The Yogi and the Commissar (1)
by Arthur Koestler

I. The Static Spectrum

I like to imagine an instrument which would enable us to break up patterns of social behavior as the physicist breaks up beams of rays. Looking through this sociological spectroscope we would see spread out under the diffraction grating the rainbow-coloured spectrum of all possible human attitudes to life. The whole distressing muddle would become neat, clear and comprehensive.

On one end of the spectrum, obviously on the infra-red end, we would see the Commissar. The Commissar believes in change from without. He believes that all the pests of humanity, including constipation and the Oedipus complex, can and will be cured by Revolution, that is, by a radical reorganization of the system of production and distribution of goods; that this end justifies the use of all means, including violence, ruse, treachery and poison; the logical reasoning is an unfailing compass and the Universe a kind of very large clockwork in which a very large number of electrons once set into motion will forever revolve in their predictable orbits; and that whosoever believes in anything else is an escapist. This end of the spectrum has the lowest frequency of vibrations and is in a way the coarsest component of the beam; but it conveys the maximum amount of heat.

On the other end of the spectrum, where the wave become so short and of such high frequency that the eye no longer sees them, colourless, warmthless but all-penetrating, crouches the yogi, melting away in the ultra-violet. He has no objection to calling the universe a clockwork, but he thinks that it could be called, with about the same amount of truth, a musical-box or a fishpond. He believes that the End is unpredictable and that the Means alone count. He rejects violence under any circumstances. He believes that logical reasoning gradually loses its compass value as the mind approaches the magnetic pole of Truth or the Absolute, which alone matters. He believes that nothing can be improved by external organisation and everything by the individual effort from within; and that whosoever believes in anything else is an escapist. He believes that the debt-servitude imposed upon the peasants of India by the money lenders should be abolished not by

financial legislation but by spiritual means. He believes that each individual is alone, but attached to the all-one by an invisible umbilical cord; and that his only task during his earthly life is to avoid any action, emotion or thought which might lead to a breaking of the cord. This avoidance has to be maintained by a difficult, elaborate technique, the only kind of technique which he accepts.

Between these two extremes are spread out in a continuous sequence the spectral lines of the more sedate human attitudes. The more we approach its centre, the more does the spectrum become blurred and woolly. On the other hand, this increase of the wool on the naked spectral bodies makes them look more decent, and intercourse with them more civilised. You cannot argue with a naked Commissar– he starts at once to beat his chest and next he strangles you, whether you be friend or foe, in his deadly embrace. You cannot argue with the ultra-violet skeleton either, because words mean nothing to him. You can argue with post-war planners, Fabians, Quakers, liberals and philanthropists. But the argument will lead nowhere, for the real issue remains between the Yogi and the Commissar, between the fundamental conceptions of Change from Without and Change from Within.

It is easy to say that all that is wanted is a synthesis– the synthesis between saint and revolutionary; but so far this has never been achieved. What has been achieved are various motley forms of compromise– the blurred intermediary bands of the spectrum– compromise but not synthesis. Apparently the two elements do not mix, and this may be one of the reasons why we have made such a mess of our History. The Commissar's emotional energies are fixed on the relation between individual and society, the Yogi's on the relation between the individual and the universe. Again it is easy to say that all that is wanted is a little mutual effort. One might as well ask a homosexual to make a little effort towards the opposite sex, and vice versa.

The Commissar's Dilemma

All attempts to change the nature of man by Commissar methods have so far failed, from Spartacus's Sun State through Inquisition and Reformation to Soviet Russia. This failure seems to be rooted in two disturbing phenomena which Kant could have called the Antinomies of

Applied Reasoning. The first is the Antinomy of the Serpentine; the second the Antinomy of the Slopes.

The peak of Utopia is steep; the serpentine road which leads up to it has many torturous curves. While you are moving up the road you never face the peak, your direction is the tangent, leading nowhere. If a great mass of people are pushing forward along the serpentine they will, according to the fatal laws of inertia, push their leader off the road and then follow him, the whole movement flying off at the tangent into the nowhere. That is what happened to most revolutionary movements, where the mass-impulse is strong and the inertia of the mass is converted into a violent centrifugal force. In the more cautious reformist movements, on the other hand, the momentum soon fades out and the ascending spiral first becomes a weary circling round and round the peak without gaining in height until it finally degenerates into a descending spiral; e.g., the Trade Unionist movement.

The second root of failure is the Antinomy of the Slopes, or of Ends and Means. Either the Means are subordinated to the End, or vice versa. Theoretically you may build up elaborate liberal or religious halfway houses; but if burdened with responsibility, and confronted with a practical decision to be taken, you have to choose one way or the other. Once you have chosen you are on the slope. If you have chosen to subordinate the Means to the End, the slope makes you slide down deeper and deeper on a moving carpet of common-sense propositions, for instance: the right of self-defence– the best defence is attack– increase of ruthlessness shortens the struggle, etc. Another well-known slope-pattern starts with the "Healer's Knife" and ends with the Moscow Purges. The fatal mechanism of this slope was already known to Pascal:

Man is neither angel nor brute, and his misery is that he who would act the angel acts the brute.

The Yogi's Dilemma

The attempts to produce Change from Within on a mass-scale were equally unsuccessful. Whenever an attempt was made to organise saintliness by external means, the organisers were caught in the same dilemmas. The Inquisition flew off at a tangent; the Churches in the liberal era circle round and round the peak without

gaining height. To subordinate the End to the Means leads to a slope as fatal as the inverse one. Gandhi's slope started with non-violence and made him gradually slide down to his present position of non-resistence to Japanese conquest: the Japanese might kill a few million Indians but some day they would get tired of it, and thus the moral integrity of India would be saved.

Obviously the prospects for the masses of common people are now brighter under this inverted Machiavellianism than under the leadership of the Commissars. One slope leads to the Inquisition and the purges; the other to passive submission to bayoneting and raping; to villages without sewage, septic childbeds and trachoma. The Yogi and the Commissar may call it quits

II The Spectrum in Motion

But they don't. Unable to form a synthesis and unsatisfied by the patched-up compromise in the medium bands of the spectrum, they attract and repel each other in rhythmical intervals. This strange minuet is one of the more exciting aspects of History which Marxism, otherwise the most serviceable guide, falls short of explaining.

Under certain historic climates mass-migrations start from one end of the spectrum to the other, general displacements from infra-red to ultra-violet or vice versa, like mighty trade winds travelling over the seas. The nineteenth century brought such a general displacement towards the Commissar or infra-red end. The present climate favours the opposite direction. Since the early 'thirties we are all travelling, more or less consciously, more or less willingly, towards the ultra-violet end.

The less consciously we drift with the wind, the more willingly we do it; the more consciously the less willingly. Personally I belong to the later type; I wish one could still write an honest infra-red novel without an ultra-violet ending. But one can't, just as no honest scientist can now publish a book on physics without a metaphysical epilogue, no honest Socialist can write a survey on the Left's defeats without accounting for the irrational factor in mass-psychology. He who clings blindly to the past will be left behind; but he who abandons

himself too readily will be carried away like a dry leaf; all one can do is to travel even more consciously and even less willingly.

But again, is such intentional readaptation possible? Are those who survive the great spectrum displacements the fittest or merely the glibbest? Thinking of some fellow-writers who achieved the journey from the pink decade to the Yogi decade with such monkey-like agility one is tempted to say, "Let the dead bury their dead." They answer, "But we mean it"– and there is no doubt that, at least, they believe they mean it. Yet what writer has ever written a line without at least meaning to mean it? Hence one first feel disgust with them; then one finds out that one was disgusted for the wrong reasons; and after that one was still disgusted because they were so quick to find the right reasons for their expatriation from the infra-red to the ultra-violet. In these matters clumsiness is respectable and glibness abject. They never seriously attempted to sail against the wind; they abandoned themselves to its breeze, which broke them gently from their stems, and whirled them round and dropped them gently at the other end; that is perhaps why, when you hear their whisper, it sounds so much like rattling of dead leaves.

For the political Commissars the spectral displacement hs more tragic results than for the arty Commissars. I don't mean that they necessarily feel deeper about it; perhaps it is rather the other way around. In ages of distress when values crumble and survival has an ever so slight but still perceptible touch of glibness and betrayal, artists are often tempted by suicide but rarely commit it, whereas the revolutionary is rarely tempted to suicide, but when it happens it is because he has no other choice. In a sense spiritual life can be defined as the training for the acceptance of death; the Commissar is the human type least advanced in this training and yet by force of circumstances most advanced towards it.

