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A Philosophy of Wonder

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A PHILOSOPHY OF WONDER *

An adequate philosophy of wonder would analyze the meaning of the experience of wonder and its different types; show its similarities to and differences from ordinary experience; indicate what it is about man that makes him capable of wonder; describe the components of wonder, their relations, the subtypes of wonder, the conditions under which wonder arises, the kinds of experiences which are allied to wonder and can follow from it; consider the relation of wonder to human values, the history of wonder and its relation to man's nature and to the child, the contemporary search for wonder, the conditions conducive to the development of wonder; and much more.

In what follows I have briefly discussed these topics, with the intention not so much to give definitive answers as to make a preliminary investigation of them. Wondering is an essential characteristic of man, who is a creature of a universe that has brought him forth and that in its many aspects evokes his wonder. Therefore a philosophy of wonder would implicitly be a philosophy of man and the universe; and such a philosophy men will continue to work at as long as they seem worthy of wondering and the universe seems worthy of their wonder.

The Latin word *mirari* means to wonder or marvel at, and *miraculum* was used in the Latin translation of the Greek New Testament to indicate "anything wonderful, beyond human power, and deviating from the common action of nature, a supernatural event."¹ With a gradual shift in metaphysical viewpoint, stimulated by the rise of natural science, a cognate, *admirari* (and then *admiration*), appears to have gradually acquired the meaning of purely natural wonder. In antiquity the spectacular in nature (plagues, earthquakes, volcanoes, floods, disasters in the heavens), dramatic healing, the rare intuitions of sages and artists, the penetrating visions of prophets, were considered *miraculous*. As knowledge advanced, however, drawing some of these events down into the orbit of man's understanding, man still wondered at them, though in a naturalistic, admiring way; while the word *miraculous* remained to signify

* Read before Society for Philosophy of Creativity, December 27, 1966.

¹ "Miracle," *Encyclopedia Britannica*, Vol. 15. Chicago: Encyclopedia Britannica, Inc. 1959, p. 585.

a wonderful, deviant event, supernatural and divine in origin. With the advance of natural science from the Renaissance onward, this usage of *admiration* spread. And the corresponding advance of humanism made man, the wonderer, more and more a natural object of admiration. Of him, Shakespeare cried out: "What a piece of work is man! . . . In form and moving how express and admirable!"² Today we admire mainly men; but while that means to wonder at, in most cases it means to regard with pleasure, approval, respect, and esteem. The history of these words reflects the history of the European mind in its attitude of wonder: the direction of wonder has passed from God, to nature, to man, and the emotion has become attenuated. If wonder is important to man, as I shall maintain, then this history indicates a problem.

Our English *wonder*, lying relatively close to its primitive roots, retains the more powerful force of *miracle*; and although it is liberally used in English translations of Biblical terms that carry supernatural connotations, it is by no means an equivalent. *Wonder*, from the Old English *wundor*, might be cognate with the German *Wunde* or *wound*. It would thus suggest a breach in the membrane of awareness, a sudden opening in a man's system of established and expected meanings, a blow as if one were struck or stunned. To be wonderstruck is to be wounded by the sword of the strange event, to be stabbed awake by the striking.

A common type of wonder, the one indicated in the usual English dictionary meaning, is a strong emotional experience containing elements of ideation and disposition to act which are, in the initial stage, suppressed and undeveloped. Wonder in such cases is (1) a feeling of startle or surprise and (2) an incipient, inquisitive interest in the object of wonder (the wonderful). The excitation, usually sudden or intense, arises in response to an occurrence that may or may not be identified in perception. A man finds a newly blossomed rose wonderful: the primary determinative occurrence is that he is in love, though he believes that the wonder originates outside him. Wonder in these common cases is usually occasioned by some thing or event that appears extraordinary and is in fact unexpected. What gives an experience the quality of wonder or wondrousness is just such a sense of sharp novelty in qualitative awareness (sense, images) and (secondarily) in meaning. This awareness is a function of both happenings and a man's response to them. Wonder is the spark of excitation leaping across the gap between man and the world. (The spark may leap in solitude and appear to have no cause or referent; but its cause may be traced in the world, and man normally seeks a referent for it.)

The excitation of wonder ranges from the sudden and intense to the

² *Hamlet*, II: 2.

gradual and moderate, until it shades into ordinary emotion. What seems ordinary to most persons may, to the child or man who is naked and naive toward nature or men, appear in some novel light, exciting the “wondering” that is both emotional and curiously cognitive. It is true that an organism capable of emotive wonder is necessary to the evocation of wonder. On the other hand, an object is required to evoke it. The wonderful is any object of any wondering, excited interest. So far as a person’s perceptions, activities, and meanings are not entirely routinized and stereotyped, so that he responds to the unique qualities and forms of things, then in principle every particular occurrence may become an object of surprise and curiosity for him, i.e., something wonderful in greater or lesser degree.

