Human Potentialities

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I

It is not difficult to outrage the conscience of an anthropologist or a social psychologist by remarking that “human nature is everywhere the same.” What about cultural differences, and what about individual differences? Indeed, we often find today a preference for an antithetical statement, to the effect that human nature is simply what the culture has made it. It was, I suggest, the genius of Kurt Lewin that gave us the most appropriate tools for the analysis of this problem of the unity, the fixity, the diversity, of human natures, and the correlative problem of the flexibility, the range, the potentialities of human nature, both as it may take shape in the world of today and as future human societies may know it. Rather than inviting your approval by emphasis upon the solid facts which today are at our command, I will deliberately endeavor by a sort of stretchout method, a sort of “testing the limits,” to see how far my imagination and yours may be willing to move in the direction of charting the unchartable domain of the potentialities latent within human society and latent within the individual personality.

The first fundamental conception is that of the life-space, the experienced totality of the individual, comprising a fluid yet indissoluble unity between the experiencing self and the experienced world without, and comprising not only the clearly conscious but likewise the half-conscious and unconscious dispositions and attitudes which color and give meaning to all that is experienced. This has proved to be a remarkably flexible, subtle, and productive tool in research thinking, and if I develop it in a somewhat unorthodox fashion, I shall make my plea that this is the very virtue of flexibility, and remember with affection and gratitude the way in which our beloved Kurt sat and laughed when speakers challenged his findings or rejected his theoretical constructs.

Much of what I wish to share with you is very familiar. I take your time to recount it only in order to put it in a perspective rather different from what is current in psychology. Ordinarily we begin our accounts of human nature very much as Aristotle, or Hobbes, or McDougall, or Thordike, or Watson, has done, by assuming an “original nature” which is
intrinsic, implicit, needing only to be guided into one form or another by processes of growth and learning. Growth and learning can lure into being whatever is potential in the inner stuff of humanity, but nothing more. Most of the environmentalists shift the accent to an educational process, and show how man may become what the social environment dictates, for the social environment is usually conceived as acting upon an essentially formless human nature. Here and there, as in the writings of James Harvey Robinson, George Rusk, Gordon Allport, and now S. E. Asch, there has been a glimpse of a third conception, which I believe is nearer to the truth: a conception of man's endless becoming. It is my own prejudice, however, to believe that this last conception is still somewhat handicapped by a Platonic idea of intrinsic human nature as something guiding human destiny, and that it needs the benefit of field theory to achieve coherence and credibility, in an era in which both man and his environment, each studied so closely and so earnestly, need to be seen not as two realities, but as two phases of one reality. The result would be literally the discovery of a new human nature.

The world to which I would first turn your attention is the world of music. Katydids, frogs, birds, and men exploit devices by which parts of their bodies vibrate, giving off sweet sounds, perhaps attracting females, showing off, or at least beguiling a swampy or sultry evening. Where does this music come from? Often from the throat. Apes find, however, that drums may augment the body, and preliterate man may accompany the vocal cords with pipes or strings. Some voices, and some strings, sound better than others, and by common consent, the singer and the instrumentalist appear on the scene, whose tone quality may give group delight, or be good enough even for the gods of the temple to hear. So our first conclusion might be that man, to supplement his glottis, has invented vibrating strings; from these in time come harps, pianos, violins.

But while inventing vibrating strings, he has also been inventing the art of playing upon the strings; he invents the process of plucking or rubbing, and of combining the strings with one another and with the voice. He invents partly to please himself, but partly also because other men enjoy it too; Saul wants to hear David play, and you and I gladly pay to watch and listen while a hundred men to the rhythm of a stick waved in the air scrape horsehair fibres upon catgut strings and others swell their cheeks to push air through brass tubes while deft fingers lengthen or shorten the appropriate air-column. It can be very satisfying too. So satisfying that there ought to be some sort of conception of human nature that would provide a lively place for it, and for countless other deep and satisfying experiences that make us feel complete and fulfilled as human beings.

Do you find in our textbooks an account of the so-called basic drives that seems able to carry the weight of explaining these experiences? Are these experiences simply derivatives, by sublimation or the like, of simple vis-
ceral drives or instrumental acts which derive their inherent quality of fulfillment from the fact that they lead into other activities which in themselves bring satisfaction? To Schubert, and I venture to say, to you, too, music is not only a preparation for other good things, but a good thing in itself.

