

On the Laterality of Psychogenic Somatic Symptoms

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Tabulation of cases reported in the literature of unilateral psychogenic somatic symptoms revealed that more symptoms were on the left side of the body than on the right; this result, although falling short of statistical significance, is consistent with recent reviews of hospital records by Stern and by Galin et al. A review of organic diseases and traumata for which lateral preferences have been reported, and a retrospective study of hospital emergency room records, provided no evidence for the hypothesis that the left-sided predominance of psychogenic symptoms is underlain by a generalized greater vulnerability of the left side to organic pathologies. The status of three other explanations for the asymmetrical incidence of psychogenic symptoms is discussed.

Both clinical observation and systematic investigation have suggested that, when unilateral, somatic complaints with arguably psychogenic components are more frequent on the left than on the right. Such a gradient has been reported for hysterical hemianesthesia (21), hypochondriasis (45), "rheumatic" and "neuritic" complaints (19, 36, 37), pain in psychiatric patients (1, 89), and postamputational stump pain (61). Most recently, careful reviews of hospital records by Stern (90) and by Galin et al. (27) have found unilateral conversion symptoms to occur more often on the left than on the right. (A report by Fallik and Sigal [20] provides an exception to the directional gradients found in the studies just cited; of their 33 unilateral cases, 76 per cent had right-sided symptoms.)

At least three varieties of explanation for a left-sided predominance of psychogenic symptoms have been proposed. The first assumes that—probably because most humans are right-handed—the symbolic or evaluative significance of right and left are different. Malevolent forces are sinister; physically or socially clumsy persons are *maladroit* or *gauche*; skilled motor performances require manual dexterity; unintended or grudging praise is expressed in left-handed compliments; the mind of the wise man faces right, but the mind of the fool faces left (Eccl. 10:2). Given a psychological association between right and good, and between left and evil, one might expect the neurotic choice of symptom site to be influenced by such associations. This

view is understandably congenial to psychoanalytic writers (e.g., Domhoff [16]).

A second explanation has been called the convenience hypothesis (90). On the assumption of a variant of the law of least effort, the (right-handed_ neurotic in search of a symptom site would find it less discommoding to have, say, a paralyzed left arm than a paralyzed right arm. This hypothesis predicts that left-handers should have more right-sided stigmata. However, of eight sinistrals with unilateral sensory conversion symptoms, Stern (90) found that seven had their symptoms on the left, and of six with unilateral motor symptoms, all had left side involvement. Analysis by body part² makes the argument still more compelling. All eight of the sensory symptom cases, and five of the six motor symptom cases, were patients with involvements of the upper limb—precisely those who, under the hypothesis, should be most likely to have chosen the side contralateral to the preferred hand. Stern's result, although understandably based on a small number of left-handers, argues strongly against the convenience hypothesis. So does the report by Fallik and Sigal (20) that 25 of their 29 right dominant patients, and all four of their left dominant patients, had their conversion symptoms on the dominant side.

A third variety of explanation, one that has attracted recent attention, derives from interest in the differential functions, and modes of functioning, of the two cerebral hemispheres. Already in 1878-79, Jackson (41) remarked that emotional language may be relatively unaffected in patients with aphasia due to left hemisphere lesions. Ferenczi—of course aware of the sensorimotor decussations—thought that the left half of the body was more accessible than the right to unconscious impulses, and

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² Stern, D. B. Personal communication, 1978.

that “the sensational sphere from the left side... (is) placed at the service of unconscious libidinal fantasies” (21, p. 116). Schilder wondered whether “only centres in the right hemisphere have a sufficiently close relation to central emotional activities” (80, p. 37). Recently, in an elegant presentation of some of the psychiatric implications of current clinical and experimental work on asymmetry of cerebral function, Galin (25, 26) has proposed that “certain aspects of right hemisphere functioning are congruent with the mode of cognition psychoanalysts have termed primary process, the form of thought that Freud originally assigned to the system Ucs” (25, p. 152). Galin argues for the usefulness of the hypothesis that the defense mechanism of repression is underlain by a functional disconnection of the right hemisphere mental processes from the verbal, logical ones of the left hemisphere. On such a view, conversion reactions, which are somatic expressions of unconscious ideation and affective conflict, ought to occur more frequently on the left side of the body than on the right.

The present paper has two purposes: first, to report the results obtained from a survey of unilateral conversion cases presented in the published literature; and second, to examine yet another possible explanation for a left > right gradient in psychogenic symptoms, namely, a left > right gradient in susceptibility to some types of genuine pathophysiology and trauma whose effects might constitute organic bases on which conversion symptoms are elaborated.

