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THE NATURE OF
BASIC EXPLANATION

Thesis

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts
in the
Faculty of the Graduate School
of
West Virginia University

by

David Leonard Thompson, B.Sc.

Morgantown
West Virginia
1966

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PREFACE

The purpose of this thesis is to examine the concept of basic explanation particularly as it is discussed by Charles Taylor in his book, The Explanation of Behaviour. An exposition of Taylor's views will be followed by a criticism of them in the light of a number of contemporary approaches to the issue. I will suggest modifications to Taylor's position to make it more compatible with these other approaches. Finally the importance of this idea of a basic explanation will be discussed.

I thank my adviser, Professor J. Lambert, for inviting me to West Virginia University and for giving me the opportunity to write this thesis. His generous and immediate advice is appreciated. I also thank my wife, Madeline, not only for the many hours of typing that she spent on the draft copies of the thesis, but also for her moral support and her many sacrifices while it was being written.

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Taylor's Concept of Basic Explanation

In his book, The Explanation of Behaviour, Charles Taylor argues the following thesis: Whether all human and animal behaviour can be explained causally or whether at least some behaviour must be explained teleologically is ultimately to be decided on empirical grounds.

The broad outline of his argument is as follows. "To offer a teleological explanation of some event or class of events, e.g. the behaviour of some being, is, then, to account for it by laws in terms of which the event's occurring is held to be dependent on that event's being required for some end."¹ An event is explained teleologically if it is subsumed under a teleological law, i.e. a law of the form "whenever a behaviour, B, is required for the goal of the system, G, then B occurs." Similarly, a causal explanation is given if the event is subsumed under a causal law, i.e. a law of the form "whenever the antecedent condition (characterized by the "'intrinsic' description"², E) occurs, then B occurs". (An intrinsic description of a situation is a description which enables us to identify the situation independently of any law in which it may figure.) Taylor thus claims that the difference between causal and teleological explanation is a formal difference,

a difference, specifically, in the form of the laws appealed to. The distinguishing point is in the form of antecedent term permitted; in a causal law the antecedent term will be an intrinsic description of the situation, whereas in a teleological law, the antecedent term must be a description of the situation in terms of requirement. For example, a lion might be found to start stalking whenever there is a deer present. In such a case the law governing his behaviour would be a clearly causal law, "whenever a deer is present, then the lion stalks". But it might be found that the stalking did not always occur, but only in those cases where the situation was such that the stalking was required for the lion to get his next meal. In this case, the law governing his behaviour would be the teleological law "whenever stalking is required for getting his next meal, then the lion stalks".

Thus an explanation of a teleological type involves the assumption that the system concerned 'naturally' or inherently tends towards a certain result, condition or end; for the principle of laws of this kind is that an event's being required for this end is a sufficient condition for its occurring.³

The dispute as to which of the two forms, the form for a causal law or the form for a teleological law, is a form which actually fits the situation is to be decided on empirical grounds, for, under this view, not only are the two terms of any causal law observable, but so are the terms of teleological laws. "To say that a system can only be explained in terms of purpose, then--at least insofar as this is an assertion about the form of the

laws—does not involve making an unverifiable claim any more than it involves postulating an unobservable entity."⁴ Hence the contestants in the dispute must await further experimental evidence on the issue and stop excommunicating each other on a priori grounds.

The word "ultimately" in Taylor's thesis is of the utmost importance for this argument. For as Aristotle pointed out, causal and teleological explanations are not always incompatible. Thus, writes Aristotle,

The same thing may exist for an end and be necessitated as well. For example, light shines through a lantern (1) because that which consists of relatively small particles necessarily passed through pores larger than those particles—assuming that light does issue by penetration—and (2) for an end, namely to save us from stumbling. If, then, a thing can exist through two causes, can it come to be through two causes—as, for instance, if thunder be a hiss and a roar necessarily produced by the quenching of fire, and also designed, as the Pythagoreans say, for a threat to terrify those that lie in Tartarus? Indeed, there are very many such cases, mostly among the processes of the natural world; for nature in different senses of the term 'nature', produces now for an end, now by necessity.⁵

Taylor does not deny that both types of explanation may account for certain events in the manner Aristotle describes. Rather he is maintaining that ultimately only one can apply. To say of a system that it is purposive or that it is mechanistic "is a claim about the laws holding on the most basic level of explanation,"⁶ a claim that the ultimate explanation of the system must be teleological (purposive) or causal (mechanistic), but not both.

To explain what Taylor means by the "most basic level of explanation", requires prior clarification of Taylor's idea of explanation as subsumption under law. Taylor's position is close to that of R. B. Braithwaite, and so we will first discuss the latter's theory and then treat of the points to which Taylor objects.

Braithwaite's position on scientific explanation by law is as follows.

An hypothesis, to be regarded as a natural law, must be a general proposition which can be thought to explain its instances; if the reason for believing the general proposition is solely direct knowledge of truth of its instances, it will be felt to be a poor sort of explanation of these instances. If, however, there is evidence for it which is independent of its instances, such as the indirect evidence provided by instances of a same-level general proposition subsumed along with it under the same higher-level hypothesis, then the general proposition will explain its instances in the sense that it will provide grounds for believing in their truth independently of any direct knowledge of such truth.⁷

He illustrates his position by the following example. The fact that men are mortal is explained by quoting the law that animals are mortal which is a higher-level hypothesis supported by evidence other than that men have so far died (e.g. that dogs have died, horses have died, etc.). He specifically describes this process as deducing the proposition "men are mortal" from the proposition "animals are mortal".

Taylor takes exception to Braithwaite's view, which he

characterizes as "explanation in the weaker sense",⁸ on the grounds that it adds nothing to our knowledge of the conditions for men dying. Taylor deals "with 'explanation' in a stronger sense, in which the less basic laws $y = f_1(z)$ can not be derived not from the more basic $y = f_2(x)$ alone, but from these together with some other contingent statement of 'initial conditions' which ensure that z is related in some way to x ".⁹ Since this 'stronger sense' of explanation gives us the conditions upon which the system's behaviour depends, it also gives us the means for controlling our predictions. Braithwaite's type of explanation does not give us control because, in the example given, "the statement of 'initial conditions' which permits the derivation of explicandum [the item to be explained] from explicans [the explaining statements] is itself a necessary proposition, 'all men are animals'".¹⁰ The difference, which Taylor insists upon, between the two positions is not very clear but it seems to lie in the nature of the 'initial conditions', Braithwaite's initial conditions are 'necessary propositions', whereas Taylor's are 'contingent' and therefore the situations which the latter describe can be changed, "with such amazing results in control over our environment."¹¹ The key point is that necessary propositions describe what must be, whereas contingent propositions describe what could be otherwise. It is only explanation of the second sort which gives man, in principle (i.e. given the tech-

nology), the ability to control his universe.

Taylor also distinguishes these two senses of "explain" in another manner. He has claimed that the stronger sense of explanation connects a range of phenomena with a wider range of phenomena while "accounting for the difference."¹² Thus Newton's laws connected the laws of motion of the planets with, say, the laws of motion of satellites around the planets. But Newton's laws also explain why the movements are different and, therefore, what factors are (in principle) controllable. Braithwaite's weaker sense, while it does connect the law "all men are mortal" with the law "all animals are mortal", does not give us an account for the differences in behaviour of the two groups, e.g. men usually live longer than dogs. Hence, for this second reason, the stronger sense does give man control.

The reason for insisting on the point of 'control' is that modern science so clearly does give man control over his universe. Since both Taylor and Braithwaite accept the view that science gives us paradigms of explanation (a view which has been denied by some thinkers, e.g. Duhem¹³), Taylor can claim as evidence for his characterization of 'explanation' that it accounts for the control feature of science whereas Braithwaite's characterization fails to do so.

Another reason for accepting Taylor's view rather than Braithwaite's is that this "stronger sense" of explanation is

continuous with one "ordinary" use of the term "explain". In ordinary usage, Taylor maintains, "explain" often means "to make what appears strange and outlandish understandable."¹⁴ We "explain" an action to someone by describing the context in a way which makes the act understandable given current conceptions of human motivation. For example, "someone suddenly gets angry in the course of a discussion; we ask why? The event is explained when it is pointed out that the subject mentioned is taken as a reflection on the man's honour . . ."¹⁵ The scientific meaning of "explain", Taylor's "stronger" sense, is analagous to this 'ordinary' sense in that it supplies a context ("initial conditions") which shows why the event to be explained is reducible to (or deducible from) that behaviour which is "normal" for this class of events (i.e. to a law). The difference from the 'ordinary' sense is that scientific laws or "norms" must themselves be discovered whereas 'ordinary' explanations appeal to culturally accepted "norms" already given. And just as the 'ordinary' norm is accepted as such because it applies to a class which include more than the particular event (or set of regularities, i.e. another norm) which is being "explained", so too, the scientific idea of what is normal, the law, is accepted as such because it applies to a larger class of which the event, (or the set of regularities or previous laws) are but a part. So both the 'ordinary' use and Taylor's stronger, scientific sense of the term 'explain'

involve giving a set of conditions (special context, 'initial conditions') which show why that which is 'strange' is really a case of a regularity (law) which is quite 'normal' (more general).

Such an explanation also implies that given a different initial set of conditions, a different result would have occurred, thus giving us the control factor emphasized above. For instance, in the example given above of the man's anger, it is implied that some other subjects could have been mentioned which would not have evoked his anger. So the explanation explains not just the event (or law) but also why the event (or law) differed from some other event which would have occurred if the initial conditions had been different.

