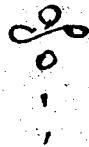


# Habit as a Factor of Conduct Control"

by

Minnie Mildred Osterhout



HABIT AS A FACTOR OF  
CONDUCT CONTROL

by

Minnie Mildred Osterhout.

---

A Thesis Submitted for the Degree of  
MASTER OF ARTS  
in the Department  
of  
Philosophy.

---

The University of British Columbia

April 1924.

## TABLE OF CONTENTS

- Chapter I. Conduct as an expression of Human Nature.  
Two factors controlling Conduct - heredity  
experience.  
The former analyzed.  
The power of habit in modifying and developing  
instinct and reflex.
- Chapter II. The nature of habit.  
Its connection with the inherited nature.  
Divergence of thought as to which predominates.  
The Physical basis.
- Chapter III. Some aspects of habit formation.  
Impulses leading to such formation.  
Laws governing the formation of habits.  
Plateaus.  
Characteristics of formed habits.  
Time of setting up.
- Chapter IV. Classification of habits - moral, immoral.  
Possibility of modification.  
Importance of correct formation.
- Chapter V. Value of Habit formation.  
Advantages to be gained.  
Conservative view.  
Progress dependent on habit.  
Significance of habit formation.

## CHAPTER I.

### Conduct as an Expression of Human Nature.

---

Conduct has ever been the reaction or adjustment of man to his environment. Granted a similarity of external conditions the variations in the responses of different individuals to the same stimuli indicate the differences in their inner natures. If we could comprehend man's inner nature completely we could explain his responses. But it is impossible with our present psychological knowledge to directly know the inner nature of other individuals than the self. We may however by an analysis of man's outward reactions gain indirectly some insight into the factor which controls their expression. This method is the only one that leads us to an understanding of the factors involved in conduct control.

Considering man as a unit of society the same rule applies. For as conduct is the chief factor leading to an understanding of the individual so it must form the basis of all study of man in relation to his fellow man. History and Economics are wholly studies of such relationships as portrayed in conduct. Any moral progress that has been made is indicated in conduct. If one generation does not show any variation from the preceding one little advance can be



ascertained. But as we note how one generation or one individual rises above the restrictions that the past has imposed we observe progress or possibility of progress. Psychologically these variations as well as the usual reactions can be explained, for all actions conform to the laws of cause and effect. As we analyze the effects in the form of man's adjustments to the usual and unusual situations of life with which he is confronted, we are generally able to expose the cause. Human conduct then, is our only criterion by which to interpret human nature whether individually or socially. It is the purpose of this study to enquire into the factors controlling conduct to see in how far they may be modified and to analyze the chief factor which controls its expression.,

Modern psychologists agree that there are two main factors controlling man's nature. As expressed by Bagley 1. "Through the nervous system operate the forces that control conduct, and while it is impossible in the present state of our knowledge accurately to describe the mechanism of control, two large factors that are of especial significance to our present problem may be readily distinguished. " These he points out are (1) Heredity (2) Experience.

Conduct explained from the point of view of inheritance is relatively fixed, comprising actions which are reflex and those which are instinctive. Reflex actions are involuntary motor responses to stimuli having a sense origin. They have the three aspects of all mental processes the

cognitive, the affective, and the conative. The neural pathways leading to certain responses are inherited, sometimes wholly formed but more often experience is necessary to fully establish these co-ordinations. Thus bodily movements such as the grasping movements of the hand, improve with experience. As experience may develop reflexes so it may modify them for example when some foreign matter enters the eye the lids involuntarily close but if one's eyes are being treated regularly, after a time they become accustomed to certain stimuli and the reflex may be inhibited.

The other inherited factor which aids in controlling conduct is instinct. Instinctive actions conform to the general reflex type so closely that some psychologists fail to recognize any distinction between them. We may however note a few distinguishing features. A reflex is primarily physiological and may be understood from the mechanical activity of the nervous structure, while the instinct can be referred to its purpose alone, although one may not be conscious of this purpose at the time of action. Thus the reaction if one steps on a tack may be explained in purely physiological terms, but these are not sufficient to account for such reactions as those which take place when one sees a movement in the grass suggesting a snake.

Consciousness plays a more important part in instinct than in reflex. Many reflex movements take place quite unconsciously as for instance the adjustment of the pupil of

the eye. In the instinct usually all is conscious except the reason for the act. The adolescent youth gives expression to an instinct, in displaying his strength or bravery before members of the opposite sex without realizing why he does so.

An instinct is generally considered to be more complex than a reflex. Warren says, "Instincts are complications of behavior which involve a series of reflex activities. The simple act of swallowing is a reflex but there are a number of such actions involved in the instinct which leads to eating. Another distinction lies in the fact that instincts are usually accompanied by a degree of emotion which is for the most part absent in the reflex."

Having established these distinctions it is still difficult to obtain a scientific definition of an instinctive action. McDougall defines instinct as "an inherited or innate psycho-physical disposition which determines its possessor to perceive and to pay attention to objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object and to act in regard to it in a particular manner or at least to experience an impulse to such action." He further holds that instincts cannot be eradicated from the mental constitution and that the intelligence does not supplant and so lead to their atrophy but rather controls and modifies their operation.

1. ( Human Psychology p.102)

2. (Social Psychology, p.29)

I think McDougall over-emphasizes the emotional element for some instincts are performed without the accompaniment of consciousness at all and others have no definite emotion attached to them. We can hardly say that an infant is conscious of its first instinctive movements or that these are accompanied by any emotion. He also overestimates the stability of instincts for while some have become so deeply ingrained in the race that they cannot be entirely eliminated, others can be completely uprooted as we shall see later.

In defining instinct Russell says "it is a vital movement performed by an animal the first time that it finds itself in a novel situation" Russell's view restricts the ordinary meaning of instinct for such an instinct as the nest building of birds manifests itself more than once. We may also note that a vital movement performed in a novel situation may be the result of emotional impulses, of reason, or of previously learned response in some similar or parallel situations.

This view that an instinct only expresses itself once leads to the conclusion that this expression opens the pathway to which there was an inherited predisposition. The instinct forms the incentive but habit establishes the reaction often modifying its expression through repeated responses. This is possible because instincts are general rather than particular when first expressed and have to be guided

into certain channels. Thus although a child has an instinctive desire for nourishment at its birth, habit formulates a desire for food at certain regular intervals and this desire is just as insistent whether the child has become accustomed to satisfying it two, three or four times a day.

Similarly the instinct of fear, if one gives expression to it associates it with certain objects etc., may become a habit of lifetime endurance and of great intensity expressing itself in a certain definite way when certain stimuli appear. Thorndike says, "The instinctive tendencies become habits as soon as experience alters them. They are modified into habits when any act physical or mental, which in a given situation produces satisfaction, becomes associated with that situation so that when the situation recurs the act is more likely to recur also". 1.

On the other hand habit may establish a mode of reaction which tends to weaken the expression of the original instinct. Thus an individual who has an instinct of repulsion towards a certain object may habituate himself to seeing and even handling that object with only a slight feeling of his previous disgust. We may agree with Dewey that "in reality instincts are most easily modified and subject to education." 2.

Contrary to McDougall I think habit may in some cases displace the instinct altogether. As Bain holds some habits oppose instincts and we see this to be true in such 3.

