

cumstances of which we are well acquainted, do really admit of being ascertained; and that the other branches of human knowledge, which this undertaking presupposes, are so far advanced that the time is ripe for its commencement. Such is the object of the Social Science.

That the nature of what I consider the true method of the science may be made more palpable, by first showing what that method is not, it will be expedient to characterize briefly two radical misconceptions of the proper mode of philosophizing on society and government, one or other of which is, either explicitly or more often unconsciously, entertained by almost all who have meditated or argued respecting the logic of politics, since the notion of treating it by strict rules, and on Baconian principles, has been current among the more advanced thinkers. These erroneous methods, if the word method can be applied to erroneous tendencies arising from the absence of any sufficiently distinct conception of method, may be termed the Experimental, or Chemical, mode of investigation, and the Abstract, or Geometrical, mode. We shall begin with the former.

...

John Stuart Mill, *A System Of Logic* (8th ed., 1872), book VI, chs. 1-3, 6 (vol. 2, pp. 415-435, 464-468)

BOOK VI.

ON THE LOGIC OF THE MORAL SCIENCES.*

* Mill uses as an epigraph for this part of his work the beginning of the 10th "epoch" (titled *Des progrès futurs de l'esprit humain* [Of future progress of the human mind]) from the Marquis de Condorcet's *Esquisse d'un Tableau Historique des Progrès de l'Esprit Humain* [Historical Sketch of the Progress of the Human Mind] (1794):

Si l'homme peut prédire, avec une assurance presque entière, les phénomènes dont il connaît les lois; si lors même qu'elles lui sont inconnues, il peut, d'après l'expérience, prévoir avec une grande probabilité les événements de l'avenir; pourquoi regarderait-on comme une entreprise chimérique, celle de tracer avec quelque vraisemblance le tableau des destinées futures de l'espèce humaine, d'après les résultats de son histoire? Le seul fondement de croyance dans les sciences naturelles, est cette idée, que les lois générales, connues ou ignorées, qui régissent les phénomènes de l'univers, sont nécessaires et constantes; et par quelle raison ce principe serait-il moins vrai pour le développement des facultés intellectuelles et morales de l'homme, que pour les autres opérations de la nature? Enfin, puisque des opinions formées d'après l'expérience ... sont la seule règle de la conduite des hommes les plus sages, pourquoi interdirait-on au philosophe d'appuyer ses conjectures sur cette même base, pourvu qu'il ne leur attribue pas une certitude supérieure à celle qui peut naître du nombre, de la constance, de l'exactitude des observations?

Here is the passage as translated in an early English edition (*Outlines of an Historical View of the Progress of the Human Mind*, London, 1795):

If man can predict, almost with certainty, those appearances of which he understands the laws; if, even when the laws are unknown to him, experience of the past enables him to foresee, with considerable probability, future appearances; why should we suppose it a chimerical undertaking to delineate, with some degree of truth, the picture of the future destiny of mankind from the results of its history? The only foundation of faith in the natural sciences is the principle, that the general laws, known or unknown, which regulate the phenomena of the universe, are regular and constant; and why should this principle, applicable to the other operations of nature, be less true when applied to the development of the intellectual and moral faculties of man? In short, as opinions formed from experience, relative to the same class of objects, are the only rule by which men of soundest understanding are governed in their conduct, why should the philosopher be proscribed from supporting his conjectures upon a similar basis, provided he attribute to them no greater provided certainty than the number, the consistency, and the accuracy of actual observations shall authorise?

CHAPTER I.

INTRODUCTORY REMARKS.

§ 1. PRINCIPLES of Evidence and Theories of Method are not to be constructed *a priori*. The laws of our rational faculty, like those of every other natural agency, are only learned by seeing the agent at work. The earlier achievements of science were made without the conscious observance of any Scientific Method; and we should never have known by what process truth is to be ascertained, if we had not previously ascertained many truths. But it was only the easier problems which could be thus resolved: natural sagacity, when it tried its strength against the more difficult ones, either failed altogether, or, if it succeeded here and there in obtaining a solution, had no sure means of convincing others that its solution was correct. In scientific investigation, as in all other works of human skill, the way of obtaining the end is seen as it were instinctively by superior minds in some comparatively simple case, and is then, by judicious generalization, adapted to the variety of complex cases. We learn to do a thing in difficult circumstances, by attending to the manner in which

The backward state of the Moral Sciences can only be remedied by applying to them the methods of Physical Science, duly extended and generalized

we have spontaneously done the same thing in easier ones.