Where, in the course of evolution, did music arise? From the survival value of response to tone? From the elaboration of techniques that fulfill the visceral drives? Or perhaps from the elaboration of human experience itself into a new dimension? I think the last of these statements, though excessively vague as it stands, may be groping in the right direction. My aim therefore will be to offer something more definite regarding such new dimensions of human experience.

Well, maybe, you think this is too much for psychology, and maybe you are right. I can only say that for myself the usual analysis stops before it even makes contact with the problem. For the usual way of thinking anchors the music of the violin at some point in the body—and I do not care at the moment whether it be the fingers or the ears, or the viscera; while the fact seems to be that we make music as much with our brains and our muscles, or even, if it be great music, with our scalps, our spines, and our skins. Or if it anchors the music in the instrument. Of course the violinist's tone was good, we say, for he played a Stradivarius. But I can make no sounds on a Stradivarius that you would willingly hear. Oh, then, we may say, it's not just the instrument, but the virtuoso in relation to the instrument. But this won't serve either, for the instrument and the virtuoso alike represent a phase of human culture in which complicated operations carried out on a hollow wooden instrument with resonating strings have taken on certain rich meanings located neither in the instrument nor in the individual, nor in the relations of the two, but in a complex interpersonal invention known as violin music.

Now my thesis is very simple, and to a reasonable psychologist, very shocking. If it is katydid nature to scrape, frog nature to croak, warbler nature to warble, it is human nature to play the air for G-string on a Stradivarius. It isn't quite fair to reply that the last named of these is a learned activity while the others are innate, because the whole question is what sorts of things does any species tend to learn; what are the lines of development which it follows when it does what it wants to do? It doesn't help to talk about the infinite variety of human cultures. From the point of view of infinite flexibility of culture we still have to face the question of the range of human potentialities. We must locate the individual human being, with all his complex organs, tissues, and learning readinesses, in the picture, not outside of it. The real problem, I think, is the range of conceivable possibilities for human nature in which we allow for all possible transactions between persons and conceivable environments, neither the persons nor the environments being the absolute arbiters of what may happen,
but rather, the modes of reciprocal interdependence that might develop between them.

I think this is what is wrong with most of the Utopias. They devise an ideal society which would satisfy the known demands of the humanity that we now know to exist in terms of existing or recent cultural arrangements. But even if the trick could be done, there would be no way to stop that evolution of the interrelations of man and culture that goes on because human beings are human and won’t stay put; a Utopia which would fit the men of today would be insipid or become a straightjacket to the men of tomorrow. The problem is to try to envision not the society that would satisfy the men of today but the forms of potential inter-relations that might exist between potential men and potential environments. It is not that the one must be made, Procrustes-like, to fit the other, but that among the organic potentialities and the cultural potentialities those that might fit must, through reflection and social experimentation, be selected.

It is easy at this point to say in despair that we might ultimately develop a science of persons, and perhaps long after that, a science of environments, but that it is unthinkable that there ever be a science, permitting prediction and control, relating to interactions of persons and environments. This despair, I shall hope to show, derives from insufficient attention to the development of several sciences which attempt a similar task, and in particular, derives from inattention to some phases of psychology which are already oriented in this fashion.

II

In the specification of a field science of human potentialities, the first step, I suggest, is quantitative, the second qualitative; the third relates to the addition of new elements, and the fourth is configurational.

The quantitative changes are changes in alertness, range of information, skill, sensitivity; indeed, all the measurable attributes of personality. If the young men and women of today are, as the evidence suggests, taller than their parents, they may likewise be brighter; perhaps it’s a nutritional matter, perhaps a matter of exploiting more fully the abilities latent in the tissues. In any event, I suggest that we be prepared to think of the humanity of a few generations hence as considerably altered from that which we know. Whether one thinks of genetic factors or cumulative cultural changes or both, there is every reason to believe that now that we have discovered the art of measuring one another, we shall find that the measurements change with time.