Thus the artists shows the least resistance against being carried away; the revolutionary the greatest. Indeed the Commissar can be defined as the human type which has completely severed relations to the subconscious. This is the more remarkable as the constant danger under which he lives– I think Lenin used the phrase "We are dead mean on furlough"– is a constant temptation to communicate with those forbidden zones. In fact he is condemned to live in a permanent state of repressed puberty. While in the normal curriculum the great

crisis of adolescence, the confrontation with the tragic and insoluble problems of existence occurs only once– a limited process, like teething–the revolutionary spends all his life in this tropical climate, and those tragic problems remain his daily bread and butter. The ordinary citizen, once the transcendental teething is over, evolves a smooth modus vivendi towards the absolute; the best the Commissar can hope is to find a smooth modus moriendi.

Yet living in a climate of perpetuate adolescence, his behaviour is as unadolescent, unecstatic, unromantic as can be imagined. One has the feeling that his subconscious has been dealt with not on the analyst's sofa but on the surgeon's table by the amputating knife. In fact one of his often recurring problems is not to give himself away by sleep-talking or other subconscious automatisms; and if he is a good Commissar he succeeds. He is a marvel of unneurotic repression: one of the most admirable achievements of the human species.

Now if life becomes impossible without pity, it is perhaps equally impossible without a grain of self-pity. The Commissar is not immune against suffering, but what he experiences is more the echo of pain than pain itself, like the aching of an amputated limb. He compels admiration, but also pity– that tender pity which the weak sometimes feel for the strong. Faced with giant figures like Blanqui, Luxemburg, Vera Figner, we can do nothing but shut up and realise what futile, frivolous dwarfs we are; yet pity remains.

That this instinct is justified becomes apparent when the Commissar faces the crisis of his life. This is a tragic and complicated process, often misunderstood. The forms it may take vary individually, but basically it si always the same: it is the revenge of the amputated organ. In a story of Gerard de Nerval's, which I remember only vaguely, a judge sentences a thief to have his hand cut off; the amputated hand then pursues the judge and finally strangles him. In the Commissar's case the judge and victim are the same person and the cut off organ is not a hand; it is, if we examine it closely, the Yogi's umbilical cord, his means of communication with the Absolute, with the "Oceanic Feeling," to use Freud's sober term. The Commissar lived in the conviction that it was a luxury organ, but when the crisis comes he realizes that it is not. The Man-Society connection suddenly proves to be not enough to procure psychic metabolism; the Man-Universe connection has to be re-established.

At this point one of two things might happen. Either the cut connection is re-established, and as an act of atonement the Man-Society connection broken off; this is the classical case of the Revolutionary turning into a Mystic, the total jump from Commissar to Yogi. Or the connection is not re-established– then the dead cord coils up and strangled its owner. This is the equally classic case of the ex-revolutionaries whose souls died of suffocation. They might appear as cadaverous as Sinojew at the Moscow trials; or satanic and cynical like Laval and Doriot, or as impotent and desiccated as the Left party-bureaucracy. Since Rosa Luxemburg there has arisen no man or woman endowed with both Oceanic Feeling and the momentum of action.

Unfortunately we have as yet no scientific terminology to describe these processes, which are of vital importance for the understanding of the "subjective factor" in history. Hence the more soberly one tries to describe them the more vague imagery one has, faute de mieux, to use. The enormous literature of the three main contemporary schools in psychology contains not a single case history of this conversion, the revolutionary's transformation into cynic or mystic, whereas history, past and present, abounds in examples. Jung comes nearest to the question: his interpretation of the subconscious bears most resemblance to the "umbilical cord," but her prefers to study its effects on the most unsuitable human type, the wealthy middle-aged Babbitts. And this for good reason: were he to choose his patients among the type which inhabits the German or Russian concentration camps, his therapy would not only prove to be inadequate but he would have to introduce so many new determining factors that both his terminology and his Weltanschauung would go to blazes. The Commissar's spectral displacements are terra nova for the psychologist.

Turning to the more muddled, intermediary bands of the spectrum we find that their reactions to the mystic current are of a revealing nature. In the pink regions the reaction first manifest itself by an intense consciousness of the Left's serial defeats, of disgust with the old parties, disgust with their worn-out leaders, with plans and promises, ideas and ideals, and most of all with one's own foolish and frustrated hopes. This pink hangover is the emotional starting point. Next comes the realisation that "there must have been something

basically wrong in our approach to the Masses." Next to this the discovery that on the very point where they failed– activation of the masses– fascism was horribly successful. Now the feeling which success inspires in the unsuccessful is envy. If we look closely we ind indeed that the pink attitude to fascism is envy rather than hatred.

There is one definite profiteer of the spectral displacement: the Scientist. In a certain sense it was he who started the movement; then its momentum carried him further than he probably liked. One should remember that the irrational or ultra-violet element which strongly taints present-day physics, biology, and psychology was not a philosophical fashion smuggled into the laboratories, but grew out of the laboratories themselves and created the new philosophical climate. The most striking example is the development of physics which was an enormously successful rational Commissar-science up to the closing years of the last century and has since become more and more of a Yogi-science. Matter, substance, time, space, causality, precision of measurement and the belief in the predictability pf behaviour of the Measured have run like sand through the physicist's fingers until nothing remained but a group of formal statements of this type: "If a small poker-die is so constructed that we have no reason to assume a preference on its part for falling on the ace-side, then we are entitled to expect that, in the course of a great number of casts, it will show no preference for falling on the ace-side."

This is undeniably a precise statement, but a rather modest in one in relation to our hunger for the mysteries of the Universe explained to us. The modern physicist of course denies that his task should be to "explain" anything, and he takes a masochistic delight in producing formulae which establish with precision the degree of imprecision in his statements, i.e., the inadequacy of physics not only to explain but to even describe what exactly is going on in the physical world. Some time ago Laplace thought that if a superior intelligence counted all atoms and their velocities at a given moment he could predict all future events to the end of the world, including the brand of Mr. Churchill's cigars. Physicists and Philosophers of the last Commissar period tried to jolly around the fatalistic trap of physical determinism, but there was no escape from it. In nineteenth century physics the world was running down like a clockwork without freedom, except the arbitrariness of the initial state and of the initial choice of a certain set of "Natural Laws" which governed the mechanism. In twentieth

century physics this initial arbitrariness or freedom is evenly distributed in minute quantities over all possible cross-sections in time and space; the initial creation has become a creatio continua. "Freedom" and "arbitrariness" are of course merely terms to indicate the presence of factors which cannot be described or accounted for in the physicist's terminology. Nineteenth century physics describes a sharply defined world with a blurred initial stage; contemporary physics describes an equally blurred world, like a fil with coarse granulation. (The granulation being indicated by the Quantum of Action "h" and defined in Heisenberg's Uncertainty Principle.) Whether we describe this world as "Pantheistic", "Free," "Undetermined," "Statistical," "Spiritual," or Voluntaristic" is more or less a matter of taste. What really matters is that the physicist's instruments of measurement indicate the presence of physically unmeasurable factors. And this is the reason why the physicist travels perhaps more consciously than anybody else towards the ultra-violet. **(2)**

III The Pendulum

The Commissar, the Artist, the vague Man of Goodwill, the Scientist, not only seem to react in different ways to the great spectral displacement, but their motives for participating in it seem also different in nature. Is there a common reason for this pilgrimage? To a certain extent the revolution in physics has certainly affected the artist, the revolution in psychology has influenced political outlook, and similar cross-influences are easy to discover. They form a pattern of diagonal lines of forces, but this pattern is that of a network, not of a causal chain. There is not causal chain running from Quantum Mechanics to the self-accusations of Bucharin, but in an indirect way they are all linked together by diagonals. We cannot ask for common a reason, we can only ask for a common denominator in the variety of reasons.

In the critical years of the Weimer Republic, when a communist or fascist revolution seemed equally possible and the only impossibility the continuation of the worn-out regime, a certain Ernst Jeunger coined the phrase of the anti-capitalist nostalgia of the masses." This vague but violent longing was indeed by groups of people of otherwise very different tendencies. Perhaps the common denominator we are looking for can best be described as an "anti-materialistic nostalgia." It is allergic to the rationalism, the shallow optimism, the ruthless logic,

the arrogant self-assurance, the Promethean attitude of the nineteenth century; it is attracted by mysticism, romanticism, the irrational ethical values, by mediaeval twilight. In short it is moving towards the very things from which the last-but-one great spectral displacement towards the infra-red has moved away. Apparently these movements have a pendular rhythm.

The swinging of this pendulum from rationalistic to romantic periods and back is not contradictory to the conception of a basic dialectic movement of history. They are like the tidal waves on a river which yet flow into the sea. One of the fatal lacunae in the Marxist interpretation of history is that it was concerned only with the course of the river, not with the waves. The mass-psychology aspect of Nazism is not describable in Marxist terms, in terms of the river's course; we need tidal waves to account for it. On the other hand our pendulum alone is no guide to history. We must know about the river before we talk of the waves.

