Chapter 9

FACTORS INFLUENCING EDUCATION

If it could be demonstrated that there was a genetic foundation to this bifurcation of mankind along the lines of mental-imagery or whatever we may call such a kind of mental set, it would not be too difficult to account for its persistence in spite of the vicissitudes of history. The Mongol racial characteristics, for example - black hair, dark brown eyes, comparative hairlessness, the epicanthic fold, etc. -- have persisted, partly because some of them are dominant over the alternative characteristics. It seems likely that there must also be some relationship between bodily and mental characteristics. Sheldon has found a correlation between body type and temperament that is remarkably high. [1] His figures are challenged by some authorities, but they are based on a large sample -- some 45,000 individuals.

Moreover, the existence of a kind of national character is now likely to be recognized more willingly since the concept of racial superiority has been pretty well buried. Some very sane and balanced scholars admit the objective reality of differences in mental set. Occasionally the modal personality may be traced to environmental influences, as in the case of the Aymara who are somewhat short tempered, or in the case of residents in the tropics who may tend to be mentally and physically less active than those who live in a cool

1. Sheldon, W. H., S.S.Stevens, and W.B. Tucker, *Varieties of Human Physique: an Introduction to Constitutional Psychology*, New York, NY, Harper, 1940, xii, 347 pp., and Sheldon. W.H. and S. S. Stevens, *Varieties of Human Temperament: a Psychology of Constitutional Differences,* New York, NY, Harper, 1942, x, 520 pp.

environment and are subjected to quite violent fluctuations in temperature from one season to another. [2] These may be very transient responses to the environment, resulting from the basic flexibility of all living things.

Factors influencing attitudes or 'mental set'

But it is not altogether impossible that there is a real genetic foundation to the mental attitudes of whole societies, if they have maintained themselves 'racially' intact for a sufficient length of time to become genetically stable.

Laurence Snyder wrote in this connection: [3]

> Recent refinements of procedure, notably the twin family method, have provided important evidence for the genetic basis of specific disease entities, physical and mental, as well as of basically uniform patterns in the organization or disorganization of physical and mental

capacities essential in effort tolerance, personality integration, and intellectual performance.

Edward Sapir goes further. While recognizing the dangers of holding such opinions, he nevertheless says: [4]

> There need be no special quarrel with this conception of a national genius so long as it is not worshipped as an irreducible psychological fetish
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> Here, as so often, the precise knowledge of the scientist lags somewhat behind the more naive but more powerful insights of non-professional experience and impression. To deny to the genius of a people an ultimate psychological significance and to refer it to the specific historical development of that people, is not, after all is said and done, to analyze it out of existence
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> The whole terrain through which we are now struggling is a hot-bed of subjectivism, a splendid field for the airing of national conceits. For all that, there are a large number of international

2. Huntington, Ellsworth, *Mainsprings of Civilization,* New York, NY, Wiley, 1945, p.405, 528, 547, and 599 especially.
3. Snyder, Laurence H., "The Genetic Approach to Human Individuality," *Scientific Monthly,* Mar., 1949, p.169.
4. Sapir, Edward, *Selected Writings of Edward Sapir,* edited by David G. Mendelbaum, University of California, 1949, p.311. Sapir seems to have changed his views somewhat from previous statements on this point.

> agreements in opinion as to the salient cultural characteristics of various peoples. No one who has even superficially concerned himself with French Culture can have failed to be impressed by the qualities of clarity, lucid systematization, balance, care in choice of means, and good taste, that permeate so many aspects of the national civilization.

A. L. Kroeber takes a somewhat similar view and is willing to concede the existence of recognizable differences in the national characteristics of the Spanish, the French, the Germans, the Russians, and the 'Americans.' [5] But he feels that such differences result from Culture which he views as a kind of "social fact" (to use Durkheim's term), something reified which has almost an independent existence of its own apart from those who happen to live in it. This is a view of Culture about which there is considerable argument, but all agree that Culture is pretty compulsive of personality formation in many ways.