In the matter of qualitative changes, we might draw examples from the arts and from science and technology. From Cimabue and Giotto to Leonardo and Michelangelo you can reckon about five generations. In terms of cultural
evolution we don't ordinarily think of five generations as much time. It is
time enough, however, to transform Byzantine flatness into Masaccio's three
dimensional and tactual qualities, to transform dull hard colors into moulded
tints and shades that tell of enchanted landscape, women of unearthly beauty,
and the divine majesty of a world conceived beyond the clouds; time enough
to turn stolid sober faces to faces that challenge you and threaten you, escape
from you, plead to you, and show mercy upon you. No one man did this.
What happened was essentially like a conflagration kindled by a spark. The
love of visual representation, the capacity to see richly and subtly, came
first, and then came the skills born of the passion to convey what had been
felt. In every city where the transformation went on, Florence, Siena,
Perugia, Milan, Venice, the feeling for richer experience preceded, and
guided the accumulation of skill, and as the skills were mastered, new en-
thusiasms, new realities to be grasped and represented were defined. You
read at the foot of a painting not the name Sandro Botticelli, but the careful
collector's scrupulously reserved annotation: "From the School of Botticelli."
They learned to mix and spread paints like the master because they had
learned to see like the master. It has been regarded by many as a scandal
that some of the immortal Rembrandts were painted by his pupils. Why so?
The flame caught in the ready fuel, as it had in Italy. Rembrandt did more
than add range; he added depth of perception. In music the same social
development of a unique new human experience is very evident, as for
example in the Vienna of the period from Haydn to Schubert and Beethoven.
In philosophic efforts one may similarly scan the era from Thales to Aristotle,
or in literature the romantic period, or in science the whetted curiosity of
Faraday and Maxwell to the passionate devotion of the Curies to their hidden
radium. In all these experiences, I would suggest there is much more than
the logical fulfillment of a trend once set going by a genius; there is the
development of a transmissible quality of new experience, which then is
further enriched as it is further transmitted. There is no single quality that
gives fulfillment to the trend; rather, as one watches the development of
painting in each of the North Italian cities of the renaissance, or of biology
from the school of Cuvier to the pupils of T. H. Morgan, there are as many
qualities coming into existence as there are groups of human beings who
have caught the excitement of seeing in a new way.

You see, I am making the point that there is no meaning in the con-
ception of fulfilling human potentialities by rounding out a man and making
him perfect, for he becomes qualitatively a new man as he grows; and there
is no such thing as a society which will offer fulfillment to human nature,
for human nature and society are evolving together not only along a line
indicating quantitative increase in this or that but into ever new qualities.

The biogenetic law prompts us to watch, in the young musician or
scientist, to see whether some of the steps of qualitative transformation that
are evident in the history of music and science may appear also in the grow-
ing individual. In our fascination with a purely quantitative approach to the process of learning, we have given singularly little attention to the need to observe, describe, and understand the qualitative changes of the person into something rich and strange. But we can open wide this area of research if we wish.

The third aspect of new experience relates to the discovery of new elements of experience, never known to human beings before. Industrial chemistry, for example, gives us a wealth of new color experiences yielded by no sunset, no geological formation, and new qualities of olfactory and tactual experiences; while new musical instruments and new devices for altering the familiar instruments reach the sensitive ear and brain with a new volley of unfamiliar tone. New drugs, new foods and drinks, are notorious vehicles of new experience. Most of the new products, of course, are not viable, as is true also of most biological mutations. Man is not absolutely, only relatively free. But in the same sense in which mother Nature is creative, the mind of man is creative, namely, in the discovery of the qualitatively new.

In Aristotle's Politics you will find the remark that "most things are known," and that what is needed is not further knowledge but the application of existing knowledge. If one meditates for a moment on what was really known to the men of Aristotle's time—if one for example compares Aristotelian physics and Hippocratic medicine with the physics and medicine of today—and then reviews Aristotle's statement "most things are known," one can match this self-assurance only with that of the mid-twentieth century, which believes that we have now at last discovered all the real essentials within human nature. Having watched the tides of sentiment that have moved so massively against many of the findings of psychoanalysis, of cultural anthropology, and of parapsychology, I have wondered whether the primary affect involved might not be the simple fear that we might find out something new about man. But defensive barriers of this type can always be safely left to their encounter with the creative insistence of new evidence.