Perhaps it is not too hazardous to assume that these pendular changes in the mass-psychology spectrum are a process analogous to the rhythmical change of waking and sleep in the individual. The irrational or romantic periods of mass-psychology are periods of sleep and dream. The dreams are not necessarily peaceful; more often they are nightmares; but without these periodic plunges into the subconscious the vital juices would not be provided for the next wideawake Promethean or Commissar period. Perhaps every Gothic period is followed by a Renaissance period and they are but the succession Yogi-nights and Commissar-days in the curriculum of the race. And perhaps this, our present civilization, is not dying, only sleepy.

The Yogi and the Commissar, part II
by Arthur Koestler

"Science is a vast and impressive tautology."

– C.C. Pratt, *The Logic of Modern Psychology*

I

It is now six o'clock in the evening, I have just had a drink and I feel a strong temptation to have a couple more and then go and dine out instead of writing this essay. I have fought myself over this issue for the last quarter of an hour and finally I have locked the gin and the vermouth in the cupboard and settled down to my desk, feeling very satisfied with myself. From a scientific point of view this satisfaction is entirely spurious, since the issue was already settled before I started fighting myself; it was also settled that I should feel this spurious satisfaction and write what I write. Of course in my heart of hearts I do not believe that this is so, and I certainly did not believe it a quarter of an hour ago. Had I believed it, the process which I call "inner struggle" would not have taken place, and fatality would have served me as a perfect excuse for going on drinking. Thus my disbelief in determinism must be contained in the set of factors which determine my behaviour; one of the conditions for fulfilling the prearranged pattern is that I should not believe that it is prearranged. Destiny can only have its way by forcing me to disbelieve it. Thus the very concept of determinism implies a split between thinking and doing; it condemns man to live in a world where the rules of conduct are based on As If's and the rules of logic on Becauses.

This paradox is not confined to scientific determinism; the Moslem, living in a world of religious determinism, displays the same mental split. Though he believes, in the words of the Koran, that "every man's destiny is fastened on his neck," yet he curses himself and his enemy when he blunders, as if all were masters of their choice. He behaves on his won level exactly like old Karl Marx who taught that man's mental make-up is a product of his environment, yet showered invectives on everybody who, in obedience to his environmental conditioning, couldn't help disagreeing with him.

Destiny versus freedom, or explanation versus volition, is an eternal duality in man's mental structure. Both concepts are derived from fundamental instincts, though in different periods they are expressed in different forms. The idea of destiny responds to the need to find some organising principle, a universal order behind the threatening chaos of the natural world. Its instinctual root is probably the feeling of insecurity, the cosmic anxiety, which craves for reassurance by "explanation," that is, the reduction of the strange and threatening to the familiar. In primitive religion this is achieved by explaining the forces of nature through animism and personification. However choleric or arbitrary those deities are, they are moved by familiar impulses, and everything that befalls us is thus satisfactorily explained.

About A.D. 1600 the character of destiny underwent a change. A new method of explanation arose in the measurements of the quantitative aspects of things and the formulation of their rules of interaction. Many phenomena which had appeared different in kind proved to be explainable in differences of degree– colour, sounds, heat and cold, above and below, animal and man. The success of this method meant that the organising principle of the universe could now be more satisfactorily explained in terms of these quantities and relations. The Deity, whose human passions had gradually decreased with increasing wisdom, now became entirely de-personalised. The idea of an enforced order "fastened around man's neck" remained untouched, but the seat of the organising power had been shifted. The gods had been supermen, extrapolations on an ascending scale; atoms and electrons were subhuman, extrapolations on a descending scale. Destiny, which had operated from above now operated from below.

Volition, destiny's antagonist, we shall define as the psychological aspect or projection of the interplay of impulses and inhibitions. If this interplay takes place on the conscious level it is experienced as a not enforced, not inevitable process of choice. This subjective experience if freedom is the stronger, the closer the process to the focus of attention. Actions resulting from processes on the pre-conscious fringes are experienced as "absent-minded" semi-automatic doings, and from extra-conscious processes as fully automatic.

The experience of freedom resulting in the processes in the focus of attention is probably synonymous with consciousness itself. Its essential characteristic is that the process is experienced as working from inside outwards instead of from outwards in; it seems determined from the subject's core and not by outward environment. On the psychological plane the experience of is as much a given datum or "reality" as are sense perceptions or the feeling of pain. The abolition of the experience of free volition leads to collapse of the individual's whole mental structure, observable in certain forms of insanity (de-personalization). The concept of free choice is implicit in all systems of moral values and ethical imperatives.

Thus the beliefs both in determinism and freedom are rooted in primary instincts: the first in the need for protection by a universal order which "explains" and thus tames the threatening forces of nature; the second in any drive for action which, when balanced by inhibition and focused by attention, gives rise to the experience of free choice. We have seen, however, that the two beliefs stand in reciprocal relation. Each progress in explanation draws the net of cognized objective relations tighter and narrows the scope of subjective choice. Thus the mind is driven to deny its own experience of freedom.

It is important to notice that this conflict is originally not (as it appears today) a conlfict between objective thought and subjective feeling. The "explanation" of animism and deism are just as effective, irrational and pre-logical as the experience of free volition. The conflict between freedom and determinism is a conflict between two instinctual beliefs, experienced in alternation and with equal intensity.

II

The Primitive's life is a series of rites to influence the spirits which govern his destiny. He believes that he has a free choice to perform those rites or not, and to perform them well or badly, which means that at those times he is not subject to destiny; moreover under certain conditions he may be able to force his will on the spirits, and thus completely reverse the situation. The Primitive is not conscious of this paradox, because his deities are still very human and imperfect. They in turn would need super deities to impose order upon their

conduct, and so on, through a receding series, to a completely depersonalised, ubiquitous and all-knowing godhead.

The Primitive, however, is satisfied with a rather coarse determinism of the first degree. As the human mind develops, more complete explanations are needed, the determining network becomes tighter and the divinity which operates it more perfected. At this point the paradox of destiny and volition becomes conscious; the contradiction between divine omnipotence and human striving expresses itself with unparalleled dramatic force in mythology. Eve eats the fruit of knowledge of good evil against the will of the Lord; Prometheus steals the fire from the gods; Jacob fight the angel, the tower of Babel is built and destroyed. The two instincts are locked in dramatic battle and the older instinct always wins against the younger one– for, as we saw, the experience of freedom only arose at a high level of consciously experienced balance between impulse and inhibition. Thus each Promethean attempt ends in defeat, punishment, or humiliation; the Augean stable is never cleaned, the Danaid's vessel never filled, Sisyphus' labours are eternally in vain: the desire for protection is stronger than the self-confidence for making the right choice. On a planet with a friendlier climate populated with a biologically less vulnerable race, mythology might make an opposite course: each battle would end with a Promethean victory over the gods and the race would grow up free, self-confident, without priests, leaders and kings– an attractive subject for dreams on a rainy day.

The conflict reaches it conscious peak in the type of myth imortalised by Oedipus Rex. Oedipus apparently retains his freedom of volition and nevertheless fulfils the pattern of his destiny. The fates know that out of his free choice he would never slay his father and marry his mother, so they trick him into it under false pretenses. His "freedom" is contained in their calculus and hence not worth much. But the significant fact is that destiny is forced to accord man at least the illusion of freedom.

Christianity carries the solution an important step further. Man's freedom is no longer an illusion but reality on the human plane; while divinity is omnipotent, omniscient and completely determines the world on a superhuman plane. The dilemma has been sharpened and at the same time solved by projecting the split from mind into nature. The universe itself has been divided into levels of human volition and

divine volition– destiny. The levels stand in a hierarchic order, i.e., the laws of divine logic are impenetrable by the human mind, whereas the latter is an open book to destiny. God is "not what I think thou art but what thou knowest thyself to be." The Primitive's world was homogenous in the sense that the superhuman operators of destiny thought and behaved much in the same way as the humans. The Christian world is discontinuous in the sense that separate laws operate on separate levels– the divine, the human, the animal level. The logical contradiction between freedom and determinism has been solved by attributing different types of logic to different planes in the hierarchy.

It will be useful to retain the following characteristics of the Christian hierarchy of levels:
God is the explanation for everything, but this explanation cannot be formulated on the lower (human) level.

The laws of the higher level cannot be reduced to, nor predicted from, the lower level.

The phenomena of the lower level and their laws are implied in the higher order, but

Phenomena of the higher order if manifested on the lower level appear as unexplainable and miraculous.

