tremely loath to admit that the analysis of the motor and sensory systems is impossible, or that it will finally be necessary to postulate any agency which transcends matter and energy as we ordinarily know them, to complete that analysis. I would strongly insist that even our present methods of analysis have not as yet been shown incapable of yielding further information. I am not quite sure, from reading Professor Franz's paper, of his position in regard to localization of the motor system, or of certain sensory systems, but I have given this survey of them in order better to show by comparison, that similar methods may be applied to the analysis of mental processes.

For my part I find it impossible to gain a clear idea of how the brain functions as a whole in motor processes. I do believe, however, that we may gain a certain degree of clearness of ideas if we suppose that certain definite circumscribed cell areas, and no others, acting through their association tracts, may evoke a definite motor reaction, and no other motor reaction. Similarly, I find it extremely difficult to see how the brain, acting as a whole and without reference to circumscribed cerebral areas or to integration systems involving two or more such areas, may give rise to a mental process. I can picture to myself a conceivable way in which several cell groups or systems, acting together in a particular manner and without special reference to the rest of the brain, may give rise to a particular mental process or conception made up of certain definite mental elements which are related in a definite way. Other parts of the brain may subsequently be involved in succeeding mental processes, but a definite order of succession may well be followed. This is, as I take it, the only fundamental difference between Professor Franz and the advocates of cerebral localization. It appears to me that the localizationists, or phrenologists if you please, have somewhat the better of the argument, inasmuch as one very valuable method of getting at the working of a mechanism as a whole is by taking it to pieces and studying the properties and reactions of each piece separately, and attempting to determine the relations of the pieces to one another. The validity of each view must, however, be determined by the results which it can produce when applied to the analysis of nervous functions.

To many of us, mental states mean the resultant of the various sensory impressions of the moment, modified, it may be, by stored-up impressions of past incidents—the memory of past sensory impressions. To many of us, it appears, also, that sensory impressions are closely connected, in a dynamical way, with certain definitely localized anatomical mechanisms in the central nervous system. If it be true that there exist in the central nervous system such integrative sensory mechanisms, and if it also be true that mental states are but the integration, in a definite sequence in space and time of these sensory impressions, it follows that there must also be localization of mental processes with reference to these integrative mechanisms. It may be that our views of definitely localized integrative mechanisms and their functions are unfounded, but they appear to be the simplest views which, in the light of our present knowledge, we are justified in retaining.

This is not to insist that any one shall become a new phrenologist against his will, but is meant simply as a justification for those to whom it still appears that localization of function, in the sense of its dependence upon the action of localized integrative mechanisms, "is a wholesome doctrine and very full of comfort."

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Mr. Dooley on Science: Being a Protest against the Violence of the Geneticist

"Science is a great thing, Hinnissy," said Mr. Dooley. "Av coorse t' a man av yer onidjicashun th' rale progriss iv science manes but little, but to thousands iv collidge profissors 'tis the brith av life. Av coorse 'tisn't much iv a livin' the pore divils git, but th' likes iv them don't nade t' spind money like you and me—them havin' no bad habits."

"But what do their families do?" asked Hennessy.

"They don't have anny," said Mr. Dooley.

"Yis, science is a great thing."

"But what is science?" said Hennessy.

"I'm serprised at yer ign'rince, Hinnissy. 'Tis 'knowledge sit in orther,' as me frind Doc Wiley says. It's like this. Take yersilf, Hinnissy; ye have some knowledge iv mixin' drinks, but it kapes ye in trooble because ye don't have it sittin' in orther."

"I orther what I plase," said Hennessy.

"Don't int'rupt me argiment," said Mr. Dooley. "Yer knowlidge bein'—as I may say —th' common or gardin varity iv knowlidge, ye goorge yersilf on two scooners iv beer and thin ye regoorge yersilf on two indacintly large glasses iv whiskey, and thin I have to iscoort ye home."

"Niver! with only two glasses," interrupted Hennessy.

"As I was sayin', 'tis th' orther was wrong. That's where science stips up and puts ye right. It says, the orther is beer afther whiskey; niver whiskey afther beer."

"Do ye know anny scientists?" said Hennessy.

"Some iv th' greatest," replied Mr. Dooley. "In fact, I have jist coom from visitin' wan iv me old collidge frinds, who is a great beollergist. As I know that ye can't consave th' proper manin' iv th' worrud Beollergist, I will explain. 'Tis made up iv two worruds, the worrud 'be,' 'being,' manin' annything at all that can *be,* and th' worrud 'oller' or 'holler.' That is, 'tis anny wan who hollers a great deal about ivry livin' thing."

"Where does yer frind worruk?" asked Hennessy.

"Niver say that worrud iv a scientist, Hinnissy. He re-e-tains a posishun iv thrust an' responsibility with our great an' gloryus government at Washington."

"Do they have scientists at Washington?" asked Hennessy.

"They do that. Me frind says that moostly all iv th' raly progrissiv scientists ar' at Washington. Ye see, Hinnissy, scientists ar' jist like polytishuns; they ar' divided into progrissives an' consarvitives. The progrissives want to see somethin' doin' avin av they have to do it thimsilves: th' consarvitives moost have ivrythin' quiet avin iv th' ithers want t' worruk."

"What do they do?" said Hennessy.

"They ask Congriss fer large appropriashuns froom th' money that th' taxpayers iv th' coonthry rejoice t' conthribute, fer th' perpus iv amelyoratin' th' rejuced condishun iv th' pore farmer."