Our fourth principle is the configurational; it relates to the combination or reorganization of the familiar into new forms. The simplest verse or drawing represents the principle. Anthropologists tell us that even the major emotions are ordered in different fashion in different societies. Jules Henry finds that the usual inventory of emotions which we use to describe the affective life is insufficient to describe the experience of the Pilaga of the Gran Chaco. They have for example a type of experience which is neither fear nor rage, but, as he names it, fear-rage. In similar vein, the muted rage which Karen Horney describes as characteristic of the child who dares not express hostility, dares not even experience hostility, has its peculiar affective quality which, while related both to rage and to fear, is experienced as neither the one nor the other. I might remind you here of the brilliant passages in which
McDougall sketched out his hypotheses as to the qualities derived from the compounding of the affective life. If this thinking regarding the reorganization of affect is in the right direction, we not only direct our affects at different cultural objects from those known to the men of the Mediterranean world, or even our great-grandparents of a pre-industrial order; our affective life contains much which they never knew. I believe that as one reads of the attitudes towards children entertained in the Calvinist era in New England one may find oneself tempted to call these attitudes inhuman; in quite literally the same sense, our great-great-grandchildren, experiencing much of which we today know nothing, may quite as rightly refer back to us as inhuman, that is, not human in the sense of sharing the experiences which they regard as human.

There are more complex examples of that class of new experience which I have called the configurational. Science, if we may borrow from Conant's absorbing essay on scientific history, seldom consists of noting a fact not noted before; it consists of a process of relating, or the construction of a configuration. Now the relating is not just a matter of putting two external events together. The observer puts himself into the equation, simply because, as Einstein so well puts it, there are no "privileged positions" from which observations can be made. As the philosophy of science and the sociology of knowledge make clear, the science which emerges is just as much a matter of the man as of the external event. Eddington reminds us of the sculptor who wagered that a figure of Galatea sat hidden in the marble block; and when he chipped away the outer husk that hid her, he showed her sitting there. The scientist has to have the chisel and the block of marble; he also has to have his own intellectual and emotional predispositions, or he will see nothing. So science, as it comes into being in any society, is more than a technique for chopping off a chunk of reality; it is an expression of a new man-nature interaction.

The same process which goes on in the arts and sciences goes on also in the quality of relationships which men establish with one another. Affection and trust, belief in the unrealized potentialities of other human beings, calls into existence not only what is waiting to bud, but what never could otherwise be; and others responding in their turn, lift those who reached out to them to a plane which they themselves could never have defined.

Shall we conclude, now, that these four classes of experience created and maintained by society are dependent upon the environment in such fashion that the individual reared within such a society must be daily reminded, reinforced, transfused with the spirit of his environment, like a man in an iron lung, so to speak, depending for his existence on external arrangements, or like a fluorescent light which fails to shine with its welcome glow when the power lines are down? In a sense yes, in a sense no. Yes, insofar as the man shining with a light whose source is gone shines with less and less
conviction, like the great Venetian painters after the divine frenzy of the
renaissance had begun to fade; but no, insofar as any great experience from
the past, whether in philosophy or in the arts or in science or in the relation-
ship of men to one another or to the unseen, may reach across a thousand
years and requicken into the old light the men of a later era. Essentially,
however, the answers both show plainly that the new experiences depend
on a complex field of interpersonal realities, and that men in the group
achieve experience-qualities which lie not within the skin of the individual
as potentialities waiting to be tapped, in the way in which a firecracker has
the potentiality of going off when ignited, but rather within a relationship
between what is inside the skin and what is outside it; in other words, in
the life-space of field theory.

We may rightly expect that even within the lives of those present there
may emerge new and significant types of human experience which are func-
tions of newly discovered ways of organizing our group life. I might remind
you that in the physical sciences this creation of the new is taken as a matter
of course. Mendeleeff proved once and for all that there could be only 92
elements in a perfect "periodic table." He was right—that is, under the con-
ditions which he knew, there could be only 92. But in the electric furnace,
there are plenty more, and in these days of isotopes, the only comment could
be: "What do you mean 'elements'?" Much which can not exist can exist
when the circumstances of its existence are altered.

The quality of interpersonal relations is again much more than a com-
pounding of the qualities of persons in relation to milieu. Great as was the
genius of Sigmund Freud, one cannot but feel the tragedy of his attempt to
define the vast world of the unknown in terms of the little that is known
of the instinctive life of man. The conception of personality represented by
field theory envisages the appearance of attitudes, outlooks, feeling tones
which were never released before, and which go on proliferating, or explod-
ing into amazing new forms. In the mad ecstasy of a psychotic like the author
of "Wisdom, Madness and Folly," one encounters what the mariners of the
15th century described in terms of "always more, more, beyond." Social in-
ventions of all sorts, arising from a combination of curiosity, the gain motive,
persistence, the ability to scrape up capital, can turn the social order upside
down, introducing utterly new qualities of life which are nothing like the
ingredients that went into the recipe.