The Literature Survey

Method

Using standard bibliographic methods, we searched the literature for reports of cases with unilateral psychogenic complaints. Except for seven cases discussed by Fallik and Sigal (20), none of the cases cited by the authors mentioned in the first paragraph, above, were included, since they have been reviewed by Stern (90). A case was included if: a) the patient was individually described, and a label was applied to the patient or to the symptom indicating psychogenicity (e.g., hysteria, conversion), no attempt being made by us to evaluate the original authors' diagnoses; b) in monosymptomatic cases, there was clear lateralization of the complaint to one or the other side of the midline; and c) in polysymptomatic cases, all unilateral symptoms were lateralized to the same side.

Many hundreds of the cases we reviewed qualified under criterion a), of course, but most were excluded by application of criteria b) and c). We were able to include a total of 150 appropriate cases, of which 88 were monosymptomatic and 62 polysymptomatic. Although no claim is possible that our search was exhaustive, it was quite extensive; and we have no reason to suspect that there was any directional bias operating in case selection. A list of the included cases and their sources appears as Appendix 1.

Results

Side. With the case as the unit of analysis, the left-right gradient, although not significant, was in the expected

direction: 82 of the 150 cases (55 per cent) had left side symptoms, and 68 (45 per cent) had right side symptoms ($Xc2[1] = 1.13$). Whether patients had single or multiple unilateral symptoms did not affect the laterality proportions: with the symptom as the unit of analysis, the left to right ratio was 143 to 117 ($Xc2[1] = 2.40$, $.05 < p < .10$ [one-tailed]).³

Below we address the possible influence on directional gradients in psychogenic symptoms of asymmetries in preexistent pathophysiology or organic damage. We note here that, in our sample of 150 cases, 40 (20 left, 20 right) could be classified as organically biased because mention was made of a pre-existent organic condition on the same side (usually the same part of the body) as the psychogenic symptom. In 16 additional cases (psychologically biased), a nonorganic factor was mentioned which might have determined the site of the symptom, e.g., simulation of a relative's complaint. In the 56 biased cases, there appeared to be no lateral preference (27 left, 29 right). In the 94 cases in which no mention was made of a biasing factor, the ratio was 55 left to 39 right ($.05 < p < .10$ [one-tailed]).³

Sex. Of the 143 cases whose sex was specified, 77 (54 per cent) were female and 66 (46 per cent) were male. The samples of both Stern (90) and Galin et al. (27) had more than 3.5 times as many females as males; we suspect that one reason for the unexpectedly high proportion of men in our sample is a tendency to regard hysteria and conversion symptoms in men as rarer, and therefore more worthy of report, than such diagnoses in women.

In agreement with Stern's findings, the proportions of men and women with left side symptoms in our sample (56 and 53 per cent, respectively) were not significantly different. Galin et al. found the expected left > right gradient in their female subjects (30 left, 12 right), but a reverse gradient (3 left, 7 right) in males; the side x sex interaction in their data is significant ($Xc2[1] = 4.33$, $p < .05$ [our calculation]).

Type of symptom. Of the 260 symptoms, 61 per cent were sensory (e.g., pain, anesthesia) and 39 per cent were motor (e.g., tremor, paralysis; $Xc2[1] = 11.63$, $p < .01$).³ Sixty-seven per cent were negative symptoms (e.g., anesthesia, paralysis) and 33 per cent were positive (e.g., pain, tremor; $Xc2[1] = 27.79$, $p < .001$).³ On the hypothesis that the four types of symptom are equiprobable, the obtained proportions of positive sensory and negative motor symptoms were close to the expected values (24 and 29 per cent, respectively), whereas negative sensory symptoms were more common than expected (37 per cent) and positive motor symptoms were rarer (10 per cent; $X2[3] = 41.75$, $p < .001$).³ Tests of the side x sensory/motor interaction, the side x positive/negative interaction, and the side x type interaction all yielded nonsignificant $X2$ results.

³ Caution is required in the evaluation of probability statements derived from analyses with the symptom as the unit of analysis, as the $X2$ statistic assumes independence of observations. Because two or more symptoms were included for 41 per cent of the cases, this assumption is incompletely met.