This truth is exemplified by the history of the various branches of knowledge which have successively, in the ascending order of their complication, assumed the character of sciences; and will doubtless receive fresh confirmation from those of which the final scientific constitution is yet to come, and which are still abandoned to the uncertainties of vague and popular discussion. Although several other sciences have emerged from this state at a comparatively recent date, none now remain in it except those which relate to man himself, the most complex and most difficult subject of study on which the human mind can be engaged.

Concerning the physical nature of man, as an organized being—though there is still much uncertainty and much controversy, which can only be terminated by the general acknowledgment and employment of stricter rules of induction than are commonly recognized—there is, however, a considerable body of truths which all who have attended to the subject consider to be fully established; nor is there now any radical imperfection in the method observed in the department of science by its most distinguished modern teachers. But the laws of Mind, and, in even a greater degree, those of Society, are so far from having attained a similar state of even partial recognition, that it is still a controversy whether they are capable of becoming subjects of science in the strict sense of the term: and among those who are agreed on this point, there reigns the most irreconcilable diversity on almost every other. Here, therefore, if anywhere, the principles laid down in the preceding Books may be expected to be useful.

If, on matters so much the most important with which human intellect can occupy itself, a more general agreement is ever to exist among thinkers; if what has been pronounced “the proper study of mankind” is not destined to remain the only subject which Philosophy can not succeed in rescuing from Empiricism; the same process through which the laws of many simpler phenomena have by general acknowledgment been placed beyond dispute, must be consciously and deliberately applied to those more difficult inquiries. If there are some subjects on which the results obtained have finally received the unanimous assent of all who have attended to the proof, and others on which mankind have not yet been equally successful; on which the most sagacious minds have occupied themselves from the earliest date, and have never succeeded in establishing any considerable body of truths, so as to be beyond denial or doubt; it is by generalizing the methods successfully followed in the former inquiries, and adapting them to the latter, that we may hope to remove this blot on the face of science. The remaining chapters are an endeavor to facilitate this most desirable object.

§ 2. In attempting this, I am not unmindful how little can be done toward it in a mere treatise on Logic, or how vague and unsatisfactory all precepts of Method must necessarily appear when not practically exemplified in the establishment of a body

How far this remedy of the backward state of the Moral Sciences can be at-

sponding art should possess universal, or even general, rules. The phenomena of society might not only be completely dependent on known causes, but the mode of action of all those causes might be reducible to laws of considerable simplicity, and yet no two cases might admit of being treated in precisely the same manner. So great might be the variety of circumstances on which the results in different cases depend, that the art might not have a single general precept to give, except that of watching the circumstances of the particular case, and adapting our measures to the effects which, according to the principles of the science, result from those circumstances. But although, in so complicated a class of subjects, it is impossible to lay down practical maxims of universal application, it does not follow that the phenomena do not conform to universal laws.

§ 2. All phenomena of society are phenomena of human nature, generated by the action of outward circumstances upon masses of human beings; and if, therefore, the phenomena of human man thought, feeling, and action are subject to fixed laws, the phenomena of society can not but conform to fixed laws, the consequence of the preceding. There is, indeed, no hope that these laws, though our knowledge of them were as certain and as complete as it is in astronomy, would enable us to predict the history of society, like that of the celestial appearances, for thousands of years to come. But the difference of certainty is not in the laws themselves, it is in the data to which these laws are to be applied. In astronomy the causes influencing the result are few, and change little, and that little according to known laws; we can ascertain what they are now, and thence determine what they will be at any epoch of a distant future. The data, therefore, in astronomy are as certain as the laws themselves. The circumstances, on the contrary, which influence the condition and progress of society are innumerable, and perpetually changing; and though they all change in obedience to causes, and therefore to laws, the multitude of the causes is so great as to defy our limited powers of calculation. Not to say that the impossibility of applying precise numbers to facts of such a description would set an impassable limit to the possibility of calculating them beforehand, even if the powers of the human intellect were otherwise adequate to the task.

But, as before remarked, an amount of knowledge quite insufficient for prediction, may be most valuable for guidance. The science of society would have attained a very high point of perfection if it enabled us, in any given condition of social affairs, in the condition, for instance, of Europe or any European country at the present time, to understand by what causes it had, in any and every particular, been made what it was; whether it was tending to any, and to what, changes; what effects each feature of its existing state was likely to produce in the future; and by what means any of those effects might be prevented, modified, or accelerated, or a different class of effects superinduced. There is nothing chimerical in the hope that general laws, sufficient to enable us to answer these various questions for any country or time with the individual cir-

Of what nature the Social Science must be

of all others engaged the most general attention, and been a theme of interested and earnest discussions, almost from the beginning of recorded time.

