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THE IDEA OF INDIVIDUALITY

“Die Zeit ist abgeflossen, wo mir noch Zufälle begegnen durften; und was *könnte* jetzt noch zu mir fallen, was nicht schon mein Eigen wäre!”

NIETZSCHE.\*

“La vie manifeste une recherche de l’individualité et tend à constituer des systèmes naturellement isolés, naturellement clos.”

BERGSON.†

“Accidents cannot happen to me.” So says Nietzsche’s Zarathustra, and in the saying proclaims to the world the perfection of his individuality. It might be thought that such a being was far outside the purview of the Zoologist, that he himself belonged to imagination and his individuality to the most speculative philosophy, and that both he and it should be left where they belong, where they could not contaminate the “pure objective truth of science.”

\* Nietzsche, “The time is now past when accidents could befall me; and what could now fall to my lot which would not already be my own!”

† Bergson, “Life manifests a search for individuality and tends to form systems that are naturally isolated, naturally closed.”

That I think is an error: for the idea of individuality is dealt with of necessity both by Science and by Philosophy, and in such a difficult subject it would be mistaken to reject any sources of help. Not only that, but animal individuality with the advent of consciousness, though still remaining a lawful subject of the Zoologist, becomes naturalised in the proper realms of the Psychologist and the Philosopher and transfers thither the major portion of its business.

More, even were the Zoologist to confine himself to a description of non-conscious organic individuals and the deductions he drew from them, he would often find himself without a reasoned criterion of Individuality or a true idea of what he means by “higher” or “lower” individualities. It is only when the Biologist and the Philosopher join hands that they can begin to see the subject in its entirety.

There are two chief ways of enquiry into the meaning of things—the static and the dynamic. In determining the nature of Individuality, for instance, we may seek to define it by comparing the different objects we are agreed upon to call individuals and then taking their Highest Common Measure—extracting from them the utmost which is common to all and erecting that as the minimum conception of Individuality; or we may search for the movement of individuality through the individuals, and, finding that some are more perfect, some more rudimentary in their individuality, thus establish a direction in which its movement is tending, and from that deduce the properties of the Perfect Individual, possessing then a maximum conception of Individuality.

In view of the change, the progressive change or evolution which is one of the fundamental things of Life, the second method is the more natural, and in a way includes the first. Using it in the main, therefore, but not rejecting the other as an engine, we will begin to lay siege to the notion of

individuality; and so, having justified the necessity for some philosophical view of the subject, but with apologies none the less for a biologist's intrusion on another's domain, we return to Zarathustra and his pronouncement.

“Accidents do not happen to me.”—When a glance is thrown over the various forms of animal life to which the name of Individual is naturally conceded,<sup>1</sup> it is seen that in spite of many side-ventures, they can be arranged in a single main series in which certain characters are manifested more clearly and more thoroughly at the top than at the bottom. One of these characters is independence of the outer world and all its influences—in other words, immunity from accidents. By independence is not meant the independence of the recluse or the ascetic, but that other independence belonging to the great man of action and the inventor. These are not independent in the most literal sense—they do not “do without,” they are not proud of existing on the barest minimum; the ultimate logical end of that kind of independence is atrophy, both mental and physical. Their other, higher independence involves this much of dependence, that they employ the things of the external world as material with which to work. For the making of bricks, you are dependent upon straw: but you attain a higher independence by making bricks and being dependent upon straw than by being independent of straw and lacking bricks. They gain their independence by using the outer world for their own ends, harnessing some of its forces to strive with and overcome the rest. At the least they can resist the adverse current, displaying a purpose of their own which is not whirled away by every wind of fate. “Accidents cannot happen to me”—so spake Zarathustra, and then added this reason: “Because all that could now happen to me would be my own.”

In this making of Nature his own, civilized man has an individuality vastly fuller, more perfect, than the savage. Both

in resisting adverse forces and in harnessing the indifferent to his will, he is far superior; take as a concrete instance, for one the stamping out of malaria in the Suez Canal zone, and for the other the invention of the microscope.

At the other end of the series, even the simplest Protozoan has something of the same power. Although in a current against which the savage (let alone the steamboat of the civilised man) could easily swim, the Protozoan is carried utterly away, yet none the less it has some power of independent movement, and is not helpless like the inorganic grain of dust.

This gradual increase of independence up from the Protozoa to the highest animals is due partly to mere increase of size:<sup>2</sup> the same current that carries the grain of sand in its midst and rolls the pebble on its bed, swirls powerless past the boulder.