III

The final step in the perfection and de-personalization of destiny was performed when, in the beginning of the seventeenth century, God became a mathematician. The first protagonists of the new method of explanation by measurement and quantitative laws literally believed that God had created the world according to algebraic precepts, and that the planetary laws were an expression of His desire to maintain harmony in the spheres. But now that destiny had yielded the objective principles of the universal order, there was no more need for a subjective operator, and God dissolved into natural law; for a perfect law leaves no scope for a judge.

Thus, on a higher bend of the evolutionary spiral, the world became again homogeneous. The same laws governed the conduct of atoms, stars, organic matter, the brain and its highest manifestations. The only difference was, as we saw, that determinism from above became determinism from below. The Primitive had formed anthropomorphic images of the gods; the primitive physicists made three-dimensional models of the atom-nucleus. As observation and explanation progressed, the models collapsed as the idols had. The gods became de-personified and the models de-materialised. Both the upward projection of human temperament and the downward projection of human spatio-temporal experience were insufficient for perfectioned explanation; and the commandment "thou shalt not make unto thee any graven images" applied to God as to multi-dimensional space, electrons, wave-packets and quanta.

Thus scientific determinism was heading towards the same crisis as that of religious determinism, expressed in the Oedipus myth. Instead of being a puppet of anthropomorph gods, man became a physico-chemical automaton; destiny from below left as little scope for the experience of free choice as destiny from above; the iron grip of heredity and environment was as inescapable as that of the weird sisters of fate. The only difference was that philosophic jargon did its best to obscure the conflict. By the beginning of this century, however, philosophers grew tired of their of jargon, arguments on "free will" were considered bad form and left to the theologians. All the volumes of the British Museum are insufficient to exhaust the implications of my sweating over this essay instead of drinking my gin.

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So far we have dwelt only on the logical aspect of our paradoxon. What about its influence on ethics?

Ethical systems are based on the implicit assumption of free choice of action. The Primitive's code of behaviour is dictated by the aim of influencing spirits by submission or coercion, by trickery and bribery, the latter including self-mutilation and sacrifice. Primitive ethics aim at using man's free will in such a way as to pacify destiny and thus reconcile the determinant with the determined. Ritual is the bridge between freedom and destiny.

As deity progresses towards omnipotence, the gross methods of coercion are abandoned and ethics become dominated by submission and humility. The exertion of free will is subordinated to divine guidance. This guidance can only be obtained by the sacrifice of volition: the mystic uses his freedom to focus his will into the total passivity of contemplation. In ecstacy the spirit becomes one with the principle of universal order: a total Explanation is attained. But this final triumph of one of the two conflicting instincts can only be achieved by the total defeat of the other, volition. Detachment, the foundation of all mystic techniques, may be compressed into the formula: I will not to will.

As deity progresses a further step and becomes transformed into mathematical law, ethics again follows suit by adopting a quantitative language: "The greatest happiness for the greatest number." Ethics thus remains true to its aim, i.e., to reconcile man's freedom with his destiny; but its ritual code has once more to be adapted to deity's changed character. Before the change, man's relation to "destiny from above" was one of submission; now that destiny operates "from below" it becomes mainly one of domination. The forces of nature determine man's fate, but at the same time technics enable him to dominate those forces; and he is more conscious of his power than of his dependence. Before the change, Explanation was attainable only by passive contemplation; now by active research, knowledge becomes eternalised. Before the change, man's condition was derived from a Fall; now from an evolutionary Rise achieved by permanent violence in the struggle fro survival. The Christian method of making society conform to the divine order aimed at a Change from Within; the new method of attaining a mathematically perfect society aimed at Change from Without. The new codes of behaviour emphasise activity instead of passivity, dominion instead of submission, ruthlessness instead of meekness, calculation instead of guidance. The saint is succeeded by the revolutionary, the Yogi by the Commissar.

A further consequence of the change was that Explanation lost its reassuring character. The urge for both knowledge and reassurance are rooted in the same instinct– to assimilate the uncanny to the familiar. But like all instincts it had branched out as the level of mental organisation rose, so that today it needs the analyst's perspicacity to unearth the root. Religious determinism had covered all branches of

the instinct: God was both explanation and protection. Scientific determinism covered only one: "destiny from below" was unable to provide protection by a paternal power. The neglected branch took its revenge by reverting to archaic myths, and the beating of the jungle tom-tom drowned the ticking of the scientific clock.

IV

The latent crisis of scientific determinism became acute about the turn of the century in practically all branches of science, from theoretical physics to experimental embryology.

Around 1900 certain atomic nuclei were found to behave like a miniature Oedipus. They conformed to a plan but at the same time seemed to enjoy freedom in their own terms of reference. They unfailingly fulfilled their destiny which ordained the a milligram of radium had to disintegrate at a certain given rate (about 500 million atoms per second) and in doing this emit a certain radiation (alpha and bet corpuscles and gamma rays); but at the same time it was found that each little nuclear Oedipus was completely indifferent to physical influence in his environment. The law of Rutherford and Soddy (1903) implied that the collapse of radio-active atoms was "spontaneous," i.e., independent of the atoms physical state, position and environment. The most complete description of the atom's present condition in physical terms allowed no conclusion as to its future. It's fate seemed determined "from inside and not from outside" (Jeans). The individual atom seemed to experience freedom in the sense that for its behaviour no explanation was possible in physics owns terms of explanation. In 1917 Einstein that the right to "spontaneous" collapse had to be accorded to all atoms. In the 'twenties Schroedinger postulated that the whereabouts of electrons traveling through empty space could only be expressed in terms of probabilities, not in certainties; and Heisenberg that with regard to electrons inside th atom a similar uncertainty reigns; while Dirac assumed that all phenomena in space and time arise from sub-stratum which is not in space and time and entirely beyond measurable grasp.

These findings revolutionised physics and lent themselves to wild metaphysical speculation which ranged from theological seminaries to the detective stories of Miss Dorothy Sayers. The only disappointing thing was that the apparent anarchy disappeared and determinism re-

entered into its rights, as soon as we left the realm of the infitesimal for the macroscopic world. However Oedipus-like the individual atom behaved, fair-sized atom crowds behaved in a strictly predictable way.

Thus the significance of modern physics is not the discovery of some divine agent working inside the atom, but merely a limitation of the scope of physical explanation. It all boils down to this: microscopic events cannot be adequately described or explained in terms of our macroscopic experience of space, time and causation. The framework of experience on the human level is inapplicable beneath that level. Modern cosmology with its curved space-time showed that it is equally inapplicable above that level.

The antimony of freedom and determinism can now be translated into the realm of the atom as follow:

The "freedom" of individual atoms, nuclei, etc, means not arbitrariness or divine inspiration but merely freedom from such determinants as are experienced on the man-sized scale. Their behaviour cannot be defined or explained in terms of quantitative measurements nor by thought-processes based on the elements of human experience. It is "not of this world," if by world we mean our spatio-temporal experience. It exists on a different level of organisation, whose relations and relata cannot be reduced to, nor predicted from, the macrocosmic level.

Each of the sentences in the paragraph above contains the word "not." All our statements above the sub-atomic level are negative statements, denoting the limitations of physical explanation. But there is no reason why the discovery of these limitations should be regarded as a tragedy, or as a proof of the immaculate conception. It only means that the hope for a complete explanation of the world by quantitative measurements proved as fallacious as deistic explanations in the past. After all it is only three centuries since God became a mathematician and we have plenty of time before us for other transformations. The monopoly of quantitative measurements is drawing to its close, but already new principles of explanation begin to emerge. Meanwhile we have to admit that science is reverting to the same expedient for solving its paradoxes as religious explanation once did: it renounces the idea of a homogenous universe ruled by one comprehensive law, and replaces it by a hierarchy of "levels of

organisation." That is not, as many frightened scientists believe, a regression into religious thought; it is merely an analogy in method to solve the paradox of freedom and determinism which remains hidden and latent as long as a type of explanation is still incomplete, but explodes into a crisis as it become perfected.