The condition, indeed, of politics as a branch of knowledge was, until very lately, and has scarcely even yet ceased to be, that which Bacon inadvertently on, as the natural state of the sciences while their cultivation is abandoned to practitioners; not being carried on as a branch of speculative inquiry, but only with a view to the exigencies of daily practice, and the *fructifera experimenta*, therefore, being aimed at, almost to the exclusion of the *lucifera*. Such was medical investigation, before physiology and natural history began to be cultivated as branches of general knowledge. The only questions examined were, what diet is wholesome, or what medicine will cure some given disease; without any previous systematic inquiry into the laws of nutrition, and of the healthy and morbid action of the different organs, on which laws the effect of any diet or medicine must evidently depend. And in politics the questions which engaged general attention were similar: Is such an enactment, or such a form of government, beneficial or the reverse—either universally, or to some particular community? without any previous inquiry into the general conditions by which the operation of legislative measures, or the effects produced by forms of government, are determined. Students in politics thus attempted to study the pathology and therapeutics of the social body, before they had laid the necessary foundation in its physiology; to cure disease without understanding the laws of health. And the result was such as it must always be when persons, even of ability, attempt to deal with the complex questions of a science before its simpler and more elementary truths have been established.

No wonder that, when the phenomena of society have so rarely been contemplated in the point of view characteristic of science, the philosophy of society should have made little progress; should contain few general propositions sufficiently precise and certain for common inquirers to recognize in them a scientific character. The vulgar notion accordingly is, that all pretension to lay down general truths on politics and society is quackery; that no universality and no certainty are attainable in such matters. What partly excuses this common notion is, that it is really not without foundation in one particular sense. A large proportion of those who have laid claim to the character of philosophic politicians have attempted not to ascertain universal sequences, but to frame universal precepts. They have imagined some one form of government, or system of laws, to fit all cases—a pretension well meriting the ridicule with which it is treated by practitioners, and wholly unsupported by the analogy of the art to which, from the nature of its subject, that of politics must be the most nearly allied. No one now supposes it possible that one remedy can cure all diseases, or even the same disease in all constitutions and habits of body.

It is not necessary even to the perfection of a science, that the corre-

of doctrine. Doubtless, the most effectual mode of showing how ^{tempted in the present work} the sciences of Ethics and Politics may be constructed would be to construct them: a task which, it needs scarcely be said, I am not about to undertake. But even if there were no other examples, the memorable one of Bacon would be sufficient to demonstrate, that it is sometimes both possible and useful to point out the way, though without being one's self prepared to adventure far into it. And if more were to be attempted, this at least is not a proper place for the attempt.

In substance, whatever can be done in a work like this for the Logic of the Moral Sciences, has been or ought to have been accomplished in the five preceding Books; to which the present can be only a kind of supplement or appendix, since the methods of investigation applicable to moral and social science must have been already described, if I have succeeded in enumerating and characterizing those of science in general. It remains, however, to examine which of those methods are more especially suited to the various branches of moral inquiry; under what peculiar facilities or difficulties they are there employed; how far the unsatisfactory state of those inquiries is owing to a wrong choice of methods, how far to want of skill in the application of right ones; and what degree of ultimate success may be attained or hoped for by a better choice or more careful employment of logical processes appropriate to the case. In other words, whether moral sciences exist, or can exist; to what degree of perfection they are susceptible of being carried; and by what selection or adaptation of the methods brought to view in the previous part of this work that degree of perfection is attainable.

At the threshold of this inquiry we are met by an objection, which, if not removed, would be fatal to the attempt to treat human conduct as a subject of science. Are the actions of human beings, like all other natural events, subject to invariable laws? Does that constancy of causation, which is the foundation of every scientific theory of successive phenomena, really obtain among them? This is often denied; and for the sake of systematic completeness, if not from any very urgent practical necessity, the question should receive a deliberate answer in this place. We shall devote to the subject a chapter apart.

CHAPTER II.

OF LIBERTY AND NECESSITY.

§ 1. THE question, whether the law of causality applies in the same strict sense to human actions as to other phenomena, is the celebrated controversy concerning the freedom of the will; ^{Are human actions, subject to the law of causality?} which, from at least as far back as the time of Pelagius, has divided both the philosophical and the religious world. The affirmative opinion is commonly called the doctrine of Necessity, as asserting human volitions and actions to be necessary and inevitable. The negative maintains that the will is not determined, like other phenomena, by antecedents, but de-

termines itself; that our volitions are not, properly speaking, the effects of causes, or at least have no causes which they uniformly and implicitly obey.

