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[224] **METAPHYSICS**, [...] the accepted name of one of the four great departments of philosophy. [...]

[...] To this pressing question then—What is the world as we know it?—three kinds of definite answers are returned: those of materialism, idealism and realism, according to the emphasis laid by metaphysicians on body, on mind, or on both. *Metaphysical materialism* is the view that everything known is body or matter; but while according to ancient materialists soul is only another body, according to modern materialists mind without soul is only an attribute or function of body. *Metaphysical idealism* is the view that everything known is mind, or some mental state or other, which some idealists suppose to require a substantial soul, others not; while all agree that body has no different being apart from mind. *Metaphysical realism* is the intermediate view that everything known is either body or soul, neither of which alone exhausts the universe of being. Aristotle, the founder of metaphysics as a distinct science, was also the founder of metaphysical realism, and still remains its main authority. [...] [225]

2.—MATERIALISM

1. *Materialism Proper*.—Materialism in its modern sense is the view that all we know is body, of which mind is an attribute or function. Several causes, beginning towards the end of the 18th century, gradually led up to the materialism of Moleschott, Vogt and Büchner, which flourished in the middle of the 19th century. The first cause was the rapid progress of natural science, e.g. the chemistry of Lavoisier, the zoology of Lamarck, the astronomy of Laplace and the geology of Lyell. These advances in natural science, which pointed to a unity and gradual evolution in nature, were accompanied by a growth in commerce, manufactures and industrialism; the same kind of spirit showed itself in the revolutionary upheaval of 1848, and in the materialistic publications which immediately followed, while these [226] publications have reacted on the industrial socialism of our own time. Meanwhile, philosophic forces to counteract materialism were weak. Realism was at a low ebb. Idealism was receding for the moment. Hegelianism had made itself unpopular, and its confusion of God, nature and man had led to differences within the school itself.

These causes, scientific, industrial and philosophical, led to the domination of materialism in the middle of the 19th century in Germany, or rather to its revival; for in its main position, that matter and motion are everything and eternal, it was a repetition of the materialism of the 18th century in France. Thus Karl Christoph Vogt repeated the saying of the French physician Cabanis, “The brain is determined to thought as the stomach is to digestion, or the liver to the secretion of bile,” in the form, “Thought stands in the same relation to the brain as the bile to the liver or the urine to the kidneys.” But the new materialism was not mere repetition. J. Moleschott (1822–1893) made a diligent use of the science of his day in his *Kreislauf des Lebens* (1852). Starting from Lavoisier’s discoveries, he held that life is metabolism, a perpetual circulation of matter from the inorganic to the organic world, and back again, and he urged this metabolism against the

hypothesis of vital force. Aristotle had imputed to all living beings a soul, though to plants only in the sense of a vegetative, not a sensitive, activity, and in Moleschott's time many scientific men still accepted some sort of vital principle, not exactly soul, yet over and above bodily forces in organisms. Moleschott, like Lotze, not only resisted the whole hypothesis of a vital principle, but also, on the basis of Lavoisier's discovery that respiration is combustion, argued that the heat so produced is the only force developed in the organism, and that matter therefore rules man. He put the whole materialistic view of the world into the following form: Without matter no force, without force no matter. Ludwig Büchner himself said that he owed to Moleschott the first impulse to composing his important work *Kraft und Stoff* (1855), which became a kind of textbook of materialism. Passing from Moleschott to Lyell's view of the evolution of the earth's crust and later to Darwin's theory of natural selection and environment, he reached the general inference that, not God but evolution of matter, is the cause of the order of the world; that life is a combination of matter which in favourable circumstances is spontaneously generated; that there is no vital principle, because all forces, non-vital and vital, are movements; that movement and evolution proceed from life to consciousness; that it is foolish for man to believe that the earth was made for him, in the face of the difficulties he encounters in inhabiting it; that there is no God, no final cause, no immortality, no freedom, no substance of the soul; and that mind, like light or heat, electricity or magnetism, or any other physical fact, is a movement of matter. Sometimes he spoke of mind as an effect of matter; but, though his expressions may be careless, nothing is to be made of the difference, for he called it movement and effect indifferently in the same context. His definitely expressed view was that psychical activity is "nothing but a radiation through the cells of the grey substance of the brain of a motion set up by external stimuli."

