to W. Peter Mulacz for pointing this out to me. For another example of dematerialization see Gissurarson and Haraldsson (1989, pp. 78–80).

of metapsychics, was seen to be analogous to radioactive emanations from inorganic matter (pp.270–271).

In another overview of psychical research, French psychical researcher René Sudre's *Introduction à la Métapsychique Humaine* (1926), the concept of the 'psychic fluid' was related to all kinds of effects on physical and organic matter and to materialization. Sudre redefined the term telergy previously used by F. W. H. Myers, to mean "the phenomena by which the psychic fluid accomplishes more or less visibly an exterior work on ordinary matter" (p.226).

The above-mentioned writers developed their ideas in part through the phenomena of physical mediumship. Similarly, French Attorney General and physician Joseph Maxwell believed that the force emitted by physical mediums was "kindred to the energy which circulates in our nerves and which provokes the contraction of our muscles" (Maxwell, 1903/1905, p.51). To generate this force, Maxwell thought muscular contractions were useful. He wrote, "a movement without contact can be procured by tightly squeezing one another's hands, or by resting the feet very firmly on the floor" (p.110). This was related to the possibility that this nerve energy may act "in proportion as it is able to acquire a sufficient tension for its emission" (p.56). Tension was achieved by lack of motion of the medium. If the energy could not find a normal outlet, it increased the possibility of being exteriorized to produce telekinesis and other phenomena. But there could be exceptions. If there was enough tension, body movements could produce phenomena. That is, the movement could "liberate a quantity of energy superior to that which was utilised by the working of the muscle" (p.57).⁶

One of the mediums Maxwell studied was Eusapia Palladino, who was very important for the development of concepts of paranormal forces, not only because of the phenomena reported to take place around her, but because she presented all kinds of behaviours (e.g. movements of the hands corresponding to movements of objects, statements about the force, exhaustion after séances) that supported the idea of the emission of a bodily force. While she was not unique in this, her performances were particularly influential in the development of these concepts of force (Alvarado, 1993).

For example, Italian psychiatrist Enrico Morselli derived his ideas from sittings with Palladino. Morselli's (1908) two-volume work *Psicologia e 'Spiritismo'* was largely devoted to the physiology and psychology of Palladino's phenomena. In his view the medium could create phantasms and forms "through the radiant exteriorization of its force, the bio-psychic undulatory emanation projected" from her (Morselli, 1908, Vol. 1, p.449). This

⁶ There are many observations relating body processes and movements to physical phenomena. Palladino moved her feet against the floor before phenomena were produced (De Rochas, 1897, p.17), and showed movements while telekinesis took place (e.g. De Rochas, 1897, p.19; Lodge, 1894, p.333). Hamilton (1934) reported movements of the mediums (stamping on the floor, rubbing their hands and the hands of others) presumably related to the release of forces to form materializations. Willy Schneider experienced clonic spasms, general body tension, penile erection and orgasm while physical phenomena were produced (Schrenck-Notzing, 1920/1925). Other mediums did 'passes' around sitters apparently to 'extract' energy (Farmer, 1886, p.169; Price, 1926, p.648). Pawlowski (1925) reported that with medium Franek Kluski rhythmic breathing of the sitters helped the 'growth' of a materialization from a small formation to one of a larger size. With Rudi Schneider, occlusion of infrared beams was apparently synchronized with the medium's breathing cycle (Osty & Osty, 1931–1932).

force was further described as an "exopsychism, a vital dynamism" (Vol.1, p.322). Like many previous writers, Morselli believed in collective agency to explain this force. He reported that dynamometric readings taken before and after séances showed that the force in the hand grip of medium and sitters decreased from the first to the second measurement, suggesting energy expenditure during the séance by all involved (Vol.1, pp.351–352).

Ideas of a force coming from the medium's body were also supported by observations of ectoplasm. Richet (1922/1923) referred to this as a "faculty of external projection, of 'ectoplasmization'. The emission of a material substance that can become organic" (p.619). This substance—observed also during the nineteenth century (e.g. Oxley, 1876)—took mainly the form of clouds or nebulous formations, as well as a plaster-like and, more rarely, seemingly liquid forms. Ectoplasm was generally believed to be part of the vital force of the medium's body and the invisible principle behind most of the physical phenomena of mediumship.