Scientific explanation therefore has two important properties: it gives the antecedent conditions of the explicandum in terms of a set of factors which make evident its connection with others; it makes clear with some exactitude what would need to be changed for other outcomes to eventuate; and it is capable of building in tiers, that is, the correlations which explain at one level can be taken as explicanda and explained at another.¹⁶

It is this last aspect, this building in tiers, which gives rise to Taylor's concept of a more basic explanation. He says that "An explanation can be considered as more basic than another when the regularities which the laws cited in the first describe are themselves explained in terms of the laws cited in the second",¹⁷ together, of course, with the initial conditions which explain why

and under what circumstances these less basic laws hold. The following example will illustrate his point more clearly. If we have a projectile that is one mile high one second after firing, we can explain its position by the law $h = t^2$, an instance of $y = f_1(z)$ in Taylor's terminology. If asked for an explanation of the law that $h = t^2$, we can in turn explain it by stating that all projectiles follow the law $h = at^2 + bt + c$, an instance of Taylor's $y = f_2(x)$, and that in this case $a = 1$, and $b \text{ \& } c = 0$. That is, the less basic law $h = t^2$ is explained by quoting the more basic law $h = at^2 + bt + c$ together with initial conditions ($a = 1$, $b \text{ \& } c = 0$). "Thus we can say that the set of laws $y = f_2(x)$ [$h = at^2 + bt + c$ in our example] is more basic than $y = f_1(z)$ [$h = t^2$ in our example] for the former provides us with the conditions in which the latter will apply [when $a = 1$, $b \text{ \& } c = 0$] or not apply [$a \neq 1$, or $b \text{ \& } c \neq 0$]. . ."¹³

The disagreement which Taylor claims can be settled empirically is whether, in psychology at least, the most basic explanations are to be causal or teleological. That is, "the claim that the behaviour of the system must be accounted for in terms of purpose or 'natural' or 'inherent' tendencies concerns the laws which hold at the most basic level of explanation."¹⁹ (Hence the situation quoted above from Aristotle does not constitute a counter-example to Taylor's thesis unless it is claimed that it is a case of basic explanation.) That this is the claim that the

teleologist makes is shown by the fact that if a system's teleological behaviour could itself be explained mechanistically, the teleologist would not accept it as a purposive system. If we could construct a mechanical dog, "the laws descriptive of his external behaviour $[y = f_1(z)]$ would be teleological ... but the more basic explanation $[y = f_2(x)]$ would not."²⁰ But Taylor maintains that in a system of this kind, "we can hardly speak of an account in terms of 'natural' or 'inherent' tendencies."²¹

He continues:

Those who claim a special status for animate organisms on the grounds that the order evident in their behaviour must be accounted for in terms of a tendency or 'purpose' of the events to realize this order could hardly hold that their claim had been vindicated by an explanation of this kind, where the tendency to realize the given order could itself be accounted for by other factors.²²

The teleologist's claim is therefore twofold; it involves the assertion that there are most basic explanations and that, at least in psychology, they are teleological.

The teleologist, however, makes an even stronger claim, according to Taylor. Taylor has already made it plain that "explanation at the most basic level" refers to the position of the explanation in the hierarchy of explanations. So much is clear from the meaning that Taylor gives to the terms "more basic" and "most basic". It might seem, at least prime facie, that the criterion for discovering whether an explanation is on

the most basic level or not, is a criterion which is completely extrinsic to the explanation itself, viz., its position in the hierarchy. But Taylor then says that because of a particular feature which teleological explanations have, they are all on the most basic level. This is not an extrinsic feature, but an intrinsic one; it is something in the very nature of a teleological explanation; it is the fact that teleological explanation is explanation in terms of 'natural tendencies'. For,

the function of an explanation invoking powers or natural tendencies can be precisely to shut off further enquiry. And this is why it is absurd when it is taken as an attempt to state some antecedent. For the fact that a tendency towards a given condition results in that condition neither requires nor admits of explanation. It is, rather, the break-down of such a 'correlation' which stands in need of explanation. And this logical feature of an account in terms of powers which makes it a block to further enquiry is also the one which unfits it to serve as an empirical law linking two terms. On the contrary, it can serve only to characterize the type of laws which hold of the system.²³

His point is that because teleological explanations are explanations in terms of natural tendencies they are at the 'rock bottom' of explanation. Further, he is maintaining that, in contrast to causal explanations, teleological explanations are asymmetrical, i.e., that the explanations of some types of behaviour do not require further explanation (and indeed, cannot be further explained). These two features will now be discussed in order.

The first feature, that a teleological explanation is at the "rock bottom" of explanation and neither requires nor admits of further explanation, could mean that the question "why" can be asked but that no answer can ever be found. But it seems much more likely that when Taylor says that a teleological explanation does not require further explanation he is suggesting that the question "why" does not arise, or is inappropriate in some way. This interpretation is further substantiated by Taylor's treatment of specific teleological explanations in his chapter on action and desire. Explanation of action by means of desire and intention are teleological explanations, but teleological explanations of a special sort because they involve not just any goal but a specific "goal-result which it was the agent's purpose or intention to bring about."²⁴ Such explanations, then, are special cases of teleological explanation. For these special cases, at least, the question "why" is illegitimate because the two terms involved in the explanation are "non-contingently linked." (Taylor applies the phrase "non-contingently linked" to any relationship of two terms A and B such that it could not be said that the first term was A unless B follow it, in the absence of interfering factors.)

This point can be put in another way. Because explanation by intentions or purposes is like explanation by an 'antecedent' which is non-contingently linked with its consequent, i.e., because the fact that the behaviour follows from the intention other things being equal is not a contingent fact, we cannot

account for this fact by more basic laws. For to explain a fact by more basic laws is to give the regularities on which this fact causally depends. But not being contingent, the dependence of behaviour on intention is not contingent on anything, and hence not on any such regularity.²⁵

For example, in the case of explanation by intention,

We are not explaining the behaviour by the 'law', other things being equal, intending X is followed by doing X, for this is part of what we mean by 'intending X', that, in the absence of interfering factors, it is followed by doing X. I could not be said to intend X, if, even with no obstacles or counter-vailing factors, I still didn't do it.²⁶

Although a claim, such as this, "to have reached rock bottom of explanation is not one which is usually made in scientific theory,"²⁷ yet it is not unusual in ordinary language. Indeed, common sense views of behaviour,

although not theories, generally have certain features which are analogous to theories of a teleological kind. Thus common sense views often contain 'stopping points' beyond which further questioning is inappropriate or unintelligible. And since these often invoke a desire or goal, which is thought of as 'natural', they play an analogous role to the 'inherent tendencies' of teleological explanation. Thus an example of a stopping point of this kind would be if someone replied to the question, 'Why are you doing that?', by saying, 'My life depends on it.' This is a stopping point because, unless some special factors are adduced (such as, 'after the disasters you have suffered, life should be nothing to you,' or 'what is life without honour?'), we do not know how to go about answering the question, 'why do you want to preserve your life?'. The end of self-preservation is thought of as inherently desirable, as something that men 'naturally' desire so that no further explanation can be offered.²⁸

At least purposive teleological explanations, then, (and Taylor never gives any examples of non-purposive teleological explanations) appeal to non-contingent correlations between natural tendencies and their corresponding result-conditions. They appeal, that is, to correlations which are such that it could not be said to be a tendency towards a given condition, if, even with no obstacles or counter-vailing factors, the conditions did not come about. These considerations suggest that the reason a teleological explanation cannot be pursued further lies in the fact that some tendencies are considered natural. Taylor explicitly says this about teleological explanations which are explanations in terms of intention and desire ("the end of self-preservation is thought of as inherently desirable ... so that no further explanation can be offered"²⁹). Since all teleological explanations are explanations in terms of natural tendencies, Taylor presumably intends this account to cover all teleological explanations.

Teleological explanation also has another feature which Taylor calls asymmetry. Taylor succinctly characterizes this notion in the following passages. "For that the system achieves the goal-condition neither calls for nor admits of explanation; but should it achieve any other condition, we are bound to give an account."³⁰ The break-down of the correlation "must ... be accounted for by some interfering factor ... fatigue, sickness,

alcohol, nervous strain or some such special condition."³¹ Taylor notes that his position on the asymmetry of teleological explanation is similar to the distinction between 'natural' and 'violent' movement in pre-Galilean physics. He also compares the principle of asymmetry with the Principle of Inertia in Newtonian physics for "In both cases the principles serve to make clear the kinds of events for which an antecedent must be adduced and the kinds of events for which this is not the case."³² But there is also a disanalogy between Inertia and asymmetry in that the former is "neutral between different results"³³ i.e. motion in different directions, whereas asymmetry is such that "only movement in certain directions requires an explanation",³⁴ i.e., its "function is precisely to distinguish a privileged state or result."³⁵ This disanalogy is of considerable importance for Taylor since it is this feature which allows him to say that teleological explanations are different than causal explanations, at least with respect to the role they can play in a given explanatory system. If causal explanations were asymmetrical then at least some causal explanations of behaviour would not require further explanation (that is what "asymmetrical" means). Taylor's insistence on the disanalogy between the Principle of Inertia and the principle of asymmetry for teleological explanations suggests that he wants to exclude causal explanations from the most basic level of explanation.

In summary, then, it can be said that Taylor wishes to maintain that "there is a form of life which is higher and more properly human than others"³⁶ and that he considers this premise would collapse if any ultimate mechanistic explanation of human behaviour could be shown to hold. His book is an attempt to prove that whether or not a causal (mechanistic) explanation is possible is an empirical question. To this end he gives characterizations of both causal and teleological explanations, characterizations which he claims are sheerly formal, such that all the terms in the laws involved in both types of explanation are observable. He then points out that the dispute as to whether human behaviour is ultimately purposive or mechanistic is a dispute about which of these two types of explanation hold on the most basic level of explanation. To clarify this, he must explain what it means to say that one explanation is more basic than another, which he does by defining "more basic explanation" in terms of the relative position of the explanation in the hierarchy of explanations. A "most basic explanation", then, by this extrinsic characterization, is an explanation such that there is no more basic explanation in the hierarchy which explains it. He then claims that teleological explanations by their very nature, i.e., by the fact that they have the intrinsic feature that they always invoke natural tendencies, are always on the "rock bottom" of explanation. It is this same feature which

makes teleological explanations asymmetrical, in contrast to causal explanations.

Footnotes to Chapter I

1. Charles Taylor. The Explanation of Behaviour. New York: The Humanities Press, 1964. p. 9.
2. Ibid., p. 13.
3. Ibid., p. 17.
4. Ibid., p. 10.
5. Aristotle. Posterior Analytics. Bk II. Bekker pagination 94b 26-36. Translated in R. McKeon (Ed.). The Basic Works of Aristotle. New York: Random House, 1941. p. 172.
6. Taylor. The Explanation of Behaviour. p. 18. My underlining.
7. R. F. Braithwaite. Scientific Explanation. Cambridge University press: 1953. p. 303.
8. Taylor. The Explanation of Behaviour. p. 19, footnote 2.
9. Ibid., p. 19.
10. Ibid., p. 19, footnote 2.
11. Ibid., p. 19, footnote 2.
12. Quoted from an unpublished address entitled "Notes on the Explanation of Behaviour", presented by Charles Taylor at West Virginia University on May 10, 1966.
13. "A physical theory is not an explanation." Pierre Duhem. The Aim and Structure of Physical Theory. New York: Atheneum, 1962. p. 19.
14. Ibid., p. 19.
15. Ibid., p. 19.
16. Ibid., p. 19.
17. Taylor. The Explanation of Behaviour. p. 18.

18. Ibid., p. 19.
19. Ibid., p. 20.
20. Ibid., p. 20.
21. Ibid., p. 20.
22. Ibid., p. 20.
23. Ibid., p. 21.
24. Ibid., p. 27.
25. Ibid., p. 44.
26. Ibid., p. 33.
27. Ibid., p. 21.
28. Ibid., p. 39 et seq.
29. Ibid., p. 40. My underlining.
30. Ibid., p. 22.
31. Ibid., p. 22.
32. Ibid., p. 23.
33. Ibid., p. 24.
34. Ibid., p. 24.
35. Ibid., p. 23.
36. Ibid., p. 4.

