

DISSOCIATION AND STATE-SPECIFIC PSYCHOPHYSIOLOGY DURING THE NINETEENTH CENTURY

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ABSTRACT

This paper reviews examples of state-specific psychophysiology in nineteenth century reports of dissociative disorders. These cases occurred in the context of rapid developments both in neurology and in the understanding of phenomena suggesting the possible influence of the mind, emotions, or psychological states on general health and specific bodily functions (e.g., the study of hypnosis and hysteria). It is argued that interest in such cases was part of a general concern with mind-body interactions. The explanations offered to account for these cases reflected different orientations to the mind-body problem prevalent during this era.

In an early report on Mary Reynolds, the most famous American case of multiple personality disorder of the nineteenth century, the patient was said to have written:

Whenever I changed into my natural state, I was very much debilitated. When in my second state, I had no inclination for either food or sleep. My strength at such times was entirely artificial. I generally had a flush in one cheek, and continued thirst. . . .
(Plumer, 1860, p. 812)

Such nineteenth century observations of state-specific psychophysiology in dissociative disorders were more common than has been generally realized (e.g., Coons, 1988). In this paper I discuss some examples of this phenomenon during the nineteenth century, and argue that such observations were part of a wider interest during the period: a concern with the mind-body problem.

The field of neurology was one of the intellectual contexts in which discussions about mind-body interactions developed during the nineteenth century (for a review of these developments see Young, 1970). A variety of studies explored the issue of the localization of sensory and motor functions in the brain during this period. The study of aphasic disturbances was a main line of research, as seen in the case studies of Broca (1861/1960) and many other (e.g.,

Jackson, 1878-1879). Another approach was that of animal experimentation, undertaken by researchers like Ferrier (1886) and Fritsch and Hitzig (1870/1960).

The findings of these and of many other studies not only provided new information about the functioning of the nervous system in human and animal life, but were considered by some to provide evidence for particular views of the mind and of human consciousness. One of the most influential of these views was epiphenomenalism. Huxley (1874) considered the brain as the seat of consciousness and maintained that anatomical and physiological explanations of the mind should take precedence over philosophical and psychological views (which can be seen as epiphenomena of brain structure and function). Similarly, Clifford (1874) argued that changes in the brain were the "invariable concomitant of sensation, thought, and emotion" (p. 717). It is not surprising, then, to see that most physiologists and physicians of the period followed Hammond (1876) in believing that: "We have no evidence to show that the mind can exist independently of the nervous system" (p. 2).

This same neurological tradition inspired other models, however. This included psychophysical parallelism (Jackson, 1884), and the assumption that the mind was independent of the nervous system and capable of using brain mechanisms to express itself (F. W. H. Myers, 1885).

That all these views affected psychiatry and psychology can be seen in the proliferation of physiological conceptions about the mind and mental disease (e.g., Jacyna, 1982; Thielman, 1987). This point was clearly argued in Maudsley's *The Physiology and Pathology of the Mind* (1867), where he discussed "mental phenomena from a physiological rather than from a metaphysical point of view" (p. v). A later writer described insanity as "a symptom of a whole group of diseases and disorders having their seat in the brain, or in some other organ of the body, and affecting the brain by reflex or sympathetic action" (Folson, 1880, p. 484). Further examples of this trend were attempts to conceptualize in physiological terms phenomena such as somnambulism (Prichard, 1850), trance (Beard, 1877), and events associated with spiritualism (Carpenter, 1884, pp. 626-635). This approach to spiritualistic phenomena (such as table turning) was part of a nineteenth century trend to naturalize the "supernatural" using psychiatric and physiological explanatory concepts (Alvarado, 1989). This trend has been described by Murphy and Kovach (1972, p. 152) as a gap between medicine and psychology. In their worry for physical explanations of disease physicians "were seldom inclined to look systematically for concomitant psychological causes

for medical problems. Psychological reality could be a *result*, but not a *cause*, of a medical problem" (p. 153). In fact, several individuals during this period discussed this issue in an attempt to promote their physical views. Clifford (1874, p. 722) admitted that these were mental effects on the body but considered them a part of the properties of the nervous system. Bain (1883) also discussed this issue when he wrote:

Before endeavoring to formulate . . . the relationship of body and mind, I make a reference to one of the current modes . . . namely, that the mind acts upon the body, and the body upon the mind. To this I object, as assuming the independent existence of the mind. I affirm, on the contrary, that the inter-actions of mind and body are coupled both in the antecedent and in the consequent. A fright depresses and deranges the bodily functions; yet the antecedent fact is not a piece of pure disembodied consciousness; it is a consciousness that would be non-existent but for its being embodied in a series of nervous disturbances; and its efficacy is due to those disturbances, and not to any power that it possesses as a purely subjective phenomenon. (p. 403)

But Murphy and Kovach's view should not be taken to mean that there was no interest in nor discussion on alternative points of view about these issues. There is ample evidence that there was interest in mind over body effects (regardless of their interpretation) during the nineteenth century, a field reviewed by Stainbrook (1952). The development of dynamic psychiatry and its emphasis on the effect of subconscious ideas on mental and physiological processes is evidence of this fact (e.g., Breuer & Freud, 1893/1957; Janet, 1889). For an overview, the reader is referred to the work of Ellenberger (1970).

A particularly interesting line of conceptualization and research held that the mind (i.e., thoughts, emotions, or mental states) could and did influence health and bodily functions. Tuke's *Illustration of the Influence of the Mind Upon the Body in Health and Disease* (1872), and Carpenter's *Principles of Mental Physiology* (1884, pp. 676-690) debated these points. The literature of the period discussed mind over body effects as evidenced in phenomena such as faith healing (Goddard, 1899), religious stigmata (Maury, 1854), and so-called maternal impressions in which a pregnant woman's mental impressions were thought to cause special features or malformations in the body of her unborn child (Baker, 1887). With regard to the interpretation of stigmata, there were many debates during the nineteenth century. For example, Lefebvre (1870/1873, pp. 92-100) questioned Maury's assertion that an excited imagination could produce the phenomena. In his opinion stigmata was beyond medical explanation.

Additionally, two other phenomena key to an understanding of the development of nineteenth century psychiatry were specifically relevant to discussions of the possible influence of mental states on the physical body: hysteria and hypnosis. During the nineteenth century many considered hysteria to be a "connecting link between mental and bodily disease" (Camps, 1859). Its manifestations included a variety

of functional sensory (e.g., anesthesia, hyperesthesia, blindness) and motor disturbances (e.g., epileptic-like fits, muscle contractions, paralysis), as well as many other conditions such as anorexia, anuria, fever, and headaches (e.g., Breuer & Freud, 1893/1957; Bristowe, 1885; Pitres, 1891; Richer, 1879). Many of these symptoms changed continually and could be modified by suggestion (e.g., Bernheim, 1886/1889; Charcot, 1887). Some clinicians interpreted this to mean that the disturbances were associated to changing the psychological conditions or states of consciousness of the patients. It is helpful to recall that physiological conceptions of hysteria were still prevalent during the nineteenth century as seen in ideas connecting the disease with female reproductive organs (e.g., Clarke, 1891). There were also other models that emphasized "nervous exhaustion" as a physical process, as in some of the writings on neurasthenia (Gosling, 1987).

Hypnosis, considered by many to be a symptom of hysteria, not only was used to produce or to control the above mentioned hysterical manifestations, but also was employed to induce or "cure" a variety of physiological phenomena or medical conditions. In the words of an early author on these topics, animal magnetism produced: "A general excitement and strengthening of the vital functions . . . in the nervous, muscular, vascular and digestive organs . . ." (Colquhoun, 1833, p. 85). Beaunis (1887, pp. 44-111) reported experiments of successful use of hypnosis to change heart beat rate, induce red blotches, cure warts, and produce changes in muscular force, auditory acuity, and in the reaction time of auditory and tactile sensations. Other claims of the powers of hypnosis included the production of anorexia, bulimia, anuria and fasting (Debove & Flamand, 1885), analgesia (Elliotson, 1843), dermatography or skin writing (Mesnet, 1890), burns (Rybalkin, 1890), and hemorrhages (Artigales & Rémond, 1892). In his *Suggestive Therapeutics* (1886/1889) Bernheim presented cases of medical problems successfully treated with hypnosis, among them, menstrual, rheumatic and gastric disorders. In fact, claims of healing were common in the nineteenth century hypnosis literature, as seen in the writings of Lafontaine (1847, pp. 178-238), and others (e.g., Thompson, 1845).