There was a time when meadow, grove and stream,
 The earth, and every common sight,
 To me did seem
 Apparellled in celestial light,
 The glory and the freshness of a dream.³

What makes ordinary experience “ordinary” is the flattening out of the wild, erratic flora and protruding peaks and outcroppings—by blueprints, bulldozers, superhighways. Conceptualization, the instrumental attitude toward things, the development of mechanized habits, the creating and application of classes, with abstract types and subtypes of particular things—all contribute to extinguishing from awareness the qualitative uniqueness of things and hence the experience of wonder. “Ordinary” experience is just that experience which has this regular, accustomed, predictable character. But it is not by any means the only kind of experience—as is shown by art, which enhances qualitative experience; by science, which invents or discovers new orders and advances by just such innovation; and by psychedelic experience, which, as drugs (perhaps by their effects on the myelin sheath) remove the inhibitions to perception, gives a very intensified and free flow of qualities.⁴

Thus the conditioning effects of habit tend to determine not only what we regard as ordinary but also what we are ready to respond to as wonderful. Centuries ago an eclipse, comet, or thunderstorm was an invariable occasion for wonder, since such occurrences had not yet been integrated into the system of expectations and meanings of men. Less than a century

³ Wordsworth, “Intimations of Immortality.”

⁴ “Artist,” “scientist,” “mystic,” etc. in the following usually mean an ideal and relatively rare fulfillment of a common type of activity — what Pepper calls a “perfect specimen” or something close to it. Analysis of such types can illuminate the characteristics of the common type, since in the former the characteristics are “writ large.”

ago men used to wonder at the marvellous cures effected by medical and surgical science. Now, among the wealthier classes, they are commonplace, and have lost most of the quality of the wonderful once attributed to them.

Wonder is distinguished from the almost purely emotional, negative experience, like panic or terror or awe. Wonder retains an element of detachment or ideation, a minimal curiosity, a control of emotion that gives psychic distance to the event and permits at least in some small degree the play of imagination. When detached imagination is overcome by emotion, such as great fear or terror, wonder disappears. On the other hand, although "wonderful" often means satisfying or favorably esteemed, the emotion of wonder is not always pleasant. A mountain-climber or a mother giving birth or a heroic man under torture may find his experience wonderful though it means travail and possibly death.

What attracts and holds the wondering imagination is the mystery of quality and meaning, dramatically or silently challenging man, waiting to be unraveled. It is this lure of the unknown, this temptation of exploring the hidden labyrinth, that gives to the wonderful its peculiar fascination. At first the thing may be simply arresting by reason of its unfamiliar character—a birth, a death, a flood, a large fire. But to sustain the wonder in man it must elicit from him "wondering" and, drawing man's attention to it, lead him by the lines of tentative meaning which he has thrown out toward it, until he is caught up and held in it. At the primitive level of raw experience, the thing experienced as wonderful is apt to be initially ambiguous, attractive and simultaneously repelling, since its possibilities for life or death, for assurance or terror, for knowledge or mystery, have yet to be resolved. A storm at sea, even when one is in a large liner, can still evoke such wonder. And to escape the doldrums of the affluent life, people seek out such experiences in surf-riding, sky-diving, auto-racing, polymorphous love-making, jazz, LSD, war, and the like.

Are non-man animals capable of wonder? Man's wonderful excitement is not merely blind reflex or brute emotion such as felt in the presence of a sudden loud sound or a flash of light in the dark. The startle-stimulus, however, cannot be discounted. What makes a charismatic orator or monumental cathedral or canyon or mountain or river or ocean or dawn or sky or symphony or city wonderful may be largely its sheer mass or volume or the dramatic impression it makes, the sudden opening of man's awareness into a new world that is breath-taking because it cannot immediately be taken in. The "spectacular" shower of meteors on November 17, 1966 was described by Dr. Gerald P. Kuiper as follows:

The students . . . noted the time, brightness and trajectory of each meteor. As hours passed it was dull work. At most only about two a minute were seen. Then, at about 5 A.M. . . ., the rate suddenly began to increase. Within a few minutes the meteors were raining down so fast that further recording was hopeless. The students simply stood and gazed aloft in wonder. They estimated that, during the 15-minute peak of the shower, the "stars" were falling at a rate of 40 a second.⁵

In such situations too it may be that my sense of my small body here, and of the great sky over me, and of the uncontrollable and magnificent (greatly made) display before me, making me feel powerless—that such gives me a sharp sense of contrast and overwhelming novelty, alerting me and more or less alarming me. In these cases wonder borders on awe. But even in the presence of persons of great beauty or commanding character we may feel a kindred wonder and weakness, and "have eyes to wonder, but lack tongues to praise." Perhaps such wonder before natural powers, which is a primordial religious feeling, is at its roots a feeling shared by the live creature in nature, which has some sense of his identity and limits in the midst of a world that stands over against him. Who of us, small man-creatures, will say that those fellow creatures of ours, the primates and maybe the mammals and more, alive and aware of a wide and precarious world around them, do not have a primitive sense of *mysterium tremendum*?