II

Criticism

In this chapter I will examine Taylor's views on explanation at the most basic level as presented in chapter one. These views will be criticized using arguments and suggestions from a number of sources, mostly from within contemporary schools of thought. I will suggest alternative interpretations of Taylor's position in the light of these criticisms, and at times I will show that, to meet these criticisms, considerable modifications to Taylor's theory are required.

The chapter is in three sections. The first will discuss a possible "conventional" analysis of basic explanations, whether teleological or causal. The second section will discuss a number of points drawn mostly from R. F. Braithwaite's theory of scientific laws; it will center about the question of whether causal explanation or only teleological explanations can be on the basic level of explanation, and, of the latter, whether all, or only some, are on the basic level. The third section will deal with a more fundamental assumption which Taylor makes, viz., that all explanations involve subsumption under general laws.

Section I

As I pointed out at the end of chapter one, Taylor claims

that there is a disanalogy between his principle of asymmetry for teleological explanations and the Newtonian Principle of Inertia, i.e., Newton's first Law of Motion. This disanalogy is quite important for Taylor's theory since, when he shows why, in terms of non-contingent linkage, teleological explanations are basic, he clearly does not want the same reasoning to apply to causal explanations.

A couple of preliminary remarks on this subject will now be made followed by an analysis of the disanalogy. An attempt will be made to show that the disanalogy does not hold and the consequences of the resulting complete analogy will be drawn out with the help of Brian Ellis' views on the conventional nature of "final" (i.e. basic) explanations.

When Taylor speaks of the "asymmetry" of teleological explanation, he means that there are 'natural' and 'unnatural' results, and "that the two must be accounted for in quite different ways."¹ (in the sense I have previously explained, see page 28). To say an explanation had the property of "symmetry", presumably, would be to say that all results would be accounted for in the same way. "Symmetry" and "asymmetry", then, would appear to be used by Taylor as attributes describing the ways in which explanation is applied. However, he also says,

And indeed, the gap between teleological explanation and that in vogue in modern science can be seen if we compare principles of asymmetry with the modern

analogues. The term 'principle' here is apposite because asymmetry plays something of the kind of role in a teleological science of behaviour that Inertia does, for instance, in Newtonian physics."²

This seems strange, for "Inertia" is a term designating "a property of matter"³, whereas "asymmetry" designates a property of explanations. The "Principle of Inertia", then, is a principle governing the behaviour of Newtonian bodies whereas the principle of asymmetry is not a principle governing "teleological bodies"; it is a principle governing explanations.

Taylor wants principles of asymmetry to play something of the same kind of role in a science of behaviour that the Principle of Inertia does in Newtonian physics. But the Principle of Inertia is appealed to as part of a mechanistic explanation, so presumably "principles of asymmetry" are appealed to as part of teleological explanations. In view of this, the most reasonable interpretation of Taylor's remarks is that when he refers to "principles of asymmetry of teleological explanation", he is using an abbreviated method of referring to the laws appealed to in the course of teleological explanation which are such as to result in that explanation being asymmetrical. This seems to be the only way that his comparison of the 'principle of asymmetry' and the 'Principle of Inertia' can be made intelligible, and it will be assumed in the following discussion, despite the doubt, that this is what Taylor means. His phraseology will be used throughout.

At first sight Taylor appears to make inconsistent statements. He says that "continued rest or rectilinear motion could be spoken of in this sense [in the sense of not requiring the adduction of an antecedent] as 'natural'.¹¹ and follows it four sentences later with "it is not part of what is asserted by the Principle of Inertia that, for that system, one particular condition or set of results is natural."⁴ It would seem that in this second statement he must have a sense of "natural" other than "not requiring the adduction of an antecedent." But if he has, he never states the fact, and it is very difficult to conceive of what other sense he could have in mind. He continues to make his point about the disanalogy without further clarification.

The disanalogy between the two principles lies in the fact that "the Principle of Inertia does not single out any particular direction in which bodies 'naturally' tend to move or any constellations that they tend to move towards,"⁵ whereas the principle of asymmetry has the function, precisely, of distinguishing "a privileged state or result."⁶ The Principle of Inertia "can be said to be neutral between the different states of that system of which it may be invoked to explain the behaviour."⁷ Taylor adds, "this is the disanalogy: That a principle of asymmetry does distinguish between different states of the system where it is invoked in explanation, that it is not

neutral between different states."⁸

It is indeed clear that the Principle of Inertia is symmetrical with respect to the direction of motion of any body in any explanation in which it is invoked. But this is not the same as saying that the Principle is symmetrical with respect to any "state of a system where it is invoked in explanation"⁹, for there are other states of, say, a particle than its motion eastwards or northwards. The particle could be at constant velocity¹⁰, or in constant acceleration, for example. These are just as certainly "states of the system" as are the different directions at constant velocity, and with respect to these states, the Principle of Inertia is clearly asymmetrical. The state of constant velocity is explained in one manner, i.e. by direct appeal to the Principle of Inertia, whereas a statement of acceleration is explained in terms of forces and Newton's Second Law. The objection that this is an unfair criticism of Taylor's position because the Principle of Inertia is only invoked in explanation of constant velocity states and is symmetrical with respect to all of those states is not acceptable. Under such a view, the teleological principle of asymmetry would only be invoked in the case of behaviour in accord with natural tendencies and not in the case of any behaviour being explained in terms of interfering factors. But if this is how Taylor intends the phrase "invoked in explanation" then the "principle of asymmetry" is also

symmetrical, in that it is appealed to in the explanation of the lion's stalking whether the lion's direction of stalking is north, south, east or west. If "the system where the principle is invoked in explanation" consists only of those events directly explainable by the principle, then both principles are symmetrical with respect to all these events; but if "the system where the principle is invoked in explanation" consists of all events explainable by the theory of which the principle is a part, then both principles are asymmetrical. In either case, the disanalogy that Taylor maintains breaks down and is replaced by the complete analogy of the two principles.

This breakdown has three important consequences. It suggests that explanations in which the Principle of Inertia are invoked are basic explanations: It means that the choice of which tendencies of a system are to be called 'natural' is a conventional one: And, therefore, it means that Taylor's "empirically decidable" thesis is no longer defensible. These will now be considered in more detail.

It follows from the breakdown of the analogy that since the Principle of Inertia and the principle of asymmetry for teleological explanation both play the same role in their respective systems, then any explanation in which the Principle of Inertia is invoked must be a basic explanation in the sense that the Principle itself is not further explainable. Despite his in-

sistence on the disanalogy, Taylor himself writes sometimes as if he did think of explanations invoking the Principle of Inertia as basic explanations. He says, for instance,

For Newton's first Law, the continuation of a body at rest or in uniform rectilinear motion did not admit of explanation in this sense, i.e., [requiring an antecedent] only changes in velocity were to be accounted for. Continued rest or rectilinear motion could be spoken of in this sense as 'natural'.¹¹

Brian Ellis in "origin and Nature of Newton's Laws of Motion",¹² also maintains the view that Newton's First Law (or, the Principle of Inertia) designates a state of motion that is 'natural'. An examination of Ellis' position will further clarify this view.

In examining the criteria for the existence of forces in Newtonian mechanics, Ellis states:

We may say that a system is subject to the action of a force if and only if (1) the system persists in what we regard as an unnatural state, or (2) the system is changing in what we consider to be an unnatural way. The concepts of natural state and natural change must, of course, be explicated . . . Here we shall merely say that a system is thought to be an unnatural state if and only if we consider that its persistence in that state requires causal explanation, and a system is considered to be changing in an unnatural way if and only if we think that its changing in that way requires causal explanation.¹³

Ellis then explains that "a given system is considered to require causal explanation if and only if we feel that this behaviour is not sufficiently explained by its subsumption under a law of succession."¹⁴ A law of succession is "any law that enables us to predict the future states of any system . . . simply from know-

ledge of its present state . . ."¹⁵ The laws of free fall and of radioactive decay and Kepler's laws of planetary motion are the illustrations which Ellis gives of laws of succession. He continues,

it is maintained that provided that subsumption under such a law is considered to give a final explanation of the behaviour of a given system, then the system is considered to be in a natural state or to be changing in a natural way. That subsumption under such a law is considered to be a final explanation is shown by the fact that we reject any request for an explanation of why systems behave in that way or remain in that state as inappropriate in the context of the given enquiry.

The law of inertia is a law of succession according to the above criteria. But this law, unlike the others cited, has a special role within our conceptual scheme, for if the behaviour of a given object could be explained simply by subsumption under this law, then we should reject the question of why that object remains in that state.¹⁶

Ellis' concept of a final explanation beyond which further questioning is inappropriate is clearly very similar to Taylor's concept of a 'rock bottom' explanation which "neither requires nor admits of further explanation".¹⁷ Taylor, as I pointed out on page 11, considers some explanations "rockbottom" because they invoke non-contingent linkages. He never explains how it comes about that some linkages are non-contingent, in our language, while others are contingent, but he suggests that the reason lies in certain beliefs we hold about 'natural' behaviour.

Ellis's treatment of the concept of 'natural' behaviour will now be examined in the hope of discovering why some behav-

four is 'natural' and hence that explanation in terms of it is a "final explanation". He says,

We have, in fact, drawn certain lines and come to regard certain successions of states as natural and others as unnatural. But in the absence of any clear and objective reasons for drawing these lines as we do, we may wonder whether other lines could be drawn, or whether, indeed it is necessary to draw any lines at all.¹⁸

To prove that we could draw other lines, Ellis invents a new 'first law of motion' which says, in effect, that the natural state of any body is that state which Newton would have considered to be due to gravity. There is no need to elaborate on the details of Ellis's new theory of mechanics. His conclusion is that with this new concept of 'naturalness', mechanics would be capable of explaining any motion that it is presently capable of explaining, and that it would be simpler in many respects, for example, we would need no strange entities called 'gravitational forces'. "The possibility of such an alternative dynamic is therefore proof positive of the conventionality of the law of inertia."¹⁹ Ellis goes on to say that although the Principle of Inertia is conventional it is not arbitrary, by which he means that although we are not bound by empirical considerations to base our mechanics on this principle, yet empirical considerations do exclude certain possible alternate principles. It is also not arbitrary in the sense that our choice brings with it certain theoretical assumptions that we

may or may not want to make. Ellis concludes that

Since we are at liberty to choose to regard whatever changes or states we please as natural (i.e., as not being effects), it follows that the forces which we should say are operative in nature depend upon choices we actually make.