Partly it is due to increased complexity: the actions of the caterpillar who once in his life weaves an elaborate cradle to support his transmuted pupa-self, without either practice or the sight of another to teach him, can only be due to the actual machinery of his brain, working in a way almost as stereotyped as our machines,—a long series of ready-wound clockwork which must unwind itself when a certain catch is released. The Protozoan or the Jelly-fish is not capable of such precise and ordered action because it has not the requisite machinery, the requisite complication of brain and muscle.

Lastly it is due to increased adaptability, which depends mainly upon increased power of choice. Adaptability seems to be a property soon acquired by a complex and unstable substance, or rather mixture of substances, like protoplasm. Roux (16) by extending Darwin's idea of Natural Selection or survival of the fittest from individuals to the organs and tissues, the cells and varieties of protoplasm within the

individual, has shown that some measure of adaptability, or useful response to changed conditions, becomes a common property of all living things. This, though very important, has been slow in action, merely automatic, and therefore limited in its usefulness, the result, to speak in metaphors, not of choice but of habit. What we call choice has only become fully realized through a special arrangement of special tissue—the brain.

Says Bergson: “A nervous system with neurons placed end to end in such wise that, at the extremity of each, manifold ways open in which manifold questions present themselves, is a veritable reservoir of indetermination” (1, p. 133). Such is the nervous system of man: and whatever value we assign to the idea of indetermination, whether we believe in the reality of choice and free-will, or think that they are only apparent, due to the relativity of our mental powers, the fact remains that in a brain which is constructed after the pattern of our own, and in which therefore we postulate the existence of Consciousness, a new machinery, different in kind from any machinery we have been able to construct, has been introduced; machinery that by supplying the individual with memory and reason gives him the largest scope to adjust his actions, and so himself, to the variations of circumstance.

Civilized man is the most independent, in our sense, of any animal: this he owes partly to his comparatively large size, more to his purely mechanical complexity of body and brain, giving him the possibility of many precise and separate actions, and most to the unique machinery of part of his brain which enables him to use his size and the smoothly-working machine-actions of his body in the most varied way.

But he is far from perfect independence of accidents. A being to whom accidents really could not happen might attain

to that happy state through having perfected himself in any of the three qualities which have been seen to assist independence. By incorporating more and more matter—that is, by increasing in size—until co-extensive with the universe, he would obviously be entirely independent; there would remain nothing on which to be dependent. Since matter is what it is, man at least has little chance of advancing far along that road. By building up within himself a separate machine for dealing with each possible eventuality, independence would likewise be obtained were it not that there is an infinity of eventualities, and so the project is self-contradictory. But by perfecting his mental attributes—his means of perceiving, remembering, and reasoning—he would become capable of dealing with any one of the infinite eventualities, for though he could not construct an infinity of machines simultaneously, yet as each new eventuality cropped up, he would be able to invent a new plan to cope with it. Though Zarathustra had climbed far up this path, he probably was not quite accurate about the accidents: it is not likely that he would be able to experience everything, to remember everything, and to understand everything, but so alone would he be altogether immune from the accidental. That is neither here nor there. The chief importance lies in this: all life of which we have any assured cognizance is dependent upon or inseparably associated with a certain kind of matter—protoplasm. Knowing what we do of the properties of protoplasm, it becomes evident that no considerable advance towards independence through either of the first two methods is physically possible for life; it is only the third way, with its multiplication of potentialities, which, in spite of size really not so hugely great and mechanism really not so vastly complex, can yet give life a considerable fresh amount of immunity from accident.

The second quotation at the head of this chapter seems at first sight to take a very different view of the individual, conceiving of it as “a system naturally isolated, naturally closed.” By this Bergson means that in any consideration of that system, it is the unity of it as a whole that is important: more than that, even if you want to consider a part of the system by itself, you cannot do so, for it loses almost all its significance when detached from the whole. What is the meaning of the hand and its actions apart from the functioning of the whole body? More striking still, for here there are no physical connections to sever, what is the meaning of a lonely bee and its actions when it comes back to find its hive destroyed? With inorganic things on the other hand, a part does not lose significance when detached from a system, nor the system appear less perfect for the detachment of the part. The inorganic system is a Particular, but not an Individual. Cause half a mountain to be removed and cast into the sea: what remains is still a mountain, though a different one. Take away a planet, and the Solar System still works: its working is different, but, as far as we can see, only different, not less perfect.