Now there is something more, that leads us on to "wondering" in the active, creative sense. The excitation elicits a focus of attention and prepares the body for doing and making. It produces curiosity, which non-man animals seem to have in abundance too. This is the originating disposition through which particular meaning emerges into behavior—if not immediately then in consequence of a general drive to discover the signification and significance (import) of something. This initiating curiosity about the *what* and *why* and *whence* and *whither* etc. is a concern whose content is intentional emotion seeking to evoke meaning. It is *care* (L. *curiosus cura* care; cf. Heidegger's *Sorge*). In the case of man there is not just a startled, curious, caring response. There is a sense of possibilities, called forth by previous and similar novelties which lead him to think, "Have a care!" His nervous system carries within it memories and extracts and extrapolates from them anticipations of what the thing of concern might mean. At first this sense of possibilities is more or less vague and, even as the possibilities become clarified in thought, retains the vagueness of imagination, memory, and dream. The sense of possibilities may remain at the level of dumb wonder—e.g., astonishment mixed with speechless terror toward a murderer, or blind admiration toward a movie star—or it

⁵ *The New York Times*, November 18, 1966.

may with meaning-making activity pass over into the definiteness of sensuously embodied, public, communicable meanings. But in either case the vagueness of the possibility-sense remains—the sense of what might be, of future and cathected occurrences. And it is akin to the excitement that has been aroused, excitement that fits and enhances the cognitive sense of possibilities.

When emotion is added to this visionary power, it may be called the romantic sense, the sense of a *roman*, a story unfolding, a history, a natural history, etc. (A *spell* is a story; a story keeps one spellbound.) Thus wonder may pass into the various forms of symbolic expression—myth, art, science, etc.—and so far as the latter retain and renew the excitement and curiosity of wonder they perpetuate the experience of wonder itself. As far as we know, no non-man animal on our planet makes gods, formulas, poems, novels, philosophies, or love, all of which originate in wonder of something very much like it and rely on the romantic sense and symbolic power to carry them forward to completion.

Man is pre-eminently the wondering, romantic animal. He has the sensitive, affective, empathic, social capacities of the mammals; ⁶ he also chatters like the social primates; ⁷ and he speaks and writes and generates a whole new objective world of sensory things and meanings (the world of “spirit,” de Chardin’s “noösphere”). Hearing and seeing the signs of others as well as his own, out there beyond his skin, he responds to them in a signifying way.⁸ He makes signs about signs about signs, etc. He is the sign-multiplier. Thus his capacity for surprise and curiosity becomes powerful and persisting since his sensitivity and responsiveness to the novel and to the potentially meaningful are thereby greatly increased. Romeo found Juliet wonderful not merely because he was a male attracted to a female but also because his imagination was rich with the humanistic expectations and values of Renaissance man: sweetness, wit, chastity, beauty, and wisdom. A scientist can find a molecule or protozoan or child or galaxy wonderful because he can be excited by the known and imagined meanings that his scientific community has surrounded him with. Hence while the emotion of wonder with its attendant drive can generate curiosity and lead into meaning, meaning by a reversal can acquire and call forth feeling, including the feeling of wonder, such as that felt by

⁶ Weston La Barre, *The Human Animal*. Chicago: University of Chicago Press, 1955.

⁷ Charles D. Hockett, “The Origin of Speech”; Marshall D. Sahlings, “The Origin of Society”; Sherwood L. Washburn, “Tools and Human Evolution” — all in *Scientific American*, Vol. 203, No. 3 (September, 1960).

⁸ George Herbert Mead, *Mind, Self and Society*. Chicago: University of Chicago Press, 1934.

Buckminster Fuller when he contemplates the mutual pull of earth and moon or by Einstein when he viewed like an old Pythagorean the music of the spheres.

Wondering arises and swells into being at that point where surprise-emotion is impregnated with a question and quest for signification, when the vague egg is invaded and transformed by the tiny sperm of meaning. The emotion sustains and sharpens attention; the puzzling, the drive to form the emotion and subjugate the mystery and discover-create the latent meaning, attracts and holds man to a line of searching, creative activity. Something suddenly strikes a man as strange; depending on his sensitivities, interests, expectations, and stored, latent meanings, it may be a new face that a Leonardo sees in the streets of Florence or swinging pendulum that a young Galileo sees in the cathedral in Pisa. What is it? What does it mean? His mind is set to wondering. He stops to think. The cortical currents and circuits begin to run, stirred and disturbed by new impulses from new observations. Man's imaginative machinery mediates (meditates) between stimulus and response; and in mediating, in wondering, in the tower and the play room of thought, he begins to recreate himself and the universe.

Current accounts of the physiology of the imagination, centered in the cerebral cortex, match what we know at a phenomenological level. The stage on which the drama is played out is a sensitive sheet or mass of some ten billion neurons elaborately interconnected and discharging so as to generate (in a waking but inattentive state) whole wavefronts that sweep swiftly through the neurons and generate patterns and subpatterns of activity. The whole is a mixture of dynamic patterns, reverberatory and shifting activities, "congealed" neuron patterns (memories), and random pathways without completion, all interacting. In an inattentive, waking state, this whole mixture is summated as a characteristic rhythmical pulsation, fed by impulses from the lower centers; lacking these, it lapses into virtual inactivity. New sensory input disturbs the normal rhythm of neuronal activity and produces specific local patterns.⁹ If these latter are in sufficient conflict with existing patterns or produce massive excitation, the summated excitation aroused is what we call emotion, eliciting attention and preparing action.¹⁰ In man's brain this whole process is greatly stepped up because of the power of his signaling or signifying processes to multiply sensory and mediating processes.