1.(El. of Psychology, p.16)

2.(Human Nature and Conduct, p.107)

3.(The Emotions and The Will, p.446-447)

instances as he quotes in which habits of obedience are set up in opposition to self will and the instinctive tendency to follow out one's prevailing temper." In such cases it may take a long period of habit formation to completely overcome the instinct. In other types of instinct which are weaker a much shorter term will serve. Some appear only for a short time and then if not satisfied die out. Thus the instinct to play appearing at a certain period in the life of a child and finding no outlet for expression dies out in a relatively short time. Habits of work, listlessness, etc completely overpower the instinct.

Accordingly we see that although instinct is given such a prominent place as a conduct-control in reality its power is limited. Instinct alone would not equip an individual to cope with the intricacies of modern civilization. The majority of instincts only become of worth to us as they are guided into certain channels. Russell says "The higher we rise in the evolutionary scale, broadly speaking, the greater becomes the power of learning and the fewer are the occasions when pure instinct is exhibited unmodified in adult life." Habit then as the guide and modifier of some instincts and reflexes, as the destroyer of others, and as the means of establishing new modes of behavior is the factor which exercises the greatest power as a conduct-control. The following chapters are given over to analyzing this statement and endeavoring to prove its validity.

## CHAPTER II.

### The Nature of Habit.

---

Having discussed innate characteristics, we come now to consider that part of a man's character which is not his at birth and which he attains only through experience. Woodworth says, "Extensive as is the native equipment of man with its manifold sensations and emotions, movements and interests it is very small compared with the learned equipment." This latter consists of habits which we may define as, tendencies to respond to stimuli in a certain manner, which have been created by experience and which have their stability in the physical organism. Royce says "Each of the numerous habits of the brain means then, tendencies to the excitement of localized tracts and paths under given physical conditions. James says, "A simple habit is nothing but a reflex discharge and a complex one discharges due to systems of reflex paths so organized as to wake each other up successively." Bagley says Habit is an acquired mode of response, the separate ingredients of which have at one time or another been coordinated or associated through conscious control but in which the connections are in the completed habit quite mechanical." We

1. (Dynamic Psychology p.80)
2. (Outlines of Psy. p.67)
3. (Educational Values p. 23)
4. (Educational Values, p.23)

1.

2.

3.

4.

could quote innumerable definitions but for the present we shall use these as the basis for our enquiry into the nature of habit.

Our first difficulty arises in trying to determine how far the acquired part of man's nature is dependent upon his inherited characteristics. Some psychologists, including Watson, believe that all life processes are practically dependent on the inherited factors. He says "It is probable further- 1. more that at the birth of the animal or soon afterwards all possible nervous connections are already established and that all later development, all adjustments of the animal to changes in its environment by habit formation involve only changes in resistance through various inherited areas." Consequently the possible habits which an organism may acquire are limited by its nervous structures. All that is new in habit is the organization.

Theodore Dreiser in an article in Current Opinion 2. expresses his view that individual characters are born. A Napoleon, Goethe, Shakespeare, Lincoln etc. are not made but have certain innate characteristics without which no training or development could make them what they are. They must have these very special characteristics or very individual impulses to begin with. "If nature wishes one to rise above the conditions wherewith he finds himself surrounded at birth she usually provides him with the equipment for so doing during gestation or before." 1. (Psychology from the standpoint of a Behaviorist, p.150)



Acquired knowledge and intellect he admits play a very important part but it is not these alone that place a man so high above his fellows, there must also be that vital energy to apply them or the hypnotic power of attracting attention to them -- in other words personality. Life develops and trains especial inherent capacities but the instinct and the ability to foreknow, do, appreciate, understand these things are not taught in schools. Schools labor with them to improve, polish, give them a special turn or bent, little more or less.

On the other hand we have a great school of psychologists who believe life is what we make it. Among earlier writers Locke was the first to speak of personality as something which is made from moment to moment by a cause which can be assigned. Helvetius and others made the idea of the complete malleability of human nature, which is wholly empty and passive, the basis for asserting the omnipotence of education to shape human society and the ground of proclaiming the infinite perfectibility of mankind. In more recent times so great a man as the Duke of Wellington is reported as exclaiming "Habit is a second nature! Habit is ten times nature!" In referring to habit we must keep in mind the fact that its domain covers the whole field of human reaction. It controls not only the physical but the mental and emotional spheres as well. It is through habit that the influence of intelligence has most control over the lives of the majority of civilized men. Pillsbury says, "If you eliminate from the various

intellectual activities all that belongs to habit most of the higher mental operations become impossible , and if we include association among habits we may say with complete assurance that no intellectual activity of any kind goes on except on the basis of habit. Hadfield in his treatise on Psychology and Morals says, "Environment is most important in forming character especially the environment of early childhood. A single experience may cause a change in our outlook on life but more effective are the large number of trifling events which becoming habits establish these impressions and they become a fixed part of personality."

Now it is impossible to draw a line of strict demarkation between these views and to vindicate either completely. We must admit that heredity and environment each have a part to play in conduct control . We are however justified in making some criticism of the more extreme views and we hope by further enquiry to determine which factor is the more powerful. Dreiser in emphasizing the innate faculties does not recognize how useless they would be unless developed into and supported by habits. A man endowed with the brightest of intellects is helpless unless he develops it and unless he forms habits of temperance, perseverance, keenness of observation etc. to supplement it. If it is true that no man can be a genius unless endowed by nature it is also true that he cannot be so without developing his innate powers by means of

1. (Essentials of Psy. p.61)
2. (Psychology & Morals p.17)

habits. Training does more than polish, it develops from very infinitesimal beginnings strong habits of reaction which become mighty powers in the individual's life. Habit has been called the architect that builds the feeble rudimentary powers of the child into the strong developed power of the full grown man. All educationalists work on this basis. Little value is now given to a system of education which does not provide for extensive habit formation in the young. Rousseau's theory that the only habit worth developing is the habit of forming no habits at all justly receives little consideration. An individual who had formed no habits at all would be quite incapable of meeting the contingencies of private or public life.

In order to discuss Watson's statement we must enquire into the physical basis of habit. But first we may note that he does not underestimate the importance of habit as a factor in developing the inherited tendencies, but he holds only certain lines of development are possible and similarly only certain habit formations are possible because of the inherited connections in the nerve arcs. He would lead us to believe that life is wholly determined through these inherited connections.

Physiologically, habit depends on an organic connection of the nerves concerned. Horne quotes Cramer as saying that habit formation is dependent upon the fact that

1.

"the brain and spinal cord are plastic enough to receive impressions and rigid enough to retain them." It is only through the nervous system that we receive any impression of the outside world. The eye, the ear, the olfactory globes etc are simply specialized functions for receiving these impressions which the nerves carry to the brain where they are registered. Once the stimulation has found a way in <sup>we find</sup> the law of preservation which operates in all nature, to be active here too. For as all material structures have the property of retaining traces of the physical impressions made upon them so the nervous system is able to retain its impressions. Just as the growth of a tree preserves any wound to its trunk so the growth of the body preserves any modification to its nervous system. Physiologically, habit may be called a sort of material memory. A shoe that is worn acquires the habit of the foot, a pen that is used acquires the habit of the hand. And similarly the nervous system which is much more plastic acquires in time the habit of its stimulations. Or we may say from the physiological side, habit always represents modification of structure to an extent which gives the organism a bent or tendency toward a repetition of the function. Just how the modifications are made we cannot definitely know for it is impossible to ascertain the specific nature of the nervous system but we can make certain possible suggestions as to their nature.