Nietzsche’s words affirmed the individual’s principle of action: Bergson’s point out the inner unity for the good of which that action is performed. From the latter we can deduce another attribute of individuality—its heterogeneity; from that very unity of the whole we can postulate diversity of its parts. This sounds paradoxical, but in reality it can be easily shown that nothing homogeneous can be an individual.

Suppose (as is highly probable) that the earliest forms of life were homogeneous in chemical composition. If so, even were they compelled by the nature of things (see Chap. II) to exist as separate masses of defined shape and size, even though, by reason of their complicated atomic structure, they could

carry on all the diverse functions necessary for their continued existence with their one chemical substance, they would then not be individuals. There is no unity residing in such masses—they are the merest aggregates; whether you divided one into two or twenty or a hundred pieces it would still go on working in the same way, without a break,<sup>3</sup> whereas if you divide a man into two by cutting off his hand, the working of the main part—the man—is rendered less effective, and that of the lesser part—the hand—is stopped for ever. Even in animals with the most astounding powers of regeneration, the working of the whole is always impaired, if only for a short time, by the removal of a part: some regulation, or remodelling, is necessary before the mutilated mass is ready to function as a whole once more. Even such an animal is a whole and no mere aggregate: it has an inner principle of unity, which may be loosely fixed and lightly changed, but is none the less real. Our hypothetical homogeneous masses have, in themselves, no inner principle: their definiteness is imposed on them from without, and one feels that if the external conditions altered, they would have none of the independence of our perfect individual, but would alter blindly with the conditions, like raindrops, which in ordinary showers are small, but in a thunderstorm, under the influence of electricity, run together into large heavy drops showing no sign of their composite origin. One can, in fact, consider the working of any portion without the slightest reference to a whole, and it thus becomes evident that nothing homogeneous can be called an individual. Starting from the just not homogeneous, there can be traced a tendency towards ever greater heterogeneity running up through the series of animal individuals. This was indeed only to be expected. To perfect its independence, the individual, it was seen, had to render its actions precise, independent of each other: and in non-conscious organisms at least, difference



of function always implies difference of structure, so that the more independence—the more individuality—an individual is to possess depends very closely on the amount of heterogeneity of its parts. Look for instance at such an individual as a colony of Termites (“white ants”) (cf. p. 108), its defence delegated to one caste, its nutrition to another, its reproduction to another; the various castes are specially adapted in their structure for their various functions. It is obvious at once that the queen with her vast swollen abdomen full of eggs is a much more effective reproducer than if she had retained any of the structure and mobility necessary to defend or look after herself. The soldiers again could not have been such powerful defenders of the colony if they were to have kept any of the delicacy of mandible required by the workers, the craftsmen.

Another illustration: the accurate grasping powers of the human hand are only rendered possible by its consisting of a number of distinct but co-ordinated parts. The action of grasping is an undivided and a single act, but is only possible because the organ of grasping consists of separate and different parts. The pseudopod of an Amoeba, to take the opposite extreme, has no differentiation of parts: hence the functions it can perform are few and unprecise.

In both these cases, the dependence of efficient action, and so of independence, is clearly dependent upon a visible and obvious heterogeneity of structure. It might appear self-evident that the organs, the animal's living tools, should have a different structure according to the functions they were meant to carry out, were it not that in man we have the example prominently before our eyes of an enormous number of very special functions being executed by a single organ such as the hand. This apparent exception is due to the structure of his brain, which has given him reason and educability for instinct and automatism. True, he has to be at the trouble of exercising

his wits, but gains vast potentialities thereby; the brutes have no toils of learning, but their smooth actions are sadly limited. He has learned to make tools from inorganic materials, and *they* serve as the heterogeneous structures by means of which he can perform all his diverse actions. For specialised functions there must always exist specialised structures; but man through his conscious reason has been able to put off the burden of them from his own substance on to the broader shoulders of inorganic nature. There does exist some corresponding heterogeneity in himself, but not in visible structure: it lies in the diversity of his states of consciousness.