For this reason, then, a principle of natural motion such as the law of inertia, cannot be an empirical principle. Of course it does not follow that our choice of principle of natural motion is arbitrary. On the contrary, it has been shown that it is just such choices which govern the whole course of physical inquiry. The choices we actually make are always theory committed. Nevertheless, it has been seen that there still remains some area of choice.²⁰

We see then, that if someone asks, "Why does the Principle of Inertia hold?" the answer is, "because we have agreed to call motion at constant velocity 'natural'." If he continues to question us and ask why we have agreed on this state as natural and not another state, our answer is twofold. First, we explain that some of the other possible states were eliminated because theories resulting from the choice of these states as natural could not be made to fit the facts. Then we explain that, of the remainder, the resultant theories of all of which could be made to fit the facts, we have chosen one on the basis of its theoretical commitments. Typical theoretical commitments have involved claims from theology, metaphysics, aesthetics (e.g., simplicity), ethics, and so on, in any case, from beyond the realm of strictly empirical science. To say, then, that such a choice is conventional is not to say that it was made without a good reason, but only that it was made on grounds other than

the combination of strict empirical evidence with the tools of induction and deduction. It is in this sense, then, that the naturalness of a certain motion or behaviour, and therefore the finality of a certain explanation, are both based partially on convention.

The immediate result of this conclusion, as Ellis himself points out,²¹ is that the decision about what principle of "naturalness" to adopt is non-empirical. If, then, there is a direct analogy, as I have previously attempted to prove,²² then the choice of a teleological principle of asymmetry over a competing principle may be conventional. That is, it is possible that the two principles can form the foundations for two theories which are equally acceptable on empirical grounds and the choice "will depend on what theoretical commitments we wish to make."²³ This is in conflict with Taylor's thesis that whether basic explanation of behaviour appeals to the teleological principle of asymmetry or some other principle (e.g. some mechanistic principle such as one of Newton's laws) is an empirical question.

Taylor could claim that he has already taken this criticism into account. For he says of this choice of mechanistic or teleological principles that,

this could be called an empirical question, but it could also with equal justice be called a conceptual one. But in this case it would be a mistake to consider these two descriptions as mutually exclusive. In fact, this issue can be called em-

pirical in the same sense as the Principle of Inertia can be called empirical, and it can be called conceptual in the same sense in which the discovery of this principle can be said to have involved a conceptual shift.²⁴

However he goes on to say that

Now these issues, touching as they do on the conceptual framework of enquiry, are nevertheless empirical in this sense, that whether or not a given principle, say that of mechanism, or that of purposiveness, is judged valid will depend ultimately on whether laws of the type it prescribes are found to hold of and account for the phenomena. The Principle of Inertia won universal acceptance because it was the foundation of the most fruitful set of explanatory laws discovered up to that time.²⁵

But Ellis' point is that there is at least one other principle that could replace the Principle of Inertia, i.e. another conceptual framework, which would still "account for the phenomena", and that a choice between them is therefore still possible. Similarly it is possible that two (e.g., both mechanistic and purposive) conceptual frameworks could account for the phenomena. Ellis has proved this in the case of the Principle of Inertia, but Taylor has not disproved it for his principle of asymmetry in teleological explanations. However, it is now a plain possibility that both purposive and mechanistic frameworks could be empirically acceptable. Until Taylor excludes this possibility, which he has not done, his thesis is not proved. But, on the other hand, any of Taylor's opponents who maintain on a priori grounds that purposive explanation is unacceptable, are in exactly the same situation; until they can exclude this possibility,

they cannot prove their thesis either.

Section II

Our choice, then, of which explanations are on the most basic level, is partially conventional. It will be remembered, however, that the only sort of explanation that Taylor claims could be on the most basic level is the teleological sort of explanation. This claim will now be examined, first to discover if Taylor actually excludes causal explanations from being on the most basic level, then to compare Taylor's view with Braithwaite's exclusion of all explanations from the most basic level, and finally, to draw out the consequences of a peculiar result of Taylor's insistence that all teleological explanations are basic.

It should be noted that although we have examined the views which Ellis holds about final explanation as exemplified by Newton's laws, Taylor himself never says that any of Newton's laws formed part of an explanation on the most basic level. Indeed he never mentions the possibility of any non-teleological explanation being on the most basic level. His phraseology ("And therefore whether the principle of asymmetry is valid and whether the most basic laws are of this [i.e. teleological] sort are also empirical questions"²⁶) suggests that he does not exclude the possibility of "most basic laws" of a causal sort. On the other

hand, Taylor also claims that in scientific theory the "modern norm" always leaves open the possibility "that another set of laws will be discovered which are more basic."²⁷ Presumably he is speaking here of the usual kind of scientific law, i.e. causal law. The implication is that causal laws are not normally invoked in explanations on the most basic level. Braithwaite, for example, supports this view and insists that "At each stage of explanation a 'Why?' question can significantly be asked of the explanatory hypothesis; there is no ultimate end to the hierarchy of scientific explanation, and thus no completely final explanation."²⁸ (Braithwaite applies this judgement to all scientific explanation, including teleological explanation.) Braithwaite points out that Newton's law of gravity has been subsumed under a more general hypothesis (Relativity). It also appears that the Principle of Inertia, the only non-teleological principle that Taylor even hints could be involved in explanation on the most basic level, has itself been subsumed under a more general relativistic law which says, in effect, that, in the absence of forces, a body will follow a geodesic line in Riemannian space-time.²⁹

Nevertheless, the most consistent conclusions to draw from Taylor's characterizations of the concepts involved, (especially in view of the breakdown of the disanalogy between the Principle of Inertia and the principle of asymmetry for teleo-

logical explanations) would seem to be that explanations invoking the Principle of Inertia (and perhaps other mechanistic principles, e.g. Newton's second and third laws) are basic in a Newtonian (or mechanistic) system. The apparent counter-example given above could then be explained as a "conceptual shift" in that now, given the new Einsteinian conception of space-time one can ask the question "Why?" of the old Newtonian Principle of Inertia, but this does not change the fact that if we still thought in Newtonian concepts such a question would not be possible. Such an interpretation would again imply that the concept of a most basic level of explanation is relative to the conceptual framework (i.e., culture) in which it occurs. (Cf p 30 above.)

If this interpretation of Taylor is accepted then an apparent conflict between Braithwaite and Taylor can be resolved and the claim for the "basicness" of some explanations may become clearer. Braithwaite labels as 'naïve' the teleologist's view that teleological explanations have an "essentially irreducible character".³⁰ By "irreducible" Braithwaite means that it is not possible that they could ever be non-teleologically explained, a view that Taylor also characterizes the teleologist as holding. In the following passage, Braithwaite shows why, in the light of his theory of the nature of scientific laws, the teleologist's view is unacceptable.

The world is not made up of empirical facts with the addition of the laws of nature: what we call the laws of nature are conceptual devices by which we organize our empirical knowledge and predict the future.³¹ From this point of view any general hypothesis whose consequences are confirmed by experience is a valuable intellectual device: and the profitable use of such a hypothesis does not presuppose that it will not at some future time be subsumed under some more general hypothesis in a more widely applicable deductive system, nor that the facts which it explains will not at some time be explicable by a quite different hypothesis in another deductive system.³²

The underlined phrase is very important for without it Braithwaite would appear to be saying that we could conceivably find, at some future time, a further explanation even of those explanations in our system that we now consider basic or final. But given the "partially conventional" analysis presented above, this is clearly impossible. An explanation on the most basic level qualifies as such because the correlations involved are non-contingent. Any attempt to explain a non-contingent correlation would be similar to an attempt to explain why all bachelors are male, a clearly misguided enterprise since "bachelor" means "male" (among other things). By including the phrase "explicable . . . in another deductive system," however, Braithwaite saves himself from this objection. Presumably "another deductive system" would be a theory that approached the world with a different set of concepts, although the terms designating these concepts might not differ from those in the previous theory. In such a case, the previously

non-contingent correlation between two terms may become a contingent correlation between the same two terms, but this could only occur because the concepts designated by the terms have changed. In other words, the terms have undergone a change in meaning, they now designate different concepts. Under this new conceptual scheme, this new deductive system, the new contingent correlation may, of course, be explainable on a more basic level.

Taylor seems to accept the latter position in part 4 of chapter II (pp.45-48) of his book where he points out that mechanism is 'conceivable' but only by our present framework undergoing a "conceptual shift" which would change the meaning of the present terms. For our present "scheme requires that we identify, in 'intention' or 'purpose' a condition which is non-contingently linked with what follows from it."³³ If this non-contingent linkage were to break down, then "our conceptual scheme would collapse."³⁴ Final explanation, then, or explanation on the most basic level, (despite Braithwaite) can retain its status within a conceptual scheme; but this does not mean that it could never be further explained within a new scheme.

Taylor's point, then, that there is a basic level of explanation is well taken, provided he means within or relative to a given conceptual scheme. However, his suggestion that causal explanation, unlike teleological explanation cannot be on that level must be rejected as inconsistent with his own theory. I

have also rejected his claim that the acceptance of a particular set of explanations on the most basic level is empirical; I have shown, rather, that it is partially empirical and partially conventional. However, nothing, so far, has made any less plausible Taylor's claim that teleological explanations are always on the most basic level. This claim will now be examined.

I have already mentioned (p.¹⁶) Taylor's thesis that teleological explanations, by their very nature, have a feature such that there can be no more basic explanation. In other words, teleological explanations, since they invoke natural tendencies and so require no further explanation, are always basic. If, then, any event is explained both causally and teleologically, it is immediately evident, on clearly a priori grounds, that the causal explanation cannot be more basic than the teleological explanation, for teleological explanations are always on the most basic level. There is no question of ever discovering empirically that the causal law is the most basic of the two, for it is impossible that any explanation could be more basic than the teleological explanation.

This is a very serious objection to Taylor's thesis, for he wishes to maintain that the decision about whether the most basic laws are causal or teleological is an empirical decision. But it is now clear that in those cases where both teleological and causal explanations account for the event, the decision as

to which is most basic is an a priori decision. What is worse, this objection follows solely from his concept of a hierarchy of explanation, his characterization of teleological explanation in terms of natural tendencies and his statement of the problem as empirically decidable on the most basic level. It seems unlikely that Taylor would wish to reject any of these points outright since they are so central to his thesis. One way of rescuing his thesis that the decision about one type of explanation being most basic is an empirical decision, is by claiming that teleological and causal accounts could never both be given of the one event. But it appears clear that both accounts often are given. Taylor gives us an excellent example in the case of the mechanical dog. He says, "In this case the laws descriptive of his [the dog's] external behaviour . . . would be teleological like those of his real counterpart . . . but the more basic explanation would not."³⁵ This implies that Taylor considers (as do Aristotle³⁶ and Braithwaite³⁷) that both types of explanation can be simultaneously given without biasing the question about which is basic. I do not think that there is much point in attempting to rescue Taylor's thesis by denying that both types of explanation can be given.