Drummond says, "Physiologically habit depends upon pathways of discharge for nervous currents, which have been laid down in the nervous system ! We think of this system as made up of millions of interlacing nerve cells called neurones from which smaller fibers called dendrites branch out. In the infant these cells are in a conglomerate mass except for a few inherited connections but as the child develops certain connections are formed amongst them. The laws governing the formations of these pathways are the laws governing habit formation. Thorndike distinguishes three such laws which are, the law of least resistance or of strongest connection, the law of Inborn connection, and the law of acquired connections. These laws explain themselves to some extent. The first one states that when a stimulation from a nerve end is carried to the brain it tends to discharge along the path where the resistance is least. If there is no inherited connection and there has been no previous stimulation of any kind several paths may be open to it. The discharge may take place along any one of these. Watson would have us believe that only one response is possible but observation of our own acts and those of others shows that this is not so. If the first response proves unsatisfactory the next will be different and so on until one is tried which brings satisfaction and with it pleasure and which therefore will tend to be repeated. Each reaction leaves its trace in the path it takes. The neurone that carries the stimulus to the brain becomes connected with

1. (An Introduction to Child Study p. 225)
2. (Elements of Psychology p. 164)

the out going neurone through adjoining dendrites which are the essential structures in forming connections. As James says, "It is to the infinitely attenuated currents that pour in through the sensory nerve roots that the hemispherical cortex shows itself to be so peculiarly susceptible. The currents once in must find a way out. In getting out they leave their traces in the paths which they take."

1.

Repetition fixes these paths so that in course of time a certain stimulus always calls forth a specific response because the one pathway has been opened up and the others have been abandoned. A change has occurred which may best be thought of as metabolic or nutritive. Woodworth and Ladd say that as a muscle may take up nutriment from the blood and increase in size so the activity of the brain causes a growth in the fine branches of the dendrites. They also point out that besides this growth in size a muscle shows after exercise, an improvement in its inner condition. It shows this in the fact that its increased strength is often too great to be explained in terms of increased size-- "It is not unlikely 'they say' that neurones also improve in their inner condition as the result of preceding activity. Both growth of the fine branches and improvement in internal conditions are probably factors in the retention of a response."

2.

1. (Psychology Volume 1, p.107)
2. (Elements of Physiological Psy. p. 616)

Such growth once set up continues even after the exercise stops. This explains the increased improvement to be observed after periods of rest. Again we refer to Woodworth and Ladd "The nutritive after effect of exercise occurs largely in the subsequent period of rest. After a little exercise rest improves the organ which enters on the next period of activity more capable of deriving benefit from it. It is perhaps a larger organ and so able to absorb more nutriment in its next rest." The contention that we learn to swim in winter and skate in summer is based on this theory. This view also explains the greater rapidity in modifying living matter than lifeless matter. The incessant nutritive renovation tends often to corroborate and fix the impressed modification rather than to counteract it by renewing the original constitution of the tissue that has been impressed.

Consequently we see how a mode of response once set up becomes in time permanently established and although consciousness is necessary at first to effect certain responses later some become so automatic as to need no accompaniment of consciousness. And so they come to take on the nature of reflexes.

### CHAPTER III.

#### Some Aspects of Habit Formation

---

Having discussed what we mean by habit from a physiological standpoint we shall now consider more directly the aspects of habit formation. We may note first that habits are of two kinds, those which are actively formed and to which we must give our assent and attention such as habits of skill. Secondly habits may be passively formed without even the accompaniment of consciousness. These may be exemplified in the individual habits of gesture and manner we acquire. We shall try and find what impulses lead to the formation of habits and thus discover their origin. We find that the forces determining the actions which become established as habits may be divided into two groups extrinsic, and intrinsic. Extrinsic motive forces are those outward forces, rewards and punishments, public opinion, etc., which impel to action in a certain direction. Intrinsic forces are those which operate from within such as reason, volition, etc.

Of the intrinsic we have seen that instincts and reflexes sometimes act as driving powers. Seashore says, "Thus habit is instinct or reflex progressively adapted,

1.



enlarged and extended on the basis of individual experience." also  
McDougall<sup>^</sup> contends that all habits have their origin in these instinctive tendencies, but I think we may safely challenge this statement. It may be true that all possibilities of development are present in the individual at birth but it does not follow that modes of reaction may be developed only through instinct. In this connection it is interesting to note Seashore's delineation of capacity and ability. He says, "Capacity refers to organic equipment acquired in the process of evolution (i.e. adapted organs with the instinct to use them); ability refers to habit or skill acquired through the use of capacity in the life of the individual."

1.

Although we must agree that unless a person has the equipment, development is impossible, there are various ways in which it may take place. It must be generally admitted that certain habits have their mainspring in volition. No one would claim that an individual is born with an instinct to learn to typewrite yet if one wills to do so he may set up certain reactions which will result in such an accomplishment. Of course willingness is not sufficient of itself to establish habits but in many cases it forms the incentive. There must however be something behind the will which moves it to action. To take another example, very few people are blessed with an instinct to rise early but reason may show such action to be advantageous and then the will may cause

the habit to be formed. The reason therefore has an important function to perform as an intermediary between will and habit. It acts as an incentive which calls the will to exert its power. It is chiefly reason acting through will power that guides the early instinctive impulses into channels which lead to the development of well formed habits.

But this work is not confined to the reason. The emotions form just as powerful if not more powerful stimuli to the will. In this connection it is interesting to note an observation of Bain regarding the experiencing of those changes in man's character which we term conversions. He says, "The explanation of sudden conversions is no doubt to be sought in some overpowering impression upon the mind that supplies a new and energetic motive to the will thereby initiating a new line of conduct. If we can only strike a blow with such power as to seize possession of a man's entire thoughts and voluntary dispositions for a certain length of time we may succeed in launching him in a new career and in keeping him in that course until there be time for habits to commence and until a force is arrayed in favor of the present state of things, able to cope with the tendencies and growth of the former life."

Some psychologists attach great importance to the emotional element holding that it is only as they are grounded in the emotions that habits can be firmly established.

Hadfield says, "Behind and beneath every habit is an emotion the arousal of which determines the habit." He maintains that there was originally an emotion connected with it and that it is the arousal of this repressed emotion which now gives rise to the habit. Even the habits of everyday life are the expression of latent desires, normal or abnormal." Such a statement is too all embracing to be scientifically accurate. Some habits we must admit are probably induced by the emotions for example habits of ill temper or habits of pleasantness. And as far as the instincts are accompanied by emotions those habits arising from instinct will also have an emotional basis. But we must make allowance for the fact that many habits, as the habit of eating too much, or the habit of eating at certain times, are not backed by any great emotional impulses and many of the personal and business habits we form cannot be traced back to an emotional origin.

This theory involves the pleasure-pain theory which holds that those actions which produce pleasure tend to be repeated and so become established as habits while those which result in pain tend to be inhibited. But pleasure and pain act as guides in the formation of habit no matter what the origin. They are not the sole determinants however, for, will for instance may induce a habit which does not bring pleasure or even the promise of future pleasure. An example of such a habit would be the learning of a trade in

which he was not interested by a boy who had to support his aged parents. Rewards and punishments may be mentioned here as conducive to habit formation through the controls of pleasure and pain. These we term extrinsic impulses.