I received the other day an ad of a device known as "Choosit" which
makes it possible to pull into my television set any one of hundreds of re-
corded operas, plays, prizefights, skating races. Note the following from the

Some readers may be interested to learn the history of the present craze for psycho-
diagnostic novels. Beginning in April, 1953, Archibald Ribber of Pocatello, Idaho,
began to stay at home evenings to hear the operas over his Choosit set. Each mem-
ber of the family wanted to see a different thing. So Archie squelched Junior who wanted to see Hopalong Cassidy when the set was turned for Traviata; Junior in turn squelched his baby sister, who, not being content with squelching the cat, developed psychosomatic allergies. Her mother took her to a clinical psychologist at the university, who gave both mother and daughter the Rorschach. When Archie heard this, he went to work to develop a method of administering the Rorschach over the TV which could be scored and interpreted for you for free by the Scrubo. 

This new way of getting oneself diagnosed over TV resulted in such a degree of public sophistication regarding psychology that the new type of literature which is known as mass psychodiagnosis has been rapidly displacing the whodunit literature at the drugstores. In the meanwhile the interest in this literature in Japan, Norway, Northern Rhodesia, and Burma has produced a marked increase in interest in American culture, and the overseas libraries have been forced for security reasons to allow only those psychodiagnostic novels which have been written by authors who have been analyzed by analysts who have been cleared by the FBI.

III

Human potentialities are given by the action of that which sleeps within us upon the unformed potentialities of the world. As David Levy has shown, interference with activity is as dire a blow to health as interference with nutrition. Bela Mittelmann has shown that the activity needs are indeed as fundamental as is the nutritive need. We are provided with a complicated set of organic equipment, and if it is not allowed to function, something happens to us, just as in using it we find joy. If we have tissues within us which through learning and thinking develop and enrich us, we shall in the same way find joy both in the new activities, and in the process of learning and thinking. If thinking becomes a group-supported activity we may, like the Athenians, foregather just to think, as the Icelanders foregather to play chess, or the Germans to make music. In the long run the use of the brain, if not preempted entirely by the sheer process of keeping alive or keeping up with the Joneses, leads, over the centuries, to more and more exquisite cultural products. Those, according to my thesis, which supervene after ten generations of cumulative thought are just as directly and fully human, remain just as directly and fundamentally an expression of human nature, as breathing or eating. Because man has this rich potentiality for sensory, motor, intellectual experience, and has to combine all this in fresh acts of cultural creativeness, he is doing nothing more than realizing these potentialities when he writes Macbeth or flies a plane at Kitty Hawk. And it is not only human to invent oneself out of one world into another; it is also human to keep moving towards a destination which is not set within man's present nature, but keeps changing as the nature of his environment changes. The biocultural reality keeps rolling up on itself. As James Harvey Robinson said, we can invent more and more mind as we go along, "now that we have the trick."
Now if we once make up our minds that there is a vast and challenging area of human potentialities, we may view the issue either passively or actively. The passive attitude would involve delight and bemusement, expressed by ordinary mortals in terms of \textit{obs} and \textit{ahs}, and by the poet, as for example by Shelley in \textit{Prometheus Unbound}, in terms of a ravishing ecstasy of joyous anticipation of man's future. The active attitude would be embodied in a quest for definite principles governing the discovery and release of these potentialities. This should be attempted in a manner which my Rorschach friends would characterize as FC-ish, cognitive clarity prevailing over affectivity. Not being a poet, and being somewhat constrained by the responsibility you have put upon me to emphasize a cortical rather than a diencephalic approach, I will now attempt to sketch out a few principles which I believe may help to point the way, and may be tested, experimented with, and replaced by better ones.