V

In modern biology the stratification of the world into hierarchic "levels of organisation" is an even more necessary expedient than in physics. The transition from the old to the new outlook is reflected inter alia in the writing of J. Needham, the Cambridge biologist; his example is particularly interesting because Needham belongs to a school of scientists with a strong Marxist and even Stalinist tendency and hence is more unwilling to move in a direction that smacks, if ever so faintly, of "metaphysics" or "vitalism." Yet the findings in their own laboratories and intellectual honesty compel the commissars of science to travel, however reluctantly with the stream. Needham's progress may be characterised by two quotations:

In 1928 he wrote: "At the present day zoology has become comparative biochemistry and physiology biophysics"; in 1941 he wrote: "Biological organisation... cannot be 'reduced' to physico-chemical organisation, because nothing can ever be reduced to anything. As Samuel Butler once remarked: 'Nothing is ever merely anything.'" **(3)**

The crisis in biology opened at the end of the last century with the development of experimental embryology. In 1895 Driesch showed that, against the expectations of science, all kinds of things could be done to the embryos of certain species without changing the outcome. If after the first division of the frog egg one of the two resulting cells (which normally would have become half of the future frog) was amputated, the result was not half a frog, but a complete frog of a smaller size. If one repeated the operation in a later blastular stage, the result remained still the same; a whole crowd of cells of the blastular foetus could be removed or reshuffled, without changing the result. If the future tail of a newt was grafted into a position where the leg should be it grew not into a tail but into a leg. The matter caused great consternation. For if the cells and cell tissues in the blastula were by physico-chemical laws "determined" to become half newts to half

tails, how could they change their mind as it were, and grow into while newts or legs? It was obviously absurd to assume that the physico-chemical regulative devices inside the cells implied the possibility of meeting Driesch's knife and the proper reactions to this event.

The consternation became even greater when it was discovered that from a certain point onwards in the development of the embryo, the position becomes reversed. Embryonic parts which have reached the gastrular stage lose their flexible future and seem so strongly "determined" to persist on their path that, if cut off, and grafted to other parts of the foetal body, they not only go on growing as if they were still in their normal position, but also force the host tissue to adapt its own development to the function of the guest (provided of course that the host is still in the flexible stage). The results obtained by Speeman and Mangold (1924) by their new grafting techniques were fantastic. Thus when an eye placode of a tadpole is removed from the head and grafted under the surface of the belly, the surface skin becomes transparent and develops a correct lense and cornea for this abdominal eye. Finally it was found by Paul Weiss that these phenomena were not confined to embryonic stage but also occurred in the regenerative tissues of grown-ups. Thus young tissue from the stump of an amputated new tail grew into a leg if transplanted into a "leggy" position, but older tail-stump tissue grew into a tail wherever grafted on.

The mechanistic idea that the laws governing life were mere extrapolations of physico-chemical laws was utterly defeated. And the findings of experimental embryology were merely the crassest examples of analogous developments in other branches of biology. The conflict between freedom and determinism became even more acute in the realm of the cell than in the realm of the atom; but here, too, "freedom" should only be interpreted in the sense that the potentialities of the living are not exhausted by explanations in terms of anorganic matter. The freedom of a blastomere to develop into a quarter-frog or a whole frog, is obviously the opposite of arbitrariness; but its behaviour can only be "explained" by collecting and relating experimental facts on its proper level and no by predictions based on physico-chemical laws.

The first attempt to solve the problem was abortive. Driesch's "entelechies" were a purely terminological sham solution, similar to the

nineteenth century physicist's Ether, and based on the old procedure of baptising an X with a Greek name. One might as well introduce an entelechy into each atomic nucleus; or, to quote Dr. Broad, "the hypothesis of an entelechy can explain the facts only if it supposes the entelechy to be so exalted a mind as to deserve the name of a 'god.'" **(4)**

During the 'thirties, after the quarrel between Vitalists and Mechanists had come to a deadlock, the expedient of splitting up the world into hierarchy of "levels of organisation" became more or less generally accepted among biologists, though each seems to interpret the philosophical implications in his own way. **(5)**

The laws, or "organising relations," which operate on each level of the hierarchy are of two kinds. (a) Non-specific laws (e.g. inertia) which are shared by all levels but which have little explanatory value; the law according to which an egg will not move from my plate unless it is pushed does not enrich my knowledge of the egg. (b) Specific laws, which contain practically all that is worth knowing about a thing. These cannot be reduced to or deduced from lower levels of the hierarchy, and can only be formulated by studying the phenomena on their proper level. Where this is impossible without completely destroying the specific order which is to be studied as, e.g., on the subatomic level, no laws can be formulated.

It follows that a thing will display different characteristics on different levels, according to the specific "organising relations" to which it is exposed. Thus a crowd of carbon molecules will display different properties as an element, in an anorganic compound, in an organic compound, on the crystalline, colloidal and bio-chemical level; and the components of a spermatozoon will display different properties in vitro, in the scrotum, in the ovum, in the blastular state, and inside the grown-up organism. None of these specific properties can be predicted from a lower level; not even the chemical qualities of compounds from the physical data of their components; these new qualities emerge suddenly, in a jump as it were, on their appropriate level; hence the name "Theory of Emergencey. " **(6)**

Just as a process cannot be predicted "upward" from a lower level, they can also never be completely analysed "downward" into their components. To analyse means to isolate parts from the whole, and

the functioning of a part in isolation is not the same as its functioning in the whole. When a physiologist studies a tissue culture he may reconstruct to a certain extent the conditions prevailing in the body by an artificial organic environment, but he can never succeed completely. "The environment of the part is the whole organism" (Woodger). Thus a cell isolated from the convoluted tube of the kidney will in tissue-culture exhibit the basic metabolic changes common to all cells, but its specific characteristic as a kidney cell will be lost. The same of course applies if the analysis is pushed further down to the chemical components; for the chemist in order to reach them has usually to destroy all the intervening levels. Thus the specific behaviour of wholes can only be properly studied and described in terms of the relations of wholes to each other, and the specific behaviour of parts only in their relation to other parts; isolation destroys their very character of "part-ness"; and so down to parts of parts.

Analysis reveals only the common factors contained in a process; but the process cannot be reconstructed by putting these factors together again; their law of integration is different on each level. Thus if I analyse a square into dots I have to put them together according to the laws of multiplication; if the dots belong to an ellipse I have to apply the laws of integral calculus; if they are parts of a portrait, new relations emerge. The levels do not differ from one another by the things they contain, but by the way these things associate on each level, and the new properties and values which emerge by this specific type of association. The "freedom" of a level consists in these new values and relations which were not present among the determinants of the lower level; the "destiny" of a level is its dependence on the laws of the next higher level– laws which it cannot predict nor reduce.

In other words: the freedom of the whole is the destiny of the part; the only way to comprehend destiny is to comprehend one's part-ness. That is precisely what the mystics said. But that does not mean a victory of mysticism over science; only the recognition of the limitations of science within its own terms of reference.

VI

It is fascinating to watch how a concept of a hierarchy of levels and of their irreducibility by uniform quantitative laws arose independently in various branches of science.

In psychology, quantitative measurements began to fade into the background at the beginning of the century; Gestalt-psychology, developed by Koehler, Koffka and Wertheimer in the late 'twenties is entirely dominated by the concept of "wholeness" and the specific laws which integrate elementary sense- data into perceptional wholes.

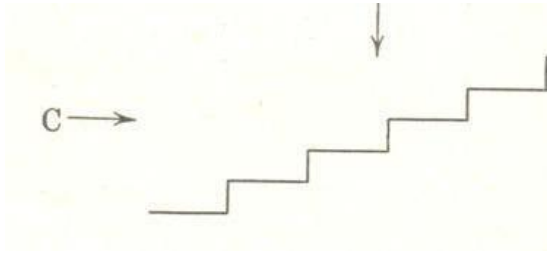
Let the whole be a triangle; then, then, by analysing into its parts I get three straight lines of given length which I can measure. But obviously a black line of two inches in length is as a sense perception something quite different from a hypotenuse of a triangle. Its specific character can only be perceived if it is in its proper place in the whole. As a sense perception "black line" is as different from "hypotenuse" as a kidney cell in isolation from a kidney cell in the kidney. I have twice italicised the words "as a sense perception" because on the drawing board the black line remains unchanged whether it is part of a triangle or not. I may cover the other two sides and the line remains the same– in its physical existence on the paper. But as a percept it does not remain the same. On the perceptual level the black line changes its character when exposed to the influence of the other two parts. This interaction of perceptual elements in the mental field is as real as the interaction of kidney cells. Accordingly it must have some physiological equivalent in the brain, and Koehler assumes that there are self-distributing electro-magnetic currents between the cortical projections of retinal points. Other physiological hypotheses are equally possible; the essential point is not the nature of the physiological process but the fact that on the level of the drawing-board the three lines are a static mosaic which leaves one another alone, whereas on the brain-mind level they automatically enter into dynamical relations with one another and emerge as wholes. All this may appear as fairly obvious to the layman who does not realise how hopelessly bogged the old atomistic psychology had become in its ambiguous distinctions of "sensation," "perception," "meaning," etc. In atomistic psychology the brain served as a kind of screen on to which the retina projected its static mosaic; this implied the necessity of a second observer or brain who transformed the "sensation" into

"perception" and invested it with the "meaning" of triangularity.. Gestalt-psychology does not explain the emergence of the mental level just as biology does not explain the emergence of life; but once that level is given, the things which are lifted onto it become integrated by specific organising relations, and the mystery of the mind is reduced to the already familiar principle of a hierarchy of qualitatively different levels.