Morphological and Pathophysiological Asymmetries: A Potential Source of Bias

In Agnew and Merskey's (1) sample of 42 psychiatric patients with pain (as we understand the report, these were patients whose pain was likely to be of psychogenic origin) 27 (64 per cent) had unilateral left-sided pain. But the investigators also found that 24 (60 per cent) of 40 organic patients, presumably with pain of organic origin, likewise had left-sided pain. Why should this be? One possibility is that the left side of the body may be more vulnerable than the right to at least some types of pathophysiology and trauma.

It is widely recognized that pre-existing organic conditions may lay the groundwork for conversion symptoms, and it is a matter of common clinical experience that many hysterical complaints are overreactions to some genuine discomfort, ailment, or injury. Terms such as "hysterical elaboration" and "hysterical overlay" derive from such experience. Addressing the puzzling question of choice of location of conversion symptoms, Laughlin (48, pp. 697-698) points out that "an early antecedent organic disturbance may provide a hidden but established peg, to which later symptom formation is attached or associated...The site of injury...can provide a focus for immediate or later attachment of conversion symptoms. The basis or capacity for Somatic Conversion may preexist, in which the injury becomes an 'opportune foundation' for symptoms."⁴ It therefore seems reasonable to ask whether there is any evidence for a left > right gradient in the incidence of potential organic "pegs" or "opportune foundations." If a neurotic is searching for a conversion symptom site, then the peg would presumably not need to be a specific recent pathological condition; it might simply be an accumulated experience over a lifetime with pains, discomforts, and pathologies in general. If such pathologies were more frequent on the left side of the body than on the right, then hysterical overreactions would be expected to likewise be more frequent on the left.

Misdiagnosis provides a second link between organic pathology and symptoms recorded as psychogenic. Complaints indicative of early organic pathology may be labeled as hysterical unless careful follow-up and re-examination are done. Organic diseases whose early symptoms may be atypical, variable, intermittent, and unaccompanied by clear physical signs and laboratory findings—particularly when the patient's demeanor and history are compatible with a psychogenic diagnosis—are sometimes erroneously considered to be functional; for example, a number of authors have called attention to the problem of differentiating conversion from early multiple sclerosis (42, 87, 96). Thus, quite apart from the issue of neurotic overreaction to real organic conditions, one can expect that some proportion of so-called functional disorders are, in fact, real organic conditions with no psychogenic component at all. The proportion may not be negligible. Slater and Glithero (87) were able to determine after-

histories of 85 patients who had been given diagnoses of hysteria (most by neurologists). Of the 73 still living, "an organic basis for the symptoms was eventually disclosed" in 22 (87, p. 10). It should be pointed out that a much lower misdiagnosis rate was reported by Jacobs and Russell (42), although they acknowledged that their results were at a variance with other reports.

If there is a left > right asymmetry in vulnerability to organic pathology, then a left > right gradient in conversion symptoms might as logically be ascribed to it as to any of the more popular mechanisms mentioned earlier (differences in the evaluative significance of left and right, in the degree of inconvenience of dysfunction of the two body sides, or in the characteristic mode of function of the two cerebral hemispheres).

Normal morphological and physiological asymmetries. Before discussing possible asymmetries in organic pathological conditions, it may be well to recall that, notwithstanding the apparent external symmetry of the body, the form and locus of many internal structures are strikingly asymmetrical, e.g., the heart, gut, spleen, and liver. Even paired structures which seem bilaterally symmetrical can have, on close examination, asymmetrical features with systematic directional gradients. So, for example, the capacity and weight of the right lung tend to be greater than those of the left (32, p. 1139), and the right lung also has more lymph nodes (68). The left testicle tends to hang lower than the right (at least in right-handers [40]). Asymmetries in dermatoglyphic (handprint) patterns and in upper limb weight are present prenatally; the former are predictive of adult handedness (75), and Pande and Singh (67) suggest that the latter may be as well. The right foot has been reported to be larger than the left in dextral males and smaller than the left in dextral females, these gradients reversing in non-dextrals (50). The os calcis (heel bone) is denser on the dominant than on the nondominant side (92). A substantial literature on systematic morphological cranial and cerebral asymmetries, some of them known to be present at birth and many related to handedness, has been reviewed by Rubens (77) and by Galaburda et al. (24).