I have already made it sufficiently apparent that the former of these opinions is that which I consider the true one; but the misleading terms in which it is often expressed, and the indistinct manner in which it is usually apprehended, have both obstructed its reception, and perverted its influence when received. The metaphysical theory of free-will, as held by philosophers (for the practical feeling of it, common in a greater or less degree to all mankind, is in no way inconsistent with the contrary theory), was invented because the supposed alternative of admitting human actions to be *necessary* was deemed inconsistent with every one's instinctive consciousness, as well as humiliating to the pride and even degrading to the moral nature of man. Nor do I deny that the doctrine, as sometimes held, is open to these imputations; for the misapprehension in which I shall be able to show that they originate, unfortunately is not confined to the opponents of the doctrine, but is participated in by many, perhaps we might say by most, of its supporters.

§ 2. Correctly conceived, the doctrine called Philosophical The doctrine commonly called Philosophical Necessity is simply this: that, given the motives which are only present to an individual's mind, and given likewise the character and disposition of the individual, the manner in which he will act might be unerringly inferred; that if we knew the person thoroughly, and knew all the inducements which are acting upon him, we could foretell his conduct with as much certainty as we can predict any physical event. This proposition I take to be a mere interpretation of universal experience, a statement in words of what every one is internally convinced of. No one who believed that he knew thoroughly the circumstances of any case, and the characters of the different persons concerned, would hesitate to foretell how all of them would act. Whatever degree of doubt he may in fact feel, arises from the uncertainty whether he really knows the circumstances, or the character of some one or other of the persons, with the degree of accuracy required; but by no means from thinking that if he did know these things, there could be any uncertainty what the conduct would be. Nor does this full assurance conflict in the smallest degree with what is called our feeling of freedom. We do not feel ourselves the less free, because those to whom we are intimately known are well assured how we shall will to act in a particular case. We often, on the contrary, regard the doubt what our conduct will be, as a mark of ignorance of our character, and sometimes even resent it as an imputation. The religious metaphysicians who have asserted the freedom of the will, have always maintained it to be consistent with divine foreknowledge of our actions: and if with divine, then with any other foreknowledge. We may be free, and yet another may have reason to be perfectly certain what use we shall make of our freedom. It is not, therefore, the doctrine that our volitions and actions are invariable consequents of

sons act or are acted upon in a particular way; since his speculations and his practical arrangements refer almost exclusively to cases in which the whole community, or some large portion of it, is acted upon at once, and in which, therefore, what is done or felt by *most* persons determines the result produced by or upon the body at large. He can get on well enough with approximate generalizations on human nature, since what is true approximately of all individuals is true absolutely of all masses. And even when the operations of individual men have a part to play in his deductions, as when he is reasoning of kings, or other single rulers, still, as he is providing for indefinite duration, involving an indefinite succession of such individuals, he must in general both reason and act as if what is true of most persons were true of all.—*A System of Logic*, Book III, ch. 23, §7 (vol. 2, pp. 140f, in the 8th ed.)

It is no disparagement, therefore, to the science of Human Nature, that those of its general propositions which descend sufficiently into detail to serve as a foundation for predicting phenomena in the concrete, are for the most part only approximately true. But in order to give a genuinely scientific character to the study, it is indispensable that these approximate generalizations, which in themselves would amount only to the lowest kind of empirical laws, should be connected deductively with the laws of nature from which they result; should be resolved into the properties of the causes on which the phenomena depend. In other words, the science of Human Nature may be said to exist in proportion as the approximate truths, which compose a practical knowledge of mankind, can be exhibited as corollaries from the universal laws of human nature on which they rest; whereby the proper limits of those approximate truths would be shown, and we should be enabled to deduce others for any new state of circumstances, in anticipation of specific experience.

The proposition now stated is the text on which the two succeeding chapters will furnish the comment.

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CHAPTER VI.

GENERAL CONSIDERATIONS ON THE SOCIAL SCIENCE.

§ 1. NEXT after the science of individual man comes the science of man in society—of the actions of collective masses of mankind, and the various phenomena which constitute social life.

If the formation of individual character is already a complex subject of study, this subject must be, in appearance at least, still more complex; because the number of concurrent causes, all exercising more or less influence on the total effect, is greater, in the proportion in which a nation, or the species at large, exposes a larger surface to the operation of agents, psychological and physical, than any single individual. If it was necessary to prove, in opposition to an existing prejudice, that the simpler of the two is capable of being a subject of science, the prejudice is likely to be yet stronger against the possibility of giving a scientific character to the study of Politics, and of the phenomena of Society. It is, accordingly, but of yesterday that the conception of a political or social science has existed anywhere but in the mind of here and there an insulated thinker, generally very ill prepared for its realization: though the subject itself has