The nineteenth century, then, demonstrated the presence of a conceptual and research tradition in which, regardless of precise ideas on the nature of the mind-body relationship, the mind was seen as capable of affecting the body and as related to at least some mental illnesses and dissociative phenomena. Binet (1892/1896) related the issue of psychophysiological effects to dissociation in this way:

all patients having "second states" . . . have peripheral sensory modifications which signalize the transition to a new state. This is logically necessary. From the moment that the character is modified and the span of memory is changed, it is natural to expect that the ability to perceive sensation should be equally affected. (p. 31)

Other nineteenth century writers were aware of similar

phenomena related to dissociation. Laurent (1892), in keeping with Janet's (1899) ideas, noted that the narrowing of the field of consciousness was related to "somatic phenomena." Hyslop (1899) discussed different types of variations of personality. He was of the opinion that: "These variations may depend upon sensory experiences which are different to those habitual to the normal self; *there may be new bodily sensations, or loss of old ones . . .*" (p. 784, my italics). Some of these phenomena consisted of state-specific psychophysiological manifestations observed in patients suffering from dissociative disorders (see Table 1 for a summary, including cases mentioned in the text).

An early case (1815) of somnambulism reported by Dewar (1823) showed some interesting state-specific phenomena. A girl of 16 years of age was reported to have shown during her "fits" of sleep "symptoms of torpor or disorder in the alimentary canal" (p. 368). During the fits it was noticed that her pupils were sometimes dilated (although once there contracted), and that the cornea looked glazed, resembling the appearance of a syncope.

Other early cases showed changes in particular bodily functions. In the case of Estelle L., who suffered from paralysis of her legs and other symptoms, Despina (1838) reported that his patient could walk when she was under hypnosis and communication with her secondary personalities was possible. Elliotson (1846) reported a case of a patient suffering from somnambulist states in which the patient, a 15 year old boy (in 1842), performed actions he could not remember later. In his secondary states the patient ate voraciously, much more than normally. "Though he was always on full diet, that never satisfied him when in the extraordinary state" (p. 161).

In later years state-specific observations of this kind became more systematic, perhaps because the study of hysterical manifestations in general received further and more detailed attention during the last quarter of the century (Ellenberger, 1970; Veith, 1965).

Dufay (1876) reported a case of somnambulism in a 28 year old woman originally studied in 1845. During somnambulist states the patient was able to do needlework without her glasses, although she needed them normally because of myopia. She was able to thread a needle easily even in dim light. But in her normal state, even while wearing glasses and in good light the patient had trouble threading the needles. Some medical and physiological tests were conducted on the patient (see Table 1 for more details). Dufay found some anesthesia of cutaneous sensibility in two points, contact with either of which induced somnambulism or awakened the subject. Clearly this is a reference to the phenomenon of hysterogenic zones. Pressure applied to these zones or spots was supposed to induce or arrest hysterical symptoms (e.g., Pitres, 1891, Vol. 1, pp. 237-238).

The case of Louis Vivé, who showed six different states or personalities, is one of the most interesting cases of state-specific psychophysiology published in the nineteenth century (Bourru & Burot, 1888; A. T. Myers, 1886; Voisin, 1885). In the words of a commentator: "Not only are these past and forgotten mental states recalled by physical impressions, but also conversely if a past and forgotten mental state is sug-

gested to the patient as his actual and present condition he accepts the belief and with it comes back his past physical condition . . ." (A. T. Myers, 1886, p. 602). That is, conditions such as paralysis, contractions, speech difficulties, and anesthetics would be specific to particular states or personalities that changed spontaneously or under the influence of suggestion. (See Table 2 for information about some of the phenomena.)

Some of the cases, like that reported by Despina (1838), were observed in patients that showed one of more personalities when hypnotized. For example, Lucie, a patient of Pierre Janet (1887), suffered from a variety of somatic problems, including absence of tactile and kinesthetic sensations. During hypnosis a personality named Adrienne communicated with Janet through automatic writing. When Janet pinched Lucie, Adrienne reported feeling sensations that Lucie did not feel. Similarly, under these conditions Adrienne was able to recognize objects by touch, a task Lucie was unable to accomplish. Janet measured the tactile sensibility of his patient with an esthesiometer and found that while Adrienne's sensation was normal, Lucie's was not.

The case of Blanche Witt, studied by Jules Janet (1888), showed similar phenomena. In her "primary" state Witt showed several sensory and motor deficiencies such as total anesthesia, lack of muscular sense, deafness in her left ear, color blindness in the left eye, restricted visual field, low visual acuity, and hysterogenic and erogenic points. Under hypnosis, however, Witt's secondary personality did not exhibit these problems.