⁹ The preceding is adapted from John C. Eccles, "The Physiology of the Imagination," *Scientific American*, Vol. 199, No. 3 (September, 1958). pp. 135-146.

¹⁰ See Daniel E. Berlyne, "Conflict and Arousal," *Scientific American*, Vol. 215, No. 2 (August, 1966), pp. 82-87.

Specific sensory inputs are transmitted to specific areas of the brain where they may be integrated with wavefronts signalling other kinds of sensory information. But a larger kind of integration is required and occurs, i.e., the integration of new sensory patterns with established patterns of activity, which are the larger integrating habits—the “theories” of science and the basic “assumptions” of common experience, which as revealed in bodily action and language philosophy aims to disclose, analyze, criticize, reconstruct. If the new observation is similar to previously integrated ones, the integration is relatively easy. If not, there may be a dissociation of new and old, a not uncommon course;¹¹ or a struggle for a higher integration. The persistent struggle to integrate and even habitually seek discordant patterns characterizes the creative artist and scientist;¹² the power factor in intelligence suggested by Spearman and confirmed somewhat by Barron’s studies of creative people appears to be decisive. Such struggle if it is to move to a successful issue must submit itself to the discipline of information-gathering and incubation before it is rewarded with the required integrating insight.

This conflict is intensified in the creative person not only because he is especially sensitive to the play of new stimuli against the background of established neuronal patterns but also because he *creates* problems for himself by yearning toward or imagining a very inclusive pattern that will unite a variety of sensory patterns. For example, faced with Tycho’s observations of the planets and especially of Mars’ irregularities, conflicting with Copernican theory, Kepler yearned toward a pattern that would take account of and explain all such observations, trying first a circle and then an ellipse, which mathematically fitted.

The emotion of wonder appears to arise, first, at that point where a dramatically new sensory pattern breaks in upon the established wave activity and disorganizes it—this is the wonder of diffuse emotional excitement which people seek at circuses and in travel to exotic places, and upon which the mass entertainment media often rely for their effects. Second, wonder arises at that same point or where there is a train of “wondering” set in motion and a struggle to resolve the conflict by a search for a more inclusive pattern. Third, wonder arises at that point where the new pattern suddenly ingresses and the hitherto conflicting patterns “click” into place. Such a pattern may of course be formulated, communicated, and tried out in the external world. Of this last kind of

¹¹ Lawrence S. Kubie, *The Neurotic Distortion of the Creative Process*. Lawrence: University of Kansas Press, 1958.

¹² Frank Barron, *Creativity and Psychological Health*. New York: Van Nostrand, 1963.

experience—the wonder of triumphant discovery—Kepler, indulging his “sacred fury,” recalled: “It is not eighteen months since I got the first glimpse of light, three months since the dawn, very few days since the sun, most admirable to gaze on, burst upon me . . .”

In the early stages of the man-child and the man-species the feeling of surprise appears to function as a preparatory mechanism that arrests attention and opens the way for subsequent meaning. In the process of development the infant learns which surprising things can be rendered significative and significant in a positive way,¹³ and which not; and in seeking the former and shunning the latter it selects and orders its experiences of wonder. The resulting sets of perception and conception in turn form its sensitivity for surprise, so that basic emotion becomes integrated with meaning, i.e., primitive, individual response becomes integrated with culture. The Gestalt of a face, for example, appears to the infant and engenders some surprise, but the surprise is attenuated by an instinctive recognition response¹⁴ and by learning that the presence of such a face signifies food, warmth, soft touch, familiar sounds, language, and eventually the myriad meanings of a particular culture. An infant will stare at a new person in wonder, transfixed by the unaccustomed colors and shapes and sounds and volumes but also intent on hitting upon some clue of familiarity, some sign of what it all means. There are two primary causes in the shaping of such wondering experiences: the infant's own hereditary tendencies to respond (including the tendency to seek stimulation), both species tendencies and individual ones; and the responses reinforced by his culture. A child thus learns what is wonderful and what is not, as well as ways of dealing with wonder and the wonderful. For example, the instinctive fear of the noises and lightning of a violent thunderstorm signified for the young Luther's Gothic culture a punitive warning and judgment from God. Over two centuries later Benjamin Franklin, in the American colonies, took lightning to be a possible sign of electricity and, thereafter, of how to control its damaging effects by the lightning rod. In Franklin, the wonder was turned into wondering, then into knowledge, and finally into control.

We have already spoken of a common type of wonder, a compound of surprise and inquisitive interest. In these instances we can discriminate the

¹³ Very young infants prefer complex perceptual patterns to simple ones. See Robert L. Fantz, “The Origin of Form Perception,” *Scientific American*, Vol. 204, No. 5 (May, 1961), pp. 66-72; and Leon Festinger, “Cognitive Dissonance,” *Scientific American*, Vol. 207, No. 4 (October, 1962), pp. 93-102. The motivation to seek and resolve dissonance may of course be diverted and suppressed.