French physician Gustave Geley described ectoplasm as consisting of an "anatomy-biologic decentralisation in the medium's body and an externalization of the decentralised factors in an amorphous state, solid, liquid, or vaporous" (Geley, 1924/1927, p.358). In his view, this decentralization process could produce different effects, namely movement of objects, luminous effects and materializations. The latter were considered by Geley as the "final and superior phase" of the projection of the body's forces (Geley, 1922, p.202).

Both Geley's (1919/1920, 1924/1927) and others' observations of controversial medium Marthe Béraud, alias 'Eva C.', (Schrenck-Notzing, 1920) did much to publicize the existence of strange forms, faces, cords and spaghetti-like structures that seemed to come from the medium's body or were seen close to it. As Geley described a particular observation:—

From the mouth of Eva there descends to her knees a cord of white substance of the thickness of two fingers; this ribbon takes under our eyes varying forms, that of a large perforated membrane, with swellings and vacant spaces; it gathers itself together, retracts, swells and narrows again. Here and there from the mass appear temporary protrusions, and these for a few seconds assume the form of fingers, the outline of hands, and then re-enter the mass. Finally the cord retracts on itself, lengthens to the knees, its end rises, detaches itself from the medium, and moves towards me. I then see the extremity thicken like a swelling, and this terminal swelling expands into a perfectly modelled hand. I touch it; it gives a normal sensation; I feel the bones, and the fingers with their nails. Then the hand contracts, diminishes and disappears in the end of the cord. The cord makes a few movements, retracts and returns into the medium's mouth. [Geley, 1919/1920, pp.57–58]

Geley believed that the process of materialization, and the formation of ectoplasm in particular, was the same as the process behind the formation of a butterfly inside a chrysalis or of a foetus inside a woman's womb.⁷ In his view "there is simply one substance, unique and basic, as the substratum of organic life" (Geley, 1919/1920, p.64). Both organic and ectoplasmic forms were considered representations of this basic primal principle. In addition, Geley believed that the same superior dynamism or psychism shaped both organic

⁷ Years before, another writer described materializations as "another expression of uterine growth" (Donnelly, 1876). On vitalistic ideas see Carrington (1909) and Mulacz (2001).

life during foetal development and materialization phenomena in the séance room. It moulded both organic and ectoplasmic formation through the process of ideoplasty, where an idea could direct both normal and 'supernormal' materialization. The superior psychism, a principle independent of physiology, was seen to be the "very foundation of the living being; it centralises and directs the psychic whole; it binds together all present states of consciousness . . . it possesses the so-called supernormal faculties" (Geley, 1919/1920, pp.215–216).

Other researchers centred their speculations of subtle energies on more empirical work. Polish psychical researcher Julian Ochorowicz conducted particularly influential studies with physical medium Stanisława Tomczyk. Ochorowicz studied the properties of fluidic projections from the medium that could move small objects. In his first paper he said he observed threads coming from the medium's fingers (Ochorowicz, 1909). According to him he could cut these threads and they would form back again. Tomczyk stated that there were different forces at work. She referred to: (1) the personal current of the medium, capable of acting a short distance from the body; (2) the etheric or fluidic hands of the medium's double, which could act at a distance without help from the medium's own force; and (3) the current from the hands of the medium's double, which could act at a short distance from the body (Ochorowicz, 1909, p.98).

Ochorowicz kept defining the different emanations in different papers. In a later paper (Ochorowicz, 1910) he said that the 'current' was a combination of forces also related to what he conceived as rays. The latter were an external prolongation of the current, and were guided by the influence of the medium's subconscious mind. The rays could be further divided into two types: 'rigid' rays were concerned with mechanical phenomena but could not affect photographic plates or go through objects; on the other hand, 'X^x'-rays could affect photographic plates and could penetrate matter further than X-rays.