I would begin this task empirically, by asking what good teachers, parents, group leaders, clinicians actually do to release the potentialities of those whose development they cherish. First of all, good teachers seem to me to be concerned very little with fitting a child into a socially specified pattern; they seem to be ever on the watch for the free movement of the spirit, the reaching out, the sense of exploration, the insatiable curiosity, the yen for new experience, the delight in manipulation and mastery of new media. Those who conceive of education in terms of systematic mastery of all that one's culture has achieved, as for example in the incorporation within oneself of the 100 great books, or the great central ideas of western civilization, seem to me to be missing something very fundamental; indeed I fear you will find the very heart missing. For the heart, as I see it, is the demand of the person for life, the enrichment of what he already is. The great teachers whom I have known are forever alert to the fact that the individual, whether two or twenty years old, can tell us more about his unrealized potentials than can any norm prepared in any office. There will indeed develop in him in time a need to share experience with his fellows and with the men and women of other regions and other periods; but these likewise will be richly and rapidly released if the teacher watches for their beginnings, and feeds the flame with good tinder, rather than attempting in advance to determine the directions to be taken. It takes a good deal of faith in the raw human stuff to do this; but those who have watched good teaching will, I think, agree that it can be done. In the same way the parent will let the child tell him where his tastes, his loves, his demands upon life lie. He will supply restraints and disciplines primarily when the child is defeating his own ends, especially when the child is clearly showing, as most children do sooner or later, that he actually wants discipline, order, direction, rather than chaos. But it will be his first concern that the child live in the child's own idiom before he be asked to understand the idiom of others.
The same for college education and for graduate schools. This may shock you a bit. You may feel that the older a person is the less able he is to tell us where the creative spark in him lies. Fill him up with the standard psychology that is good for him, we say; make him choose a dissertation problem that will teach him the nature of science. In the course of some 30 years' watching of this process, I have seen the creative impulse of many students muted, and I cannot think of any one who was made into a creative scientist by such pressures. The discipline of sound method, scientific caution, respect for solid facts will come if there is a little seed which in time can be nursed into such a flower. But if we deny our students the right to explore and to speculate, they will in time play by the rules in their own specialty and dogmatize all over the lot in every other area of life. If we do not respect what the language of the organism tells us, we can only learn the hard way, namely in sterile science, and in the soured personalities whom we have created. Those of you who have watched the so-called raising of standards pursued in an impersonal spirit and the cut-throat competition imposed upon students for grades, in the attempt to make out of clinical psychologists something that they have no desire to become, will hardly be surprised when you encounter a clinical psychologist who has been so thwarted and misdirected that he cannot even be civil with a frightened mother, or free himself from moralistic clichés when he finds a child unable to face its own aggressions or status needs. And do you ever hear from your colleagues the tragic words: "I did that study to get the degree. An awful bore it was. Now I haven't any time for research." So I wonder whether psychologists ever stop to think: "I wonder who is pulling whose leg."

My answer, then, to the question about principles permitting the discovery of human potentialities is that the first principle is to take them where you find them. But I must now attempt a more systematic theoretical answer. I would invite your attention to five principles; the first two are negative, the other three positive.

First, note that in the equipment of man there are some needs so simple that they cannot to any considerable degree be culturally complicated into progressively richer satisfactions. The maintenance of body temperature is one, the maintenance of oxygen tension another. You can indeed get delight from warmth when you are cool and from coolness when you are warm, but it is difficult to build symphonies out of such experiences. The idea of fulfilling human potentialities by simply giving the individual all he needs runs afoul of the fact that many of the needs just disappear when gratified, and nothing more can be done.

The second negative principle is to avoid the competitive. Not because competition is always bad, but because it frustrates and benumbs most of
... those who fail, and because for those who succeed it can at best give only the ever iterated satisfaction of winning again and again and again. In this direction lies, of course, a convenient way of maintaining a status minded society; but I am speaking of something quite different, namely, the release of human potentialities.

Now for my three positive principles. First, study within the equipment of mankind the satisfactions that are capable of progressive development. Look at the sensory equipment, which the history of the arts shows to be capable of practically limitless variety, and which, in combination with the affective experiences linked with sensory qualities and their combinations, can make up the burning passion of many human lives. It is sometimes asked, "After all, what proportion of the general public can become seriously concerned with the arts?" Well, a village in India often channels the creative energies of a large proportion of its boys into the making of things of beauty; Donatello found a lot of boys eager to learn sculpture; whole communities in Germany and Austria have grown up with a craving for music. Sandlot baseball, sidewalk hopscotch, and radio mysteries can all give something to the growth of boy and girl; but it is not clear that they necessarily give more to the fulfillment of human nature than many other satisfactions which cover the face of the earth, and which have, as a matter of fact, grown like mushrooms when once encouraged, until blocked by the competitive spirit as incarnated in power struggles, militarism, an over-long working day, status anxiety, or some other circumstance alien to the need we are now considering, namely the need for rich and progressively richer experience.