There are certain other habits I think which are induced extrinsically but through no specific impulse. Thus a man quite by chance may take a certain seat in church and may readily establish the habit of sitting in that one place. This habit may become so firmly fixed that he is uncomfortable if he has to sit elsewhere and cannot enjoy the service as usual. It was surely no emotional impulse that started Immanuel Kant down a certain path which later became famous as "The Philosopher's Walk" and yet the habit of taking his daily exercise along that particular walk, we are told, was no haphazard thing.

Peters says, that these habits into which we drift represent a lower biological level than those acquired by effort. Many of the lower instincts which we share with savages and lower animals become established as habits through being allowed to function a sufficient number of times. Such habits as selfishness, laziness, intellectual drifting etc. need no strenuous self assertion and guidance but only self surrender.

All these impulses have their part to play in the origin of habit and it is impossible to say which has the greatest influence. In the life of the very young child

before the will is well developed the other impulses have determining influence. Drummond says, "Purposive and conscious volition has played only a very subordinate part in the development of our first formed habits although its scope does become gradually more and more important in the acquisition of habits which are grafted upon these. But in the adult whose faculties are fully developed perhaps a combination is most effective as when the will and instinct act in the same direction and are backed up by a strong emotional impulse and when the habit leads to pleasure.

1.

We have seen that various impulses may lead to action and our next problem is after the first action then what. As we have noticed in some cases the impulses must continue to instigate conduct for some time but eventually the essential law of habit formation holds as true here as in other cases. This law as expressed by Gordy in his New Psychology is that "Every time we perform any action mental or physical we have more proneness to, and a greater facility for, the performance of that action under similar circumstances than we had before". Repetition then becomes the means to the end in habit formation. But undirected repetition is not usually enough. There are certain rules which we must observe to successfully establish habit. According to Bain and James these are--

2

- 1.(An Introduction to Child Study, p.233)
- 2.(New Psychology p.184)

1. We must "launch ourselves with as strong and decided an initiative as possible". James says, "Engelop your resolution with every aid you know, make engagements incompatible with the old way and encourage the new".

2. "Never suffer an exception to occur till the new habit is securely rooted in your life". Continuity of training is imperative. James says, "Allowing an exception to occur is like dropping a ball of yarn that we have been carefully winding up." This theory is incompatible with the tapering off method of abandoning such habits as drink and opium. If there be any possibility of carrying it out abrupt acquisition of the new habit is the best way.

3. The third maxim is, "Seize the first possible opportunity to act on every resolution you make and on every emotional prompting you may experience in the direction of the habits you desire to gain". It is only by action that habit can be established.

4. James suggest another principle, "Keep the faculty of effort alive in you by a little gratuitous exercise every day."

This is necessary because habit grooves out general as well as particular forms of discharge. Thus a man may acquire a habit of industry or of laziness which will influence him in every department of his life. The idea of doing something we do not want to do just to keep the faculty of effort alive seems however a little ludicrous. There are plenty of

things to be done that will serve the same purpose and at the same time accomplish some worthwhile end.

Bagley sums up the preceding laws in one inclusive statement which calls for "The focalization of consciousness upon the process to be made automatic; attentive repetition of this process, permitting no exceptions until automatism results."

As these rules are adopted and action follows precept habits become established but during the time of their formation there may be certain periods of no or only slight improvement. Such periods are called plateaus and have proven very difficult to explain. Several theories have been advanced to interpret their significance. Colvin has summed these up rather well. Bryan and Harter hold that they arise because the attention is directed to the completing of a lower order of habits that are reaching their maximum development. But it has been proven that no order of habit is entirely perfected before another sets in. Peters says, "Plateaus in habit formation occur when a change in method is necessary to further improvement". In typing and telegraphy for example, he says the required change consists in the substitution of words and phrases for letters as the units of performance. Edman holds the view that, "Some of the less observable features of skill in performance which

1.

2.

3.

1. (Ed. Values p.17)
2. (The Learning Process p.42-43)
3. (Human Conduct )
4. (Human Traits and their Social Significance

only later become overt in speed and accuracy are being attained during these seemingly profitless and discouraging intervals." Bennett likens it to the holding up of traffic while improvements are being made in the road. Book as quoted by Colvin has another solution to offer. He concludes that "the plateaus are due to lengthy periods of lapses of attention, relaxations of interest and effort." After a time of concentration the mind wanders. If new objects of attention and new modes of reaction are found the plateau stage may be avoided or lessened.

This latter explanation seems the most practical one. D. H. Colcord says, "Put a man in a new environment and all his old habits are broken up and he must learn new ones. The change is stimulating at first-- it acts upon him as does a vacation among new faces." He is interested and attends closely to his new work but after a time interest lags. He thinks he can do his work automatically but the habits are not thoroughly formed and so the right responses cannot be made. Discouragement follows mistakes, because he does not realize the reason of this lull. Educationalists in trying to meet this difficulty use all kinds of natural and artificial interests to stimulate the flagging interest and so avoid these plateaus in the learning process.

The time necessary to establish a habit is dependent on a number of factors. It will vary with the emotional and volitional accompaniment, the closeness with which the rules



are observed, the number of other habits being formed simultaneously and the general health of the system. Munsterburg says advance in habit building depends upon the local situation of the sensory track and outgoing discharge, and upon the quantitative amount of the incoming current and of the outgoing discharge. In terms of the resistance in the nervous arcs habit formation depends on the laws of Primacy, Recency, Frequency, Intensity and Congruity which state that other things being equal each of these factors will determine the path to be taken and the time of opening it.

Because of these influencing factors it is almost impossible to devise an exact method of measuring habit. Any scheme that might be used to measure learning could of course be adapted here, for habit forming is really a process of learning. The development in acquiring skills is probably most easily measured, for example the progress in learning to typewrite can be measured fairly definitely by the increase in accuracy and the decrease in the time consumed. But there are no definite measurements that can be applied to adequately measure all mental and physical habits.

There are however certain indications which we may note as significant of the on coming and establishing of habit. The most outstanding of these is the ability to repeat the action with lessened effort and attention. The volition element so necessary at first is in some cases, no

longer needed. Gradually the guidance of the action involved slips down into the unconscious. Thus Reid says, "What we have been accustomed to do we acquire not only a faculty but a proneness to do on like occasions so that it requires a particular will and effort to forbear it, but to do it requires very often no will at all. We are carried by habit as by a stream in swimming if we make no resistance." 1

Another factor we might note is that the process is capable of being set in action by a slighter cue. This is especially true in regard to a series of connected actions as the routine duties of office life. They must be learned individually at first but come to follow each other automatically. In the third place as habit begins to gain control it becomes less liable to disturbance from accompanying circumstances, and when disturbance does take place it is productive of greater impatience. Errors are gradually eliminated as the process becomes automatic and so accuracy is one of the distinguishing features of the newly formed habit. When firmly established, ease, rapidity and general efficiency also characterize the habit.