Ernst Haeckel belongs to a slightly later time than the materialists hitherto mentioned. His book *Die Welträthsel* (Eng. trans. J. M'Cube, *The Riddle of the Universe*) identifies substance with body. Starting like his predecessors with the indestructibility of matter, Haeckel makes more than they do of the conservation of energy, and merges the persistence of matter and energy in one universal law of substance, which, on the ground that body is subject to eternal transformation, is also the universal law of evolution. His strong point consists in inferring the fact of evolution of some sort from the consideration of the evidence of comparative anatomy, palaeontology and embryology. On the strength of the consilience of arguments for evolution in the organic world, he carries back the process in the whole world, until he comes to a cosmology which recalls the rash hypotheses of the Presocratics.

He supposes that all organisms have developed from the simple cell, and that this has its origin by spontaneous generation, to explain which he propounds the "carbon-theory," that protoplasm comes from inorganic carbonates. He not only agrees with Laplace and Lyell about the evolution of the solar system, but also supposes that the affinities, pointed out by Lothar Meyer and Mendeleeff, between groups of chemical elements prove an evolution of these elements from a primitive matter (*prothyl*) consisting of homogeneous atoms. These, however, are not ultimate enough for him; he thinks that everything, ponderable and imponderable or ether, is evolved from a primitive substance, which condenses first into centres of condensation (*pyknotoms*), and then into masses, which when they exceed the mean consistency become ponderables, and when they fall below it become imponderables. Here he stops; according to him substance is eternal and eternally subject to the law of substance; and God is the eternal force or energy of

substance. What, then, is the origin of mind or soul? Haeckel answers that it has no origin, because sensation is an inherent property of all substance. He supposes that *aesthesia* and *tropesis*, as rudimentary sensation and will, are the very causes of condensation; that they belong to *pyknatoms*, to ponderables and imponderables, to chemical atoms and molecules. Hence, when he returns to organisms, it does not surprise us that he assigns to ova and spermatozoa cell-souls, to the impregnated ovum germ-soul, to plants tissue-souls, to animals nerve-souls; or that he regards man's body and soul as born together in the impregnated ovum, and gradually evolved from the bodies and souls of lower animals. It appears to his imagination that the affinity of two atoms of hydrogen to one of oxygen, the attraction of the spermatozoon to the ovum, and the elective affinity of a pair of lovers are all alike due to sensation and will.

But has Haeckel solved the problems of mind? When he applies sensation and will to nature, and through plants to the lowest animals, he considers their sensation and will to be rudimentary and unconscious. Consciousness, according to his own admission, is not found even in all animals, although it is present not only in the highest vertebrates—men, mammals, birds—but also in ants, spiders, the higher crabs and molluscs. He holds indeed that, in accordance with the law of substance, consciousness must be evolved from unconsciousness with the development of sense organs and a central nervous organ. At the same time he admits, firstly, that to mark the barrier between unconscious and conscious is difficult; secondly, that it is impossible to trace the first beginning of consciousness in the lower animals; and, thirdly, that “however certain we are of the fact of this natural evolution of consciousness, we are, unfortunately, not yet in a position to enter more deeply into the question” (*Riddle of the Universe*, 191). Thus in presence of the problem which is the crux of materialism, the origin of consciousness, he first propounds a gratuitous hypothesis that everything has mind, and then gives up the origin of conscious mind after all. He is certain, however, that the law of substance somehow proves that conscious soul is a mere function of brain, that soul is a function of all substances, and that God is the force or energy, or soul or spirit, of nature. He, in fact, returns to ancient *hylozoism*, which has tended to revive from time to time in the history of thought. He believes that mind and soul are inherent attributes of all bodies. Curiously enough, he supposes that by making mind a universal attribute of matter he has made his philosophy not materialism, but monism. It is really both: monistic, because it reduces substance to one kind; materialistic, because it identifies that one kind of substance with body or matter, and reduces mind to an attribute of matter. It makes no difference to attribute mind to all matter, so long as it is attributed as an attribute. It is at least as materialistic to say that unconscious mind is an attribute of nature as to say that conscious mind is an attribute of brain; and this is the position of Haeckel. Materialists seem to dread the word “materialism.” Büchner also entreats us “to abandon the word 'materialism,' to which (it is not clear why) a certain scientific odium attaches, and substitute 'monism' for it” (*Last Words on Materialism*, 273). His reason, however, is different: it is that a philosophy, not of matter as such, but of the unity of force and matter, is not materialism. But if a philosophy makes force an attribute of matter only, as his does, it will recognize nothing but matter possessing force, and will therefore be materialism as well as monism, and in short materialistic monism. The point is that neither Büchner nor Haeckel could on their assumptions recognize any force but force of [227] body, or any mind but mind of body, or any distinct thing or substance except body. This is materialism.