Finally, Bruce (1895) reported another case in which systematic tests were conducted. His patient, a 47 year old Welsh sailor showed two different states: one in which he spoke Welsh (was left handed, and had weak circulation and constipation), and another in which he spoke English (was right handed, and his circulation and bowel movements were normal). According to Bruce: "Occasionally when changing from the Welsh to the English stage, or the reverse, this patient passes through an intermediate condition, in which he is ambidextrous, speaks a mixture of Welsh and English and understand both languages" (p. 62). Additionally, the patient's pulse had a higher rate in the English state than in the Welsh state.

The interpretation of these phenomena was problematic, however. Those that were offered were as varied as the then-current views of the mind-body relation. Many considered dissociation, and, consequently, state specific physiology, to be related to the workings of the nervous system. Dewar (1823) and Jackson (1869) speculated that brain states caused consciousness and state-specific phenomena in dissociation cases. Others such as Bruce (1895) and Voisin (1885) argued that different physiological states exhibited by different alters were related to the alternate functioning of the brain hemispheres. The use of concepts of hemispheric functioning to explain a variety of psychiatric and psychological phenomena (including dissociation) was popular during the nineteenth century (Harrington, 1987).

Other theoreticians and clinicians espoused different views. Dufay (1876) suggested that psychological variables were more important than physiological ones when he

TABLE 1
Nineteenth Century Cases of Dissociation Disorders Showing State-Specific Psychophysiology

Reference	Sex	*Age	**Condition	Comments
Dewar (1823)	F	16	S	During "fits" eye pupil sometimes dilated, cornea looked glazed; once pupils were contracted; symptoms of digestive problems; no perceptible contraction of the iris when asked to look at the sun.
Despine (1838)	F	-	M	When in hypnosis and in contact with alters, patient recovered from leg paralysis.
Elliotson (1846) reported by a Dr. Wilson, unpublished	M	15	S	During somnambulism, patient ate voraciously, more than normally.
Elliotson (1846) reported by a Dr. Skae	M	-	-	Patient suffered from indigestion and bodily pains on alternate days; when suffering, he could not remember days when he was well or events related to those days.
Plumer (1860)	F	about 19	D	Alter had no inclination for food or sleep (according to subject's self-report).
Jackson (1869)	F	14 - 15	S	Change of voice during somnambulism; change of state accompanied with nausea and vomiting on one occasion but not on a second observation.
Dufay (1876)	F	28	S	Normally suffered from myopia but could work at needlework without glasses during somnambulism; slight convulsion on lower part of an eye; pupils normal; senses of touch, taste and smell normal; circulation and respiration rate slow; anesthesia of cutaneous sensibility in lateral middle neck and in throat; pressure on these spots could induce or arrest somnambulism.
Bourrou & Burot (1888); Myers (1886); Voisin (1885)	M	-	M	Patient suffered from six states or personalities associated with a variety of phenomena such as speech problems, variations in muscular activity, paralysis, anesthesia, and contractures. Symptoms could be induced with suggestion, and transferred to different parts of the body using magnets and metals.

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Reference	Sex	*Age	**Condition	Comments
Azam (1887)	F	about 15	D	Patient (Félida X) suffered from blood spitting and bodily pains in different parts of the body during primary state; no such symptoms appeared in the secondary state. At the beginning both states differed regarding somatic disorders. Later this changed as the second state became more frequent and overshadowed the primary one.
P. Janet (1887)	F	19	D	Hypnotic alter did not suffer from problems of primary personality (absence of tactile, temperature and kinesthetic sensations).
J. Janet (1888)	F	-	D	Hypnotic alter did not suffer from problems of primary personality (sensitivity of anesthetized areas, muscular sense, blindness, deafness, and loss of color vision).
Ladame (1888)	F	27	S	During secondary state, patient had better appetite and digestion than in the normal state.
Bonnamaison (1890)	F	22	S	During somnambulism, patient had hyperesthesia of hearing and smell.
Mason (1893)	F	18 or over	M	Patient had three personalities; primary one suffered from a variety of conditions (e.g., lumbar pain, insomnia, headaches, weakness); one alter was free of pain and had more strength than primary one; third alter sometimes was deaf.
Bruce (1895)	M	47	D	Patient showed a state in which he spoke Welsh and one in which he spoke English. The first one was left handed and suffered from weak circulation and constipation; the second was right handed and had good circulation and regular bowel movements. Sensory tests did not show significant differences between states, except for the fact that there was no visual recognition of tobacco or of primary colors in the Welsh state. Sphygmographic pulse tracings showed high tension in the English state and lower tension and less volume in the Welsh state. Occasionally there was a mixed state in which patient was bilingual and ambidextrous.