These cannot all exist as such at one time,<sup>4</sup> but by means of the memory, each can be summoned up as it is wanted. No doubt accompanying them there are physical and chemical differences in the nervous tissue, causing differences of continuity between the various neurones, but this physical heterogeneity is of no obvious or visible kind. The broad differences, the differences that can be felt, lie in the states of consciousness, so that the individual, after advancing a long way in its march towards perfect individuality by means of heterogeneity of co-existent structures, has got to its present position by adding to this a new device, heterogeneity of states of consciousness, which states, through not being co-existent, can be more numerous and more heterogeneous than ever the structures could.

One last attribute of the individual, but a very important one. So far the individual has emerged as “Unity in Diversity.” It shows diversity both in what it *is*—its physical structure and the architecture of its consciousness—and in what it *does*—the actions which more truly constitute its real essence. It also has unity, because though all its heterogeneity of architecture is devoted to producing heterogeneity of actions each

one of these only has meaning when considered in relation to the whole. Thus the problem so far has been the relation of the parts to the whole. There remains to be considered the relation of this whole to itself.

Since it is obviously the working, the function, which is important in an individual, the structures being only instruments for the function's better performance, this question really resolves itself into the relation between the working of the whole individual at one time and its working at another, later time. This has already been implicitly answered. When we said that the hand and its functioning had significance in relation to a whole, we did not mean merely to a whole which happened to be there at that one instant, but to a whole which had a continued existence in time. When the hand takes up a piece of bread and puts it into the mouth, that action has no significance for the whole man if only that instant of time is considered. Its significance is only seen later, when the bread has been digested, absorbed, and carried to nourish all the hungry parts of the whole individual.

What has been said so far presupposes some degree of continuance in the individual; a survey of the various kinds of organic individuals shows this continuance to be common to them all, and that too in no limited measure, but as one of the fundamentals of their existence. Looked at from this point of view, the individual appears as a machine whose working has for result no "finished article," the uses of which do not affect the machine, but merely the continuation of that same working. The result (and the object) of the working of a printing-press is to print books: but the books when printed are of no use to the press. The result (it is risky to say the object) of the working of an individual is for it a minute later to be still working in the same way. There is no material product given

birth to by the process; but the result of the working is of the greatest interest to the individual, the machine that is working.

This fourth view of the individual, as a whole whose diverse parts all work together in such a way as to ensure the whole's continuance, or, as the evolutionist would say, whose structure and working has "survival-value," cannot stand without some qualification. There is death to be reckoned with; the survival is only temporary.

Under cover of the one word *Death* lie sheltered two separate notions—death of the substance, when the living protoplasm ceases to exist as such, and death of the individuality informing the substance.<sup>5</sup> In man, both are inseparably connected; in many lower animals they are not. To take the simplest example: most Protozoa, such as *Amoeba* or *Paramecium*, definite individuals both, feed and continually grow, and when they are grown to a certain maximum size, divide into two halves (see pp. 33, 42–43), each of which reorganizes itself into an individual resembling its "parent." Not a jot of substance has been lost: but one individuality has disappeared and two new ones are there in its place.

Owing to the material properties and limitations of her "physical basis" of protoplasm, Life in her attempt at perfect individuation has been faced by a dilemma with which she has never fully been able to cope.

Growth, the balance of gain over loss in metabolism, is either a necessary attribute of protoplasm, or else, more probably, an easily-acquired property, of such all-round usefulness that every organism has seized upon it (see Roux, 16). At all events it is universal in all protoplasm throughout all or most of its active existence. Now if Life allows this growth to take place indefinitely within the limits of one individual, two awkward things happen; first of all, the mere increase of bulk

brings difficulties (see Chap. II), and secondly the increased weight of the whole needs some kind of a skeleton or scaffolding for its support. This skeleton, since living protoplasm itself is not firm enough, must be built out of dead materials, mere secretions of protoplasm. These have not Life's power of renewing themselves, of "sprouting fresh and sweet continually out of themselves" like protoplasm, yet all the time are being exposed to the inclemencies of the world and the assaults of enemies: at last something, the oldest part, gives, and involves the whole fabric in its fall.<sup>6</sup>

Death of the substance—that has been the result whenever Life has allowed unlimited growth to the individual: and when she preserves the substance, as in the Protozoa, by dividing it into two whenever it has reached a certain size, so keeping the pattern of the race within a narrow range, easily controlled, then there must be death of the individuality. She has never been able to produce an individuality which can for ever keep the unstable structure of its substance nicely balanced against the chance violences of the outer world.