2. *Materialistic Tendencies.*—Besides these direct instances of materialism, there are philosophers to whom the scientific tendencies of the age have given a materialistic tendency. In Germany, for example, Eugen Dühring was a realist, whose intention is to prove against Kant a knowledge of the thing in itself by attributing time, space and categories generally to the real world. But, under the influence of Trendelenburg's attempt to reconcile thought and being by assigning motion to both, his *Wirklichkeitsphilosophie*, in a similar effort after a unity of being, lands him in the contention that matter is absolute being, the support of all reality underlying all bodily and mental states. So Avenarius was no materialist, but only an empiricist anxious to reclaim man's natural view of the world from philosophic incrustations, yet when his *Empiriokriticismus* ends in nothing but environment, nervous system, and statements dependent on them, without soul, though within experience, he comes near to materialism, as Wundt has remarked. In France, again, positivism is not materialism, but rather the refusal to frame a metaphysical theory. Comte tells us that man first gets over theology, then over metaphysics, and finally rests in positivism. Yet in getting over theology he ceases to believe in God, and in getting over metaphysics he ceases to believe in soul. As Paul Janet truly remarked, positivism contains an unconscious metaphysics in rejecting final causes and an immaterial soul. Now, when in surrendering theology and metaphysics we have also to surrender God and the soul, we are not free from materialism. Positivism, however, shelters itself behind the vague word "phenomena." Lastly, in England we have not only an influence of positivism, but also, what is more important, the synthetic philosophy of Herbert Spencer. The point of this philosophy is not materialism, but realism. The author himself says that it is transfigured realism—which is realism in asserting objective existence as separate from subjective existence, but anti-realism in denying that objective existence is to be known. In his *Principles of Psychology* he twice quotes his point that "what we are conscious of as properties of matter, even down to its weight and resistance, are but subjective affections produced by objective agencies which are unknown and unknowable." This then is his transfigured realism, which, as far as what is known goes, is idealism, but as far as what exists goes, realism—of a sort. His *First Principles*, his book on metaphysics, is founded on this same point, that what we know is phenomena produced by an unknown noumenal power. He himself identifies phenomenon, appearance, effect or impression produced on consciousness through any of the senses. He divides phenomena into impressions and ideas, vivid and faint, object and subject, non-ego and ego, outer and inner, physical and psychical, matter and spirit; all of which are expressions of the same antithesis among phenomena. He holds that all the time, space, motion, matter known to us are phenomena; and that force, the ultimate of ultimates, is, as known to us, a phenomenon, "an affection of consciousness." If so, then all we know is these phenomena, affections of consciousness, subjective affections, but produced by an unknown power. So far as this main point of transfigured realism is steadily maintained, it is a compound of idealism and realism, but not materialism. But it is not maintained, on the side either of phenomena or of noumena; and hence its tendency to materialism.

In the first place, the term "phenomenon" is ambiguous, sometimes meaning a conscious affection and sometimes any fact whatever. Spencer sets himself to find the laws of all phenomena. He finds that throughout the universe there is an unceasing redistribution of matter and motion, and that this redistribution constitutes evolution when there is a predominant integration of matter and dissipation of motion, and constitutes dissolution where there is a predominant absorption of motion and disintegration of matter. He supposes that evolution is primarily *integration*, from the incoherent to the coherent,