If there is such a thing as national character, there is probably something common also to groups of people who belong within the wider classification of 'stock' or 'race' Speaking of this, from the point of view of the human geneticist, Curt Stern indicates not only the likely sharing of bodily characters, which is assented to readily enough, but also of mental traits. He writes: [6]

> Stressing possible genetic factors in racial mental differences does not deny some plasticity, and stressing plasticity leaves room for possible genotypic differences. Even lacking exact knowledge, one may still be rather confident not only of the existence of great

> plasticity, which is an obvious phenomenon, but also of genotypic differences in racial endowment. Mental traits are correlated with material physical factors among which the organization of the nervous system and the hormonal constitution are the most important.
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> Delicate and far-reaching inter-relations may mold the psychology of each individual in conformity with all aspects of his physical make-up. Since genetic differences influence all parts of the body and since absolute and relative differences in allele frequencies have been established for various genes in different races, one may expect some genetic influence on mental traits. The important problem is how great this influence is in differentiating races mentally.

5. Kroeber, A.L.,*Anthropology,* New York, NY, Harcourt Brace, 1948, p.583-592.
6. Stern Curt, *Principles of Human Genetics,* San Francisco, CA, Freeman, 1949, p.577.

This is a somewhat involved statement, but it means in effect that there are good grounds for believing that a certain mental set can become common to a society or even to larger aggregates of people by inheritance genetically and not merely culturally.

Nevertheless, it seems likely that the cultural pressure is the deciding one because we know that the Oriental can enter into and achieve the spirit of the Occidental world-view; and there are not a few anthropologists who have in a real way mastered the spirit of an alien culture sufficiently to be able to feel towards Nature something of what the natives feel -- thereby coming to understand their thinking processes to a large extent. This has *always* involved, it may be added, the mastery of the native language -- at least to the point where thinking in it is possible.

That such 'conversions' can be achieved at all, by the process of re-education suggests that education itself has far more to do with the mental attitudes of a culture than heredity. The influence of language is implicit of course, almost if not quite unperceived by most of those who use it, but the influence of education is explicit and calculated to a large extent. In the most primitive of cultures, the 'course materials' both for boys and girls are clearly laid out, and graduation, i.e., initiation, is at all times recognized as the goal.

Education in primitive cultures

In order to clarify the influence of any single factor in a complex cultural situation, it is helpful sometimes to isolate the factor in its simplest form. Primitive forms of education are simple and the objective understood by both master and pupil, namely the preservation of the status quo. Such objectives may differ from ours in many ways, but in spirit they stand for the same process, being the method by which a Culture seeks to guarantee its own continuance. The Cultural wealth in the form of beliefs, values, skills, and rights, are communicated to the next generation by the present one. For us this poses peculiar problems because our values and beliefs and even our rights, are in a state of flux, so that one generation with one set of values is seeking to indoctrinate a new generation with a slightly different set of values; often, in fact, with a value system that is passing away. This

does not happen in a primitive society for a number of reasons which are worthy of consideration.

If we examine these Cultures where the struggle of the community to survive is severe because the environment has not yet been mastered sufficiently to give an adequate sense of security, we can probably obtain some picture of what must have been true in very early times when all societies were precarious in this sense, whether non-Indo-European or Indo-European.

Such primitive cultures are bound by tradition to an extraordinary degree, because having once found how to survive, the margin of survival being still very small, no changes dare be allowed for fear of disrupting the established balance of things. The feeling of community with Nature is very close. She must not be offended in any way, or the caribou will not come back to provide food and raiment next winter, and the rains will not come to fertilize the seed planted hopefully in the parched desert, and so forth.

The simplicity of a Culture bears upon the ingenuity of its solutions to the problems of getting food. Nature is sensitively balanced as we know only too well, and primitive people are aware of this, though they treat the word 'sensitively in its psychological sense. A rabbit or a bird or a fish or a bear must be killed respectfully and cooked in the proper way. One does not cook certain forms of life together, simply because these forms of life are antagonistic in Nature. The Indians of North America were horrified at the first plows of iron used by the White Man. One should use wood which grows out of the earth, if one wishes to plow Mother Nature. Nor should a steel knife be used to cut fish -- but only bone, because the fish are accustomed to having bone in their flesh. When killing certain types of animals, such as bears, one apologized especially if bears were scarce, so that the spirit of the bear would go away peaceably and return again in due time. The Naskapi Indians always had a threefold Blessing for food before eating it. "Thank you Creator for sending the Caribou, thank you Caribou for being obedient and coming, and thank you Cook for preparing it so well!"