Ochorowicz (1911) conducted experiments to study the properties of the emanations. The 'fluidic thread' could carry objects and could be detected when passing through smoked paper and liquids. The 'current' or rays could carry water or humid particles that were able to cause chemical reactions when combined, thus showing the transfer of one substance to another. They were also found to be resistant to fire, unaffected by a magnetic field and capable of conducting electricity. Eventually, Ochorowicz (1911–1912, 1912) published pictures of hands. These were supposed to be the hands of the medium's double. The emanations that caused the pictures of the hands, Ochorowicz thought, came from Tomczyk's etheric body and were different from the other emanations that were related to the medium's nervous system.

Another important group of studies were those conducted by Irish mechanical engineer W. J. Crawford (1916/1918, 1919, 1921), who worked with a mediumistic circle—the Goligher circle—that produced such phenomena as table levitations. He conducted experiments that led him to postulate a 'psychic rod' theory of table levitations (Crawford, 1916/1918). On this theory, an invisible structure emanating from the body of the medium (but nurtured as well by the psychic forces of the sitters) could levitate tables. The observation that the weight of Kathleen Goligher, the main medium of the circle, increased when the table was levitated suggested that the table's weight was being

transferred to her through an invisible structure projected by her body in cantilever shape (this change of weight had been reported before with Palladino by Courtier, 1908). On other occasions, Crawford believed that the cantilever had a point of contact on the floor and the weight was not transferred to the medium. He also postulated other modes of action of the rods. In addition, both the medium and the sitters lost weight after the séances.⁸ This suggested that the phenomena depended on the forces of both medium and sitters. In his book, *The Reality of Psychic Phenomena*, Crawford stated that he believed that invisible 'operators' or spirits manipulated the forces in question.

ATTEMPTS AT PHYSICAL DETECTION

Other researchers worked with non-mediumistic individuals. French physician Hyppolyte Baraduc (1893) used an instrument he called a biometer consisting of a glass jar inside which was a needle suspended by a thread. The needle rotated on top of a circular surface with numbers that allowed Baraduc to obtain readings corresponding to the deviations of the movements of the needle. When people put their hands near the instrument the right hand effected an attraction of the needle whereas the left hand repelled it. These movements, described by Baraduc as "tangible and recordable expressions of a superior Force" (pp.12-13), were considered to be evidence for the existence of a vital body in human beings. The movements of the needle showed that each person had a particular biometric formula consisting of "the expression of the vital state" (p.22) at the moment of measurement. This formula, consisting of combinations of attraction and repulsion in the right and left hands, could change according to different states, dispositions and medical conditions. Baraduc believed that the conditions were caused by "primordial fluidic perturbations of the vital body" (p.162). He was aware that the proximity of the hand to the biometer could induce some movements due to bodily heat. He conducted tests that showed that while candles and light produced movements of the biometer's needle, they did not produce the attraction and repulsion patterns observed with hands. In addition, Baraduc noticed that the movements could be produced at will by some individuals.

Similar to Kardec and others, Baraduc believed that the vital force or vital body was a semi-physical body that bridged the physical body and the spirit. The vital body influenced the physical body. It "rules, conserves, animates the material body" (p.212). In turn, the spirit could influence the physical body through the vital body. The vital body obtained its nourishment through absorption of a universal life force surrounding everything, a concept similar to the universal animal magnetism of Mesmer and Reichenbach's (1849/1851) Od. In this vitalistic view, life was seen as much more than an energy emanating from the human body; the body was only a place where the spirit and vital body dwelled.

In addition to Baraduc, several French researchers argued that different types of instruments or devices showed the existence of a fluid or a nervous force by the movement of a needle or some other part of the instrument. One of

⁸ See, for example, Crawford (1916/1918, pp. 24-25, 40-56). Regarding alterations of the weight of mediums as a physical phenomenon, see Courtier (1908), Grunewald (1920) and Olcott (1875).

the most influential workers in this area was physician Paul Joire, who published several papers about the influence of the nervous force on an instrument he called the sthenometer. The externalized nervous force, Joire maintained, could cause movements of a needle under glass. The right hand usually produced larger deflections of the needle than the left hand, but some medical conditions such as neurasthenia could reverse this pattern. Hysterics showed very low left-hand readings (Joire, 1905).