VII

We may imagine our hierarchy of levels as a series of terraces on an ascending slope, or as a broad ascending staircase. Then the horizontal surfaces of the steps will represent the field in which the laws of a given level operate, and the vertical surfaces the "jumps" which lead to the emergence of the higher levels. The succession of steps will be roughly this: space-time, sub-atomic phenomena, physics, chemistry, crystals (paracrystals, viruses), non-dividing organic constituents (proteins, enzymes, hormones, etc.), dividing organic constituents (cell-parts and some cells), higher (non-dividing) cells and organs; and so on up to the higher mental functions. Some of these steps will have to be divided into sub-steps and in the higher regions the staircase will branch out; but this can be neglected from the point of view of an argument. There will also be "mezaforms"– hybrids like the paracrystals and probably the viruses; some mechanists have argued that these are proof of continuity between the levels. But this position is practically abandoned by modern biology– just as nobody will try to deduce from the existence of hermaphrodites that male and female functions differ only in degree, not in kind. "If we look carefully at the steps between successive levels of organisation," says Needham, "we find that the sharp lines of distinction are only made all the more sharp by the mezoforms which occur between them. ... These forms of existence, the more clearly we understand them, will all the more clearly serve to bring out the essentially new elements of higher order which characterize the form of organisation we call life." **(7)**

If we now represent our staircase diagrammatically, we find that there are two ways of looking at it:



The perpendicular arrow marked "S" indicates the scientific observer; to him the levels of the staircase appear projected on one horizontal plane, spread out as a kind of continuous spectrum from physics to psychology, and the jumps between the levels appear merely as thin dividing lines. Within each area everything is "explainable" or shortly will be; law and order reigns and there is no mystery– apart from those irritating divisions.

But if we contemplate the staircase as indicated by the horizontal arrow "C," everything becomes unexplained mystery. The surfaces of the steps disappear, and we only see the vertical jumps between them. S sees the phenomena as given; C is faced with the secret of their being given in unpredictable lifts; not in one act of creation but in a rhythmic creatio continua.

"What has not yet been done, however, is to elucidate the way in which each of the new great levels of organisation has arisen," Needham writes with unconscious irony, for that which "has not yet been done" was the primary aim of scientific investigation. "It must always be remembered that though we can chart out quite fully the laws existing as a given high organisational level, we can never hope to understand how they fit into the picture of nature as a whole, i.e., how they join with the next higher and next lower levels. About this there is nothing obscurantist, nothing anamistic." **(8)**

There is indeed nothing obscurantist in the admission of an obscurity. This obscurity exists, as we saw, in the fact that specific organising relations only operate on "horizontal" planes and that we cannot predict or reduce them; in other words, we have no laws which operate in the vertical direction. **(9)**

A "vertical" law would be a law enabling us to explain or predict how and when and why higher forms of existence are generated. But though we cannot formulate such scientific laws in scientific terms, we have an inkling of the general tendencies involved in the generation of higher levels. Such "transordinal" tendencies of "building up" are, e.g., the duality of aggregation and segregation which manifests itself on various levels as attraction and repulsion, integration and specialisation, growth and division, sex-instincts and death-instincts, etc. Other tendencies involved are symmetry, and adaptation and harmony. Once more I quote Needham, the ex-machinist and neophyte of Marxism, who is so anxious to avoid obscurantism:

Still we can say with Drummond that there may be something analagous between the bonds appropriate to each of the different levels of organisation in the world. And we remember that great book in which Sigmund Freud described what he called the "task of Eros"... From this point of view, the bonds of love and comradeship are analagous to the various forces which hold particles together at the colloidal, crystalline, molecular, and even sub-atomic levels.

Symmetry, harmony, love as the common organising tendencies on all levels of existence– the ring of this is rather familiar to us. But if this is mysticism, it is mysticism with a difference. The "ignoramus" is pronounced at the end, not at the beginning of the journey.

VIII

Religious explanation, caught in the paradox of destiny and freedom, had to give up the homogenous conception of the world and had to stratify it into a hierarchy of levels. Today science has to adopt the same expedient. A comparison between the Christian and scientific hierarchies will show the basic sameness of method. We said (p.222) about the Christian hierarchy that

the laws of the higher level cannot be reduced to, not predicted from, the lower level;

the phenomena of the lower level and their laws are implied in the higher order, but

phenomena of the higher order when manifested on the lower level appear as unexplainable and miraculous.

All this holds equally good for the relation between, say, bio-chemistry and embryology.

Religion further taught that there are two ways of knowing: exploration of the horizontal, worldly planes, and contemplation of the vertical or transcendental order. The second way seems trespassing across the boundaries of all separate levels; hence the mystic is viewed with equal distrust by the Churches and Sciences, by scholars and scholastics. And yet both clergy and schoolmasters have had to recognise their own limits and the validity of the "other" method of grasping the ultimate and intimate problems of existence.

The staircase of religion has only a few steep steps between inanimate matter and divinity, roughly corresponding to the six days of creation. The staircase of science has a great number of more delicate steps. The difference in height between the levels is often hardly visible, and more and finer subdivisions are likely to emerge. But nature knows no continuity, only jumps, and a staircase never becomes a slope, even if the steps are made infinitely small. For we can always choose a correspondingly small particle which will remain at rest on the staircase but roll down the slope; and in a perpendicular light the whole staircase will always remain in shadow for him who contemplates it from the front.

The two ways of knowing do not invalidate, but complete each other. We have lost an illusion and regained the right to deepen our understanding of reality– by methods which a generation ago nobody dared to mention without blushing. Newton once saw a thing fall from a tree and calculated its mass, energy and acceleration. Today we are going back to the fact that the thing which fell was an apple.

IX

Once the principle of Levels of Organisation becomes as firmly established in our mental habits as was the idea of the homogeneousness and reducibility of all things in the nineteenth century, much confusion will be avoided in aesthetics, ethics, and the

theory of knowledge. This confusion arises from the application of the specific laws of one level to another, and by our ingrained habit of "reducing,"e.g., reducing ethical values to biological relata.

Freud's essay on "A Childhood Memory of Leonardo da Vinci" is a masterpiece of applied psychology; its ingenuity equals Champollion's deciphering of the Hieroglyphs. The analysis of the Gioconda's smile is more exciting reading than any detective story– about the artistic values of the portrait it explains nothing. Leonardo becomes an open book for us– except for the fact that he was a good painter. "It is not the aim of pathography," says Freud, "to explain the achievement [of Leonardo]; one should not reproach me for having broken a promise which I never made... We would be glad to retrace artistic activity to its instinctual origins– but that is just the point where out means let us down.." Freud knew the limits of his method– so did Marx. But Freudians and Marxists don't; they raise totalitarian claims to explain all phenomena by a method which is for them a magic panacea. This attitude is not always intellectually conscious; the analyst when cornered will admit that the specific values of a canvas can be reduced neither to the chemistry of the paint nor to the case history of the painter; and the Marxist will indignantly deny that he ever claimed economic factors could explain everything. But their unconscious tendency expresses itself by an obsessional overemphasis; and thus in practice the Marxist will "explain" fascism in purely economic terms and the Alderian will "explain" Napolean by his shortness– without, however, telling us why all short people do not become Napoleons. Whence follows, inter alia, that creative people should avoid being psychoanalysed as long as their intimate miseries do not impair their creativeness. In theory analysis should help the artist to sublimate his complexes; but mostly this externally induced sublimation does not express itself in artistic creation but in rationalisations and in diminishing or destroying the generating tension. I have never heard of a neurotic becoming an artist by learning to sublimate on the analyst's sofa. The paintings which Jung's patients produce as a substitute for throwing a fit are always lamentable, whereas the drawings of schizophrenes are mostly admirable.

It also follows that the so-called "better understanding" of an artist's work gained by reading his biography, historical introductions, etc., is a non-specific, reductive understanding which interferes with the perception of the specific order of values on their own level.

Prefaces should be read after, not before the work. Julius Caesar had been forever spoiled for me by the information that the treatment of Brutus by Shakespeare was biassed by the trial of Essex; since I read Freud's "Leonardo" I can't help seeing the Gioconda as a pathological exhibit; and young X's admirable love lyric is tainted with bathos since I saw his Beatrice getting tight on mild-and-bitter at the "George." The debunking of values is not a symptom of decadence, but on the contrary a hangover of the optimistic tendency to reduce heterogenous levels to homogenous laws.