Physiological and sensory asymmetries have also been found. Sodium concentration of sweat is reported to be significantly higher on the left back and arm than on the right (29). Maximum brachial artery pressure is likewise asymmetrical, usually higher on the right (15). Light touch sensitivity of some body parts is greater on the left than on the right side (94, 95); two-point acuity may show a right > gradient (95). Pain thresholds and tolerance have been found to be higher for the right than for the left hand and foot (63); the intensity of cowage-induced itch is greater on the right than on the left wrist (64). Neonatal tonic neck reflexes; spontaneous head, eye, and arm position in neonates; and conditionability of infant head turning all show a right-sided bias (see Levy [49] for review).

Pathophysiological asymmetries. Our research into the question of asymmetry in the vulnerability of the two sides of the body to organic conditions was two-pronged. First, we made a systematic review of the literature for reports indicating that particular pathological conditions of paired

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structures were asymmetrical in incidence. The search involved a large variety of sources, specifically including the 1973 to 1977 volumes of the Journal of Trauma and the Journal of Bone and Joint Surgery. The second approach was to abstract from the log book of the emergency room of a large urban hospital information on more than 1000 consecutive cases in which the pathological condition or complaint was unilateral.

Results of the literature search. In 1974, Schnall and Smith (82) summarized extensive findings on 19 unilateral morphogenetic defects which show preference for one or the other side. Table 1 presents the directional gradients of those defects and of 27 additional nontraumatic entities for which statistically significant ($p < .05$, two-tailed test) lateral preferences in incidence have been reported.^{5,6} The number of entities showing a left>right gradient was 23. The number showing a right>left gradient was 22. Table 2 presents information on 16 traumatic conditions. Twelve show a left>right gradient and four show a right>left gradient.

Some of the asymmetries in pathology can be fairly easily related to normal morphological asymmetries. To take a trivial example, tinea cruris ("jock itch") usually extends lower on the left than on the right (76), presumably because the greater descent of the left testicle causes a greater area of the scrotum to lie in contact with the left thigh than with the right thigh. The left leg is more frequently affected than the right with deep thrombophlebitis because the disposition of blood vessels in the legs is such as to produce more stasis in the left than in the right iliac vein (59). Likewise, congenital pseudarthrosis of the clavicle is more common on the right than on the left, and this asymmetry has been attributed to subclavian artery asymmetry (54). Similarly, as a result of differences in the termination of the internal spermatic veins, varicoceles almost always involve the left testicle (7, p. 717). The right lobe of the thyroid is more likely to be attacked by some disease processes than the left⁷, perhaps because it is larger (31; 65, p. 42), and thus presents more tissue at risk. The right>left gradient in bronchial cancer (100) may be related to the fact that the right bronchus is not only shorter and wider than the left, but also so situated as to be a more direct continuation of the trachea (32, pp. 1131, 1133), providing greater access to environmental carcinogens. Also, of course, presumably because of the asymmetry in the anatomy and location of the heart, pain accompanying coronary artery disease (angina pectoris, myocardial infarction) radiates more often to the left arm than to the right (38, pp. 372, 379).

⁵ Certain entities showing consistent asymmetries were eliminated from the tables either because the side to be considered affected is arbitrary (e.g., scoliosis, in which a majority of single curve cases are convex to the left [5]) or because the affected structure, although appearing on both sides of the body, is obviously not paired (e.g., colon, trauma to which is more likely to involve the left limb than the right [55]).

⁶ In a few reports, the body sides were specified as dominant and nondominant. In Tables 1 and 2, we have considered dominant = right, nondominant = left.

⁷ Lore, J. M. Personal communication, 1978.

TABLE 1
Diseases, Dysfunctions, and Developmental Anomalies
Reported To Be Asymmetrical