This meant that one did not simply go out and kill animals. There was a wrong way and a right way, a dangerous way and a safe way. The safe and proper way must be taught to the rising generation. It usually involved a great deal of sound factual knowledge. The chains of cause and effect were more carefully noted than we are apt to suppose: but the interpretation was entirely different from ours. Yet it worked. When it was a matter of life and death, observation had to be keen and clear.

Teaching by tradition vs written records

But another important consideration in this transfer of exact knowledge and skill, is the fact that there was no written record of it. This inevitably made the older

members of the community the only 'knowing' or educated people. A young man could not short-circuit experience by reference to a handbook that at times might make him more knowing than his teacher. He had to learn the correct way to kill and prepare a bear or a bird, from an older man. And when learning is the preserve of the older members of the community, it is far more conservative, for only youth wants to change things all the time.

Besides, animals and people are related. One had to be careful not to kill a relative. The Australian aborigines believe that at one time animals and men were kind of animal-men creatures. Then one day they were separated. Some men parted from a kind of ostrich-man, some from a rabbit-man, some from, a walla-walla man, and so forth. Thus each tribe had a totem or brother animal which is tabu as food, since it is a relative. Once a year, however, a ceremonial Communion Feast is held in which the men dress up like their totem animal, and eat the flesh of that particular animal ceremonially. This unites the tribe with its animal brothers, and momentarily restores the ancient days before the division existed.

These Feast are very solemn occasions. All kinds of ritual are prescribed. The slightest error in recitation or dance step or body movement or table manners can be fatal, for the ostrich or the rabbit will be offended and will then warn all the other animals which are not tabu as food, and the plants too, of the unworthiness of the tribe to be permitted to continue. So there is much to learn, and it is learned only by rote -- not by understanding: and the movements and dances and costumes are learnt from the older men in secret and cannot be learned any other way.

The Australian is no exception in this, though better known because many of his traditional beliefs have survived into the present. But what is true of the aborigine in Australia is true of the Eskimo, and the American Indian, and the African native. And it appears to have been largely true of the Sumerian, and the Egyptian. Evidently a high culture and a greatly increased sense of security is not sufficient to disturb this view of Nature very much. This is probably because n one area of life -- the supernatural -- there is no security

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possible. We distinguish between the supernatural and the natural with a kind of precision that is totally beyond the native. To him, there is no such division. The contract between men and the world about him was always a contract between persons, though he himself was a very minor party in this agreement.

In Egypt, where annual records of the heights of the Nile were kept from the earliest times, the Pharaoh nevertheless made gifts to the Nile every year about the time it was due to rise. To these sacrifices, which were thrown into the river, a document was added. It stated, in the form of either an order or a contract, the Nile's obligations.

Such guarantees for the safety of the community were carried out only by the older men who knew how. There were no short-cuts for precocious children, any more than we would send an inexperienced youth on a very grave mission to some powerful Monarch. Nature was not considered as It, but as Thou, and the relations between men and Nature were personal, not impersonal. The forces of Nature were

more like Wills than forces, just as the characteristics of things are Characters. One did not ask, "What happened?" One asked, "Who did it"?

The kind of question determined the kind of search. Cause and effect were interpreted accordingly. Thus in the presence of any situation that demanded attention, the attitude of the individual was one of involvement. In exactly the same way that we cannot normally treat people as things (and doctors are therefore reluctant to operate on their loved ones) in this same way these people could not stand in the presence of Nature as a 'thing'. The native lore of the American Indians has a real beauty to it: it is the beauty of long experience with life and it is not communicated quickly. Education in such a society is education in Wisdom, as well as in knowledge.

Why a world view leads to magic, not to experimentation

Moreover, in such a personal view, the concept of experimenting to 'find out' is akin to sacrilege. It seemed to the native rude and improper to tamper with things just see what would happen. This feeling of impropriety prevented the Taoist philosophers from being scientifically curious about things.

The same is true of the Middle East. The concept of causality was quite different from the scientific one. As Frankfort put it: [7]

> Our view of causality would not satisfy primitive man because of the impersonal character of its explanations. It would not satisfy him, moreover, because of its generality. We understand phenomena, not only by what makes them peculiar, but by what makes them manifestations of general laws. But a general law cannot do justice to the individual character of each event. And the individual character of each event is what early man experiences most strongly.