predicted with scientific accuracy, were it only because we can not foresee the whole of the circumstances in which those individuals will be placed. But further, even in any given combination of (present) circumstances, no assertion, which is both precise and universally true, can be made respecting the manner in which human beings will think, feel, or act. This is not, however, because every person's modes of thinking, feeling, and acting do not depend on causes; nor can we doubt that if, in the case of any individual, our data could be complete, we even now know enough of the ultimate laws by which mental phenomena are determined, to enable us in many cases to predict, with tolerable certainty, what, in the greater number of supposable combinations of circumstances, his conduct or sentiments would be. But the impressions and actions of human beings are not solely the result of their present circumstances, but the joint result of those circumstances and of the characters of the individuals; and the agencies which determine human character are so numerous and diversified (nothing which has happened to the person throughout life being without its portion of influence), that in the aggregate they are never in any two cases exactly similar. Hence, even if our science of human nature were theoretically perfect, that is, if we could calculate any character as we can calculate the orbit of any planet, *from given data*; still, as the data are never all given, nor ever precisely alike in different cases, we could neither make positive predictions, nor lay down universal propositions.

Inasmuch, however, as many of those effects which it is of most importance to render amenable to human foresight and control are determined, like the tides, in an incomparably greater degree by general causes, than by all partial causes taken together; depending in the main on those circumstances and qualities which are common to all mankind, or at least to large bodies of them, and only in a small degree on the idiosyncrasies of organization or the peculiar history of individuals; it is evidently possible with regard to all such effects, to make predictions which will *almost* always be verified, and general propositions which are almost always true. And whenever it is sufficient to know how the great majority of the human race, or of some nation or class of persons, will think, feel, and act, these propositions are equivalent to universal ones. For the purposes of political and social science this *is* sufficient. As we formerly remarked,* an approximate generalization is, in social inquiries, for most practical purposes equivalent to an exact one; that which is only probable when asserted of individual human beings indiscriminately selected, being certain when affirmed of the character and collective conduct of masses.

* Mill here refers to a passage from his discussion of "induction":

... There is a case in which approximate propositions, even without our taking note of the conditions under which they are not true of individual cases, are yet, for the purposes of science, universal ones; namely, in the inquiries which relate to the properties not of individuals, but of multitudes. The principal of these is the science of politics, or of human society. This science is principally concerned with the actions not of solitary individuals, but of masses; with the fortunes not of single persons, but of communities. For the statesman, therefore, it is generally enough to know that *most* per-

our antecedent states of mind, that is either contradicted by our consciousness, or felt to be degrading.

But the doctrine of causation, when considered as obtaining between our volitions and their antecedents, is almost universally conceived as involving more than this. Many do not believe, and very few practically feel, that there is nothing in causation but invariable, certain, and unconditional sequence. There are few to whom mere constancy of succession appears a sufficiently stringent bond of union for so peculiar a relation as that of cause and effect. Even if the reason repudiates, the imagination retains, the feeling of some more intimate connection, of some peculiar tie, or mysterious constraint exercised by the antecedent over the consequent. Now this it is which, considered as applying to the human will, conflicts with our consciousness, and revolts our feelings. We are certain that, in the case of our volitions, there is not this mysterious constraint. We know that we are not compelled, as by a magical spell, to obey any particular motive. We feel, that if we wished to prove that we have the power of resisting the motive, we could do so (that wish being, it needs scarcely be observed, a *new antecedent*); and it would be humiliating to our pride, and (what is of more importance) paralyzing to our desire of excellence, if we thought otherwise. But neither is any such mysterious compulsion now supposed, by the best philosophical authorities, to be exercised by any other cause over its effect. Those who think that causes draw their effects after them by a mystical tie, are right in believing that the relation between volitions and their antecedents is of another nature. But they should go farther, and admit that this is also true of all other effects and their antecedents. If such a tie is considered to be involved in the word Necessity, the doctrine is not true of human actions; but neither is it then true of inanimate objects. It would be more correct to say that matter is not bound by necessity, than that mind is so.

That the free-will metaphysicians, being mostly of the school which rejects Hume's and Brown's analysis of Cause and Effect, should miss their way for want of the light which that analysis affords, can not surprise us. The wonder is, that the necessitarians, who usually admit that philosophical theory, should in practice equally lose sight of it. The very same misconception of the doctrine called Philosophical Necessity, which prevents the opposite party from recognizing its truth, I believe to exist more or less obscurely in the minds of most necessitarians, however they may in words disavow it. I am much mistaken if they habitually feel that the necessity which they recognize in actions is but uniformity of order, and capability of being predicted. They have a feeling as if there were at bottom a stronger tie between the volitions and their causes; as if, when they asserted that the will is governed by the balance of motives, they meant something more cogent than if they had only said, that whoever knew the motives, and our habitual susceptibilities to them, could predict how we should will to act. They commit, in opposition to their own scientific system, the very same mistake which their adversaries

commit in obedience to theirs; and in consequence do really in some instances suffer those depressing consequences which their opponents erroneously impute to the doctrine itself.