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Reference	Sex	*Age	**Condition	Comments
Wilson (1904)***	F	12	M	<p>Patient showed ten alters. There were many conditions associated with the different alters.</p> <p>Alter 1: blindness, thirst, craving for oranges and lemonade</p> <p>Alter 2: disturbances in color perception</p> <p>Alter 4: deaf-mute</p> <p>Alter 5: paralysis of legs, deaf and dumb, pain in left temple</p> <p>Alter 6: occasionally did not walk and loses use of hand</p> <p>Alter 7: cannot stand or walk</p> <p>Alter 9: talked like a baby, occasional paralysis of arms and legs</p> <p>Alter 10: incoherent speech, eyes protruded, pupils dilated, blindness (slowly recovered sight).</p>

Note: The cases have been presented in chronological order of publication.

* Age at the beginning of case study or therapy.

** D = double personality; S = somnambulism; M = multiple personality

*** This case was studied during the 1890s.

discussed the state-specific phenomena of his patient: "If hysteria plays a role in the etiology of the nervous affection in question, it consists in a modification of the cardiac impetus, or in dilating the cerebral arterial capillaries through the means of the vasomotor system" (p. 71, my translation).

Similarly, Pierre Janet (1887) argued that the processes underlying the anesthetics of his patient Lucie were not physical but subjective ones. Sensation was not destroyed, only suppressed by a process of dissociation that separated the sensations into other levels of the mind. Janet discusses this as the phenomenon of subconscious fixed ideas, an important theoretical concept by which he explained physical and mental symptoms of dissociation (for a review see Ellenberger, 1970, pp. 361-364, 368, 372-373). Similar ideas were proposed by other contemporary physicians to account for hysterical phenomena (e.g., Breuer & Freud, 1893/1957).

Therefore, a secondary personality (Adrienne) would feel sensations that a primary one (or any other) would not. Binet (1892/1896) expressed this clearly when in a discussion of about hysterical anesthesia he wrote that in this phenomenon "perception is by no means suppressed or destroyed, but . . . it . . . [is] preserved to form part of another consciousness" (p. 319).

In general, the explanations of these phenomena were controversial and lacked consensus. Perhaps Baldwin (1898) was right when he stated: "The psychologist knows practically nothing about the laws which govern the influence of mind on body" (p. 120). Nonetheless, regardless of the

framework selected to explain them, we should recognize that to nineteenth century physicians state-specific phenomena provided a glimpse into the workings of the mind and the nervous system. The phenomena were anomalies that, although consistently related to mind-body interactions, were used in various ways by defenders of different models of human consciousness and psychiatric disturbances to buttress, defend, or illustrate their preferred paradigms.

This, of course, is not new in the history of psychiatry. It has been argued before that many diseases and concepts of etiology have been employed to defend particular worldviews or theories (e.g., Foucault, 1965/1973; Showalter, 1985). Further work on the history of these phenomena could well inform other approaches to dissociation. Such studies would further delineate the historical development of dissociation as a medical and as a social entity. ■

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TABLE 2
Louis Vivé's Six States in Relation to Chronology of Memories, Paralysis, Anesthesia, and Dynamometric Readings

States	*Dates of State-Specific Memories	Paralysis	Anesthesia	**Dynamometric Readings
1	5-1880/6-1881/1884	right hemiplegia	right side	R = 0, L = 80
2	7(?) -1883/8-30-1883	left hemiplegia affecting face	left side	R = 80, L = 0
3	8-1881/9-1881/1882/4-1883	left hemiplegia no effect on face	left side	R = 80, L = 0
4	3-1877/3-1880	paraplegia	lower half	R = 45, L = 44
5	1863-1873	paralysis of left leg	left leg	R = 40, L = 44
6	1863-1873/5-1880/6-1881/intermittent memories of periods between 8-1881 to 2-1885	none	hyperesthesia of left leg	R = 66, L = 70

Note: This information is adapted from a table prepared by A.T. Myers (1886).

* These are memories of past events of Vivé's life related to the different psychophysiological phenomena.

** This refers to measures (in pounds) of hand grip strength. "R" stands for right hand; "L" stands for left hand.

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