Events are no analyzed intellectually, they are experienced individually. Emotional involvement concentrates all attention on the detailed present and freedom for the objective association of ideas in the past is virtually denied. Man becomes entangled in the immediacy of his perceptions. This attitude is viewed as the proper one. It is analogous to 'paying attention' and 'being respectful'. Such a precept was taught as fundamental to survival in every youngster about to become a man. It formed the basis of his search for a vision to guide him in the choice if an emblem or guardian spirit. He had to find some special 'power' in Nature with whom to establish specific relations as a kind of go-between, or mediator.

The sense of weakness in the face of the Wills of Nature is very marked, and continued apparently through the process of civilization until the Greeks challenged it. Among the Hebrews it was converted from 'superstition' to reverence, and awe: but the idea of tampering with Nature was still quite abhorrent. The world continued to be confronted not with detachment but as equally involved in the service and worship of God. Hence the strong element of animation in the Psalms. We may interpret this now as being one way of declaring the appropriateness of God's every

created thing. But to the Hebrew it was something more than this probably.

In Babylonia and in Egypt, man in society accompanied the principle changes in nature with appropriate rituals, which were viewed not as merely symbolic but as 'willed' counterparts, part and parcel, of the Cosmic events. Man *shared* in these events, just as the Hopi rain-maker shares in the making of rain. The same is clearly true of China. The festivals are but modern recollections of such ancient beliefs, though they have lost much of their meaning because of cultural changes induced by contacts with the West.

There is logic in much of what is done. The Hopi stamps his feet to wake up the earth so that it will be quite ready to receive the rain that heaven is about to give. Some things are more alive than others. Fire is particularly so. But then some animals are more alive than others, so it seems.

7. Frankfort, H. and H. A. Frankfort, *The Intellectual Adventure of Ancient Man*, Chicago University Press, 1946, p.16.

When a man makes an image of an enemy and commits this to the flames, he is asking the fire to judge between him and his foe. If the fire burns the image furiously, the fire has given a clear decision in his own favour. It would not occur to the native to ask whether perhaps the wood of the image was particularly dry, and therefore burned quickly on that account, any more than the Azande would ask similar questions about his *benge*. The fire was asked to give a clear decision, and this decision was given. That settles the matter.

Frankfort summarizes this view so manifest in Mesopotamia and Egypt where culture was certainly not 'primitive' in the accepted sense, with these words: [8]

> The Universe did not, like ours, show a fundamental bipartition into animate and inanimate, living and dead, matter. Nor had it different levels of reality: anything that could be felt, experienced or thought had thereby established its existence, was part of the cosmos. In the Mesopotamian Universe everything, whether living being, thing, or abstract concept -- every stone, every tree, every notion -- had a will and a character of its own.
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> World order, the regularity and system observable in the Universe, could accordingly be conceived of in only one fashion: an order of wills. The Universe as an organized whole was a Society, a State.

In this State man was very powerless. Even the animals had more power at times; and of course earthquakes, thunder and lightning, mighty floods, and eclipses were overpowering in their willful destruction and terrifying aspects. Such forces are not to be played with.

Thus it was important to be able to discern Nature's mood of the moment. One must always be on the look-out for evidences of enmity or disapproval in Nature. The slightest irregularity in events boded ill for the observer. It is no wonder therefore that the exception, not the rule, was the object of chief interest. Signs and omens, not laws, were the centre of attention. Education was intended to render this awareness more acute.

Moreover, if one can cajole or persuade Nature to be friendly or merciful towards oneself, obviously one ought to be able to persuade Nature to be injurious to an enemy. So arises the use of both White and Black

8. Frankfort H. and H. A. Frankfort, *ibid*., p.149.

Magic, and the battle of 'lobbyists' in this giant Republic begins. Education becomes not merely a matter of learning to preserve the Cultural values and skills as such, but also learning to preserve oneself in a rather hostile environment where conspiracy is rampart and where safety lies in knowing either the right people;e (spirits) or the right formulae. The exactness of one's response was all important. errors could be fatal.

The more precarious the society, the more suspicious will it be of the exceptional or outstanding individual; and the less favourable will it be to innovations either in word or deed, on the part of its members. Such innovations can only have a secret and dangerous meaning. There is no room for the brilliant child, or for the individualist in the class.