An alternative way of rescuing Taylor's position would be to reject the claim that teleological explanations must always be on the most basic level. It would not be necessary to deny that

any teleological explanation could ever be basic; it could still be held that some teleological explanations were basic. It would thus be possible to have teleological explanations which were not on the most basic level and hence possible hierarchies of teleological explanation which are not possible according to Taylor's original position. "For example, the special teleological law about a particular food (e.g. grass) as good for a particular species of animal (e.g. horses) is deducible from less special teleological hypothesis about food-seeking in general together with biochemical hypotheses about the conditions for the digestibility of grass."³⁸

Such modifications would require rejection of either Taylor's thesis that all teleological explanations are explanations in terms of 'natural tendencies' or else of Taylor's thesis that all 'natural tendencies' describe non-contingent relationships. To reject the latter would be to reject Taylor's whole method of showing how a teleological explanation could ever be basic. The former, however, has already been subject to attack by Robert Brown in his review of Taylor's book³⁹ in a manner which allows for a constructive modification of Taylor's theory.

Brown's argument is directed specifically against a particular type of teleological explanation, viz., explanation by intention. Taylor claims, as we saw earlier on page 13, that intending X is non-contingently linked with doing X because doing

X, in absence of counter-vailing factors, is part of the meaning of "intending X". Brown's refutation will be quoted in full:

This argument clearly won't work. For intending X amounts to the agent believing that he will try to do X by means he takes to be appropriate. Suppose we ask why John sold his government bonds yesterday, and learn that he intends to use the cash for the purchase of sheep. Then why cannot his intention to purchase sheep be the cause of his sale of bonds? Certainly not because "selling bonds" is part of the meaning of 'intending to purchase sheep'. What Taylor's argument might show, at best, is that an intention to purchase sheep could not be the cause of the purchase of sheep. But this conclusion is worthless for his purposes, since a trivial rephrasing of the intention can always make it eligible as a cause while still providing us with an intention-explanation. Thus my intention to make a profit from sheep grazing next year can be the cause of my purchasing sheep today, even though that intention may have as its subsidiary my intention to purchase sheep today.⁴⁰

Explanation of selling bonds by quoting one's intention to buy sheep is clearly not explanation on the most basic level for, as Brown correctly points out, there is nothing non-contingent about the linkage. Since we have granted to Taylor the position that natural tendencies describe non-contingent relationships, it follows that selling bonds is being explained by an explanation invoking a contingent correlation. Yet the explanation is clearly in terms of a law invoking the fact that selling bonds is required for buying sheep and so is a teleological explanation. So we have a teleological explanation with Taylor's "required for" formula which does not invoke any 'natural tendencies'.

It is to be expected that this teleological explanation

which does not invoke natural tendencies is not on the most basic level. And this is so, for "whenever there is an intention to buy sheep, then there is selling of bonds" is clearly not a constituent law of a basic explanation. The regularity is a contingent one and can be explained on a more basic level. For example, a more basic explanation might involve the initial conditions (a) I intend to buy sheep, (b) money is needed to buy sheep, and (c) the only way to get money is by selling bonds and therefore (d) I intend to sell bonds, together with the more general law "intending to sell bonds leads to selling of bonds." This fulfills Taylor's characterization of a more basic explanation invoking initial conditions and a more general regularity. So, since the original regularity which does not invoke 'natural tendencies' ("whenever there is an intention to buy sheep, then there is selling of bonds"), can be further explained on a more basic level, it itself cannot be on the most basic level.

To admit the existence of such teleological explanations which neither invoke natural tendencies nor are on the most basic level would solve two problems in Taylor's theory. It would answer Brown's objection that explanations in terms of intentions do not invoke non-contingent correlations by saying that only some explanations invoking intentions appeal to non-contingent correlations. It would also answer the more fundamental objection (on page 37 above) that since all teleological explanations are

basic the decision as to which type of explanation is the more basic cannot be empirical. It answers this by granting the existence of non-basic teleological explanations; hence not all teleological explanations are basic and the decision cannot be made on a priori grounds. The price has been a considerable modification in the nature of teleological explanations, although Taylor's fundamental characterization in terms of requirement has not been changed.

Section III

In this section I will discuss Taylor's concept of explanation itself, in particular his adoption of the "subsumption under law" or "covering law model" of explanation. We have already seen that Taylor considers scientific explanation to be an extension of 'ordinary' explanation, i.e., the reduction of the explicandum to what is 'normal' by giving a 'context' for it. Scientific explanation is reduction, by initial conditions, to the 'norm', that is, to a scientific law which is more general than the regularity (or event) being explained. Explanation is invariably, then, subsumption under law. I will discuss first the concept of normalcy, showing that it is fundamentally similar to the concept of 'natural behaviour'; then I will discuss a difficulty in Taylor's theory concerning the relationship of natural tendencies to laws expressed in terms of the "required

for" formula; finally, I will argue that much of what Taylor says suggests that his concept of teleological explanation is not really of explanation by subsumption under a special type of law (although Taylor clearly thinks it is), but rather is a type of explanation which does not follow the deductive pattern.

Taylor's position is that the main difference between scientific explanation and 'ordinary' explanation is that in the former the concept of normalcy must be discovered whereas in the latter the norm is given or accepted within the culture. But, it might be thought, reference to 'normalcy' or to a 'norm' is usually reference to a 'normative' concept. Abnormal behaviour, it might be objected, suggests behaviour that is not 'proper', there is something 'wrong' with it, it 'ought' to be 'normal'. It could be claimed that for Taylor to say that science can discover the norms in terms of which explanation can be given, is to say that science can jump the "is-ought gap", that science can go from facts to values. Whether the gap can be bridged is a question that has been vigorously debated at least since Hume first stated it in this form, but the dispute does not seem to be at all relevant to science; scientists never appear to have worried about setting normative standards for the behaviour they study.

A solution to this problem has been proposed by Hugh Lehman

in "Functional Explanation in Biology",⁴¹ in a discussion of "what is implied in the statement that an organism is functioning properly."⁴² He explicitly says that to function 'properly' is to satisfy a certain standard or 'norm'. But he denies that appeal to such a norm involves approval or disapproval. He says, "There is no contradiction in saying, 'The darned hamster functioned properly'."⁴³ He also asks if appeal to a norm implies a judgement as to the value of items conforming to these criteria. He answers:

The answer to this question is both no and yes—depending on how the term 'value' is interpreted. The answer is no if 'value' is interpreted to imply that the users of these criteria necessarily have a favoring attitude or feeling towards items which conform to the standard. However, the fact that these items were elevated to the standard of proper functioning rather than some other items reflects the fact that knowledge of the organism with respect for the purposes of those (for example, doctors) interested in whether an organism is functioning properly. The answer to the above question is yes if 'value' is interpreted to imply that knowledge of these factors is important for medical purposes. But in saying that the notion of a standard of proper functioning reflects values (in this sense) it does not follow that reference to such a standard is incompatible with scientific standards. In many areas of science there are references to standards and these standards are chosen in the light of the purposes of the users of them, e.g., standards of measurement.⁴⁴

The connection can now be seen between normalcy and natural behaviour. Normalcy is also conventional although only partially so. The norm adopted is determined by the purposes of the users, but not all norms will necessarily serve those purposes, due to

the empirical facts. But nor is there any a priori reason why the facts should narrow the choice down to only one set of norms. A number of choices for our concept of normalcy may be empirically possible, and the decision must be made on non-empirical grounds, i.e., in the light of the theoretical commitments involved.

To imply, then, as Taylor does, that science 'discovers' norms is an unhappy way of putting it. Rather science 'adopts' certain norms. Since the norm appealed to in any scientific law is, according to Taylor, a law which is more general than the regularity being explained, it follows that these more general laws are themselves partially conventional. This should not be surprising, for, as we saw in the discussion of "natural tendencies" (p 30 above) the most basic principles or laws are partially conventional, and hence it is to be expected that all the laws which are explained by these will also be partially conventional. Indeed, it can now be seen that the term "normal" plays exactly the same role in explanations in general that "natural behaviour" does in explanations on the most basic level.

The second part of this section will be concerned with the actual form of an explanation on the most basic level.

Taylor states that a teleological explanation is an explanation invoking a law of the form "whenever B is required for G, then B" (where B is some behaviour of the organism, and G is

some goal of the organism). He states that a teleological explanation is on the most basic level of explanation, and this because it appeals to natural tendencies. It seems that we have two formulations of teleological explanation on the most basic level, the explanations invoking laws with the "requirement" phraseology, and explanations invoking natural tendencies. While we may accept Taylor's point that it is inappropriate to ask why a natural tendency results in the corresponding behaviour, when it does, it does not seem to be at all inappropriate to ask why an event occurs sheerly because it is required for the goal. The immediate answer might seem to be given by an explanation of the "requirement" feature by invoking natural tendencies towards the goal. But this would make explanation in terms of the "requirement" condition less basic than explanation in terms of natural tendencies, and since the "requirement" law is used as part of Taylor's primary definition of teleological explanation, this would imply that teleological explanation is not on the most basic level of explanation. This clearly cannot be the correct interpretation of Taylor's view.

It would seem more reasonable to say that the statements "whenever B is required for G, then B" and "the system has a natural tendency towards G" are exactly equivalent. But if they were equivalent, why would the second formulation block further explanation when the first does not appear to? It would seem

that to get an exact equivalence we must expand the second formulation to get "the system has a natural tendency towards G, and therefore, whenever B is required for G, then B." But this looks, again, as if the empirically discovered "requirement" law is being explained (note the "therefore") by appeal to natural tendencies.

Taylor's meager comments on the issue and especially his lack of clear examples of teleological explanations do not help much in clarifying the confusion. He says, "the function of an explanation invoking powers or natural tendencies can be precisely to shut off further enquiry"⁴⁵, and follows the statement, in the same paragraph, by, "And this logical feature of an account in terms of powers which makes it a block to further enquiry is also the one which unfits it to serve as an empirical law linking two terms."⁴⁶ He seems to be suggesting that explanations invoking natural tendencies are not explanations in the sense of subsumptions under law. The next sentence reads, "On the contrary, it can serve only to characterize the type of laws which hold of the system."⁴⁷ Appeal, then, to a natural tendency is not appeal to a law. Later he says, "We are not explaining the behaviour by the 'law', other things being equal, intending X is followed by doing X."⁴⁸ And again, the statement "Thus to call something an action, is not to subsume the behaviour under any law . . ."⁴⁹ seems quite clear. However, on the next page he adds, "to classify behaviour as action ... is to set the

type of laws by which it can be explained."⁵⁰ It would seem, then, that according to Taylor, an account in terms of powers, i.e., appeal to natural tendencies, is like saying, "this system operates on teleological laws" and is not giving a further explanation for the "requirement" form of law. It would be like saying that a particle obeyed the Principle of Inertia 'because' it is a Newtonian particle and this is not to give a more basic explanation for the Principle of Inertia.

