spinal induction, functional species of reflex, are all, therefore, physiological factors influencing the result of the interaction of reflex-arcs at a common path. It is noticeable that they all resolve themselves ultimately into *intensity of reaction.* Thus, intensity of stimulus means as a rule intensity of reaction. Those species of reflex which are habitually prepotent in inter­action with others are those which are habitually intense; those specially impotent in competition are those habitually feeble in intensity, *e.g.* skeletal muscular tone. The tonic reflexes of attitude are of habitually low intensity, easily inter­fered with and temporarily suppressed by intercurrent reflexes, these latter having higher intensity. But these latter suffer fatigue relatively early, whereas the tonic reflexes of posture can persist hour after hour with little or no signs of fatigue. Fatigue, therefore, in the long run advantageously redresses the balance of an otherwise unequal conflict. We can recognize in it another agency working toward that plastic alternation of activities which is characteristic of animal life and increases in it with ascent of the animal scale.

The high variability of reflex reactions from experiment to experiment, and from observation to observation, is admittedly one of the difficulties that has retarded knowledge of them. Their variability, though often attributed to general conditions of nutrition, or to local blood-supply, &c., seems far more often due to changes produced in the central nervous organ by its own functional conductive activity apart from fatigue. This functional activity itself causes from moment to moment the temporary opening of some connexions and the closure of others. The chains of neurones, the conductive lines, have been, especially in recent years, by the methods of Golgi, Ehrlich, Apathy, Cajal and others, richly revealed to the microscope. Anatomical tracing of these may be likened, though more difficult to accomplish, to tracing the distribution of blood vessels after Harvey’s discovery had given them meaning, but before the vasomotor mechanism was discovered. The blood vessels of an organ may be turgid at one time, con­stricted almost to obliteration at another. With the conductive network of the nervous system the temporal variations are even greater, for they extend to absolute withdrawal of nervous influence. Under reflex inhibition a skeletal muscle may relax to its post-mortem length, *i.e.* there may then be no longer evidence of even a tonic influence on it by its motor neurone. The direction of the stream of liberation of energy along the pattern of the nervous web varies from minute to minute. The final common path is handed from some group of a *plus* class of afferent arcs to some group of a *minus* class, or of a rhythmic class, and then back to one of the previous groups again, and so on. The conductive web changes its functional pattern with certain limits to and fro. It changes its pattern at the entrances to common paths. The changes in its pattern occur there in virtue of interaction between rival reflexes, “ interference.” As a tap to a kaleidoscope, so a new stimulus that strikes the receptive surfaces causes in the central organ a shift of functional pattern at various synapses. The central organ is a vast network whose lines of conduction follow a certain scheme of pattern, but within that pattern the details of connexion are, at the entrance to each common path, mutable. The grey matter may be compared with a telephone exchange, where, from moment to moment, though the end-points of the system are fixed, the connexions between starting-points and terminal points are changed to suit passing requirements, as the functional points are shifted at a great railway junction. In order to realize the exchange at work, one must add to its purely spatial plan the temporal datum that within certain limits the connexions of the lines shift to and fro from minute to minute. An example is the “ reciprocal innervation ” of antagonistic muscles—when one muscle of the antagonistic couple is thrown into action the other is thrown out of action. This is only a widely spread case of the general rule that antagon­istic reflexes interfere where they embouch upon the same final common paths. And that general rule is part of the general principle of the mutual interaction of reflexes that impinge upon the same common path. *Unlike reflexes have successive but not simultaneous use of the common path; like reflexes mutually reinforce each other on their common path.* Expressed teleo­logically, *-the common path, although economically subservient for many and various purposes, is adapted to serve but one purpose at a time. Hence it is a co-ordinating mechanism and prevents confusion by restricting the use of the organ, its minister, to but one action at a time.*

In the case of simple antagonistic muscles, and in the instances of simple spinal reflexes, the shifts of conductive pattern due to interaction at the mouths of common paths are of but small extent. The co-ordination covers, for instance, one limb or a pair of limbs. But the same principle extended to the reaction of the great arcs arising in the projicient receptor organs of the head, *e.g.* the eye, which deal with wide tracts of musculature *as a whole,* operates with more multiplex shift of the conductive pattern. Releasing forces acting on the brain from moment to moment shut out from activity whole regions of the nervous system, as they conversely call vast other regions into play. *The resultant singleness of action from moment to moment is a keystone in the construction of the individual whose unity it is the specific office of the nervous system to perfect.* The interference of unlike reflexes and the alliance of like reflexes in their action upon their common paths seem to lie at the very root of the great psychical process of a attention.”

The spinal cord is not only the seat of reflexes whose “ centres ” lie wholly within the cord itself; it supplies also conducting paths for nervous reactions initiated by impulses derived from afferent spinal nerve, but involving mechanisms situate altogether headward of the cord, that is to say, in the brain. Many of these reactions affect consciousness, occasioning sensations of various kinds. In regard to the part played by spinal conduction in subserving these sensual reactions a question of practical rather than theoretical importance has been as yet the chief aim of inquiry. The inquiry has been in fact whether the impulses concerned in evoking the various species of sensations follow in their headward course along the cord certain discrete paths occupying separable fractions of the cross-area of the cord, and if they are thus confined to discrete paths in what parts of the cross-area of the cord do these parts lie. This “localization” problem has as yet been almost the sole problem attacked, and therefore, despite its limited scope and interest, the results attained in it may be briefly mentioned here.

*Localization.—*The sensations usually grouped under thç name of touch may with advantage, as shown by Head, be distinguished from the point of view of their practical elicitation into superficial and deep. The former of these are referable to stimulation of afferent nerve-fibres distributed actually to the skin, the latter to stimulation of deeper afferents subjacent to the skin. The touch-fibres belonging to the skin proper are further subdivisible, as Head has shown, into two kinds. One kind, the *protopathic,* yield sensations so suffused with disagreeable affective tone (skin-pain) that they may for the present purpose be considered pain-nerves, and the description of their spinal connexions be relegated to the paragraph dealing with the spinal path for pain. The other kind, the *epicritic,* are those which react to tangible stimuli lightly applied, such as stroking the skin with a loose pledget of cotton wool or the light touching of the skin with a pin’s head or a blunt pencil point. Deep touch, on the other hand, involves afferent nerve fibres supplied by nerve-trunks not classed as cutaneous, but probably largely muscular in the sense that they run to muscles and contain side by side the afferent fibres in question and the efferent nerve-fibres causing muscular contraction. Head has brought forward clear evidence that though the afferent fibres subserving the epicritic tactual sense of the skin and deep touch of subcutaneous origin run so separate a course in the peripheral nerves, the spinal fibres constituting the intraspinal headward-running paths from these two kinds of peripheral touch-fibres, the epicritic and the deep, to the brain, lie together and are implicated together by injuries of the spinal cord. In this sense there is, therefore, in the cord a tactual path. The question