Typical of this literature, there were criticisms related to the possibility of alternate explanations to account for the movements of the sthenometer's needle. Stratton and Philips (1906) argued that the results could be explained through body heat, a conclusion disputed by Joire (1907). Such controversies continued in later years with similar devices, as seen in Carrington's (n.d.) discussion of these types of studies. During the nineteenth century (and later) there were many attempts to record human radiations using photographic plates. Because photography had been actively used to record materialization and other phenomena as well as to capture 'invisible spirits' around the sitters (see Krauss, 1992/1995), it was logical to expect that photography could also be used to capture invisible human radiations as well. A pioneer in this area was the French Commandant Louis Darget (Darget, 1909; Tégrad, 1902). Darget reported he obtained 'effluviographs', or pictures of the 'fluid', around hands, fingers and plants without exposure to light. These pictures, he believed, reflected the moral state of the person, as well as emotional states and the state of health. Regarding the latter, Darget wrote that most diseases "are nothing but the accumulation of fluid in the diseased region or the absence of fluid" (Tégrad, 1902, p.595). In addition, he obtained 'thought photographs' by placing photographic plates a short distance from a person's body. In one such test Darget put a photographic plate for five minutes one centimetre from the head of his wife while she was sleeping. The plate showed what Darget interpreted to be the image of an eagle. Mme Darget did not remember dreaming about an eagle but he speculated that the image represented the fluidic exteriorization of a dream. Darget obtained other pictures by placing fingers or hands on the plates. The images showed apparent radiations from the respective parts of the body.

Baraduc also conducted this type of work. In his *L'Ame Humain: Ses Mouvements, ses Lumières, et l'Iconographie de l'Invisible Fluidique* he presented many pictures of vital radiations taken using a variety of methods, such as prolonged contact of hands with photographic plates (Baraduc, 1896). Like Darget, Baraduc claimed that pictures taken with regular photographic plates (with and without contact) reflected emotional and health states. The pictures present what look like fields and discrete energy particles, suggesting, as Baraduc argued, that there were different types of forces. This work led Baraduc to argue that: "Around us . . . we attract, we aspire waves in the form of ellipsoidal curved surfaces drawn from the cosmos, which in form and delicacy are related to what we call a state of mind or soul. . . . We throw back into this same cosmos, emanations more or less gross or subtle according to analogous states of the vibrating soul." (Dr. Baraduc's Discovery, 1897, p.31).⁹

⁹ During the following years there were many examples of the use of photographic plates, or actual

CONCEPTS OF FORCE AND MODERN PARAPSYCHOLOGY

While popular interest in forces is as prevalent today as it was in the old days, the rise of modern experimental parapsychology in the Anglo-American milieu has decreased interest in the concept of human radiations among professionals in the field. The work of Joseph Banks Rhine and associates redefined modern parapsychological research. In his initial monograph, *Extrasensory Perception*, Rhine (1934) had written: "The Wave theory seems to be inapplicable to these results, in view of the distance experiments and the absence of any decline of results with distance. . . . Likewise it is shown that E.S.P. is not a sensory phenomenon. The absence of any need of orientation, of any sensory localization, of any recognized stimulating energy such as the senses receive and of any awareness of reception all lead to the rejection of the sixth sense hypothesis as well" (p. 163).¹⁰

The new experimental parapsychology headed by Rhine (or at least some of its representatives) claimed that time, space and the physical characteristics of the target were irrelevant to ESP and PK test performance. This, as discussed by Warcollier (1953), led many parapsychologists to deny the existence of the 'fluid'. In *Parapsychology: Frontier Science of the Mind* (1957)—a textbook that articulated well the conclusions of the Rhinean paradigm derived from experimental work conducted since the 1930s—Rhine and Pratt stated that: "It is . . . the manifestly nonphysical character of parapsychical phenomena that for the present constitutes their only general identifying feature and marks them off from the rest of general psychology. . . . The distinction . . . from physics is *not*, however, an absolute one. Rather they usually involve physical events or objects, either as stimuli or as effects. *But there is always some distinct point at which a completely physical interpretation is manifestly inadequate.*" (Rhine & Pratt, 1957, p. 6, emphasis in original).