exemplified in the solar nebula evolving into the solar system; secondly *differentiation*, from the more homogeneous to the more heterogeneous, exemplified by the solar system evolving into different bodies; thirdly *determination*, from the indefinite to the definite, exemplified by the solar system with different bodies evolving into an order. He supposes that this evolution does not remain cosmic, but becomes organic. In accordance with Lamarck's hypothesis, he supposes an evolution of organisms by hereditary adaptation to the environment (which he considers necessary to natural selection), and even the possibility of an evolution of life, which, according to him, is the continuous adjustment of internal to external relations. Next, he supposes that mind obeys the same law of evolution, and exemplifies integration by generalization, differentiation by the development of the five senses, and determination by the development of the order of consciousness. He holds that we pass without break from the phenomena of bodily life to the phenomena of mental life, that consciousness arises in the course of the living being's adaptation to its environment, and that there is a continuous evolution from reflex action through instinct and memory up to reason. He throws out the brilliant suggestion that the experience of the race is in a sense inherited by the individual; which is true in the sense that animal organisms become hereditarily better adapted to perform mental operations, though no proof that any elements of knowledge become a priori.

Now, Spencer has clearly, though unconsciously, changed the meaning of the term "phenomenon" from subjective affection of consciousness to any fact of nature, in regarding all this evolution, cosmic, organic, mental, social and ethical, as an evolution of phenomena. The greater part of the process is a change in the facts of nature before consciousness; and in all that part, at all events, the phenomena evolved must mean physical facts which are not conscious affections, but, as they develop, are causes which gradually produce life and consciousness. Moreover, evolution is defined universally as an "integration of matter and dissipation of motion," and yet mental, social and moral developments are also called evolution, so that, in accordance with the definition, they are also integrations of matter and dissipations of motion. It is true that the author did not see that he was passing from transfigured realism into materialism. He thinks that he is always speaking of phenomena in the sense of subjective affections; and in spite of his definition, he half unconsciously changes the meaning of evolution from a change in matter and motion, first into a change in states of consciousness, then to a change in social institutions, and finally into a change in moral motives. He also admits himself that mental evolution exemplifies integration of matter and dissipation of motion only indirectly. But here he becomes hopelessly inconsistent, because he had already said, in defining it, that "evolution is an integration of matter and concomitant dissipation of motion" (*First Principles*, § 145). However, with all the author's disclaimers, the general effect left on the reader's mind is that throughout the universe there is an unceasing change of matter and motion, that evolution is always such a change, that it begins with phenomena in the sense of physical facts, gradually issues in life and consciousness, and ends with phenomena in the sense of subjective affections of consciousness.

In the second place, having declared the noumenal power, which causes phenomena, or conscious affections, to be unknowable, and having left anybody who pleased to make it a god and an object of religion, he proceeds to describe it as if it were known force, and known in two respects as persistent and as resistant force. He supposes that the law of evolution is deducible from the law of persistent force, and includes in force what is now called energy. Then having discussed force as something thoroughly material, and laying special emphasis on resistance, he tells us that "the force of which we assert persistence

is that Absolute Force of which we are indefinitely conscious as the necessary correlate of the force we know" (*First Principles*, § 62). Similarly, both in *First Principles* and in the *Principles of Psychology*, he assigns to us, in addition to our definite consciousness of our subjective affections, an indefinite consciousness of something out of consciousness, of something which resists, of objective existence. Thus it turns out that the objective agency, the noumenal power, the absolute force, declared unknown and unknowable, is known after all to exist, persist, resist and cause our subjective affections or phenomena, yet not to think or to will. Such a noumenon looks very like body or matter. Lastly, when a theory of the world supposes a noumenal power, a resistant and persistent force, which results in an evolution, defined as an integration of matter and a dissipation of motion, which having resulted in inorganic nature and organic nature, further results without break in consciousness, reason, society and morals, then such a theory will be construed as materialistically as that of Haeckel by the reader, whatever the intention of the author.

It may be urged in reply that the synthetic philosophy could be made consistent by transferring the knowable resistance and persistence of the unknowable noumenon to knowable phenomena on the one hand, and on the other hand by maintaining that all phenomena from the original nebula to the rise of consciousness are only "impressions produced on consciousness through any of the senses," after all. But in that case what will become of Spencer's theory of evolution? It will have asserted the evolution of man and his consciousness out of the phenomena of his consciousness. The truth is that his theory of evolution can be carried through the whole process without a break, only by giving the synthetic philosophy a materialistic interpretation, and by adhering consistently to [228] Spencer's own materialistic definition of evolution; otherwise there will be a break at least between life and mind. If everything knowable is an example of evolution, and evolution is by definition a transformation of matter and motion, then everything knowable is an example of a transformation of matter and motion. As an exponent of universal evolution Haeckel is more consistent than Spencer.