§ 3. I am inclined to think that this error is almost wholly an ^{Inappropriateness and pernicious effect of the term Necessity} effect of the associations with a word, and that it would be prevented, by forbearing to employ, for the expression of the simple fact of causation, so extremely inappropriate a term as Necessity. That word, in its other acceptations, involves much more than mere uniformity of sequence: it implies irresistibility. Applied to the will, it only means that, the given cause will be followed by the effect, subject to all possibilities of counteraction by other causes; but in common use it stands for the operation of those causes exclusively which are supposed too powerful to be counteracted at all. When we say that all human actions take place of necessity, we only mean that they will certainly happen if nothing prevents; when we say that dying of want, to those who can not get food, is a necessity, we mean that it will certainly happen whatever may be done to prevent it. The application of the same term to the agencies on which human actions depend, as is used to express those agencies of nature which are really uncontrollable, can not fail, when habitual, to create a feeling of uncontrollableness in the former also. This, however, is a mere illusion. There are physical sequences which we call necessary, as death for want of food or air; there are others which, though as much cases of causation as the former, are not said to be necessary, as death from poison, which an antidote, or the use of the stomach-pump, will sometimes avert. It is apt to be forgotten by people's feelings, even if remembered by their understandings, that human actions are in this last predicament: they are never (except in some cases of mania) ruled by any one motive with such absolute sway that there is no room for the influence of any other. The causes, therefore, on which action depends, are never uncontrollable; and any given effect is only necessary provided that the causes tending to produce it are not controlled. That whatever happens, could not have happened otherwise, unless something had taken place which was capable of preventing it, no one surely needs hesitate to admit. But to call this by the name Necessity is to use the term in a sense so different from its primitive and familiar meaning, from that which it bears in the common occasions of life, as to amount almost to a play upon words. The associations derived from the ordinary sense of the term will adhere to it in spite of all we can do; and though the doctrine of Necessity, as stated by most who hold it, is very remote from fatalism, it is probable that most necessitarians are fatalists, more or less, in their feelings.

A fatalist believes, or half believes (for nobody is a consistent fatalist), not only that whatever is about to happen will be the infallible result of the causes which produce it (which is the true necessitarian doctrine), but moreover that there is no use in struggling against it; that it will happen, however we may strive to prevent it. Now, a necessitarian, believing that

ones may vary from it by a difference that we are not able to foresee or conjecture. Nevertheless, not only is it certain that these variations depend on causes, and follow their causes by laws of unerring uniformity; not only, therefore, is tidalogy a science, like meteorology, but it is, what hitherto at least meteorology is not, a science largely available in practice. General laws may be laid down respecting the tides, predictions may be founded on those laws, and the result will in the main, though often not with complete accuracy, correspond to the predictions.

And this is what is or ought to be meant by those who speak of sciences which are not *exact* sciences. Astronomy was once a science, without being an exact science. It could not become exact until not only the general course of the planetary motions, but the perturbations also, were accounted for, and referred to their causes. It has become an exact science, because its phenomena have been brought under laws comprehending the whole of the causes by which the phenomena are influenced, whether in a great or only in a trifling degree, whether in all or only in some cases, and assigning to each of those causes the share of effect which really belongs to it. But in the theory of the tides the only laws as yet accurately ascertained are those of the causes which affect the phenomenon in all cases, and in a considerable degree; while others which affect it in some cases only, or, if in all, only in a slight degree, have not been sufficiently ascertained and studied to enable us to lay down their laws; still less to deduce the completed law of the phenomenon, by compounding the effects of the greater with those of the minor causes. Tidalogy, therefore, is not yet an exact science; not from any inherent incapacity of being so, but from the difficulty of ascertaining with complete precision the real derivative uniformities. By combining, however, the exact laws of the greater causes, and of such of the minor ones as are sufficiently known, with such empirical laws or such approximate generalizations respecting the miscellaneous variations as can be obtained by specific observation, we can lay down general propositions which will be true in the main, and on which, with allowance for the degree of their probable inaccuracy, we may safely ground our expectations and our conduct.

§ 2. The science of human nature is of this description. It falls far short of the standard of exactness now realized in Astronomy; but there is no reason that it should not be as much a science as Tidalogy is, or as Astronomy was when its calculations had only mastered the main phenomena, but not the perturbations.