Rhine used the findings of his card and dice tests to defend a dualistic view of human beings, a perspective clearly seen in his books, *The Reach of the Mind* and *New World of the Mind* (Rhine, 1947, 1953). In his view, parapsychology was the science of the nonphysical. The mind was clearly the causative agent underlying psychic phenomena and no consideration of fluids or electromagnetic forces of any kind was deemed necessary. This was clear in Rhine's discussion of psychokinesis (e.g. Rhine, 1947), where he did not follow the ideas of projections of biophysical force from the body postulated by previous workers. While Rhine shared with previous writers the idea that the mind or will of the subject could to some extent direct the psychokinetic influence, he argued that the process was inherently non-physical.

In the face of experimental failures to find physical correlates of ESP and PK, many thought that the concept of psychic or fluidic forces seemed to lack explanatory power and could be forgotten. Nonetheless, others protested against Rhine and the like, arguing that the 'energetic' hypothesis had been

photography, to detect the fluid or human thought (e.g. Warrick, 1939; for a review see Krauss, 1992/1995).

¹⁰ Radiation explanations of telepathy were criticized by many before Rhine (e.g. Driesch, 1932/1933; Gurney, Myers & Podmore, 1886). However, there were some supporters of these ideas as well (e.g. Cazzamalli, 1925/1926).

rejected prematurely (e.g. Cazzamalli, 1954; Dufour, 1951).

Some figures from the period reviewed here — Carrington (1952–1953), Cazzamalli (1954), Mackenzie (n.d.) and Sudre (1956/1960)—have presented ideas of human radiations to a new generation of researchers. In addition, the interest in Soviet parapsychology, which is based largely on the concept of bioplasma, has kept alive the idea of vital, biological energies underlying psychic phenomena. The Soviet influence soon spread to the United States and elsewhere, where many claimed that the electrophotographic technique known as Kirlian photography could detect and document these auric or bioplasmic emanations (e.g. Krippner & Rubin, 1974). However, this claim was questioned by some (e.g. Burton, Joines & Stevens, 1975; Ellison, 1982). Such criticisms have created distrust among many parapsychologists both concerning the validity of Kirlian photography and about most of the work claiming to detect subtle energies in general. Nonetheless concepts of force to explain psychic phenomena have been prevalent within the field of psychotronics (Second, 1975).

In recent times there have been many publications dealing with concepts of force. These include writings about auras and their instrumental detection (Korotkov, 2004; Lindgren, 2000), and about biofields in the context of alternative medicine (Rubik, 2002). Concepts of subtle energy have been discussed in recent decades within the parapsychological literature, as seen in Roll's work on poltergeists (e.g. Roll, Burdick & Joines, 1973) and Benor's (2004) and Grad's (1989) discussions about healing. Tiller's writings (e.g. Tiller, 1997) have also contributed to the modern articulation of the different meanings of the concept of subtle energies. Andrade (1983), Joines (1975), Wasserman (1956), and others, have promoted theoretical models for psychic phenomena that involve fields and emanating radiations. The concept is central to the parapsychology of such Asian countries as China (Leping & McConnell, 1991) and Japan (Kokubo & Kasahara, 2000). More recently, there has been some speculation about psychic phenomena and ambient energy in empty space, or zero-point energy (Puthoff, 2001; Roll, 2003).

The rejection of forces by many parapsychologists may also be related to the rise of concepts of non-locality that do not postulate a transmission mechanism (e.g. Oteri, 1975; Varvoglis, 1986). For example, the models developed by Schmidt (1975) and Walker (1975) do not involve projection of forces or radiations. The same may be said of more recent non-force-PK explanations (e.g. May, Utts & Spottiswood, 1995; Pallikari-Viras, 1997) and of other contemporary theoretical views (e.g. Jahn & Dunne, 2001; Rausher & Targ, 2001).¹¹

Regardless of the causes of the neglect of force concepts, the fact is that many modern parapsychologists do not believe in these forces nor in physical models of psi in general and keep commenting on the apparent independence of distance and barriers of psi test performance (e.g. Braud & Schlitz, 1991, p. 36). As stated in a widely used textbook, "there is no generally acknowledged demonstration that an energy with the required characteristics actually exists" (Irwin, 2004, p. 134).