Thomas Huxley (1825–1895) developed views very like those of Spencer, and similarly materialistic without being materialism, because inconsistent. He regarded everything known as evolved from matter, and reduced consciousness to a mere collateral product ("epiphenomenon") of cerebral operations without any power of influencing them. Matter, according to him, impresses the afferent nervous system, this the brain, this the efferent nervous system, while consciousness remains a mere spectator. "In man, as in brutes," said he, "there is no proof that any state of consciousness is the cause of change in the nature of the matter of the organism"; so that "we are conscious automata." But, in spite of these materialistic tendencies, he followed Hume in reducing matter and everything knowable to phenomena of consciousness; and, supposing that nothing is knowable beyond phenomena, concluded that we can neither affirm nor deny that anything exists beyond, but ought to take up an attitude which the ancient sceptics called Apathy, but he dubbed by the new name of Agnosticism. Thus Huxley first reduced consciousness to a product of matter, and then matter to a phenomenon of consciousness. By combining materialism with idealism he made consciousness a product of itself.

John Tyndall (1820–1893), again, came still nearer to materialism, and yet avoided it. In his Belfast address (1874), while admitting that matter as understood by Democritus is insufficient, because atoms without sensation cannot be imagined to produce sensation, he contended, nevertheless, that matter properly understood is "the promise and potency of all terrestrial life." In thus endowing all matter with sensation like Haeckel he was not

avoiding materialism. But in the very same address, as well as on other occasions, he did not identify mind with matter, but regarded them as concomitant.

All these materialistic tendencies seem to have one explanation. They emanate from scientific writers who rightly try to rise from science to metaphysics, but, as Bacon says, build a universal philosophy on a few experiments. The study of evolution, without considering how many conditions are required for “the integration of matter and the dissipation of motion” to begin, and the undoubted discoveries which have resulted from the study of inorganic and organic evolution, have led men to expect too much from this one law of Nature. This tendency especially prevails in biology, which is so far off the general principles of natural philosophy that its votaries are often ignorant of the real nature of body as matter and force. The close dependency of all mental operations on brain also tempts them to the conclusion that brain is not only an organ, but the whole organ of conscious mind.^[1] It appears also that Darwin, having extended his theory of evolution as far as the rational and moral nature of man, in the *Descent of Man*, ended in his *Autobiography* by declaring his attitude to first and final causes to be that of an agnostic. Not that he was a materialist, and shortly before his death, in a conversation with Büchner, he maintained his agnosticism against his opponent’s atheism. Still, his agnosticism meant that, though he did not assert that there is no God, he did assert that we cannot know whether there is or is not. To the evolutionary biologist brain is apt to appear to be the crowning object of knowledge. On the other hand, scientific men, such as Herschel, Maxwell and Stokes, who approach nature from mathematics and mechanics, and therefore from the universal laws of motion, have the opposite tendency, because they perceive that nature is not its own explanation. In order to exert force, or at all events that force of reciprocal pressure which we best understand, and on which, in impact, the third law of motion was founded, there are always at least two bodies, enduring, triply extended, mobile, each inert, mutually impenetrable or resistant, different yet similar; and in order to have produced any effect but equilibrium, some bodies must at some time have differed either in mass or in velocity, otherwise forces would only have neutralized one another. Why do bodies exist, with all these conditions, so similar yet different—that is, in so harmonious an order? Natural science has no answer: natural theology has an answer. This essence of bodies, this resemblance in difference, this prevailing order of Nature, is the deepest proof of God; and it cannot be the result of evolution, because it is the condition of natural force, and therefore of natural evolution. A second argument for God is the prevailing goodness or adaptation of Nature to the ends of conscious beings, which might conceivably be explained by Lamarckian evolution, but has not yet been so explained, and if it were, would not be inconsistent with a divine design in evolution. Further, the very existence of conscious beings is the best proof of the distinct or substantial being of the soul, existing in man with body, in God as pure spirit. It seems hopeless to expect that natural science, even with the aid of evolution, can explain by mere body the origin and nature of this fact of consciousness. If so, materialism is not the whole truth of metaphysics. [...]