¹⁴ Robert L. Fantz, *Ibid.*

subjective and objective components of wonder: the one is affective and receptive; the other, effective and active. On the one side men may so much admire

That they devour their reason, and scarce think
Their eyes do offices of truth, their words
Are natural breath.¹⁵

Or, passing from that to a “wild surmise,” and thence to an effort to articulate meaning, they may endeavor to give symbolic form to their initial astonishment, such as the form of art or science or plain conversation or a plan of practical action. Wonder on the one side is allied to and may become shock or fear or trauma (*Wunde*—wound; *trauma*—wound). In such instances, the novel experience is so disruptive that, incapable of assimilation into the person’s existing system of meanings, it is dissociated from them and repressed. Or it may be welcomed and sought, as it was among men and women in the middle ages—embraced as a vicarious wounding of the spirit that imitates the suffering of Christ on the cross and generates physical stigmata. Or it may be so affectively unifying and overmastering that symbolic meaning cannot grasp or accommodate it; it becomes, in the report of the mystic, ineffable, though, unlike the traumatic experience, it is easily recalled and positively valued. On the other side, where the effective and active components of wonder begin to enter into ascendancy, wonder can become any of a number of meaning-molding activities (art, science, etc.) of which we shall say more subsequently.

Thus there are two less common types (or subtypes) of wonder: the first, a receptive and inward type in which the feeling of surprise or excitement is dominant and the signifying element more or less disappears; the second, an active and outward type which brings to the fore a creative, signifying interest and subordinates the receptive element. The expressive “wonderful” and the “ah!” of pure excited joy illustrate the first type of wonder-experience, whereas “wondering” in the active voice indicates the formative, intentional force that aims at putting into meaningful form the relative disorder of the emotional experience. In both types of wonder the experience, though sometimes painful, is positively valued; and this meaning, devoid of the suggestion of great excitement or curiosity, is what the word “wonderful” in the ordinary usage often conveys. Something excellent, of special value, is thus indicated. Whatever is wonderful, in the sense of extraordinary or ordinary experience, is in most cases indicated as good. One task of philosophy must be to find out more precisely and reliably just what makes the wonderful good.

The conditions under which wonder arises are complex and need not be

¹⁵ The Tempest, V : 1.

entered into here.¹⁶ In both subtypes of wonder the immediate occasion for wonder may lie outside or inside the person. But if it lies outside, as in the Zen morning glory or the “dappled things” of Hopkins, it must be conjoined with a disciplined mind or a religious sensitivity to yield the wonder-experience. If the immediate occasion lies inside, as in a body affected by alcohol or drugs, the consequent perceptual minding is the result of what has been introduced from the outside and in turn attends to things on the outside. Again, the occasion for scientific discovery may lie in the mathematical imagination or in empirical investigation or both; and the sense of wonder may pervade both. Man is an interacting being, and organism and environment function separately and jointly to enhance or diminish his wonder. If wonder is felt as coming primarily from outside a person (outside his skin, or outside his higher mediating processes), the wonder experienced may be called receptive and man may be called created. If the wonder is felt as determined by man’s own effort, it may be called active and man may be called creative. These two modes of experiencing wonder may of course be mixed, so that both being created and creating are felt simultaneously.

Although distinct from wonder, some mystical experiences are akin to it and consideration of them can illuminate wonder. Such experiences resemble the first (receptive) type of wonder. Some mystics testify that they are “bathed” or “suffused” or “inspired” by a unitary feeling which submerges their perceptual, conceptual, and active powers. These reports suggest that in the mystical experience man becomes essentially passive and undergoes an emotion that in its intensity and spread more or less subdues his other capacities.

We have already said that the common type of wonder is a compound of surprise and inquisitive curiosity. To be surprised (*super + prehendere*) is to be taken over and taken up. It is to be subjected to an innovating experience or creation whose occurring or novelty is beyond one’s conscious control and is felt vividly. Within such wonder, however, lies the disposition to act and to take a part in the forming of one’s experience. Wonder of this type is thus a kind of suspended animation, a balance and tension between a passive mood and an incipiently perceptual and active mood. In some mystical experience this latter mood appears to be more or less nullified. The sense of a future, the perception of signs and the anticipation of things signified; the imagining of an idealized state, both

¹⁶ Among the recent literature on the conditions of wonder in the creative process, see *The Creative Process*. Edited by Brewster Ghiselin. New York: New American Library of World Literature, Inc., 1955. Also *Creativity and Its Cultivation*. Edited by Harold H. Anderson. New York: Harper and Brothers, 1959.

signified and invested with the glow of ideal desire, memory and hope and promise—all these disappear. When it is most thorough and authentic, the mystical state employs no symbols; and if symbols are employed subsequently, they simply express a state in which all significations have been transcended—or descended. They express or, by language that breaks with ordinary usage, suggest a state of pure ecstasy that is akin to wonder. In mystical experience, there is nothing left to wonder at, not even God, since all distinctions of sense and thought are dissolved. The mystic, losing himself, becomes God. “He begets me not only as his Son”—writes Eckhart —“but as himself and himself as myself.”¹⁷ St. Teresa speaks of the “swoon” and “rapture” when her soul becomes united with God. Although the will maintains contact with God, the other faculties of the soul are “suspended” and “grow inebriated.”¹⁸ Eckhart refers to “God pouring into you.”¹⁹ Normally the mystic is content to rest in his passive state of heightened excitement, in the fulfillment of his “emptiness.” Any cognitive wonder or inquisitive interest he might have is consumed and sublated in the flame of this unitary feeling. When this feeling in retrospect is referred to as “God,” the term seems to signify the powerful transformation process of self that momentarily carries it beyond self into ecstasy (*ek-out* + *histanai*-place).