The second of my positive principles is that new potentialities are realized not so much by sheer exposure to culture as by active effort at self-fulfillment. I have already mentioned the fact that the sensory experiences lead into and fuse with affective experiences. The same is true of many meaningful experiences in the symbolic world. Words and numbers, for example, may likewise give delight, as in the contemplation of the laws of nature or the regularities of experience. The venture into the new, and the return to the old with fresh understanding of it, are among the satisfactions everywhere known to common people in the form of proverbs, adages, plays upon words and plays upon life. At a higher level comes the understanding of and satisfaction in laws, for example, the laws governing a radio set or an internal combustion engine, which thousands of boys love to master. And in the manipulative skills of the artisan or the engineer. So, too, from the primitive satisfactions in early companionship and understanding one may pass to the satisfying worlds of the nurse, the teacher, the clinician, who delight both in the people with whom they work and in the self-enhancement that comes from a job well done. There is, I suggest, an unlimited range of human potentialities that can be released when once one recognizes the danger signs set up by the two negative principles mentioned
above, and notes the sensory factors and the activity factors that can be exploited if once we let the growing organism tell us in what directions it is free to move.

But there is a final principle that calls for emphasis. In addition to the sensory messages to the brain, the fusion of sensory with affective qualities, the delights of smooth running activity, there is the huge resonance chamber which we call the viscera. In addition to their specific functions in the service of life, and their intimate relation to the obvious drives which every textbook defines and emphasizes, they serve to give a rich and continuous accompaniment to the themes that attract our greater attention. We feel well or ill, friendly or hostile, confident or cautious, grateful or resentful, reflective or active, largely by virtue of the endless circuits from higher centers to visceral patterns; indeed, the effects of everything from drugs to music are being studied in terms of the physiological rhythms that bespeak the ebb and flow of our feeling tone. But we are finding, as in the case of the world of sight and sound, that there is no limit to the range and complexity of new experience that may come in this way. Indeed, we are less and less sure that there is any basic difference between these interoceptive experiences and the exteroceptive experiences to which psychology has given so much attention. There is a limitless area of new experience for the psychologist in the exploration of these interoceptive processes, and for humanity at large as they are systematically described and used. In the Western world, at least, our practice has been to wait for some odd chance to yield a new experience, toying with drugs, for example, or trying to rig up a technique through hypnosis or yoga. Our whole attitude towards our own insides has hardly been serious. When the artist or musician gives us new experience our attention is upon the art form, the medium of communication, not upon the realms of inner self-realization that are thrown open. But if the men in Rembrandt's school actually felt a sense of unity with other men by learning to look through the master's eyes, they became organized as new men, not simply as new painters.

It was Freud's genius to realize that the sexual life enters into thousands of activities which are not ordinarily viewed in this light, and I should have no objection to a stretching of his term sublimation to apply to many of the sensory and activity processes that I have described. But this rule works two ways. In the interconnectedness of visceral, endocrine, and autonomic functions, the Aeolian harp upon which the world of beauty, of love, and of challenge perpetually plays, yields blends in which no component can be sharply separated out; and if there is sexuality in the enjoyment of a woman's voice, there is likewise a powerful contribution from auditory pleasures and of rhythmic kinesthetic pleasures in her song to be included in the full measure of the erotic. No single drive could ever preempt the orchestration of the total without leading us back to that simple catalogue of
independent drives, waiting each by itself to be fulfilled, which we earlier rejected as an unworkable picture of human nature.

If you will think, therefore, of love and of sublimation in these expanded terms, which are indeed not essentially different from those suggested by Socrates in Plato's Symposium, you will perhaps come to the conclusion that the enrichment of the qualities of love is a good goal for those who believe that human potentialities can be expanded and deepened. I would want this conception of love, however, to be broad enough to include the love of looking down a microscope to see a Brownian movement, or the love of discovering a bit of old textile in a rummage sale, or the love of discovery of order, rhythm, and meaning in the world, something pretty close to Spinoza's intellectual love of God.

But to be consistent, would I include all satisfactions, say for example, the satisfaction of a good cigar, or of proving your case in an argument, or of not getting found out when putting on a big bluff? My criterion, from the viewpoint of the present study of human potentialities, would be simply this: Do these latter satisfactions make you more sensitive to new experience; do they enrich your capacities; do they lead on in turn to more and more, deeper and deeper satisfactions? If they do, I have nothing whatever against them. I have known, for example, a man who smoked his cigar in exactly this spirit of adventure. In general, however, most such satisfactions are dead ends, and while this is nothing against them, it means that in the long run they give us a great deal less than those that open areas of experience which, once open, keep opening out ever more broadly.