The phenomena with which this science is conversant being the thoughts, feelings, and actions of human beings, it would have attained the ideal perfection of a science if it enabled us to foretell how an individual would think, feel, or act throughout life, with the same certainty with which astronomy enables us to predict the places and the occultations of the heavenly bodies. It needs scarcely be stated that nothing approaching to this can be done. The actions of individuals could not be

phenomena, those of rain and sunshine. Scientific inquiry has not yet succeeded in ascertaining the order of antecedence and consequence among these phenomena, so as to be able, at least in our regions of the earth, to predict them with certainty, or even with any high degree of probability. Yet no one doubts that the phenomena depend on laws, and that these must be derivative laws resulting from known ultimate laws, those of heat, electricity, vaporization, and elastic fluids. Nor can it be doubted that if we were acquainted with all the antecedent circumstances, we could, even from those more general laws, predict (saving difficulties of calculation) the state of the weather at any future time. Meteorology, therefore, not only has in itself every natural requisite for being, but actually is, a science; though, from the difficulty of observing the facts on which the phenomena depend (a difficulty inherent in the peculiar nature of those phenomena), the science is extremely imperfect; and were it perfect, might probably be of little avail in practice, since the data requisite for applying its principles to particular instances would rarely be procurable.

A case may be conceived, of an intermediate character, between the perfection of science and this its extreme imperfection. It may happen that the greater causes, those on which the principal part of the phenomena depends, are within the reach of observation and measurement; so that if no other causes intervened, a complete explanation could be given not only of the phenomena in general, but of all the variations and modifications which it admits of. But inasmuch as other, perhaps many other causes, separately insignificant in their effects, co-operate or conflict in many or in all cases with those greater causes, the effect, accordingly, presents more or less of aberration from what would be produced by the greater causes alone. Now if these minor causes are not so constantly accessible, or not accessible at all, to accurate observation, the principal mass of the effect may still, as before, be accounted for, and even predicted; but there will be variations and modifications which we shall not be competent to explain thoroughly, and our predictions will not be fulfilled accurately, but only approximately.

It is thus, for example, with the theory of the tides. No one doubts that Tidology (as Dr. Whewell proposes to call it) is really a science. As much of the phenomena as depends on the attraction of the sun and moon is completely understood, and may, in any, even unknown, part of the earth's surface, be foretold with certainty; and the far greater part of the phenomena depends on those causes. But circumstances of a local or casual nature, such as the configuration of the bottom of the ocean, the degree of confinement from shores, the direction of the wind, etc., influence, in many or in all places, the height and time of the tide; and a portion of these circumstances being either not accurately knowable, not precisely measurable, or not capable of being certainly foreseen, the tide in known places commonly varies from the calculated result of general principles by some difference that we can not explain, and in unknown

our actions follow from our characters, and that our characters follow from our organization, our education, and our circumstances, is apt to be, with more or less of consciousness on his part, a fatalist as to his own actions, and to believe that his nature is such, or that his education and circumstances have so moulded his character, that nothing can now prevent him from feeling and acting in a particular way, or at least that no effort of his own can hinder it. In the words of the sect which in our own day has most perseveringly inculcated and most perversely misunderstood this great doctrine, his character is formed *for* him, and not *by* him; therefore his wishing that it had been formed differently is of no use; he has no power to alter it. But this is a grand error. He has, to a certain extent, a power to alter his character. Its being, in the ultimate resort, formed for him, is not inconsistent with its being, in part, formed *by* him as one of the intermediate agents. His character is formed by his circumstances (including among these his particular organization); but his own desire to mould it in a particular way, is one of those circumstances, and by no means one of the least influential. We can not, indeed, directly will to be different from what we are. But neither did those who are supposed to have formed our characters directly will that we should be what we are. Their will had no direct power except over their own actions. They made us what they did make us, by willing, not the end, but the requisite means; and we, when our habits are not too inveterate, can, by similarly willing the requisite means, make ourselves different. If they could place us under the influence of certain circumstances, we, in like manner, can place ourselves under the influence of other circumstances. We are exactly as capable of making our own character, *if we will*, as others are of making it for us.

Yes (answers the Owenite), but these words, "if we will," surrender the whole point: since the will to alter our own character is given us, not by any efforts of ours, but by circumstances which we can not help, it comes to us either from external causes, or not at all. Most true: if the Owenite stops here, he is in a position from which nothing can expel him. Our character is formed by us as well as for us; but the wish which induces us to attempt to form it is formed for us; and how? Not, in general, by our organization, nor wholly by our education, but by our experience; experience of the painful consequences of the character we previously had; or by some strong feeling of admiration or aspiration, accidentally aroused. But to think that we have no power of altering our character, and to think that we shall not use our power unless we desire to use it, are very different things, and have a very different effect on the mind. A person who does not wish to alter his character, can not be the person who is supposed to feel discouraged or paralyzed by thinking himself unable to do it. The depressing effect of the fatalist doctrine can only be felt where there is a wish to do what that doctrine represents as impossible. It is of no consequence what we think forms our character, when we have no desire of our own about forming it; but it is of great consequence that we

should not be prevented from forming such a desire by thinking the attainment impracticable, and that if we have the desire, we should know that the work is not so irrevocably done as to be incapable of being altered.