Taylor, then, appears to adhere faithfully, if rather confusingly, to the concept of explanation as "subsumption under law". At one point, however, writing about explanation by intention, he says, "But to call something action [i.e., to claim it is intentional] is like citing a causal antecedent in that it rules out other alternatives . . .".⁵¹ In his address referred to above, given a couple of years after his book was written, he says, "we distinguish the antecedent as cause ... since it is what embodies the explanatory force; it connects the outcome concerned to others, and allows us to predict and create precise alterations in outcome."⁵² These quotations may indicate a development of Taylor's thought towards Michael Scriven's concept of "discrimination-explanation, i.e., explanation of event E as due to antecedent A rather than A' or A'', all of which we realize are capable of producing E."⁵³

For example, one may be able to explain the behaviour

of a ball of some unknown material which is compressed and then expands by appeal to the fact that it is elastic. This would be an explanation because it selects the actual cause from among the large set of possible causes ... Here the trick consists in showing which of certain alternative possible explanations, each of them obviously adequate if applicable, is the appropriate one. I have elsewhere called this a selection explanation, or a discrimination explanation, as opposed to a derivation [i.e., an explanation under the 'covering law model'].⁵⁴

It would seem possible, then, to think of Taylor's explanation by appeal to intention (or any other natural tendency) as not an explanation of the derivation type, i.e., as "not to subsume the behaviour under any law . . ."⁵⁵ but rather as a 'discrimination explanation'.

Such an analysis would also have the advantage of giving us an answer to a criticism made by Robert Brown in the review of Taylor's book referred to above (p 39).⁵⁶ Brown attacks Taylor's interpretation of teleological explanation as explanation invoking a "requirement" law. He says:

The obvious difficulty here is that Taylor has not distinguished between two different claims. One is that the explicandum is sufficient to bring about the end; the other is that the explicandum is necessary to bring it about. When he writes of a state of affairs obtaining that will bring about the end, he has a sufficient condition in mind. And when he writes 'that this event is required to bring about that end' he mistakenly thinks, as his footnote shows, that he is still characterizing a required condition. But, of course, a required condition is only a necessary one. An action merely required to bring about an end will not, of itself, bring it about. This lack of clarity as

to whether a teleological explanation gives us necessary conditions, sufficient conditions, or both, is essential for Taylor's argument. Without this confusion, the central part of his thesis could not get under way.⁵⁷

Now it does indeed seem that Taylor thinks that he has produced a type of law, "whenever B is required for G, then B", which is analogous to a causal law of the form "whenever E, then B" except for the form of the antecedent term. Explanation is given by subsumption under either law. If so, Taylor is subject to Brown's objection that the first term of the "requirement" law describes neither a necessary nor a sufficient condition. For the event being explained could occur for a reason other than the "requirement" one, hence it is not a necessary condition. Nor is it true that, as Taylor claims, "an event's being required for this end is a sufficient condition of its occurring."⁵⁸ For example, the lion may still not stalk the deer even if such action were required for his next meal, if, for example, the lion were not hungry.

But maybe the explanation by appeal to natural tendencies, i.e., by appeal to the "required for the goal" expression, is not explanation by subsumption under law at all, but rather what Scriven has called a "discrimination explanation", and hence the "required for" condition need be neither a sufficient nor a necessary condition. Scriven says, "It is important to see the difference between the 'sufficient-condition' and the 'proximate-condition' analysis of cause, ... because the usual explanations

of psychology and history cannot, while those of physics can, be redescribed in terms of the sufficient condition analysis."⁵⁹

In other words, we can have a satisfactory explanation of an event without the citation of generally (i.e., subsumable under a general law) necessary or sufficient conditions.

Scriven's statement that history uses discrimination explanation and not deductive explanation is well substantiated by William Dray in his book Laws and Explanation in History.⁶⁰

Dray wrote his book to counteract the trend towards a monolithic concept of explanation as subsumption under law. He describes a type of explanation very similar to quoting a "proximate-condition" (in Scriven's terminology), and insists that the "covering law model" of explanation just does not describe historical explanations. He says:

It is important to recognize how seriously such an analysis would misrepresent what may be presumed to be the historians meaning if he said that the condition he selects as a cause was necessary for the happening he wishes to explain. We must remember, as always, that he is talking about particular happenings in a quite definite historical situation. When he says that y would not have happened without x, he does not mean that only in situations where there is an x-type event can you expect a y-type. He means that in that particular situation, if everything else remained the same, the y which in fact occurred would not have done so, or, at any rate, that it would have been different in important respects. The law, "Only if x then y", might therefore be quite false, without the historian's conclusion having to be withdrawn.⁶¹

Dray is saying that a perfectly satisfactory explanation can be

given without quoting a necessary or a sufficient condition which is universally generalizable, i.e., without subsumption under a law.

Indeed, the relation of 'support' between laws and the particular connections falling under them, is at times precisely the opposite of the one envisaged by covering law theory; for in many cases discovery of individual causal connexions precedes the formulation of causal laws, the laws--shocking though it may be to say it--requiring prior knowledge of the particular cases, rather than the cases requiring support of the covering causal law.

How, for instance, might we in practice arrive at a causal conclusion like 'Speed causes road accidents'? Would it not be by generalization from a number of particular causal diagnoses of the form: 'The cause of this accident was excessive speed'?⁶²

In other words, in such a case we must be capable of explaining the event in question by means of a cause before we can discover a general law by which to explain it, but in such a case we don't need the covering law, since the event is already explained. Dray insists that this analysis does not apply to physical laws and thus that he is not contradicting Hume. It is only in the social sciences (and perhaps diagnostic medicine) that we have non-generalizable explanations.

In the example above of the selling of bonds being explained by the intention to buy sheep, there is clearly no appeal to a general covering law "whenever there is an intention to buy sheep, then the selling of bonds occurs." The general law is false whether it describes a necessary or a sufficient condition, for bonds may be sold for many other reasons and the

intention to buy sheep can lead to many other results. Nonetheless it does give an explanation of the event and renders it "intelligible". Dray argues "that rational explanation i.e. explanation by giving the reason or intention for doing something is a recognizably distinct type of explanation; that it employs a criterion of intelligibility which is different from that formulated by the covering law model, and that there are special reasons [those already discussed and others] for objecting to the claim that such explanations require the truth of corresponding empirical laws."⁶³

Scriven seems to be making the same point about the existence of different criteria of intelligibility when he says:

when one asserts that X causes Y one is certainly committed to the generalization that an identical cause⁶⁴ would produce an identical effect. But this in no way commits one to any necessity for producing laws not involving the term "identical", which justify this claim. Producing laws is one way, not necessarily more conclusive, and usually less easy, than other ways of supporting the causal statement. In history and psychology there are very well established ways of directly supporting such statements which do not involve stating laws such as those in physics.⁶⁵

The importance of the ideas presented by Dray and Scriven for Taylor's view is that if his position were modified so that a teleological explanation were an explanation by giving 'proximate-conditions' then the objections brought against it by Brown (p 49 above) could be very simply dispatched. We could just say that the "requirement" term in a teleological explanation describes

neither a sufficient nor a necessary condition for the consequent, but just a proximate condition.

Such a modification of Taylor's scheme would be rather drastic, for with such changes teleological explanation would no longer be explanation by subsumption under law, i.e., it would not be part of a deductive system. But if it is not part of a deductive system the question of whether it is more basic or less basic does not occur, for "basic" refers to an explanation's position in the explanatory hierarchy. The problem of applying both causal and teleological explanations to the same event can also be simply solved. Both may be applied to any particular event and both will explain the event. But the explanations will be explanations within different conceptual schemes, i.e., schemes with different concepts of "intelligibility". Whether either physical events or human behaviour (Taylor) or both (Aristotle) or neither (Hempel) can be made intelligible by explanation in the sense of "rational explanation", teleological explanation, or proximate-condition explanation is to be determined by the tools of the branch of knowledge which uses this criterion of intelligibility. Similarly, whether such events can be made intelligible by explanation in the sense of "subsumption under law" or "the covering law model" is a question for the branches of knowledge which use this criterion of intelligibility, e.g., the sciences of physics, chemistry

behavioural psychology, and using their methods.

I conclude this chapter with a summary of the main points I have made in it. I argued, first, that the disanalogy which Taylor claimed existed between the Principle of Inertia and the principle of asymmetry has not been shown to hold. As a result, both principles can be assumed to have the same basis. The basis of both principles, as indeed the basis of all principles invoked in basic explanations, is, at least partially, conventional. The choice of such principles is therefore not based just on empirical grounds. Hence the decision as to whether the most basic explanation of behaviour is to be teleological or causal is not a sheerly empirical decision as Taylor maintains.

In the second section I argued that basic explanations, whether teleological or causal, are basic only within a given conceptual scheme. In other words, such explanations may be further explained, in some sense, after a "conceptual revolution". Then, to correct an inconsistency in Taylor's theory which was due to his insistence that all teleological explanations are basic, I showed how his theory could be modified to allow non-basic as well as basic teleological explanations into the system.

Finally, I discussed the fact that Taylor ultimately clings, somewhat confusingly, to a 'covering law' concept of explanation. I suggested that his analysis of teleological explanations could be improved by admitting a different concept of explanation, a

different criterion of intelligibility. The concept of explanation I proposed was that presented by Dray and Scriven, the "proximate-condition analysis" type of explanation. With this understanding of two different criteria of intelligibility I explained that there was no reason why "covering law" type explanations and proximate--condition explanations could not both be given of the same event. Hence events may be simultaneously explainable both causally and teleologically.

Footnotes to Chapter II

1. Charles Taylor. The Explanation of Behaviour. New York: The Humanities Press, 1964, p. 23. My underlining.
2. Ibid., p. 23.
3. Webster's New International Dictionary. Springfield, Mass; G & C Merriam & G., 1961.
4. Ibid., p. 23.
5. Ibid., p. 23. My underlining.
6. Ibid., p. 23.
7. Ibid., p. 23.
8. Ibid., p. 24.
9. Ibid., p. 24.
10. Velocity, that is, as the vector quantity which includes direction as well as speed. Rest is zero velocity.
11. Taylor. The Explanation of Behaviour. p. 23.
12. Brian Ellis. "The Origin and Nature of Newton's Laws of Motion." in Robert G. Colodny (Ed.). Beyond the Edge of Certainty. New Jersey: Prentice-Hall, 1965. p. 29-68.
13. Ibid., p. 43. Ellis' italics.
14. Ibid., p. 45.
15. Ibid., p. 45.
16. Ibid., p. 45-46.
17. Taylor. The Explanation of Behaviour. p. 21.
18. Ellis. "The Origin and Nature of Newton's Laws of Motion." p. 46-47.
19. Ibid., p. 50.