The question as to how far absolute definiteness of response to stimuli is a requisite of habit formation and an indication as to its perfectibility has been discussed to some extent. Some hold that repetition is not the essence of habit. A child forms the habit of attending school reg-

ularly every day in the school year but when the holidays come the habit has no power over him. Dewey says, "The essence of habit is an acquired predisposition to ways or modes of response, not to particular acts except as under special conditions they express a way of behaving." Habit he says means special sensitiveness or accessibility to certain classes of stimuli. This brings us to the question of varying responses. A man with the habit of giving way to anger may have his temper aroused by certain stimuli but his responses may vary from using violent language to committing murder. Or we might notice the responses made by a bank manager during the days work. He is so well guided by his established habits of shrewdness, resourcefulness etc. that he seldom makes a "faux pas" in spite of the various demands made upon him. How can we reconcile such variation with the physiological basis of habit which maintains that ~~"repetition causes a change in the tissue and this tissue is a new habit which maintains that~~ "repetition causes a change in the tissue and this tissue is a new habit of cohesion". From this point of view repetition must mean the formation of openings for a number of paths along the one arc. The general but not the particular direction of discharge is laid out.

On the other hand we may affirm that modes of

1. (Human Nature and Conduct p.45)
2. (Peters, Human Conduct p.26)

response are often just as definite as the sensitiveness to certain stimuli. We might mention the oft quoted story of the old veteran who dropped his lunch on hearing the familiar call to attention.

We also note that skills are the performing of definite responses to certain stimuli, but this definiteness has only come gradually as the useless movements have been eliminated in the learning process.

The possibility of habit formation is not confined to any special time in the life of the individual except in so far as the habits to be acquired are based on instincts which are transient and so must be established when opportunity offers. It is however generally conceded that habits are most easily and successfully established in youth. It is then that the brain is plastic and more susceptible to stimuli. Habits established at this time become firmly ingrained in the developing brain. This is why passages learned in youth are better remembered than those learned in later years. The child's plasticity is an advantage from the point of view of final attainment and a disadvantage from the point of view of rapid progress. Habits which have been learned previously are in a large measure the means of rapid learning of a new form of activity. The adult in so far as has an advantage over the child in that he has more habits of control which he can apply to the new situation. But although adults can attain more rapid

improvement, they cannot attain such a high rank because the older habits are not exactly like the ones which have to be formed in the new task and therefore they interfere with the formation of the newer habits.

Consequently because the habits acquired in youth become so firmly established and because they interfere to a certain extent in the forming of new habits it is of great importance that these early habits should be those which will be of greatest value to the individual. Of course all habits can not be established at this time because of the immaturity of the child. James says, "If the period between twenty and thirty is the critical one in the formation of intellectual and professional habits, the period below twenty is more important still for the fixing of personal habits properly so called such as vocalization and pronunciation, gesture, motion, and address. Hardly ever is a language learned after twenty spoken without a foreign accent. Hardly ever can a youth transferred to the society of his betters unlearn the nasality and other vices of speech bred in him by the association of his growing years." The great opportunity of the educationalist lies in the fact that the school age and nerve plasticity are practically identical. During this period we form not only habits of thought and action but habits of attitude to life and to life's problems. What an individual regards as right or wrong, what he will cherish or champion

in industry, government, and art depends in large measure on his early education and training and on the opinions and beliefs of other people with whom he repeatedly comes in contact. The child is so susceptible that impressions made at home and at school soon become permanently fixed in him. In this sense truly, "the child is father of the man."

Peters says, "Outside of their own business the ideas gained by men before they are twenty-five are practically the only ideas they shall have all their lives. The mental grooves and channels are set, the power of assimilation gone." Desires that have been set up tend to go on in the same direction. To quote the old adage "as the twig is bent the tree is inclined". This explains the difficulty of turning back, of changing habits of action and thought. A man who has established the money making habit goes on speculating and attempting to get more long after he has acquired an abundance. A man who has been brought up to dig ditches finds it difficult to rise above his position. In this connection James says, "Habit alone prevents the hardest and most repulsive walks of life from being deserted by those brought up to tread therein. It keeps the fisherman and the deck-hand at sea through the winter; it holds the miner in his darkness, and nails the countryman to his log-cabin and his lonely farm through all the months of snow; it protects us from invasion by the natives of the

1. (Human Conduct p.266)
2. (Psychology Vol. 1. p. 121)

desert and the frozen zone. It dooms us all to fight out the battle of life upon the lines of our nurture or our early choice and to make the best of a pursuit that disagrees, because there is no other for which we are fitted, and it is too late to begin again."

We see then the importance of a good start, of setting up in youth those habits which will be assets in later years when it will be too late to attain them. Horne says, "By the age of thirty most of us are the servants of our past selves," for just as the lapse of days hardens putty and concrete, so the lapse of years gradually reduces the plasticity of the nervous system until finally the whole is practically set like some plastic cast of a man." It is the duty therefore of every parent and every teacher to see to it that while the nerve cells are plastic the child acquires a great fund of those habits which will prove necessary and useful, throughout life. This is necessary in each succeeding generation because the law of the non-transmission of acquired characters excludes the possibility of children receiving any direct benefit from the habits of their parents.

## CHAPTER IV

### A Classification of Habits

---

To attempt a classification of habits is a difficult matter for habits are so wide in their application as to include every phase of life and conduct. It is practically impossible to make any grouping that will cover the whole field. We might make a classification from the physical viewpoint as habits of manner and habits of skill, and from the mental viewpoint as habits of volition and habits of thought. Or we might consider habits as to their scope whether particular or general, or as to their economic value whether productive or consumptive. Again we might divide habits into two groups organized from the ethical point of view as moral or immoral, good or bad. No one of these groupings is all inclusive. We shall however choose the last and as far as possible classify habits as moral or immoral, for not only is this the most common grouping but it is the one which has the most practical interest.

Our first problem is to discover what makes a habit bad or good and so determine a basis for the classification. Gordy says, "Bad habits are those which are unfavorable to growth," and this is true whether we mean



physical, mental, or spiritual growth. We would class walking incorrectly, overeating, observing carelessly, judging on insufficient data etc., in this group. Edman says, "Good habits are those serviceable to one's own happiness and to that of his fellows". This hedonistic view is not recognized as the highest by modern ethical philosophers. To make it more acceptable we might modify the statement somewhat and consider it from a perfection viewpoint as, good habits are those serviceable in the production of the highest perfection in the individual and in society. Conversely bad habits are those which are disserviceable and non productive of good. But how are we to judge between those habits which are serviceable and those which are not? Subjectively and objectively our criterion of judgment lies in a habit's immediate overt effects and in its ultimate consequences upon physique and character. 1

The great class of habits which are usually referred to when we speak of immoral habits are the acquired appetites such as smoking, drinking, taking drugs etc. The immediate overt effects of such are readily discernible in their consumption of time and energy. They are also accompanied by a demoralizing effect and tend to weaken both mind and body. From a social point of view too, such habits are a menace for their expression may cause great

distress and discomfort to many besides the individual who expresses them.

Another group of habits which we class as immoral includes all those whose immediate effects are destructive socially. These are such habits as stealing, gambling and gossiping which besides being detrimental to the individual's character, should be wiped out because of their overt effects on society. Legislation deals with such habits but only in a way as to prevent their public expression rather than to uproot them.

We also class as immoral all those unnecessary habits which to a large extent have their origin in the nervous constitution of the individual. Such habits as biting the lips, tapping the foot, or fingering one's watch chain not only are useless but they consume valuable time and energy. They wear out the nervous system and are annoying to others. One of the drawbacks of modern civilization lies in this fruitless waste of energy. We rush from one thing to another and even in our leisure moments -- if we have any -- few have learned the habit of relaxation. This continual tax upon our nervous system is bound to have a destructive effect individually and nationally. Regarding the unhappy effect of many acquired personal habits we need only remind ourselves of how many public addresses are spoiled for us by the speaker's irritating mannerisms. And how

often we are compelled to admit that certain worthy people get on our nerves because of their unpleasant habits.