Education for conservatism and preservation

All these considerations had a profound bearing on the problems of education. In the first place the whole emphasis was upon the survival of the community as a whole, and not upon the encouragement of the individual as such. Conformity was the watchword, preservation of existing knowledge the goal. In a situation where the old men hold the keys to knowledge, tradition and conservation rule the day. Youth had no power to effect changes.

Furthermore, the older men would be jealous of the younger man who proved exceptionally gifted. Since the method of injuring one's enemies is by the use of magic, in which the old men are skilled and the young are not, a young man dare not run foul of a superior. Discretion rules the day and serves very nicely to discourage ambition before it can feed upon itself.

The main emphasis in all education of this sort is upon memorization rather than upon creative mental activity. Children are taught to learn, not to think. Since a creative mind must create or cease to be creative, any who might have had new insights and new ideas were son rendered mentally docile and inactive for lack of encouragement.

But this leads naturally to a consideration of 'inventions'. What happens when a man has a new idea: can he introduce it? The answer is Yes and No. He may introduce it if it does not conflict with an already existing

pattern in Society. Too much is involved, too many ramifications, to permit much disturbance. It is analogous to the 'disappearance' of the occasional invention of, say, a new carburetor that cuts down gas consumption by 300%. The oil companies

cannot allow this -- so it is said. However the rejection of such an invention in our Culture is a completely rationalized and objective one. In other Cultures it may be an emotional one.

Let us say that an invention appears in such a Culture which does not conflict with existing patterns -- and is accepted. Then what happens? Can it be improved upon? Again, the answer is Yes and No. Yes, by the originator: No, by anyone else. To attempt to improve the invention is an insult to its inventor. It is analogous to adding a mustache to a friend's photograph to improve his appearance! We just don't do that kind of thing, even if we are sure it *will* improve his appearance, and sure that he will see it again. . . .

In the same way that every symbol is wedded to the 'thing' for which it stands and which called it forth, so every invention is wedded to the circumstances which called it into being. It cannot be used by transfer in some other application. It is just conceivable that wheels, for example, were used first for toys in the New World, and that *for this reason* they were never subsequently applied to larger vehicles. [9] It is however true also that they had no draft animals. Yet wheeled platforms could have been used for the moving of stones, etc., especially in view of their road systems.

At any rate, to divorce the invention from is inventor, or its original application, was not wise. This is not so strange really, for anyone in our Society with an inventive mind will experience the same kind of feeling of identity with his invention and will tend to resent its modification, unless the modification is initiated by himself. It seems like robbery otherwise.

Thus once the originator was dead, his spirit could be dangerously offended if his invention were in any changed. So development, the evolution of civilization, was restrained by such beliefs. On the other hand, a stranger could introduce a new idea, and it might be welcomed -- if it did not conflict with other elements in the Culture. If the stranger then withdrew, his invention could be safely modified. His spirit was no longer around to make such activity dangerous. But again, if a native of the Culture radically modified the innovation, it could then be identified as *his* invention and thenceforth its modification was tabu.

9. For a photograph of a wheeled toy, see Paul Herrman, *Conquest by Man*, Harper, 1954, fig.32; and for a short bibliography, see Kenneth Macgowan, *Early Man in the New World*, Macmillan, 1950, p.26, ref.2.

It is also important, in this exchange of ideas, that the right kind of person sponsor the innovation at the beginning. A king who favoured some device of no value whatever, could 'stick' his people with it for the rest of their cultural history. Whereas an unpopular or despised member of a society who happened to be the first contact to introduce a new device would thereby cast a shadow over it so that it might never gain acceptance no matter how desirable it was intrinsically.

This is not only true of new devices -- it is equally true of new ideas. As Robert Lowie says: [10]

> Training, accordingly, was not in the interests of expanding but of preserving knowledge: and if new observations ran palpably counter to the old they were not treasured but discarded. The conscious

> striving by trained workers to increase knowledge regardless of past convictions is unknown in primitive and early cultures.

In a primitive Society the Community largely takes precedence over the individual, and communities as such are not progressive. It is the individual who provides the motive power for revision of the status quo. It was Lebzelter who formulated the principle that small communities are variant in physical type but homogeneous in Culture, while large societies tend towards the opposite in each case, being uniform in physical type and more variant in cultural patterns. [11] The variability of physical type is due to the existence of mutant genes which have a better chance of finding phenotypic expression homozygously in a small community. The cultural pattern is, however, uniform because there is not sufficient room for a man with different tastes.