¹¹ See Rogo's (1980) discussion of the old biological force paradigm and the more recent mentalistic and quantum mechanical approaches.

CONCLUDING REMARKS

Overview

The idea of a human radiation has been one of the main explanatory models of phenomena in the history of mesmerism, Spiritualism and psychical research. This hypothetical subtle energy was considered as the agent behind thought-transference, movement of objects, materializations, healings and many other phenomena.

It is clear that there are many differences between the concepts discussed in this paper. The concept of the magnetic fluid of Charpignon was more physiological than that of Ordinaire, who argued for the importance of the soul as the main driving principle behind the fluid. Similarly, Kardec's perispirit was a different principle than that proposed by Rogers or by Maxwell. While Kardec (as well as Mesmer) argued for an universal fluid connected to both the physical body and the spirit, Rogers and Maxwell referred to a nervous force of more limited dimensions.

It is interesting to see that many of these ideas associated these forces to functions of the body such as movement and to life itself (as seen in the ideas of Baraduc, Deleuze, Cox and Geley). Even such concepts as animal magnetism, considered by Mesmer and others to be universal forces, have been described as being housed in the human body and related to its workings. In addition, many of the early writings (e.g. Esdaile, Fairfield, Mahan, Maxwell) argued that this force was intimately related to the nervous system or that it was the nerve force itself. But these ideas also played a different role: they naturalized psychic phenomena. For many, postulating an alternative view of the functioning of the nervous system to explain a variety of mysterious-looking phenomena was important in that the phenomena in question could then be related to the functions of the body, a kind of an extended chapter of human physiology. This seems to have been the thrust behind the writings of Cox, De Gasparin, Dods, Fairfield, Geley, Maxwell, Morselli, Rogers, Von Hartmann and others.

The emphasis on physiological explanations was in part an attempt to combat the notion of discarnate agency. Like the current idea that ESP and PK from the living can explain what seem to be survival phenomena, these ideas of force served as an explanatory concept that could be actively used to combat the basic tenet of Spiritualism. De Gasparin, Fairfield, Mahan, Morselli, Rogers and Von Hartmann, among others, were clearly interested in this goal. Nonetheless, others such as Kardec and Crawford presented views that postulated or at least admitted the possibility of the action of spirits of the dead.

Criticism

Regarding mesmerism, overt suggestion as well as the more subtle demands of the situation can perhaps account for such mesmeric phenomena as healing and reports of seeing and feeling the magnetic 'current'. This is especially true with the common practice of using the same subjects over and over again. As Carroy (1991) has argued, the history of hypnosis (and mesmerism) is full of the repeated use of the same person (or subject) to produce effects. This, in turn, may produce 'professional' subjects who have been trained to produce

particular effects that have nothing to do with animal magnetism as a force (a similar point may be made about mediums). Of course, suggestion may account for many of the reported effects even without training.¹² Many magnetizers did not control for the effects of suggestion, even though some of them were aware of and believed in its power. It is true that some effects were obtained at a distance. But such effects are at odds with the concept of a body-based 'magnetic' action. A force based on nervous currents or other biological principles should not be able to function far away from the body. If long-distance action does take place it is unlikely that it is based on biological principles. Some other principle must be invoked to explain the phenomena, as others have speculated (Rein, 2004).

The work of Baraduc, Darget and Joire needs to be replicated. These authors have described effects that do not necessarily represent the detection of a specific biophysical force. In addition to this ambiguity, researchers must confront the criticism that artifacts such as the influence of body heat have not been completely controlled for. Although such criticisms are controversial in and of themselves, the fact remains that artifacts may account for *some* results. Furthermore, we must be aware that researchers such as Baraduc were aware of these issues and controlled for them in some (but not all) tests. One hopes that researchers with the proper training will explore the use of these devices and put the artifact hypothesis to the test.