Even more undesirable are immoral mental habits such as mental laziness, fickleness, indecision etc. For in the long run habits of thought are more influential than habits of action for they outlive the latter in many cases. This has been demonstrated various times when legislation has endeavored to bring about changes in a people by changing outward conditions. More than once have attempts to clean up slum districts failed because outer conditions only were altered. Raising wages will not better the conditions of poor unless their standard of living is raised also. As Dewey says, "This is why glowing predictions of the immediate coming of a social millenium terminate so uniformly in disappointment. Habits of thought outlive modifications in habits of overt action." A new generation must come whose habits of mind have been formed under the new conditions or whose minds are at least plastic enough to receive them.

It is encouraging to note that there is nothing in the nature of the law of habit to make the formation of bad habits necessary. The law of habit tends to make us whatever we want to be enough to express our desires in action. If then we take care to cultivate habits of honesty, thrift and attention we will become as it were immune to dishonesty thriftlessness and inattention. A temperate man finds it

1.)

2 ) Human Nature & Conduct, p. 108.

practically impossible to be intemperate. The habits of right living take just as strong a hold on us as those which are injurious, and the former when firmly established make the acquisition of the latter practically impossible. The habit of decision forestalls the habit of indecision. How important then that we should establish these habits not only for their own sake but also as a protection against the opposing destructive habits. The futility of such propositions as sowing wild oats to get them out of the system becomes apparent. Physiologically we know it to be true that what a man sows that and that only shall he also reap.

If bad habits have been formed however, we may yet be able to eradicate them. The laws of habit breaking are essentially the same as those of habit forming. Hadfield would hold that all that is necessary is the exposing of the repressed morbid complex underlying the habit but we must disagree. This is not sufficient to break even such a simple habit as that of a child sucking his thumb. Rather we must look to James' rules as the surest aid in habit breaking. We must launch ourselves with a strong initiative marshalling all our forces against the undesirable habit and never allowing it to express itself. In time we will probably be able to overcome it, especially if we put something else in its place. Some contend that the only way to

overcome a bad habit is to replace it with another.

And certainly we find this to be the most successful method. The possibility of modifying formed habits must necessarily have a physiological explanation. Seashore says, "Modification is possible because neural paths are not formed by the actual growing together of successive neurones in the chain, the neurones lie in bunches like live wires, most delicately insulated in such a way that a new path may be forced through at any synapse and old paths may be blocked by interference or disuse".

If the habit is firmly entrenched the process may be long and difficult but gradually we shall find that, "the old order changeth giving place to new". Much time and energy will however be conserved if we guard against the formation of unprofitable habits for it is evident that it is much easier to avoid say the first dose of some narcotic than to break the habit of taking it once it has been established.

Just as important as avoiding the formation of immoral habits is the necessity of guarding against the incorrect formation of good habits. Bennett says, "The waste caused through forming imperfect habits is like building an elaborate machine to make one article. If adjusted to turn out a bad product it will be absolutely sure never to turn out a good one. You cannot improve its production by speeding it up nor by working it longer hours.

1.(Introduction to Psychology p.222)

2.(Psychology and Self Development, p.48)

Yet many a child is seeking to improve his penmanship simply by writing more or his ability to study simply by studying more." As truly as practise makes perfect if the practise is perfect, practise makes imperfect if the practise is of that sort. Attentive and corrective effort toward the ideal at each repetition alone can insure correct habit formation. We must also avoid developing a habit to excess. This may not be possible in some cases but it is in others. We may for example develop emotional habits too far. If we allow certain emotions to surge through us each repetition establishes them more firmly until it is impossible to control them. Similarly the habit of optimism if developed to the extent where one can see no evil, is detrimental.

A strong will, using the term in the narrower sense as applying to acts which cannot be inattentively performed, is a great aid in the prevention and cure of immoral habits. It acts as the driving power that compels to action. Interest may lag and pleasure may wane but will power proves the unfailing incentive. We decide for example to establish a habit of exercising regularly but without will power to force us to action failure will almost inevitably result unless the extrinsic impulses are strong enough to overcome the inhibitory impulses. Our duty therefore is to marshal the powers of the will to the support of the worthy action. In speaking of will we may have given the popular impression that it is a separate faculty. Such inference is difficult

to avoid but modern psychologists agree that the will properly speaking is simply a convenient appellation for the whole range of mental life as viewed from the standpoint of control. Angell says, "The whole mind active this is the will." A well developed will consists in the ability voluntarily to direct one's attention effectively and for unlimited periods in definite directions. All thoughtful activity facilitates the development of a strong will. Reason has a very important part to play but it is only one factor and may not have the determining influence for voluntary action involves all mental activity. As James says, "Voluntary action is at all times a resultant of the compounding of our impulses and inhibitions." The choice made will be determined by the education, ideals, and habits instilled in the individual in the past and will be in accordance with previous action. A weak willed person deviates from the path, laid out for him by his ideals, to gratify present satisfaction. A strong willed person keeps his ideal ever before him and fixes his attention on the matter in hand as a step toward the attainment of that ideal. An individual who simply follows the stronger impulse acts without volition at all. A strong will then, aids in the formation of habits which when established will function without its intervention. Habits disburden the will and thus give to it the chance to adapt itself to higher purposes.

1.(Psychology p.436)

2.(Talks to Teachers p.178)

Will is itself largely a matter of habit. For even if a child is born with the possibilities of developing strong will power and his parents encourage him rather in indulging his every desire and never encourage the habit of resistance in him the time will come when resistance will be impossible. Children may however be guided to form habits of decision, firmness, etc. which will all aid in the formation of a strong volitional power.

Maher says "Each solicitation conquered, each impulse to immediate gratification resisted by building up habits of self control goes to form a strong will and the stronger a man's will grows the greater the facility with which he can repress transitory impulses and the more firmly can he adhere to a course once selected in spite of obstacles." This is only the law of habit which provides for the registration of every action and in such a way as to make similar action easier in the future. It is useless to say, "I will not this time but I know I could if I really exerted my will." Such a response becomes ingrained as a habit and will power is weakened. But if we create the habit of the dominance of the will it becomes capable of determining the issue of every conflict so certainly and easily that conflicts can hardly arise. McDougall says, "The motive to do the right becomes a fixed and consolidated habit."



And so we see habit reaching out over the whole field of conduct. The type of actions we generally choose is fixed by habit, and will power which puts our choice into action is generated in the power house of habit. Our future is therefore determined by the habits not only of action but also of volition which we are creating in the present. We become enslaved to our past, but unconsciously for our slavery only consists in doing exactly what seems good or what we desire most to do. This is in essence the theory of determinism but it is a determinism that is directed. Its proper direction depends on the habits of reason and reflection we have developed and which act as guide posts to the will. We have here the ancient's ideal of a free man as one in whom reflection and reason are established as habits, and who therefore is set free from the promptings of appetite and sense.