"What ilse do they do?" asked Hennessy.

"I fergot t' ask," said Mr. Dooley, "but I know, be th' way me frind was wipin' th' sweat iv toil from his brow, that he is not wan who wud accept his small honyraryum from a ginerus an' grateful government without doobly arrnin' it. He had jist finished, be tremenjus la-a-bor, a monimental worruk showin' how anny farmer, be th' simple use iv a tilliscope an' siv'ral ither chimicals which have iscaped me mim'ry fer th' moment, can ixamine a single grane iv wheat an' tell what farm it grew on."

"Why shud he want to do that?" said Hennessy.

"He don't," said Mr. Dooley as he relighted his pipe, "but it will amelyorate his rejuced condishun.

"But it was not this awful la-a-bor brot to a brilyunt conclushun that pre-e-juced th' beads upon his fevered brow; it was th' great trooble he was havin' to kape th' science iv th' coonthry upon 'th' plane to which it properly belongs,' as he said to me in toones iv great imotion. Says he: 'Iv'ry time I pick up me fav'rite jernul, *The Ixpirimint Stashun Ricord,* I am pained be th' use iv langwidge that I do not understand. There ar' worruds that I have always trated as me own chilther that wud no longer be ricognized be their own father.'

"Not wishin' to seem onint'risted I bro-o-ke th' pause in th' convarsashun be askin', 'Ain't there lots iv worruds with more than wan manin'?'

"'In litherachoor,' says he with a savidge frown, 'which is a very diff'runt thing. In litherachoor such a thing is permisabul be-

cause only orthinary onint'ristin' persons read litherachoor. In science wan must be ortherly. Iv'ry scientist has an ortherly brain an' becomes confused in his finer sinsibilities av a worrud has mo-ore than wan manin.' We shall have a law passed forbiddin' th' use iv anny worrud in anny but the proper meanin'.'

"'How will ye know th' proper manin'?' says I, bein' somewhat puzzled.

"'The proper manin' iv anny worrud,' says he, 'will be th' manin' which I and me brothers iv like int'rists and progrissiv ideas will give it.'

"'Who are th' villuns who have bin committin' this abuse iv will intinshuned worruds?' I asked.

"'They raly shud not be called scientists at all,' says he, 'but sudo- or false scientists. They call thimsilves "geneticists." 'Tis a worrud that means an investigator in th' sudo-science iv heredity. But whin th' law is passed,' says he, ''twill be a name iv great approbrium.'

"'I shud think the name wud be curse enuf,' said I. 'But what is the precise branch iv th' great realm iv knowlidge that they st-thrive t' be settin' in orther? What is th' rale manin' iv it?'

"'They ar' th' scounthruls,' says he bitin' a large pace out iv a pincil he was holdin', 'that ixamine yer eyes an' th' eyes iv yer wife —an' th' eyes iv yer parents barrin' they ain't iscaped be dyin'—an' tell ye what color they will let th' eyes iv yer chilther be.'

"'What av ye rafuse t' ixcipt th' color they pick out fer ye,' says I.

"'Ye have to,' says he.

"'The villuns,' says I agin, fer be this time I was beginnin' t' see th' foul plot against th' liburties iv our great nashun. 'It must be stopped.'

"'It will be,' says he. 'Ler goose a broila, as that prince iv awthirs Bill Shakespere or soome wan ilse has so will said. No more will they be allowed to fill th' chicest jernuls wid mistakes, conthradicshuns and maledicshuns concarnin' mathematics iv which they know nawthin', an' concarnin' beollergy av which they know less.'

"'But don't all conthribushuns to th' larned jernuls soometimes contain mistakes?' says I.

"'All but those iv mesilf an' a few ithers,' says he.

"'How do ye manage it?' says I.

"'We don't conthribute annythin',' says he.

"'Have ye spoken to me frind Doc Wiley about this attack upon th' bulworruks iv a great people?' says I.

"'I have written him th' full details,' says he, 'but I'm afraid he has proved false to th' thrust th' people have reposed within him.'

"'What did he say?' I ixclaimed in horror.

"'Here is his letther,' says he.

"'My Dear Sir: I fear yer liver is out iv orther. I wud advise you to take Hg_2Cl_2 wantinth grain iv'ry fifteen minits fer four hours. N. B. Be sure an' rimimber the 2 afther the Hg, fer anny misuse iv sich a worrud or characther might cause wan iv yer inimies t' be indited fer yer desace.'"

"'Wud he pisen ye?' says I.

"'I don't know,' says he, 'I didn't take it.'"

"I'm not sure that I know what it's all about," said Mr. Hennessy, "but it must be a grand thing t' be a raly great scientist. I shud like to be wan."

"Fergit it," said Mr. Dooley, "th' great wans ar' all dead."

A. P. Seudo,
With apologies to P. F. Dunne

SCIENTIFIC BOOKS

RECENT BOOKS ON THE DOCTRINE OF DESCENT

La genèse des espèces animales. By L. Cuénot. Paris, Felix Alcan. 1911.

Allgemeine Vererbungslehre. By V. Haecker. Braunschweig, Friedr. Vieweg und Sohn. 1911.

Heredity in Relation to Evolution and Animal Breeding. By William E. Castle. New York, D. Appleton & Co. 1911.

Upon the Inheritance of Acquired Characters. By E. Rignano. Authorized English translation by Basil C. H. Harvey. Chicago, Open Court Publishing Co. 1911.

These four books have one feature in common, namely, they all deal with problems