20. Ibid., p. 65.
21. Ibid., p. 65.
22. See this thesis, Chapter II. p²⁴.
23. Ellis. "The Origin and Nature of Newton's Laws of Motion". p. 51.
24. Taylor. The Explanation of Behaviour. p. 101.
25. Ibid., p. 101 and 102.
26. Ibid., p. 25.
27. Ibid., p. 21.
28. Braithwaite. Scientific Explanation. p. 347.
29. See, for example, Clement V Durell. Readable Relativity. New York: Harper torchbooks, 1960. "We can now state Newton's first law in more general terms.
If a body is moving freely, and if A and C are two events in its history, the space-time path followed by the body between A and C is such that the separation of C from A measured along that path is a maximum . . ."
The world-line which has this unique property is called a geodesic."
(p. 96)
30. Braithwaite. Scientific Explanation. p. 339.
31. He adds elsewhere on the same page, "intellectual satisfaction".
32. Braithwaite. Scientific Explanation. p. 339. My underlining.
33. Taylor. The Explanation of Behaviour. p. 47.
34. Ibid., p. 47.
35. Taylor. The Explanation of Behaviour. p. 20.
36. See quotation p. 4 above.
37. "A teleological explanation of a particular event is in no way incompatible with a causal explanation of the same fact."
Braithwaite. Scientific Explanation. p. 343.
38. Ibid., p. 340.
39. Philosophy. Vol. XL #154 (October 1965). p. 344-348.

40. Robert Brown. "Review—The Explanation of Behaviour". In Philosophy. Vol. XL. #154. (October 1965). p. 346.
41. Philosophy of Science. Vol. 32, #1 (Jan 1965). Pages 1-20.
42. Hugh Lehman. "Functional Explanation in Biology". Loc. Cit. p. 16.
43. Ibid., p. 17.
44. Ibid., p. 17-18.
45. Taylor. The Explanation of Behaviour. p. 21.
46. Ibid., p. 21.
47. Ibid., p. 33.
48. Ibid., p. 34.
49. Ibid., p. 34.
50. Ibid., p. 35.
51. Ibid., pp. 33-34.
52. Quoted from an unpublished address entitled "Notes on the Explanation of Behaviour", presented by Charles Taylor at West Virginia University on May 10th 1966.
53. Michael Scriven. "A Study of Radical Behaviourism". in Minnesota Studies in the Philosophy of Science. Vol. I. Minneapolis: University of Minnesota Press, 1956. p. 121.
54. Michael Scriven. "Defintions, Explanations and Theories." in Minnesota Studies in the Philosophy of Science. Vol. II. Minneapolis: University of Minnesota Press, 1958. p. 184.
55. Taylor. The Explanation of Behaviour. p. 34. My underlining.
56. Robert Brown. Review—"The Explanation of Behaviour". in Philosophy. Vol. 40. #154. (Oct. 1965). p. 344.
57. Ibid., p. 345.
58. Taylor. The Explanation of Behaviour. p. 17. My underlining.
59. Michael Scriven. "Definitions, Explanations and Theories." p. 193-194.

60. Oxford University Press. 1957.
61. William Dray. Laws and Explanations in History. Oxford University Press: 1957. p. 102.
62. Ibid., p. 106.
63. Ibid., p. 137.
64. Dray would presumably add, "in the same particular situation."
65. Scriven. "Definitions, Explanations and Theories." p. 194.

III

Significance of the Discussion

It might be asked if the notion of basic explanation is important enough to warrant further investigation. In this chapter I will argue that the concept of a basic explanation is very significant for both practical (i.e., for methodological and ethical) considerations, and for metaphysical speculation.

First I will consider the importance of a basic level of explanation for scientific method. Given the concept of a most basic explanation as simply an explanation fulfilling the extrinsic qualifications of not being itself explainable, then its existence or non-existence would be of very little consequence to the scientist. For if there were no basic explanations, he would have to continue his investigations indefinitely, never reaching a stopping point where he could say that his job was finished. But even if there were basic explanations, he would still have to continue his investigations indefinitely for with only the extrinsic property to identify an explanation on the most basic level, he could never know when he had one. He could never prove that there might not be a more basic explanation that he had not yet discovered. The only indication he may have that the explanation he is investigating is basic is that the

explanation has not been further explained over a long period of time despite the intense efforts of many investigators to do so. But this is a slight indication, since, for example, some of Aristotle's 'basic' explanations were further explained after 2000 years. Even this slight indication vanishes if one admits the analysis in the previous chapter which holds that basic explanation is basic only with respect to a given conceptual scheme. For then, even if the scientist thinks he has good indications that a certain explanation is a basic explanation in the particular conceptual scheme he is using, he must still keep investigating in case there is a better conceptual scheme yet to be found.

The situation appears to be quite changed, however, if, as Taylor maintains, some basic explanations (i.e., teleological explanations) have an intrinsic characteristic which enables us to spot the fact that they are on the most basic level without checking their position in the explanatory hierarchy. With this concept of a basic explanation, if a scientist ever explains a phenomena on the most basic level, he can tell immediately that it is an explanation on the most basic level. He does not have to await further empirical indications, even if they could be of any help. He can tell just by looking at the explanation that it is impossible for there to be any further explanation. All further empirical investigation is now

useless, and the scientist can close up his laboratory. This result, however, does not follow if basic explanations are seen, not as absolutely basic, but basic relative only to a given conceptual scheme. But, even in this case, finding an intrinsically characterized basic explanation will have profound effects on the scientist's further investigations. For, now, although he need not cease his investigations, yet he must not rely so completely on this empirical data. For the only progress which he can make, under these circumstances, is the development of a new conceptual scheme, and as I pointed out above, this does not follow solely from further empirical findings.

So the questions of whether there are explanations on the most basic level or not, whether they can be identified intrinsically or only extrinsically and whether they are basic in some absolute sense or only relative to a conceptual scheme, all have considerable practical significance for the scientist.

The work of the scientist, however, is affected not just by the existence and characterization of basic explanations, but also by which explanations are on the most basic level. The concept a scientist has of what is "natural" will determine the area in which he will look for any 'unnatural influence', i.e., 'causes', with which to explain the phenomena he is investigating. Ellis makes this point very well in the following example:

Suppose that the meter rod in Paris were suddenly

to burst through the ends (both ends) of its glass case Let us suppose that two scientists A and B view the phenomenon of the meter rod, that A holds the principle that every body expands unless it is acted upon by a force, while B holds that every body remains the same size unless it is acted upon by a force. Let us further suppose that A and B agree on the kinematic description of the phenomenon in question. Let us say that both agree that the rod has expanded, and that the rest of the universe has remained the same. Nevertheless, the two scientists will make different investigations. A will examine the rod's present surroundings, hoping to find what has insulated the rod against the otherwise universal compressive force, while B will examine the rod's past history, hoping to find the cause of its expansion.¹

Ellis is saying that two scientists with different concepts of what is "natural," i.e., with different concepts of what constitutes a "basic" explanation, will make different investigations. Thus a psychologist who is a teleologist will, under Taylor's analysis, look for the explanation of a certain behaviour in the particular environment of the organism. He will try to find some feature in the environment which makes the behaviour to be explained a requirement for the goal of the organism. The behaviouristic psychologist, on the other hand, will look to the learning history of the organism for explanation of its present action. So the question of which form of explanation, causal explanation or teleological explanation, is explanation on the most basic level of human or animal behaviour, is of considerable importance to the empirical psychologist. It will determine what experiment he will set up to discover the

explanation of a certain behaviour.

The question of whether behaviour should be explained by subsumption under law or by giving a proximate-condition analysis also has practical implications. Explanation by subsumption under law involves the establishment of a general law by inducing from many instances of that law. A scientist holding this concept of explanation will search for the explanation of a given event by examining other similar events, by setting up experiments with similar events and so on, in order to discover the general law which can then be used to explain the original given event. On the other hand, a scientist who wishes to explain a particular event by the proximate-condition type of analysis, will look more deeply into the particular event being explained. He will examine the history of it, what possibly relevant events occurred just before the event to be explained and the particular situation and conditions under which it occurred.

For example, an historian attempting to give an explanation for the occurrence of World War II might approach the subject by examining all the previous wars of which there were records and might come up with some general law like "Whenever there is greed, there is war." He could then explain World War II as due to the initial conditions of greed and this general law. But an historian with a proximate-condition concept of explanation

would pay scant attention to previous wars and examine in further detail the events culminating in World War II. He might discover that there were a number of proximate-conditions causing the war, one of which was, say, Hitler's neurosis which in turn was due to his mother's being unbalanced. Now the history of all previous wars could be examined without a single other case being discovered of the aggressor's mother being unbalanced, and maybe there would never be any wars in which this was the case in the future either, and yet the explanation would stand. For an historian with this proximate-condition analysis of explanation, then, the examination of other wars would be highly irrelevant and, in this case, absolutely useless. The decision, then, as to which type of explanation is appropriate in a particular field has very important practical consequences for the investigation.

Taylor's thesis concerns itself specifically with the type of basic explanation which is fitting in psychology. To help illustrate some of the points made above, I will now examine the practical implications of Taylor's insistence that animal behaviour may be explainable teleologically. A psychologist looking for the explanation of a particular type of behaviour will search for some antecedent condition common to every occasion of that type of behaviour. He will look for some common description of all the situations which are followed by the behaviour. Such a description could be an intrinsic descrip-

tion (see above p. 1) or, according to Taylor, a description in terms of the behaviour being required for a goal. If the investigator finds he can characterize all of the antecedent situations by the one intrinsic description and also by one "required for the goal, G," description he has a choice of explaining the behaviour either causally or teleologically. His decision must be made other than on the basis of the empirical evidence before him, e.g., on the basis of the theoretical commitments involved, or of empirical evidence gained elsewhere than in this experiment.

Similarly, if he finds a description in terms of requirement but cannot find a common intrinsic description for all the antecedent situations, he is not forced by the empirical evidence at hand to give a teleological explanation. For he can always maintain that the behaviour is to be explained by a number of laws, one for each intrinsic description he has been able to find. For instance, if he finds that some of the antecedent situations can be characterized by the intrinsic description E, others by F and all the remainder by G, he can say that he has discovered three laws, viz. "whenever E, then B (the behaviour)", "whenever F, then B," and whenever G, then B." Alternately he can say he has found one law, "whenever E or F or G, then B." He is also free to maintain that, although he has not yet discovered a common intrinsic description for all the antecedent

situations, he will in the future, and thus he must keep on working. The point is that at no time is he constrained by the empirical evidence to adopt the teleological law, "whenever the situation is one that requires B for some goal G, then B." (Of course, faced with the reverse situation, a teleologically inclined psychologist would never be constrained empirically to give a causal explanation, either.) Yet if he accepts, for non-empirical reasons, the teleological explanation of the behaviour, he is forced to claim that his work has been successful and go on to another problem, whereas if he insists that he wants a causal explanation, then he must continue to work. Again the theoretical decision about whether Taylor's characterization of teleological explanations is such as to make teleological explanation acceptable in psychology has practical consequences for the investigation.