We cannot overestimate the worth of good habits. It has been said that perhaps the most valuable habit to form is the habit of forming good habits. Care as to what habits we allow our nerve cells to acquire is of vast importance. The habit of reflection should be our guide and it should be followed by habits of decision and volition. To establish physical habits, action must follow, for "who by taking thought alone can add one cubit to his stature?" A man must really be what he purposes to be. We may con-

clude with Warren, "Habits are useful and indispensable in so far as they fit us for coping with the conditions of life and in that they form the basis of more complex acquisitions. They are detrimental and undesirable when they become so firmly fixed as to prevent us adapting our behaviour to new conditions.

## CHAPTER V.

### Some Values of Habit Formation.

---

We shall now attempt some valuation of habit formation, considering the advantages and the disadvantages to be derived; and establishing its importance as a conduct-control. We have noted that the essential characteristics of well formed habits are, diffusion of attention, reduction of consciousness, and greater ease and efficiency of reaction. Such characteristics pertain both to good and bad habits and are of such importance in the case of the former that although mention has been made of them before we shall elaborate on them here.

Our mental energies would be soon outworn if we had to give our undivided attention to each act we perform. But fortunately this is not necessary. In learning to play the piano for instance, at first attention has to be given to each separate impulse, each key, rest, accent etc. Later it can be withdrawn from the details and given to larger relationships. Then after considerable practise the system of pathways becomes so interconnected and perfected that as the eye runs over the piece, the incoming stimuli of themselves pass directly to the appropriate responses. Attention may

therefore be withdrawn and turned to other matters without interrupting the process. One is conscious of what is going on but more as an onlooker than as a director.

Not only is it possible for a habit to function without attention but consciousness itself may be reduced or even eliminated in some cases. Often we find that we have done certain things without having been conscious of our actions. The routine habits of daily life and all chain movements such as walking are carried on partly or wholly in this automatic way. Some claim that it is only as they sink into the subconscious that habits really become effective and we see this to be true in what Bagley calls ideomotor habits. He says, "If one is to speak or write effectively the form must be largely outside the focus of consciousness". The little conventionalities of etiquette -- those habitual adjustments that make the person of good breeding must be so fixed by constant and in the beginning conscious repetition that they will go off without mental effort -- that they will become second nature." The lower centres thus take over the control of a great number of such movements and leave the higher cortical centres free for mental activity and for attaining and perfecting new reactions. It has been noticed that when a process becomes so thoroughly automatised in this way, bringing the adjustments

back into consciousness may interfere with its efficiency. Thus speaking or walking become almost impossible if we attend to the individual actions involved.

The subconscious centres would ~~not~~ be able to carry on this work if efficiency did <sup>not</sup> increase with the on-coming of habit for some movements when first performed are so difficult that they can only be accomplished with the maximum of attention. But after a certain amount of repetition even these begin to take shape and are performed with greater ease and efficiency. When firmly established they go off with the ease and alacrity of reflexes. Vague purposeless movements give place to definite movements performed for definite purposes, sensations become more explicit, perceptions become clearer, memory becomes more accurate and reasoning becomes more correct and logical. Accordingly an inestimable amount of time and energy is saved as illustrated in the time worn example of the cat secured in the latched box. By comparing its first attempts to get out with its learned response, we obtain some idea of the advantage gained. It would be impossible for us to make much advance if such progress did not take place for all our powers and time would be taken up in performing these trivial movements which are at least just as successfully carried on unconsciously.

As efficiency increases and the mind is left free

to attack other problems the field is opened for further habit formation. The nature of the new habits will depend to some extent on that of the old, for habits attract the formation of similar habits. Peters says, "One's whole character stands watch and demands the credentials of his separate habits as they present themselves and admits to favor only those in harmony with that system until his life has come to be built up around that ideal which he has chosen for himself." We are enabled to build on what we have. Just as a constructor must lay his foundation before he can erect his building so must lay our foundation habits before we can erect an adequate structure of habitual reactions. So habits of thought and decision must precede habits of judgment. The broader the foundation we lay the greater possibility we have of acquiring more habits. "To him that hath shall be given" we find psychologically true. A child with a good collection of useful habits has the equipment for further development.

We find accordingly that in time the brain attains a certain "set" which causes the individual to respond to new influences in an habitually predetermined manner. We can predict with no small certainty the response that one whom we know well will make to certain stimuli. If the set is broad in its application determining a person to act reflectively, to welcome new achievements to show sympathy to others etc it will prove of great value as a progressive factor.

But if the set formed is conservative tending to narrow the individual's interest and sympathy to a limited sphere it will prove a drawback from the point of view of progress.

Many holding strictly to the conservative point of view fail to recognize the distinction in the kind of habits to be attained and designate them all as restrictive. Sully says, "Habit is the element of persistence, of custom, the conservative tendency, and that since growth implies flexibility, modifiability, susceptibility to new impression, habit is in a manner opposed to growth." This is the popular view of habit. Mankind is pictured as being driven along in fixed paths which have become worn into such deep ruts that deviation from them is practically impossible. Not only physically but also mentally are we bound by these restrictions. Dewey says, "Habits restrict the reach and fix the boundaries of thought. They are the blinders that confine the eyes of the mind to the road ahead." If we do not constantly struggle to keep ourselves fresh and open minded we all fall before we know it into certain fixed and one sided ways of looking at life's problems. Peters says, "Habit will crystallize our mental conduct in some definite shape so that we can apperceive in only one dominant way". There must be an everlasting struggle in every mind between the tendency to keep unchanged and the tendency to renovate its ideas. Most of us grow more and more

1. (Psychology, Vol. 11. p. 49)
2. (Human Nature and Conduct, p. 172)
3. (Human Nature and Conduct, p. 25 )

enslaved to the stock conceptions with which we have once become familiar and less and less capable of assimilating impression in any but the old ways. A great many individuals have water tight compartments filled with old reaction systems which resist the storm and stress of adult life. The mind thus may take a conservative set which if not interfered with tends to dominate all thought and action. Early religious and social training especially is modified with difficulty or not at all. Ways of belief, of expectation, of judgment and attitude, emotional dispositions of like and dislike are not easily modified after they have once taken shape. And this is all due to the power of habit. Judd cites an instance of a man who had voted for one party all his life. On one occasion a friend of his in the opposing party was nominated for some petty local office. The old hardshell worked faithfully for his friend until election day and then the habit of a lifetime proved too much for him and he went to the polls and voted against his friend.

Under such conditions purposive action is impossible. But we have seen that there are certain habits which we may form which tend to keep us out of these ruts such as habits of reflection, of open-mindedness and all those we classified as good habits. Sully says, "Although" deliberation is a slowing and complication of action a substitution of a reflective for an impulsive and quasi-mech-

1. (Genetic Psychology for Teachers, p.66)
2. (The Human Mind, Vol. II p. 280)



anical process, it comes under the modifying influence of practise or habit.". Such habits will form an important counterpoise to the hardening and fossilization which certain habitual actions tend to bring about in the nervous system. In reflective thought we subject our accustomed ways to deliberate analysis however immediately persuasive these may have become, and deliberately insitute new habits in the light of the more desirable consequences they will bring. Habits come to be regarded not as final or as good in themselves but as means of accomplishing good. And habits of thought can only accomplish good if they are unhampered and free from restriction. Gordy says, "An open-minded reasoner is one who know and feels that when men have done their utmost to avoid error they cannot be so sure they are right as to shut their minds to all further consideration." The formation of such an attitude into a habit would free us from slavery to stock conception and from drifting into what some consider the inevitable terminus to which life sweeps us on -- old fogysm.