Left>Right	Right>Left
<u>Head</u>	<u>Head</u>
Neuroblastoma (82)	Retinoblastoma (82)
Cleft lip (82)	Chondrodermatitis helices (76)
Strabismus (6, 22 ^a)	Hemifacial microsomia (82)
Malignant melanoma of eye (43)	Trigeminal neuralgia (73)
Transient ischemic attacks (carotid artery system) (18)	
Agenesis of maxillary incisor (82)	
<u>Trunk</u>	<u>Neck</u>
Hyperthelia (82)	Thyroid disease referred for surgical management ^b
	<u>Trunk</u>
Hyposecretion of milk (83)	Congenital clavicular pseudarthrosis (54)
Breast tumors, benign (10)	Poland's anomaly (82)
Breast cancer (10, 28, 39, 83)	Pulmonary agenesis (82)
Abnormal vascularization of lung	Bronchial cancer (100)
In congenital heart disease (71)	Cryptorchidism (82)
Renal agenesis (82)	Testicular cancer (44)
Kidney affected in sickle cell disease (62)	Inguinal hernia (82)
Ovarian cysts, tumors (35, 85)	
Varicocele (7)	
<u>Limbs</u>	<u>Limbs</u>
Postaxial polydactyly (82)	Radial aplasia (82)
Three-headed biceps (13)	"Tennis elbow" (epicondylitis) ^c (11)
	Osteoarthritis of hand (46)
Congenital dislocated hip (82)	Carpometacarpal boss (2c)
Tinea cruris (76)	Leprosy (thumb) (66)
Leg thrombophlebitis (59, 76)	Tumors of femur (79)
Severe bone destruction of knee (nontraumatic) (4)	Fibular aplasia (82)
Popliteal cysts (14)	Clubfoot (82)
	Rheumatoid arthritis ^d (30, 52, 72, 88)
<u>General</u>	<u>General</u>
Hemihypertrophy (82)	Hemihypertrophy (82)
	Giant cell tumors (57)
	Onset of parkinsonism:
	Postencephalitic (74)
	With decreased movement as first symptom (47)

a There is an inconsistency between Fink and Bryngelson's (22) tabulation of data (their Table 1) and their text summary of the right-left frequencies (p. 949). We have assumed that the tabulation, which includes characteristics of each patient, is correct.

b Lore, J. M. Personal communication, 1978.

c This entity is here categorized with diseases rather than with traumata; the cited authors attribute the pathology to both types of pathogenesis.

d Rheumatoid arthritis of the legs may be exceptional. The gradient left > right was reported by Lewis-Fanning (52) for the ankle, by Soila (88) for the knee, and by Coventry et al. (12) for the hip.

Certain of the gradients in organic pathology doubtless reflect, in varying degrees, the operation of functional/behavioral factors. Which hand suffers a bite infection as a result of a fist fight (right>left [9, 84]) is likely to depend on the handedness of the patient, just as the side suffering a stab or gunshot wound of the thorax (left>right [86]) is likely to be determined by the handedness of the assailant.

LATERALITY OF PSYCHOGENIC SOMATIC SYMPTOMS

TABLE 2
Traumata Reported To Be Asymmetrical

Left>Right	Right>Left
<u>Neck</u>	
Carotid artery injury (3, 78)	
<u>Trunk</u>	
Penetrating thoracic injury (86)	
Diaphragmatic traumata (33, 98)	
<u>Limbs</u>	<u>Limbs</u>
Upper limb fractures (motorcycle accidents) (17) ^a	Tears of rotator cuff (shoulder) (99)
Metacarpalphalangeal dislocations (34)	Household wringer injuries of arms (58)
Elbow fractures (23, 93)	Bite infections of hand (9, 84)
Lateral strain injuries of midtarsal joint (56)	Cruciate ligament tears (knees) (91)
Monteggia lesions (69)	
Forearm shaft fractures (97)	
Elbow dislocations (70)	
Traumatic hip dislocation (8, 81)	
Osteochondritis of knee with loose fragments (53)	

a For lower limb fractures, Drysdale, et al. (17) found a right > left gradient which fell short of significance, $\chi^2[1] = 3.22, .10 > p > .05$. For the interaction between side and limb level, $\chi^2[1] = 10.82, p \sim .001$.

The emergency room survey. There may be left-right biases in incidence data derived from published reports of series of cases. Many such reports deal with the results of new treatment techniques. It is conceivable that because, e.g., damage to the dominant arm is more debilitating than damage to the nondominant arm, right side cases would be more readily selected for innovative treatments than left side cases, and would thus appear disproportionately often in published reports. We therefore examined a presumably less biased populations of patients, namely, hospital emergency room admissions. We recognize that some lateral bias may occur in such admissions as a result of patient self-selection. One could argue, for example, that cuts or abrasions might be more attention demanding on the dominant than on the nondominant hand; likewise, the person with a cerebrovascular insult, particularly a minor one, is more likely to seek medical attention if it occurs on the side of the brain mediating speech (18). Nevertheless, the degree of distortion introduced into the lateral incidence data from emergency room admissions seems to us to be minimal.

Consecutive entries (4247) into the admission log book of the emergency room at Sisters of Charity Hospital in Buffalo were examined. We were able to ascertain the side involved in 1021 cases of unilateral complaint. Eight hundred thirty-seven cases (82 per cent) involved trauma, and 184 (18 per cent) involved complaints of a nontraumatic nature. There were 466 females and 455 males among the 921 patients whose sex was ascertainable from the log book.