As for physical mediumship, we need to recognize that many of the claims that emanations from the bodies of mediums account for phenomena are based on such final effects as the perceived movement of an object or a materialization. In many cases, the supposition is not supported by any specific observation or measurement pointing to the idea that a force was projected. Of course, there are exceptions to this, among them the claim that mist or threads have been seen to come from the medium's body. Such observations were reported by Ochorowicz with the medium Stanislaw Tomczyk, by Crawford with Kathleen Goligher, and by Schrenck-Notzing and Geley with Eva C. Furthermore, the physiological phenomena shown by mediums were suggestive of some connection between bodily processes and physical manifestations. While none of these observations is conclusive, they help us to keep in mind the possibility of the existence of an emanation from the body.

While I agree with Braude (1997) that, in some cases, the evidence for physical mediumship is fairly good, one has to recognize the problem of fraud in such phenomena as materializations. Randall (2003), in a paper about a nineteenth-century medium, noted that it is very difficult to evaluate some of these phenomena evidentially. He suggested a provisional acceptance of the data in order to look for patterns and correlations. I agree that this is a good strategy for the development of theoretical ideas and procedures for future research. Such research has the potential of supporting the radiation hypothesis, particularly if it is conducted using modern technology. But in practice the prospect of finding a physical medium, and then persuading that person

¹² I say "of course" while recognizing that we still do not understand why suggestion has different effects on different individuals. My point is that there are certain effects that cannot be separated from suggestion considering the mesmerists' testing procedures.

to submit to research is not encouraging, due to the apparent rarity of such individuals.

In any case, one must be very careful not to derive conclusions about the nature of this hypothetical force from the literature reviewed in this paper. This has been done in the past by many writers, including some who put too much faith in the validity of information obtained through spirit communications (Kardec, 1876), on their theoretical speculations (Von Hartmann, 1885), or on a very particular reading of the literature (Quevedo, 1971).

I am open to the idea that some type of measurable force may be identified at some point, and that it may account for some—though not necessarily all—phenomena. Perhaps the current literature on the subject, which was not the focus of this paper, will help us on this issue. We certainly cannot close our minds completely to the idea. However unfortunate, at present speculating on the basis of the old literature that vital forces are related to non-physical or spiritual processes (as Baraduc postulated), or to the body's nerve force (as Maxwell and Morselli believed), does not rest on adequate evidence as was believed in the past and is still believed today (e.g. Loureiro, 1998).

The Past and the Present

It is interesting to notice similarities between modern concepts and findings and some of the old material discussed in this paper. The Soviet parapsychological theory of bioplasma and its claimed detection using Kirlian photography, not to mention the recent work with Gas Discharge Visualization (Korotkov, 2004), is similar to previous ideas of psychic forces. Recent studies of the lowering of temperature during supposed qi emission (Nakamura et al., 2000) parallel observations about mediumistic energies (Speculations, 1875). Similarly, pictures of such unspecified radiations as those discussed by Korotkov (2004) and Rhead (2001), are reminiscent of those presented by Baraduc (1896). Benor's (2004) discussion of healing is reminiscent of aspects of the mesmeric literature. Certainly these ideas have come to us from our past even if such an origin is not acknowledged.

From the point of view of those of us who are interested in the history of ideas, much more needs to be done to trace the development of these concepts, their relationship with ideas about physical forces prevalent at the time in which they were developed (for example, neurophysiological concepts, electricity, radioactivity, X-rays, radio waves), their relationship to other variables (e.g. distance), and to other such conceptual traditions as vitalism. In addition, there is much to explore regarding the factors that have contributed to the survival of such ideas. This has been described to some extent in another paper (Alvarado, 1993), in which I argued that ideas of human radiation are not wholly derived from research results but are also connected to other non-scientific aspects such as the behaviours of mediums during the séances.

Finally, it is important to state again that although most of the concepts discussed here were of biophysical forces, there are differences between these ideas. The same is true today, because the term 'subtle force' or 'subtle energy' is often used to refer to different hypothetical processes ranging from electromagnetic waves to unknown forces. In addition, the terms are also used as metaphorical (comparing the hypothetical forces to known forms of radiation),

descriptive (to refer to ESP and PK phenomena), and as explanatory labels (to account for what we refer to as ESP and PK). There is indeed much to clarify both from our past and present literature.

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