The psychedelic experience lies at one remove from that of the mystic.

A good experience is bizarre, extreme, profound. Thirty minutes after the exploding ticket is swallowed, life is dramatically changed. Objects are luminescent, vibrating, “more real.” Colors shift and split into the spectrum of charged, electric color and light. Perceptions come as killing insights — true! true! who couldn’t have seen it before! There is an oceanic sense of involvement in the mortal drama in a deeply emotional new way. Colors are heard as notes of music, ideas have substance and fire. A crystal vision comes; how full is the cosmos, how sweet the flowers!²⁰

Motor action may go on, but its effectiveness is impaired; and sensuous data, remaining more or less discrete, are thrown into new combinations. Like the mystic, the psychedelic participates in the expanding of consciousness and tends to lose the sense of a rigid, limited ego. Yet, though under the power of processes which he does not entirely control, he sometimes does retain some voluntary power to perceive, to conceptualize, to direct his thought, and to acquire and accept insight about himself and

¹⁷ Quoted in *The Teachings of the Mystics*. Edited by Walter T. Stace. New York: New American Library of World Literature, Inc., p. 154.

Ibid., pp. 178-180.

Ibid., p. 149.

²⁰ Barry Farrell, *Life*, Vol. 60, No. 12 (March 25, 1966), p. 31. See also Frank Barron, Murray E. Jarvik and Sterling Bunnell, Jr., “The Hallucinogenic Drugs,” *Scientific American*, Vol. 210, No. 4 (April, 1964), pp. 29-37.

others. His percepts and meanings are suddenly cut loose from habitual, conventional, fixed moorings; they become fluid and fugal, and the capacity for the surprise of wonder is greatly enhanced. At the same time the psychedelic, unlike the mystic, can retain in some degree the power of perceptual and conceptual exploration and inquiry, i.e., the inquisitive curiosity, the other side, of ordinary wonder. This curiosity pertains to the immediately grasped and highly amplified content of consciousness; and while the curiosity may later lead to changes in habits of living, during consciousness-expansion it is directed not to the world but to that content as separated from practical action.

What distinguishes the psychedelic (and artistic and scientific) experience is the emergence of a meaning either in the wonder of the psychedelic or in the subsequent stage of "wondering" of the artistic and scientific. This meaning, which is usually in its first stages vague and inchoate, is something "given" to man, as Henry Wieman has emphasized, and in this phase creativity is a process which transcends man's conscious and manipulatory powers.²¹ On the one side, man may exert his will in an effort to provide favorable conditions for this innovating event. And, on the other side, after it has occurred he may employ his will and skill to clarify and elaborate and thus "create" that initial meaning. The revelatory power of the psychedelic or artistic or scientific experience lies in just such an emergent new meaning, an "illumination" that throws old sensory data and concepts into new combinations and sensitizes man to new and hitherto unappreciated qualities and meanings. The artists of the Italian Renaissance, and later the Romantic painters of the 19th century, so valued the inspirational insight that they left their work unfinished, the better to enable the spectator to apprehend it spontaneously and directly.²²

The mystic, however, is not interested in meaning; he aims in the other direction, i.e., the transcendence of all meaning. Meaning or insight may be implicitly present in the mystical experience, later to be recalled and elaborated. But the intent of the mystic is that they be obliterated from awareness in favor of qualitative "seizure." That during such an experience the flood of conscious awareness breaks through all the little sluices and dams of the perceptual-conceptual apparatus appears to be confirmed by the contradictory language that the mystic uses to signify it: eloquent silence (Dionysius the Areopagite), the sound of one hand clapping (Zen), "Thou art woman, thou art man" (Svetasvatara Upanishad).

Both the mystic and the psychedelic experiences afford opportunity for

²¹ *The Source of Human Good*. Chicago: University of Chicago Press, 1946.

²² *Helen Gardner's Art Through the Ages*. Edited by Summer McK. Crosby. New York: Harcourt, Brace and World, 1959, p. 327.

maximizing the function of "the holding mechanism" between stimulus and response where the cybernetics of the nervous system works and generates novelty. The mystic proceeds by screening out the input and by further emptying the machine of integrative meanings. The artist, like the scientist, must be fed by an optimal number and kind of stimuli, relevant to some central organizing meaning or meanings, or to a problem demanding resolution through meaning. With the artist such meaning is primarily emotive; in solitude it becomes then an "emotion recollected in tranquility" and given form there. This solitude is the quiet wintertime seedbed of meaning wherein daffodil poems germinate. The scientist must have his period of incubation, his retreat into the magic cave of imagination. Ordinarily both artist and scientist develop their particular creations haltingly: a meaning emerges into awareness, is formulated and tried out in a material medium, is revised, and so step by step is realized. Less often the creator is possessed with a sudden, definitive meaning that crystallizes into more or less final form otherwise disparate items. Shakespeare, we are told, "never blotted out a single line," and Archimedes and Kekulé appear to have come to their ideas in single intuitive flashes which needed only expression or elucidation; Archimedes sitting in his tub immediately and joyfully "saw" (and probably felt with his whole naked body) the ratio of a body's weight to the weight of the medium it displaces, while Kekulé relates how he fell into a reverie on a London bus late at night, "and lo, the atoms were gamboling before my eyes." ²³