Overall, 506 (49.6 per cent) of the 1021 complaints were on the left side of the body, and 515 (50.4 per cent) were on the right. The equal incidence on the two sides obtained for both traumata (left = 414, right = 423) and nontraumatic complaints (left = 92, right = 92). There was no side x sex interaction: the percentage of cases in the four

side x sex cells ranged from 24 to 26. examination of the left-right distribution for each of the 38 diagnoses used in the log book (e.g., abrasion, infection, laceration) revealed no significant left-right gradients for any diagnostic category. The only gradient even approaching significance was a left to right distribution of 37 to 24 for fractures ($\chi^2[1] = 2.35, p < .20$ [two-tailed]). The lateral distribution of complaints was also examined for each of 31 body loci; no significant gradients were found. Likewise, no left-right differences emerged when the body loci were grouped into four superordinate categories: head, left = 62, right = 61; trunk, left = 21, right = 28; upper limb, left = 210, right = 219; and lower limb, left = 207, right = 208.

Discussion

Our survey of published reports on cases with unilateral psychogenic symptoms showed that left side symptoms were more common than right side symptoms, a finding in agreements with retrospective studies of hospital records by Stern (90) and by Galin et al. (27).

The question whether a left > right gradient in conversion stigmata might simply reflect a left > right gradient of pathologies in general received an essentially negative answer. For the nontraumatic entities presented in Table 1, about as many show a right side predominance as show a left side predominance. Similarly, the nontraumatic admissions in the emergency room survey were evenly distributed between right and left. The literature review of traumata revealed 12 entities with a significant left preponderance and four with a significant right preponderance; although this appears to suggest a left > right gradient for traumata, the traumatic cases seen in the emergency room were so strikingly evenly distributed between the two sides that we can confidently rule out such a gradient for traumata in general. In this connection, one should recall that the organically biased cases in our sample of psychogenic cases cited in the literature divided equally (20 left and 20 right). The possibility remains that fractures may constitute an exception to the equilaterality of traumata; more extensive studies are needed to clarify the issue.

If the greater frequency of psychogenic somatic symptoms on the left side of the body is not simply a reflection of the greater vulnerability of the left side to organic pathologies, and if, as Stern's² results strongly imply, it is not explicable on the basis of differential inconvenience, then it remains to the other two hypotheses (the evaluative and the hemispheric specialization hypotheses) to explain the gradient. Although by their nature they are difficult to put to direct test, certain predictions from them can, at least in principle, be examined empirically.

Under the evaluative hypothesis, one would expect that in a subpopulation of persons reared by sinistral parents, i.e., reared in an environment in which the negative connotations of the left side of the body would presumably be less pronounced than in the general population, the left > right gradient in incidence of conversion symptoms should also be less pronounced. A second, more feasible, approach would be to compare the left > right gradient in conversion

symptoms in certain Muslim and Hindu cultures with that in Western cultures; because the negative connotations of the left hand are more severe in the former (16), one would expect to see an even greater preponderance of left-sided symptoms in those cultures than in the west.

Galin's (25, 26) provocative proposal that the left cerebral hemisphere mediates secondary process functions whereas the right mediates primary process ones rests on well documented assumption that, in most humans, certain cognitive abilities, e.g., speech, are strongly lateralized to the left hemisphere, and others, e.g., visuospatial abilities, are lateralized to the right hemisphere. There are, however, frequent exceptions to the simple rule: in some dextrals, and in more nondextrals, the representations are bilateral or even reversed, with linguistic functions being represented in the right hemisphere and visuospatial ones in the left (51, 60). (Exceptional cases, we may note, are not vanishingly rare: Milner's (60) data suggest that as many as 8 per cent of dextrals and 31 per cent of nondextrals have bilateral or right-lateralized speech.) Under the hemispheric specialization hypothesis, one would expect that in these subpopulations the cerebral lateralization of primary and secondary process should also be bilateral or reversed; the prediction would therefore be that in these groups the left > right gradient of psychogenic symptoms should be attenuated or reversed.

Other tests of these hypotheses, or indeed, the development of more innovative hypotheses, may well be possible. In any case, complete understanding of the determinants of left-right asymmetry in psychogenic complaints, as of the determinants of conversion symptom site generally, awaits further investigation.

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APPENDIX 1: CASES INCLUDED IN SURVEY OF REPORTED PSYCHOGENIC COMPLAINTS

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