1

Some indeed do fall heir to such a fate and so illustrate the inexorable force of habit. Those who escape however are not less controlled by habit, but the habits which they have created and which govern their reactions, are of such a nature as to encourage progress rather than fociliz-  
ation. Habits of clear thinking, keen judgment and such as we have mentioned lead us to investigate new paths and become just as gripping in their way as those habits which tend to

confine us to a much narrower field.

These in fact are the only agencies by which progress can be effected. What Scientist employed in research could make any contribution to the world if his life were not based on habits of industry, accuracy, observation etc. Undirected thought is useless and without power to accomplish anything. There must be a certain discrimination. Very few can be really successful in more than one field and so blinders are necessary to confine the thought and attention to that field, and to shut out those things that might interfere.

Without this regulation we have an unbalanced state of mind tending to confusion. Dewey says, "Outside the scope of habit, thought works gropingly fumbling in confused uncertainty." It lacks means of execution and tends to become theoretical and often impossible of application and so is of little value.

Physically development takes place most<sup>adequately</sup> through well regulated habits of diet, exercise, and rest. Unless we habitually follow out these regulations growth will be hindered or checked.

Ethically our progress consists in the acquisition of moral habits and the worth of such training may also be measured in the disciplinary exercise of the will. Controlling a bad temper, exercising self denial, order, effort etc accustom a youth to act according to a fixed rule or plan instead of vacillating and changing with the impulse of the moment. We cannot have such habits too deeply ingrained for

upon them depends the happiness and worth of the individual and so of the state.

Murray says, "In fact all hope of intellectual and moral improvement rests on the power of reforming habits." 1

Maher concludes, "The total collection of man's acquired moral habits grafted into his natural temperament make up his character. It is a combination of nature, his inherited character, and nurture, his experiences." But by far the greater power in controlling conduct is to be found in the habits of reaction that he has set up. We have seen in fact that these embrace the inherited factors modifying some of the reflexes and instinctive tendencies into habits and crushing out others. Innate power no matter how strong is helpless unless directed by habit. On the other hand weakness may be converted into strength by the formation of the right kind of habits. Carlyle says, "The weakest living creature by concentrating his powers on a single object can accomplish something whereas the strongest by dispersing his over many may fail to accomplish anything. The drop by continually falling bores its passage through the hardest rock." Benjamin Kidd says, "The outlook of any people may be changed in one generation by working with the young." 3.

We may conclude then that there is no factor in the individual's physical or mental make up but which comes under the law of habit. Our very impulses, emotions, desires,

1. (Handbook of Psychology. p.11)
2. (Psychology, p.391)
3. (The Science of Power)

thoughts, and even our will power are subject to the same dominating principle. No response but has some part in determining our future, no smallest stroke of virtue or vice but makes its lasting impression on our nervous system and so helps to determine the heaven or hell we make for ourselves in this world. Once more we refer to James who says, "All our life so far as it has definite form is but a mass of habits -- practical, emotional and intellectual -- systematically organized for our weal or woe and bearing us irresistible toward our destiny whatever the latter may be."

1

Bibliography

- Angell, J. R., Psychology.  
Henry Holt and Company, New York, 1908
- Bagley, W. C., The Educative Process.  
The Macmillan Co., New York, 1922.
- Bain, Alexander, The Emotions and the Will.  
Longmans, Green, and Co., London, 1875.  
The Senses and the Intellect  
Longmans, Green and Co., London 1822.
- Baldwin, James Mark, Mental Development  
The Macmillan Company, London 1903.
- Bennett, H.C., Psychology and Self Development  
Ginn and Company, Boston, 1920.
- Bowne, B.P., Introduction to Psychological Theory.  
Harper and Brothers, 1886.
- Colvin, S. S., The learning Process.  
The Macmillan Co., New York, 192.
- Dewey, John, Human Nature and Conduct  
Henry Holt and Company, New York, 1922.
- Drummond, W. B., An Introduction to Child Study  
Edward Arnold, London 1907.
- Dunlap, Knight, Elements of Scientific Psychology.  
C. V. Mosby Co., St. Louis, 1922.
- Edman, Irwin, Human Traits and their Social Significance  
Houghton, Mifflin, Co., New York, 1920.
- Freeman, F. N., How Children Learn.  
Houghton Mifflin, Co., Boston.
- Gehring, J. G., The Hope of the Variant.  
Charles Scribner's Sons, New York, London, 1923.
- Gerdy, J. B., New Psychology.  
Kinds and Noble, New York, 1898
- Hadfield, J. A., Psychology and Morals (2nd. ed.)  
Methuen and Co. Ltd., London.

Hollingsworth & Poppenbanger, Applied Psychology  
D Appleton & Co., New York, 1916.

Hoffman, F. S., Psychology and Common Life

G. P. Putnam's Sons, New York, 1903.

Horne, H. H. Psychological Principles of Education.  
The Macmillan Co., New York, 1907.

James, Wm., Psychology. Volume I.  
Henry Holt and Co., 1896.

James. Wm., Text Book of Psychology  
Macmillan and Co., 1906.

Judd, C. H., Genetic Psychology for Teachers.  
D. Appleton Company, New York, 1909.

Ladd & Woodworth, Elements of Physiological Psychology  
Charles Scribners Sons, New York. 1915.

Loveday & Greene, Introduction to Psychology.  
Clarendon Press, Oxford, 1915.

Maher, M., Psychology.  
Longmans Green & Co., 1900

Munsterberg, Hugo, Psychology and Life.

Houghton Mifflin Co., Boston & New York, 1899.

Murray, J. Clark, Handbook of Psychology,  
De Wolfe Fiske & Co., Boston, 1897.

Peters, C. C., Human Conduct.  
The Macmillan Co., N.Y., 1920.

Pillsbury, W. B., Fundamentals of Psychology.  
Macmillan Co., N.Y., 1919.

Porter, Noah, The Human Intellect.  
Charles Scribner Sons, 1893.

Rosimi, A., Psychology Volume II.  
Kegan, Paul, Trench & Co., London 1885.

Royce, Josiah. Outlines of Psychology.  
The Macmillan Co., New York, 1916.

Russell B., Analysis of the Mind.  
G. Allen & Unwin 1921.

Seashore, Carl E., Introduction to Psychology.  
The Macmillan Co., New York, 1923.

Sisson, E. O., Essentials of Character.  
The Macmillan Co., New York, 1915.

Stephen, Leslie, Science of Ethics  
Smith, Elder & Co., London 1907.

Stout, G. F., Analytic Psychology. Volume 1.  
George Allen & Co. Ltd., London, 1909.

Sully, James, The Human Mind. Volume II  
Logmans, Green & Co., London 1892.

Sully, James, An Outline of Psychology  
The Macmillan Co., New York, 1906.

Titchener, E. B., An Outline of Psychology.  
The Macmillan Co., New York, 1906.

Thorndike, E. L., Elements of Psychology  
A. G. Seiler, New York, 1907  
Principles of Teaching.  
A. G. Seiler, New York, 1911.

Titchener, A Text Book of Psychology.  
The Macmillan Co., New York, 1915.

Warren, H. C., Human Psychology.  
Houghton Mifflin Co., Boston, New York, 1920.

Watson, J. B., Psychology from the Standpoint of a  
Behaviorist.  
Lippincott, Co., Philadelphia, 1919.

Woodworth, Dynamic Psychology.  
Columbia University Press, New York, 1918.