X

The tendency to "reduce" and the ensuing confusion of levels lead to particularly tragic results in the realm of ethics.

We may distinguish five main types of degenerated ethical systems in our time, which result from (a) the reduction of ethical values to the zero level, and/or the application of (b) biological, (c) psychological, (d) quantitative, and (e) mystical concepts to the ethical sphere. Usually we find a mixture of several of these, but it is more convenient to treat them separately.

(a) The obsession for analysing and reducing ethical values leads, if unchecked, to explicit or implicit nihilism. Reduction becomes reductio ad infinitum and ad absurdum. "When he believes he does not believe that he believes, and when he does not believe, he does not believe that he does not believe," says Kirillov in The Possessed. "All the planet is a lie and rests on a lie and on mockery. So then, the very laws of the planet are a lie and the vaudeville of devils."

Nihilism seldom assumes the explicit forms of a political movement as among the Russian intelligentsia of the 1860's, or crystallizes into such monstrous figures as Bakunin's friend Nechaev and his group. But elements of it can be traced everywhere in materialist philosophy. It also permeates the "private philsophies" of corrupt politicians, prostitutes, big bussiness, criminals and cads. Everybody with some experience in social welfare work knows that most asocials have some such sort of jealously guarded private philosophy which they believe to be their unique discovery. Once we accept the principle of reduction as legitimate, there is no means of

refuting it. If the world is assumed as homogenous, its laws must be traceable either upward to God or downward to chaos; nihilism takes the second course.

An inverted kind of nihilism is expressed in the phrase "tout comprende c'est tout pardonner." It is one of the woolliest phrases ever uttered. "Pardonner" implies an ethical judgement, based on the assumption of free choice which, as a datum of experience, is a specific property of the ethical level only. This judgement should now be "pardoned," that is invalidated, by understanding. Now either this understanding is specific, then it must lead to a judgement identical to that which it is supposed to invalidate. Or the understanding is derived from reduction to psychological, biological, etc., levels, then it leaves out the really significant factors on which the judgement is based and can never invalidate it.

Thus my condemnation on Nazism is based on observation of the social disturbances which it produces and on the implicit assumption that each individual has, within certain limits, the choice of becoming a Nazi or not; hence I fight those who are Nazis and try to prevent others from becoming Nazis. This judgement is based on my understanding of what I observed and therefor cannot be invalidated by it. If however I concentrate merely on the historical, racial and environmental factors in the make-up of my Nazi then I may pardon him by saying "the poor chap couldn't help it." But my pardon was obtained at the price of reducing him to the level of an animal or automaton and thus excluding him from the level on which my judgement was pronounced. And if he is merely and animal or machine, irresponsible for his acts, I shall be entitled to fight him the more mercilessly under the cover of my understanding. I pardon my rusty razor, but I throw it on the rubbish heap.

Thus either "tout comprendre c'est tout pardonner" produces an effect directly contrary to its intentions– or it boils simply down to the platitude that judgement should be based on observation not on emotion. In which case it should be less misleading to say simply: "Bien observe c'est bien juge."

(b) The projection of biological laws on the level of human ethics leads to Darwinistic conceptions of sociology– survival of the fittest, the "natural rights of the Superman," etc., of which the ethics of

fascism is the most consequential expression. Biology is the sociology of the jungle, and its application to a higher level must lead to the appropriate results. One of the most fascinating treatises on the application of "Natural Law" to ethics was, by the way, written by the Marquis de Sade.

(c) The reduction or debunking of ethical values to the level of psychology and psycho-pathology is a trend of little political but great cultural significance, especially amongst the intelligentsia. What we said about the reduction of aesthetic values also applies here– with this difference that while Freud himself was fully conscious of the limitations of his method in the first case, in the second he was not; his attitude to the question of the autonomy of ethical values was, to put it mildly, ambiguous. Geniuses are panzer-spearheads; their lightning advance into no-mind's-land necessarily leaves their flanks unprotected. It would be the task of the infantry that follows to broaden the base and secure the lost contact with other advancing faculties; instead they behave as if each of them were a little tank. The Freudian infantry (like the Marxist battalions) has conquered hardly any new ground; but they have played havoc in the philosophical hinterland. The "reduction" of social values like courage and self-sacrifice, to the psychological level of masochism, the death instinct, etc., is analogous to the reduction of live organisms to their chemical components. For on the sociological level the individual emerges as part of a new whole, and the integrative relations on this level are once more specific and irreducible.

Take for example the ethical concept of "conscience." In Freud's writings this concept appears frequently in ironical inverted commas– we might just as well do the same to "carbon" or "fish." In the Freudian system the origin of conscience is traced to the super-ego which in turn is traced to partial identification with the parental authority. But this reductive account leaves out the essential and specific feature of the thing analysed: namely, that a good or bad conscience is based on the conviction that the act in question was committed by free choice. Freedom as a datum of experience hardly plays any role in the Freudian system. But it is just this new and specific factor which functions as an organising relation on the ethical level, and distinguishes the new social whole from the herd, flock, or swarm.

The new factor emerges, as we saw, by a focusing of a precarious balance between impulse and inhibition. But this merely describes the conditions which must be fulfilled for its emergence, not the process of emergence itself; the latter is the vertical jump. Thus we may describe the chemical, thermal, etc., conditions which must be present at the generation of life matter; and yet the process of generation remains unexplained and its result is on a new level. Incidentally, the state of "precarious balance" which characterises the emergence of experienced freedom is also characteristic for the original instability of organic molecules and other emergent biological levels. New forms of existence are narrow victories of the tendency towards integration over its opponent.

Freud's famous question "Why should I love my neighbour?" (Civilisation and Its Discontents) cannot be answered by neurological formulations of the libido; it can only be answered by considering myself and my neighbour in the integrative relation of the parts to the whole. And if we agree, for convenience's sake, to use the term "libido" as a name for the integrative tendencies on all levels, then we have to bear in mind that this "libido" assumes different specific forms in the force of gravitation, on the molecular level, in the growth of a crystal, the grown of the gastrula, the syngamy of organ-parts, the reproduction of organic wholes and the integration of the social whole.

(d) The transfer from the physical to the ethical level of the principles of quantitative measurements has probably produced the most disastrous results. The implied paradoxa of this kind of "Commissar-Ethics" are less obvious to us than those of the biological ethics of fascism because we have been so thoroughly trained to think in quantitative terms that the application of mathematical criteria to ethical method appears to us simply as an act of common sense. Thus we accept as quite logical that a given number of people should be sacrificed in the interest of a greater number of people. Ergo, as Mr. Chamberlain said in the days of Munich, one cannot reasonably expect a great nation to take risks for the sake of a small one. But at the same time we do expect a front-line ambulance to risk the lives of their crew of five to save one man. We accept the argument of Soviet apologists that it is better to keep a thousand innocents in jail than to let one spy go free whose activity might endanger the lives of tens of thousands. And we do not notice the hitch in the argument, namely,

that we have no physical instruments to measure the exact amount of harm caused by the detention of the thousand innocents and compare it with the amount of harm to be expected from the hypothetical spy. We have mistaken a system of empirical rules of thumb, applicable only where conditions are fairly obvious, for a scientific method of ethics. Our quantitative criteria let us down each time just at the point where the pro's and con's are balanced and ethical guidance is most needed. In a revolution traitors and fools have to be shot: but at what precise point does a man who disagrees with me on points of tactic become a traitor or a fool? At what precise point does the healer's lancet turn into a butcher's hatchet? At what point does the dictatorship of the proletariat change into the dictatorship of a bureaucracy? "Dialectics" tells us that quantity changes into quality; unfortunately we are not told at what point. A system of ethics based on quantitative criteria is a slope on which there is no halt because all is a matter of degrees and not of (qualitative) values.

A related fallacy of Commissar ethics lies in the tenet that the End justifies the Means. Again, as a rule of thumb, the tenet is valid is obvious situations; as a system of philosophy, however, it implies that social developments are as rigidly predictable as only certain isolated mechanical processes are. ; Commissar ethics has still to learn that the individual stands in the social equation both for Zero and the Infinite. ∞To proclaim such a crassly fallacious system a supreme law must lead to moral disaster. Three hundred years ago Galileo already knew that the rules of computation cannot be applied to the symbols 0 and

(e) "Yogi-ethics" is the attempt to transfer the values derived from passive contemplation into practical action. This is not an impossible undertaking, but extremely difficult. The Contemplative focuses his attention on the vertical aspect of the staircase and is apt to neglect the intricate factual relations on the horizontal planes. This leads to a naive, amateurish, and often crankish approach to social problems. Such dilettantism is fraught with dangers: the most obvious among them is the danger of quietism, escapism, of sinning by omission. "So at length, gentlemen, we have reached the conclusion that the best thing for us to so is to so nothing at all, but to sink into a state of contemplative inertia," says another hero of Dostoevsky's.