A work of art, however, is a finished thing, whereas a scientific idea has to undergo the test of fitting with the objective relations it purports to explain. It does not have to undergo "the indignity of proof"; its validity is its qualitative power, its convincingness as an emotional perspective. As such it always has a certain personal quality and force, while retaining, if great, a universal appeal. But the life of both artist and scientist is a rhythm of peaks of particular created orders separated by troughs of disorder. And just as some of Shakespeare's character types and many of his expressions are taken quite independently of the personal meaning with which he clothed them, so scientific and mathematical discoveries are sometimes as highly personal and emotional as aesthetic ones. But their symbolic form and the passage of time causes us to forget that. The artist and the scientist are both subjective and objective. The people Shakespeare observed and read about were recreated in his mind just as the molecular structure of the universe was recreated in Kekulé's mind.

²³ Quoted by John Read, "Chemistry," in *What Is Science?* Edited by James R. Newman. New York: Simon and Schuster, 1955, p. 179.

We are inclined to say that Shakespeare added something that Kekulé did not. But what this comes to, I believe, is that Shakespeare's language was evocative of color and sound and feeling and judgment whereas the language of the sciences is not. But this cannot be a hard and fast distinction. To a great scientist, the language of mathematics evokes emotion, and great poetry certainly reflects truth. Shakespeare saw as deeply into the structure and conjunction and separation of men as Kekulé did into the drama of molecules. Each was attuned to the universe and with the Aeolian harp of his mind transmitted its harmonies and disharmonies.

The artistic experience lies at one remove from that of the psychedelic. The artist shares in the receptive, inward wonder of the mystic and the psychedelic and in the particularized sensuous excitement of the psychedelic. But he does go one step beyond: he transforms the mystic mist of feeling and the psychedelic drops of color and rivulets of sound into the images and shapes of meaning, into the communicable forms of painting and music and poetry and sculpture. In him, the wonder of surprise passes into a sensuous medium, objectified and public. The artist not only undergoes wonder; he forms and creates it, and in the sensitive spectator it is recreated.

To become significant and effective, the artist must become receptive in such a way that insights "occur" to him. And having been subjected to outward influences, he then creates by an act of will that is applied with skill to some physical medium and that makes use of a particular set of symbols. The created object derives its force both from the emotion and from the meaning that it is able to communicate. Handel, for example, having worked at writing the Hallelujah Chorus, reports, "I think I did see all Heaven before me, the great God himself." This is something like a mystical experience, and is certainly an expansion of consciousness. But Handel had a hold on it; he was able to convey it, or something much like it, to others. The wonder he felt is directly exhibited and so skillfully and powerfully expressed as to startle and move audiences to hum or to rise and sing themselves, expressing the emotion by which they have been overtaken. Handel's music is an expression of wonder more than a wondering *at*. It is true that the word "Hallelujah" means "Praise be to God" and that Handel attached to the flow of his music sentences like "And He shall reign for ever and ever," thus giving it particular linguistic form and meaning. But the hearer need not know such meaning in order to appreciate the primary import of this music. Like most music as such, it signifies nothing in particular but simply bodies forth a feeling whose idea if any is only palely outlined. Handel's feeling is one of elevation, of surging and triumphant power, of surprise and exaltation. His music is an

expression of wonder and makes the hearer feel wonderful, full of wonder. Its effectiveness, as in the heaven-opening, wonder-experience itself, is its vivid, arresting immediacy. As Miro said of another art, painting, it must "give the spectator an immediate blow between the eyes before a second thought can intervene."²⁴ Poetry and the other linguistic arts rely on rhythm, imagery, iconic words, and the like to express creatively their own wonder and engender it in others. What men lose in the arts that rely on sound and sight they gain in wealth and continuity of meaning which these can evoke and sustain. A man's wonder can be excited to a high pitch for several hours by a Shakespearean play or for several days by a great novel.

While the artist puts into vivid form the excitement of his wonder, aiming mainly to express his feeling, to communicate it immediately and mediately, and, like the primitive singer or enchanter, to draw others into the magic circle of his spell—the scientist (or one kind of scientist) moves from wonder into observation, theory, and hypothesis, then experimental action, then recurrent correlation, and finally into prediction and if possible control. The artist skillful in his craft is akin to the scientist: he achieves mastery over his technique and medium by testing out various plans of action until he achieves a modicum of control mutually over his thought and material. Similarly the scientist, like the artist, wishes to communicate, share his perspective on the world, and influence others. His work, if it is sustained and productive, normally is initiated and impelled by some spark of wonder, sometimes set off at an early age. The wonder that awakens and inspires him may last for years as a continuing fascinated sense of mystery surrounding some phenomenon or domain. It may emerge as a recurrent surprise in his persistent carrying out of his imaginative curiosity. Or it may come after the scientist has done his work and, as George Wald says, he "watches the molecules do their work." Galileo and many another "watcher of the skies" in the 17th century felt wonder in all of these senses as they contemplated new worlds unfolding before their wide enraptured eyes.²⁵

Both artist and scientist work within the bounds of man's interaction with the world, turning the excitement of subjective wonder into a local habitation and a name. During the high exhilaration and Olympian achievement of Greek culture, and again during the renaissance of its spirit in Italy, men like the Pythagoreans, the Parthenon builders, Leonardo, and others required both art and science (among other activities)

²⁴ Quoted in *Helen Gardner's Art Through the Ages*, p. 714.