There is a parallel in modern society. The individual worker feels so powerless in the presence of his strong employer. Only by identifying himself with a Union of some kind does he feel secure. A small Culture with little total power in the face of Nature, presents the same condition, and the individual within it has only one hope in the struggle, and that is to identify himself completely with the group which then acts as a 'giant self'. The odd man, the individualistic thinker, is suspect -- just as the man who refuses to join the Union is suspect. As Clive Bell put it, the native who stops to think in such a society, runs the risk of stopping altogether! [12] By the same token the little man cannot afford to arouse the suspicions of his Union.

10. Lowie, Robert, *Introduction to Cultural Anthropology*, 2nd edition, Farrar, New York, 1940, p.336.
11. Lebzelter, Viktor: quoted by Wilhelm Koppers, *Primitive Man and His World Picture,* Sheed and Ward, London, 1952, p.219, ref.252.
12. Bell Clive, *Civilization,* Harmondsworth, UK, Penguin Books, 1938, p.43, 44.

Education for innovation and progress

Now as such early societies developed, there would be an increasing measure of control of the environment until some degree of personal liberty would be permissible. Yet so long as the feeling of kinship with an all powerful Cosmos existed, such individualism would be restricted. The ideal of an Egyptian Gentleman was a man who never disturbed things. The same has been true in Chinese society. It was true in England until new forces came into play which upset the old accepted patterns. We shall revert to this point later.

Even the expression of emotion is discouraged-for it reveals the inner feelings to who knows what hostile invisible (or visible) forces. If one must express feelings, then they are to be shown *violently,* as a warning. This is exactly the way primitive man thinks about such things.

Goldenweiser speaks of the occasional new insight and its fate. He says: [13]

> It is of course inevitable with man that deliberation and therefore awareness will here and there break into the course of the industrial process. But the spark of intellectual discernment flickers but for a moment, presently to go out again What is passed onto the following

> generation is the objective result, not the intellectual insight This is so because these pursuits, one and all, are direct and pragmatic. What is aimed at is achievement, not understanding.

He thus refers to such culture growth as being by involution rather than by evolution. [14]

> This feature has often been commented on by observers of primitive life. The all pervading ceremonialism of the Todas, the interminable exchanges of presents attending Trobriand marriages, the minute apportionment of a hunting booty among the Central Australians (just such and such apiece to such and such a relative), the elaborateness of Maori or Marquesan Art (arts that overreach themselves), the ravages of taboo in Polynesia (taboo run amuck) - all of these and many similar cultural traits exhibit development by involution.

13. Goldenweiser, Alexander, *Anthropology,* New York, NY, Crofts, 1937, p.411.
14. Goldenweiser, Alexander, *ibid.,* p.414.

So each society permits development by slight changes in the existing patterns but always within itself as it were. An extra little kick of the foot in a ceremonial dance, a new gesture added (at first with trepidation) in a traditional pantomime, a very slight change of angle in a pattern used for vase decoration. And so on. By these, men preserved some small measure of individualism.

But extraordinary limitations were placed on ritual modifications, simply because the whole universe - including the society performing it -- was personally involved as a single unit. The 'crowd' character here asserted itself enormously. The individual had ceased to exist. Yet not entirely, for the group was drawn into one person and personally represented by the King or the Priest.

This pattern of distrust for innovation survived even in Europe and England until remarkably recent times. The reception accorded a series of inventions which we now take for granted, was at first uniformly hostile. Samuel Martin made a special study of this some years ago. [15] Among the products to the introduction of which great resistance was offered he lists Coal, Printing, the Ribbon Loom, the Stocking loom, Table forks [!], the Sawmill, the Steam Engine, Tea [!], the Spinning-Jenny, Steamboats, Railways, the use of Gas, Macadamized Roads [!], and some other items that seem essential to us today which were at first refused in almost every case on the grounds that they would upset the status quo of Society.

In all this, preservation is the watchword. Tradition is the wisdom of the ages. The old men were its repositories, and they kept their knowledge in secret societies to which no youngster was admitted.

15. Martin, Samuel, "Opposition to Great Inventions and Discoveries "in the *Exeter Hall Papers,* London, UK, 1854-55, pp.461-500.