VI

In addition to the principles of cultural evolution which I have tried to sketch, those who attempt seriously to project into the future the current trends in man's history will also note other biological and biosocial trends to which our science gives, as yet, but scant attention. Cultural factors are already rapidly altering the evolutionary principles of selection which did so much to call into being the species we know as man. As Sewall Wright has reminded us, human evolution is still going on. Frederick Osborn has brilliantly documented the thesis that through all history until a few decades ago, evolutionary changes took place by virtue of deaths: deaths negatively selected the strains that could survive. Now with the enormous majority of all infants in an industrial society surviving into and beyond the age of reproduction, selection of genetic trends hardly takes place at all in terms of deaths, almost wholly in terms of the balance of births. Such fragments of evidence as we possess suggest that man inherits his central and autonomic nervous systems, his endocrine and visceral system, as other mammals do, and in all mammals that have been studied, individual differences in temperament related to stock have been easy to document. The fact that culture very
profoundly moulds personality also prepares the way for research into the ways in which culture invisibly but inexorably influences the matings which alter the gene-patterns of a future humanity. The attitude of the social scientist who shrugs his shoulders at this huge problem, saying quite truly that he does not keep up with genetics, reminds me of the adage: "Where ignorance is bliss." It is true that we do not know with absolute certainty whether present mating patterns are bettering or worsening our human stock. But of two things one may be sure: first, they are not leaving it static; and second, that the human nature of a thousand years hence will depend on the realized potentials of the genes of that era, not just on the genes of the present era. This is not a plea for more babies from psychologists; but a plea for more bioculturally oriented research. So far as I know, there is just one psychologist in the United States who makes his major interest the inheritance of mammalian temperamental qualities. At least we might hope that there would be a growing audience of psychologists following the development of such research. But in a recent check-up of psychological courses, graduate and undergraduate, in some one hundred and sixty American institutions, I encountered not a single course surveying current research in the dynamics of heredity, and if there is any department that gives credit in genetics as one of the course requirements for the doctorate, I should be gratified to learn of it. If we are to have any clear idea of the human potentials which we might hope could be obtained, we shall need to be equally sensitive to cultural evolution and to biological evolution in order to strive to grasp their interrelations.

VII

Is there any reason to conclude on an optimistic note, despite the mess which humanity has been making of the world in the last few decades? Well, I think there are two such reasons which lie in present attitudes towards science. First, we have somehow become less afraid of studying ourselves, looking straight at, through and into ourselves; and without a great deal more knowledge of ourselves, and of the nature of our dependence upon one another, we can do but little in the realization of human potentialities. Secondly, if curiosity be the soul of science, curiosity is not only a tool in the discovery of needed truths; it is in itself one of those satisfiers that lead on and on to ever fresh delights. I should like to conclude by reminding you that curiosity rather than practical gain was the mother of both science and philosophy, and that though we live in an age of science often deflected from the satisfactions of curiosity into the production of competitive tools of many sorts, the flame of curiosity, once kindled, cannot be put out. You may feel that in this era of political interference with science, and frequently of intimidation of scientists, no good can come. I would suggest another approach. Socrates had to drink the hemlock, and Giordano Bruno to die at the stake, but the stifling of curiosity is a trick that no despot has ever yet mastered, and if my thesis about the nature of man is correct, the trick can-
not be performed. If there is in mankind a potential love of his neighbor that can be nourished through the centuries and become more and more a norm, which, however imperfectly, we strive to realize, there is also a potential craving to understand the world which as fast as it is satisfied, broadens into a greater craving, works into new material, works in a richer and broadening fashion.

Such an approach would mean not simply the fulfillment of the known biological nature of man, nor the elaboration of the known potentialities of culture, but a constant probing of new emergent qualities and forms of experience given by a system of relationships that can today hardly be glimpsed; a leaping into existence of new realms of experience; not an extrapolation of the present, but new in kind.

The realization of human potentialities, I suggest, lies in studying the directions in which human needs may be guided, with equal attention to the learning powers of the individual and the feasible directions of cultural evolution. Such study, I suggest, will give the esthetic satisfactions, the scientific satisfactions, and the interpersonal satisfactions a larger and larger place in the total way of life, and rather than achieving a goal, will define an ever widening theatre for the development of new potentialities.