And indeed, if we examine closely, we shall find that this feeling, of our being able to modify our own character *if we wish*, is itself the feeling of moral freedom which we are conscious of. A person feels morally free who feels that his habits or his temptations are not his masters, but he theirs; who, even in yielding to them, knows that he could resist; that were he desirous of altogether throwing them off, there would not be required for that purpose a stronger desire than he knows himself to be capable of feeling. It is of course necessary, to render our consciousness of freedom complete, that we should have succeeded in making our character all we have hitherto attempted to make it; for if we have wished and not attained, we have, to that extent, not power over our own character; we are not free. Or at least, we must feel that our wish, if not strong enough to alter our character, is strong enough to conquer our character when the two are brought into conflict in any particular case of conduct. And hence it is said with truth, that none but a person of confirmed virtue is completely free.

The application of so improper a term as Necessity to the doctrine of cause and effect in the matter of human character, seems to me one of the most signal instances in philosophy of the abuse of terms, and its practical consequences one of the most striking examples of the power of language over our associations. The subject will never be generally understood until that objectionable term is dropped. The free-will doctrine, by keeping in view precisely that portion of the truth which the word Necessity puts out of sight, namely the power of the mind to co-operate in the formation of its own character, has given to its adherents a practical feeling much nearer to the truth than has generally (I believe) existed in the minds of necessitarians. The latter may have had a stronger sense of the importance of what human beings can do to shape the characters of one another; but the free-will doctrine has, I believe, fostered in its supporters a much stronger spirit of self-culture.

§ 4. There is still one fact which requires to be noticed (in addition to the existence of a power of self-formation) before the doctrine of the causation of human actions can be freed from the confusion and misapprehensions which surround it in many minds. When the will is said to be determined by motives, a motive does not mean always, or solely, the anticipation of a pleasure or of a pain. I shall not here inquire whether it be true that, in the commencement, all our voluntary actions are mere means consciously employed to obtain some pleasure or avoid some pain. It is at least certain that we gradually, through the influence of association, come to desire the means without thinking of the end; the action itself becomes an object of desire, and is performed without reference to any motive beyond itself. Thus far, it

may still be objected that, the action having through association become pleasurable, we are, as much as before, moved to act by the anticipation of a pleasure, namely, the pleasure of the action itself. But granting this, the matter does not end here. As we proceed in the formation of habits, and become accustomed to will a particular act or a particular course of conduct because it is pleasurable, we at last continue to will it without any reference to its being pleasurable. Although, from some change in us or in our circumstances, we have ceased to find any pleasure in the action, or perhaps to anticipate any pleasure as the consequence of it, we still continue to desire the action, and consequently to do it. In this manner it is that habits of hurtful excess continue to be practiced although they have ceased to be pleasurable; and in this manner also it is that the habit of willing to persevere in the course which he has chosen, does not desert the moral hero, even when the reward, however real, which he doubtless receives from the consciousness of well-doing, is any thing but an equivalent for the sufferings he undergoes, or the wishes which he may have to renounce.

A habit of willing is commonly called a purpose; and among the causes of our volitions, and of the actions which flow from them, must be reckoned not only likings and aversions, but also purposes. It is only when our purposes have become independent of the feelings of pain or pleasure from which they originally took their rise, that we are said to have a confirmed character. "A character," says Novallis, "is a completely fashioned will;" and the will, once so fashioned, may be steady and constant, when the passive susceptibilities of pleasure and pain are greatly weakened or materially changed.

With the corrections and explanations now given, the doctrine of the causation of our volitions by motives, and of motives by the desirable objects offered to us, combined with our particular susceptibilities of desire, may be considered, I hope, as sufficiently established for the purposes of this treatise.*

* Some arguments and explanations, supplementary to those in the text, will be found in *An Examination of Sir William Hamilton's Philosophy*, chap. xxvi.

CHAPTER III.

THAT THERE IS, OR MAY BE, A SCIENCE OF HUMAN NATURE.

§ 1. It is a common notion, or at least it is implied in many common modes of speech, that the thoughts, feelings, and actions of sentient beings are not a subject of science, in the strict sense in which this is true of the objects of outward nature. This notion seems to involve some confusion of ideas, which it is necessary to begin by clearing up.

Any facts are fitted, in themselves, to be a subject of science which follow one another according to constant laws, although those laws may not have been discovered, nor even be discoverable by our existing resources. Take, for instance, the most familiar class of meteorological