Closely related to this is the optimistic reliance on the contemplative faculty in others and the recommendation to listen to the "inner voice of conscience." But the "inner voice" of people inexperienced in the technique of contemplation is simply the echo of unconscious conditioning by convention and tradition. I saw a striking example of this in a little girl of seven, our housekeeper's daughter, who had grown up at a time when to show a light through one's window was a crime and a sin. On the day when the blackout was relaxed in London she came to my room, whose window shone as a bright square in the dark street. I tried to calm her by appropriate explanation, but the horror did not leave her eyes and I felt that no rational arguments could convince her; and indeed her mother told her the next morning that the child had complained to her under bitter sobs that "Uncle Arthur does not believe in God."

Our "inner voice" regarding social, sexual behaviour, etc., does not differ much from the child's, and to accept is as sole guide before we have mastered the technique of contemplation means simply to vote Tory at the next election. Contemplation should help to free us from the fetters of our conditioning; it is the opposite of dogmatism, scientific or religious. C.S. Lewis in the Screwtape Letters makes the devil write to his nephew, whose job it to tempt a Christian convert: "Above all do not attempt to use science (I mean the real sciences) as a defense against Christianity. They will positively encourage him to think about realities he can't touch and see. There have been sad cases among the modern physicists." Thus to imply that the only alternative to mechanism is the Church of England, and that the only approach to what we can't touch and see is through Christian dogma, is indeed disarmingly naive coming from a Fellow of Magdalen College in 1944. There is something repulsive in the way the scholastic gloats over the difficulties of science– like a lecherous dotard wooing a girl disappointed by her young lover.

And finally there is the danger, opposite to quietism, of fanatic enthusiasm. The Church Militant, in trying to enforce Change from Within by a radical change from Without, is caught in the paradox of Ends and Means. Huxley's Grey Eminence is a masterly exposition of the Mystic who acts as an inverted Commissar.

XI

These, then, are the pitfalls of Yogi ethics. And yet when all is said, contemplation still remains the only source of guidance in ethical dilemmas where the rule-of-thumb criteria of social utility fail. But the method of contemplation has to be learned just like the methods of scientific observation; and for modern man this is an incomparably more difficult task. And those who rediscover it become so absorbed into their new world that they lose touch with the old one and their grip on reality; the vertical view of the staircase is as one-sided as the horizontal one. Thus the pendulum goes on swinging from infra-red to ultra-violet and back.

* * *

The significance of our era is that science has been forced by its own development to recognise its limitations, and thus to make room again for the other way of knowing, whose place is usurped for almost three centuries. The quantitative method is approaching perfection and with it saturation; its aggressiveness is beginning to change into the modesty of achievement. The flat- two-dimensional plane of nineteenth century mechanism is gaining depth and height by the erection of the new hierarchy of levels, and the validity of the "vertical" approach is beginning to be recognised again. This creates a historic opportunity to achieve the synthesis. The basic paradox of man's condition, the conflict between freedom and determinism, ethics and logics, or in whatever symbols we like to express it, can only be resolved if, while thinking and acting on the horizontal plane of our existence, we yet remain constantly aware of the vertical dimension. To attain this awareness without losing the other is perhaps the most necessary and most difficult task that our race ever faced.

But pious exhortations are not enough. To recover the lost half of our personalities, man's wholeness and holiness, the art and science of contemplation has to be learned; and in order to be learned, it has to be taught. But this teaching should no be left to the hacks of Yogi-journalese, nor to crank-philosophers who dispense a minimum of information about breathing-technique wrapped in a maximum of obscurantist bombast. I still have to meet the bus-driver who after a nine-hour shift will derive any profit from Heard's Training for the Life of the Spirit– though it is meant "for the people" and only costs

eightpence. Contemplation survives only in the East and to learn it we have to turn to the East;.but we need qualified interpreters and above all a re-interpretation in the terms and symbols of Western thought. Mere translation are useless, except by those able to devote their whole lives to the task, and to snobs. The Vedanta bores me to death and the Tao doesn't mean a thing to me. "The practicer of Hathayoga," Swatmarin Sami informs me, "should live alone in a small hermitage or monastery situated in a place free from rocks, water and fire; of the extent of a bow's length and in a fertile country ruled over by a virtuous king where he will not be disturbed." Think of the bus-driver.

If we are in earnest about our recovery of our lost halves, we have to find new ways of teaching and learning; if we are in earnest, we should not be frightened of aiming at a stage when contemplation is taught in schools side by side with Science and P.T.– and instead of religious dogma. Not to produce cranks, but to re-inform man's integrity.

And we have every reason to be in earnest about it. The crisis in Explanation has found its most violent expression in the ethical crisis and its political projections. Its root is the paradox of the individual whole which has to function as a social part; and again of social wholes– classes and nations– which have to be integrated into a whole of a higher order. This integration can never be achieved by Wellsian exhortations addressed to the intellect alone. It has to emerge, facilitated by a "vertical" approach which brings to the dry concepts of part-ness, love and all-oneness the igniting spark of experienced reality. Neither the saint nor the revolutionary can save us; only the synthesis of the two. Whether we are capable of achieving it I do not know. But if the answer is in the negative, there seems to be no reasonable hope of preventing the destruction of European civilisation, either by total war's successor Absolute War, or by Byzantine conquest– within the next few decades.

It needs no intellectual acumen to see this, and only the inertia of our imaginations prevents us from believing it– just as in peace we never believe that there will be war, and in war that there will ever be peace again. For beneath the Cassandra- voice of reason there is another smug and smiling voice in us, which whispers into our ear the gentle lie that we shall never die, and that tomorrow will be like yesterday.

It is time we learnt to distrust that voice.

October, 1944.

The Yogi and the Commissar and Other Essays by Arthur Koestler
NY: The Macmillan Company 1945, pgs. 218-247

FOOTNOTES:

1. First published in Horizon (London), June, 1942.

2. I am talking of the Scientist, not of the Charlatan. If Commissar-journalese of the Communist pamphlet type is bad, Yogi-journalese of the Gerald Heard type is worse. Both discredit the idea they stand for; but while in the first case the defendant may plead that according to his convictions efficient propaganda always includes a certain amount of charlatanism, in the second case this defence cannot be made. Here are few examples of Yogi-journalese:

"Eliah also acts as a telepathic secret-service agent for the king of Israel" (Gerald Heard, Pain, Sex and Time,

p.129). "Moses we know was married. He could not, therefore, have used complete sex sublimation as a

technique for enlarging consciousness." (Ibid., p. 123). "Though, therefore, Vaijroli may seem to offer a

secondary path to those who say they cannot sublimate, if 'Right Contemplation,' Samadhi (the words are

the name in Pali) non-personal consciousness (ecstasis: εποπγεια) is not only possible but the actual getting

into the next evolutionary stage of consciousness, then surely we must aim at nothing else, and the problem of

sex, by this and this only, finds at last it's solution." (Ibid., p. 229) So much for the form; an analysis of the

contents would require more space but lead to equally discouraging results.

3. In one passage Needham fights a rear-guard action by saying:

"It would be correct to say that the living differs from the dead in degree and not in kind because it is on a

higher plane of complexity of organisation, but it would also be correct to say that it differs in kind since the

laws of this higher organisation only operate here." (Time, the Refreshing River.)

Now according to the elementary rules of logic the statement, "differs not in kind" and "differs in kind,"

cannot both be "correct." We are in the presence of a striking example of what ravages the infatuation with

Marxian dialectics may cause in an otherwise clear brain. The fallacy in this case lies obviously in the silent

assumption smuggled into the first part of the sentence that living differs from dead only in numerical and not

functional complexity– which is contradicted in the second part of the sentence.

4. C.D. Broad, The Mind and Its Place in Nature

5. Such a solution had been foreshadowed by Henry Drummond, Herbert Spencer, Lloyd-Morgan, Wilson, Alexander, C.D. Broad, and

others, but only received its precise formulation in Woodger's fundamental work, Biological Principles (1929)

6. Or "emergent vitalism." It has, however, nothing in common with vitalism of the Driesch brand, and the sooner the discredited term is dropped the better.

7. J. Needham, Time, the Refreshing River.

8. Needham, op cit.

9. Except non-specific laws like the conservation of energy, etc., which do not explain anything about the emergence of new specific properties.

Note: The Yogi and the Commissar
was first published in Horizon magazine,
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