²⁵ Marjorie Nicolson, *Science and Imagination*. Ithaca: Cornell University Press, 1956.

as outlets for their superabundant creative energies. Art, we would say today, was a means of *expressing* their wonder; science, a means of tracing the lineaments of wonderful things and events in *nature*. But with them man and nature could not be so divided: art imitated and refined nature, and in pursuing nature man pursued the form and motion of his own inner feeling. Leonardo's "Annunciation" portrays the colorful forms of plants and the vivacity of the human body and face and conversation; it also expresses Leonardo's feverish love-affair with nature and man, and his unabated curiosity toward them.

The intense utilitarian development of science—chiefly economic and military—which the Duke of Milan (Leonardo's protector) and the President at Washington have been able to command has led to a separation of much science from esthetic and other humanistic values. The division of "the two cultures" has many causes: the highly special and abstract language developed by the sciences and arts; the division of labor in advanced technological society; and the capability of the power élite in a nation like the U.S. to draft the skill of one-half the scientists and engineers in the service of a warfare state. Although much science thus prepares the instruments of disintegration and destruction, while art on its side reflects such disintegration and destruction on its subjective side—wonder, curiosity, and creativity remain as necessary motives in both.

The humanistic meaning of this last fact seems to be lost on many. The inherent values of scientific and esthetic creation appear to be ones that men implicitly seek and would universally seek and cherish as children and adults, once provided with conditions for physical health and safety and with access to the means for learning to live creatively.²⁶ Mere development of scientific or esthetic creativity, as we may observe from U.S. culture and that of Germany in modern times, is no guarantee that human value in the long run will be advanced. Satisfaction of various kinds and creative activity in various modes are necessary ingredients of value, but if they are taken to be final standards for the individual seeker after value (or for a class or nation), then the result will be self-defeating. If man wants to live and to maximize both quantity and quality of satisfactions—and it appears he does really want that *as man*—then he must consider his own future, his physical and biological environment, and the welfare of other persons. He is not an isolated solid ball in empty space; he is a permeable, interactive, ecological creature-creator. Hence the integrity and development of the whole ongoing ecological system, with its neces-

²⁶ This is the hypothesis of Allport, Cantril, Fromm, Horney, Maslow, Rogers, Sullivan, and others in our own culture, and with certain qualifications is shared by some thinkers in other cultures, such as Thomists and Marxists.

sary elements and relations, has to be taken as the final standard of value by which any plan or action, with their alternatives, must be judged.

There are two minimum conditions for achieving such a world of value. The first is a sufficiency of basic material goods and services for all, a condition not now present in American society, with its systematic deprivation of 40% of the people.²⁷ The second condition is the will to create—the will to wonder, the will to consider great alternatives for self and society, and the will to try them out. The will to wonder, which comes easily for the well fed and well loved and well taught child, is a readiness to explore and hold one's mind open—a “negative capability” (Keats). The will to consider great alternatives—that is a philosophical attitude that requires honesty and courage toward oneself and one's society, and that in its aim toward the totality of truth (Hegel) leads to a will to act. Philosophy begins in wonder, but wonder begins in the child. And while philosophy in the full sense cannot be taught to the child, the philosopher who sets not just a professional but also a human value on wonder will be concerned about a society that inhibits wonder in the child and adult and thus inhibits the very reconstruction of society called for. For the inhibition of wonder carries with it the inhibition of feeling in general—compassion, commitment, indignation, aspiration—and the production of the conforming, authoritarian personality not uncommon in the U.S. today.²⁸

There are ways of breaking through this circle. The impersonal forces of history—machines, techniques of production, industries, commerce, etc.—have, in the last 3000 years, engendered an increasing demand for man's self-determination and creation. In our own highly technological society, we are witnessing a rising reaction against the real and anticipated dehumanization of man by mass industry, business, government, the military, education, electronic media, machinery, automation, and the rest. But the reaction, semi-instinctive, semilearned, requires, to be effective, enlightenment and direction based on man's needs, capabilities, and values in the world of society and nature. Here philosophers, in cooperation with scientists and artists and others, have their opportunity and their task. They can thus join their labors with those of all men to provide the conditions by which man and the world day by day grow ever more wonderful.

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²⁷ Conference on Economic Progress, *Poverty and Deprivation in the United States. The Plight of Two-Fifths of a Nation*. Washington, D. C. 1962.

²⁸ T. W. Adorno, E. Frenkel Brunswik, D. Levinson, and N. Sanford, *The Authoritarian Personality*. New York: Harper and Brothers, 1950.