But—and this is important—when the Protozoan divided its substance and destroyed its individuality, two fresh ones sprang up in the two separate masses of substance. The relation of the organism's individuality to its substance will be considered at more length in Chap. VI. Here it can only be said that protoplasm has primitively a great power of self-regulation, so that the plan of the individual's structure which is characteristic for the species can exist actual and patent in a given mass of protoplasm, and yet can also exist, though latent and potential only, in any and every part of that mass above a certain minimum size. Break off a Begonia leaf and chop it into little bits; each bit reveals its latent power, sending roots downward, shoots upwards, and at the last becoming a

self-sufficient whole. Through this regulatory power, Life has been able to save herself a tossing from her dilemma, escaping, like a Minoan acrobat, between the very horns: through it she has the possibility of reproduction.

The essence of reproduction is that one individual should create a new individual out of itself. The parent may persist, as in man, after the offspring has come into the world, or, as in Protozoa, may annihilate itself in the very act; that does not matter. What matters is that in every species there exists a succession of individuals in time, each one derived from the very substance of an earlier, each one built up and working on a common plan. Life has thus been able to steer a middle course. In the higher animals, for instance, she has perfected and used the single individual up to a point, to procure the greatest amount of independence for herself who animates his frame; then, when it becomes difficult, and more difficult as time goes on, to maintain his supporting tissues in repair and hold balanced the many processes struggling within him, she calls in the power of reproduction, raises up new individuals of the same sort out of his substance, and abandons him to his fate; but the race goes on.<sup>7</sup>

Our first definition of the individual based on the idea of continuance can now be amended. We must not say that the individual is a whole whose parts work together in such a way as to ensure that this whole, and its working, shall persist; the individual only persists for a limited time. In spite of this, something does indefinitely continue, though it is but the kind, the species, and not the single individual itself. There is only one kind of working in the species, and this repeats itself in a recurrent cycle; but for each cycle as it recurs a new individual is required as the instrument of the working.<sup>8</sup>

These qualifications, universally applicable though they are to all individuals that we know on this earth, are still mere qualifications, not essential to the pure idea of individuality: the perfect individual would be eternal, subduer of time as well as of space. Since, through practical difficulties, Life has not been able to reach this perfection, she has had to content herself with the next best, continuance of the kind of individual instead of the individual itself.

This, however, is alone enough to rule out of court the pretensions of all inorganic constellations to individuality, those even of crystals and of solar systems. The solar system is a whole most definitely "isolated by Nature," heterogeneous, and composed of parts closely inter-related in their working; what, besides the objection made above (pp. 6-7), which may only depend on our ignorance, prevents our calling it an individual? This, that its working is not directed to continuing either itself or other systems like itself.

The crystal has no parts, but is homogeneous; were it not, its working would still betray it, though at first sight its growth and its strange powers of regeneration display it as functioning to preserve a special form. Put in a weak instead of a saturated solution, and it will not simply cease to exist, like an animal placed in unfavourable conditions, but will unbuild itself as busily and regularly as just now it built itself up. Such a combination of two diametrically opposed and equally active tendencies can scarcely be called an individual.

The existence of a species or race, a procession of similar individuals each descended from a previous one, as well as of what we usually call individuals, the separate beings that at any one moment represent the species, leads of necessity to the separation of two distinct kinds of individuality, one

belonging to the race and one to the persons that constitute the race. Take as an example *Distomum hepaticum*, the Liver Fluke (Fig. 1). The eggs of this unpleasant creature, which gives sheep the disease known as liver-rot, are passed out of the host and hatch out into minute embryos that swim about in the film of moisture on the meadow-plants. They cannot develop further unless they fall in with a particular sort of snail: if so, they burrow into its liver, and grow up, not into a new fluke, but into an irregular sort of bladder, the *sporocyst*; this, from its inner wall, produces a number of new embryos which grow and burst out of their parent as the so-called *rediae*—individuals differing both from the fluke or the sporocyst. These in their turn give rise to a number of little tailed creatures, the *cercariae*, which migrate out of the snail, pass into a resting stage on blades of grass, and there passively await a browsing sheep. If one by good chance devours them, they hatch out, bore their way into the liver, and grow up again into flukes.

Now each of these three forms that thus cyclically recur is obviously an individual in the sense defined by us: they are wholes with diverse parts, whose working tends to their own continuance, even though this continuance is limited. But besides this there is the cycle itself to be reckoned with: it too is a definite something, a whole, it too is composed of diverse parts, sporocyst, redia, fluke, it too works in such a way that it continues (and continues indefinitely). What right have we to deny it an individuality as real as those possessed by any of its parts? True, those parts are separated in space; but the ant-colony (p. 108) shows that this is no bar to individuality. The real point is this: the existence of the sporocyst and the redia is of no *direct* advantage to the individual fluke: it would grow and lay eggs just as happily if all the host-snails, and with them all sporocysts and rediae, present and to come,



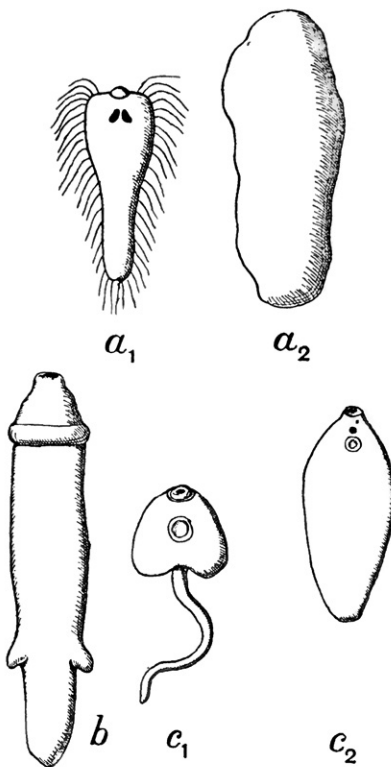


Figure 1

Diagram of the life-history of the Liver-fluke. The egg hatches out into a free-swimming embryo ( $a_1$ ); this if it finds its snail changes into a sporocyst ( $a_2$ ); this produces inside itself a number of rediae ( $b$ ); which in their turn each produces a number of cercariae ( $c_1$ ). These, if conditions are favourable, find their way into a sheep, where they grow up into the adult Fluke ( $c_2$ ) ( $a_1$ — $c_1$ , magnified;  $c_2$  natural size.)

were exterminated. It is however of advantage to something, and that something can only be the race of liver-flukes, the kind of protoplasm which by its difference from other kinds has earned a special name—*Distomum hepaticum*.

That is an extreme case; the two kinds of individuality may often be inextricably interwoven. What is of advantage to one is usually of advantage to the other, so that, by an over-emphasis of the species-individuality of which we are the parts, it is often said that our bodies are only “cradles for our germ-cells.”

It must here suffice to say that wherever a recurring cycle exists (and that is in every form of life) there must be a kind of individuality consisting of diverse but mutually helpful parts succeeding each other in time, as opposed to the kind of individuality whose parts are all co-existent: the first constitutes what I shall call species-individuality, or individuality in time, while the other corresponds to our ordinary notions of individuality and, if a special term is needed, may be called simultaneous or spatial individuality. It is of individuals of this latter class that we have so far been speaking, and to them we must now return.

Our minimum conception of continuance—the continuance of the kind of individual rather than of the single individuals themselves—is thus a touchstone to distinguish between what is and what is not an individual: it now remains to trace the progress of continuance on this earth up towards the unattainable maximum of the undying. At the start, the individual in such organisms as bacteria has a duration reckoned merely in hours or even in minutes. There is but the hastiest procession of never-returning forms across the stage of the species. As we ascend the scale, the individual learns to stay longer and

expound his part more clearly. With the attainment of the multicellular condition and the possibility of reproduction by detaching one small part of himself instead of by division of the whole (p. 35), he can even linger on the stage till the next scene is half played through.

In the actual duration of his life, the individual ranges from the bacterium's hour to the big tree's five thousand years. So far the direct and obvious path can lead. But consciousness once more has found out a way more subtle and more effective. Man in this again stands on the pinnacle of individuality—not in mere length of days, but in having found a means to perpetuate part of himself in spite of death. By speech first, but far more by writing, and more again by printing, man has been able to put something of himself beyond death. In tradition and in books an integral part of the individual persists, and a part which still works and is active, for it can influence the minds and actions of other individuals in different places and at different times: a row of black marks on a page can move a man to tears, though the bones of him that wrote it are long ago crumbled to dust. In truth, the whole of the progress of civilization is based on this power. Once more the upward progress of terrestrial life towards individuality has found apparently insurmountable obstacles, gross material difficulties before it, but once more through consciousness it finds wings, and, laughing at matter, flies over lightly where it could not climb.

One word more on continuance. The continuance of the working of a species as we have defined it would preclude change; but change and the idea of evolution are at the base of all modern thought in science and philosophy alike. As a matter of fact, the resemblance of the working of one

individual to its result, the working of a descendant individual, is never absolute: and so, since working and structure are inter-dependent, no two individuals are ever exactly alike in appearance and architecture. Given this fundamental fact of variation, nothing is impossible: and to-day few would be found to deny that all the battalions of living organisms are descended from one primeval type. That is the logical outcome of the doctrine of Evolution. Evolution is a word glibly used, but often without thought of its full meaning. If Evolution has taken place, then species are no more constant or permanent than individuals. We know what we mean when we use the words child and man, and we know that at puberty comes the crisis which transforms the one into the other; but the whole process is continuous. So we know what we mean by a species; probably, too, there are crises when the species becomes unstable and in a short time we can say, "here is a new species." None the less the one species, if we accept the idea of Evolution, is continuous with the other by the most obvious continuity, that of its substance. As individual emerges from individual along the line of species, so does species emerge from species along the line of life, and every animal and plant, in spite of its separateness and individuality, is only a part of the single, continuous, advancing flow of protoplasm that is invading and subduing the passive but stubborn stuff of the inorganic.

From this short survey of the types and tendencies of existing individuality, three things emerge. First comes the minimum conception of an individual; the individual must have heterogeneous parts, whose function only gains full significance when considered in relation to the whole; it must have some independence of the forces of inorganic nature; and it must work, and work after such a fashion that it, or a new

individual formed from part of its substance, continues able to work in a similar way.

Then comes the idea of the perfect individual—something unknown to our senses, its characters a mere raising to infinity of those enumerated above. Defining those characters in different form, we may say that such a being would possess perfect internal harmony, and perfect independence (in our particular sense) of matter and of time itself.

Lastly, and this is perhaps most important for the present quest, there shows the actual line traced by Life in her progress up towards this perfect individuality. She has had to contend with the limitations of her own physical basis, and the result achieved is a compromise; not what she planned, but what her imperfect materials allowed her to carry out—the old difference between the poem flashed on the poet's brain and the same poem on paper, striving to gleam through the words that build it.

Her track is straightforward at first: she tries to realize to the full the possibilities of her material basis, increasing the mere size, the mechanical complexity, and the length of life of her individuals, but at last there comes a point where she can go no further forward—the spirit is willing, but the flesh is weak. So far, range of action has been dependent upon actual mass of substance, diverseness of action upon complexity of substance, and length of action upon duration of substance. Now this direct way is barred: but she finds out another path. She produces a unique type of mechanism, of which the most fully developed type is the human brain, and, associated with it, the power of conscious reason and of memory. At once the individuality is released from waiting servile upon substance. Now to its own size it can add the size of all its tools and machines—by them now is measured the Range of its action:

the Diversity of its action it has multiplied a hundredfold by substituting indefinite potentialities for necessarily limited actualities; and the Duration of its action, by the device of language, now far surpasses the allotted span of its substance.

To such an individuality, one that can thus transcend the limits of its substance, the name of Personality is commonly given. Man alone possesses true personality, though there is as it were an aspiration towards it visible among the higher vertebrates, stirring their placid automatism with airs of consciousness. In man, personality is usually defined with reference to self-consciousness rather than to individuality; but the power of reflection and self-knowledge is linked up, in our one type of personality at least, with the new flight of the individuality—conscious memory seems necessarily to imply a vast increase of independence, so that it is all one whether we define the possessor of a personality as a self-conscious individual, or as an individual whose individuality is more extensive both in space and time than the material substance of its body.

Personality, as we know it, is free compared with the individuality of the lower animals but it is still weighted with a body. There may be personalities which have not merely transcended substance but are rid of it altogether: in all ages the theologian and the mystic have told of such “disembodied spirits,” postulated by the one, felt by the other, and now the psychical investigator with his automatic writing and his cross-correspondences is seeking to give us rigorous demonstration of them.

If such actually exist, they crown Life’s progress; she has started as mere substance without individuality, has next gained an individuality co-extensive with her substance, then an individuality still tied to substance but transcending it in all

directions, and finally become an individuality without substance, free and untrammelled.

That for the present must be mere speculation. The Zoologist has strayed: he must return to his mutton and his amoebae, and in the next chapter will begin to consider more closely the actual facts of animal individuality and their probable explanation.

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# The Individual in the Animal Kingdom

By: Julian S. Huxley

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