Before considering the metaphysical implications of Taylor's theory of basic explanation, I wish to discuss one more point of practical significance. Unlike my previous points, however, this one will not be concerned just with methodological considerations in the sciences, but considerations relevant to the norms of human conduct, i.e., with ethics.

As was pointed out above (p. 29), the choice of any conceptual scheme brings with it certain "theoretical commitments." In the choice of the conceptual scheme to be used in explaining human behaviour, considerations of an ethical nature could be

expected to enter. Indeed, it was the fact that this particular kind of theoretical commitment is involved in the purposive-mechanistic dispute in psychology which motivated Taylor to discuss the explanation of behaviour in the first place. He says:

Now the issue between these two views is one of fundamental and perennial importance for what is often called philosophical anthropology That this question is central to any science of human behaviour - if such a science is possible - needs no showing. But this does not by any means exhaust its importance. For it is also central to ethics. Thus there is a type of ethical reflexion, exemplified for instance, in the work of Aristotle, which attempts to discover what men should do and how they should behave by a study of human nature and its fundamental goals.²

He goes on to explain that if the mechanistic thesis were shown to hold, all such ethical reflexions, 'meaning' in human existence, 'humanism', and so on would "be shown to have no application."³

The central point of Taylor's thesis is that those who hold on a priori grounds that human behaviour is to be explained mechanistically are wrong. He tries to prove this by showing that the question of which form of explanation is applicable is an empirical question. But I have tried to indicate that much of what Taylor says would allow that at least one other approach would be equally effective in counteracting the mechanists. Explanation by proximate-condition analysis, as can be seen from the examples given above (p. 52), would be just as suitable

as a defence of "humanism". Similarly, we could maintain that, given the analysis of basic explanation in terms of conventionalism and conceptual schemes, we are not constrained by empirical evidence to choose any particular form of basic explanation. If, then, we have independent reasons for preferring an account of human behaviour which will allow room for ethical considerations, we are free to adopt a conceptual scheme which will allow ethical considerations. A conceptual scheme which includes teleological explanations on the most basic level would appear to fulfill this requirement.

I have stressed the practical significance and importance of the problems surrounding Taylor's concept of basic explanation both for scientific methodology and for ethics. In the second part of this chapter, I will discuss the relevance of these problems to certain strains of metaphysical thought.

In chapter two, I discussed the fact that there are at least two different concepts of the nature of explanation, the "covering law model" and the "proximate-condition analysis." I wish now to examine two other concepts of the nature of explanation.

The first concept of explanation is that which considers that an explanation is given if the explicandum is assimilated to some sort of order or regularity. Sometimes it involves showing that the explicandum is quite "usual" or "normal" or

that there is no reason to be surprised by it. At other times, however, the regularity appealed to is one that is not more familiar, but rather more general. Feigl, for instance, says, "That which matters is not the familiarity but the generality of the explanatory premises."⁴ In either case, the appeal is to an order either existing in the world or placed there by men, and it is an order that is contingent, that is, it could have been otherwise. I will call this concept of explanation the "empiricist"⁵ concept.

I will call the second conception of what an explanation is the "rationalist"⁶ conception. Peter Alexander gives an example of this concept when, in explaining the operation of the parts of a toy engine, he says, "An explanation is seeing . . . that the arrangement of the parts is such that when the wheels revolve the head must move in the way it does, in some sense of 'must'."⁷ Brand Blanshard states this conception very clearly in the following quotations. He says that to understand is to find an order and

If it is to satisfy reason it must be an intelligible order, and what is that? It is an order which never meets the question Why? with a final rebuff, one in which there is always an answer to be found whether in fact we find it or not. And what sort of answer would satisfy that question? Only an answer in terms of necessity, and ultimately of logical necessity, since of any answer which falls short of this the question Why? can be raised again. When we reach the answer that is necessary, we see that to repeat the question is idle. Of any statement of merely causal necessity, such as the law of gravitation,

Ohm's law, or Boyle's law, we can intelligibly ask why things should behave in this manner. But when we see that things equal to the one thing are equal to each other, we cannot sensibly ask why, because we are at the end of the line to which such questioning can take us. We have already reached the logically necessary.⁸

Spinoza, also, considered that every event was necessary. This is clear from such statements as, "It is in the nature of reason to perceive things truly, namely, as they are in themselves—that is, not as contingent, but as necessary."⁹ This belief was also held by the other Traditional Rationalists as is clear from the fact that they all held that the ontological proof for the existence of God was sound. That is, they all finally appealed to an entity whose existence is necessary and which provides an explanation for the existence of all other entities. The Thomists also hold this "rationalist" concept of explanation. Sheen, for instance, says that in an explanation of a cause-effect relationship, "The mind must perceive the bond between the two, namely, something which would render the non-succession of the two phenomena contradictory."¹⁰ The Thomists, while rejecting the ontological proof, do not reject the concept of God as a Being whose existence is necessary, but only the use of this concept in a proof of His existence by human beings. St. Thomas himself says, "Therefore I say that this proposition, God exists, of itself is self-evident, for the predicate is the same as the subject, because God is His own existence

as will be hereafter shown. Now because we [my emphasis] do not know the essence of God, the proposition is not self-evident to us . . . "11

Those who hold this "rationalist" concept of explanation naturally criticize those who hold that the "empiricist" concept is the only valid concept of explanation, but the latter strongly reject this criticism. Nagel, for example, in a chapter entitled "Malicious Philosophies of Science,"¹² quotes from Gilson, Maritain and Whitehead to "exhibit . . . the unique mixture of pontifical dogmatism, oracular wisdom, and condescending obscurantism which seems to be the indispensable intellectual apparatus of this school of criticism."¹³ He then proceeds to answer this criticism as follows:

In science the answer to the question "why" is always a theory, from which the specific fact at issue may be deduced when suitable initial conditions are introduced. The point of these familiar remarks is that no matter how far the question "why" is pressed—and it may be pressed indefinitely—it must terminate in a theory which is itself not logically demonstrable. For no theory which explains why things happen as they do and not otherwise can be a logically necessary truth.¹⁴

The last sentence, of course, far from justifying what he is claiming, is precisely the point at issue. For in the quotation above¹⁵ Blanshard claims that an explanation must "ultimately" be "in terms of . . . logical necessity."¹⁶ The discussion concerns the very nature of explanation itself. Nagel asks, "For what, anyway, is an explanation? Is it not the case that we

'explain' an event or law when we exhibit it as an element in a more comprehensive order or uniformity?"¹⁷ Those he is criticizing would simply answer, "No!" Nagel says, "A theory does make 'intelligible' the occurrences of nature by indicating their interrelations. Nevertheless, the theory is itself 'intelligible' not because of its self-luminous necessity or certainty, but because of the manner in which it organizes the concrete facts of existence."¹⁸ But his opponents (see, for instance, Blanshard's remarks quoted above, p 71.) consider a theory to be 'intelligible' precisely because of its "self-luminous necessity and certainty."

An extreme "rationalist" view might involve the assumption that this necessity and certainty was a formal logical necessity. This position would be rather implausible, however, for a number of reasons. It would mean that the whole of empirical science was just a poor (but maybe required) substitute for good reasoning. Also, "none of the statements generally labeled as laws in the various positive sciences are in point of fact logically necessary, since their formal denials are demonstrably not self-contradictory."¹⁹ But there is no need to follow Nagel in his assumption that the type of necessity required by the "rationalists" is strict logical necessity. It is possible that there is more than one kind of necessity. Leibniz, for example, claimed that "physical necessity" and "geometrical necessity" were different. He said:

Thus one may say that physical necessity is founded on moral necessity . . . and that both of these ought to be distinguished from geometrical necessity. It is this physical necessity that makes order in Nature and lies in the rules of motion and in some other general laws²⁰

Another philosopher who makes this distinction is A. C. Ewing. Ewing is clearly a "rationalist" in claiming that, "the cause logically entails the effect in such a way that it would be in principle possible, with sufficient insight, to see what kind of effect must follow from examination of the cause alone without having learnt by previous experience what were the effects of similar causes."²¹ Nonetheless, he, also, specifically rejects the assimilation of this logical entailment to the necessity of formal logic. He says:

I must add that, when I say "entail", I do not mean to cover only "formal entailment", or . . . "logical entailment." If we distinguish . . . "logical" entailment as depending wholly on the form of propositions from "ontological necessary connexion", which depends partly on content, I agree that it would not be justifiable to regard the cause as logically entailing the effect or vice versa. I do not maintain that a proposition asserting a causal law could be evident to any mind whatever, human or superhuman, merely from the form of propositions about the kind of events connected by the law, as the connexion between "All men are mortal, and Socrates is a man" and "Socrates is mortal" is evident. If we distinguish form and content in this way, I must insist that necessary causal connexions are connexions of content.²²

Whether Ewing's attempt to differentiate "physical" and "geometrical" necessity by means of the form-content distinction is acceptable or not, these quotations supply evidence that not

all "rationalists" mean "formal logical necessity" when they use the term "necessity". Even Nagel admits the possibility that "the necessity that ostensibly characterizes universals of law may indeed be unique . . ."²³ The following analogous example will give some prime facie evidence for this possibility. It would appear that the term "necessary" in "It is necessary that no bachelors be married" and in "It is necessary that the theory of relativity not be blue" is used in different senses in the two cases. The second type of necessity does not seem to have the "analytic" element present in the first; this second type is obscure; but, nonetheless, the example supplies prime facie support for the thesis that "necessity" may have a number of meanings. If so, then it is not unreasonable to admit the existence of the type of necessity Iwing might refer to as "non-formal logical entailment" or which Leibniz calls "physical necessity". The "rationalist's" thesis, then, is that ultimately explanation must be in terms of this kind of necessity.

There are, then, two fundamentally different concepts both designated by the term "intelligibility". In the "rationalist" concept, intelligibility demands some element of necessity; an explanation shows why the explicandum must be so; understanding is realizing why things have to be as they are. In the "empiricist" concept, intelligibility does not demand any of these elements of necessity, but only an appeal to 'order', to

the usual or normal, to the more general. The "rationalist" concept not only allows a basic level of explanation, but indeed demands it, for without being reduced to this basic explanation no event or regularity is ultimately "intelligible". The "empiricist" concept, however, as I pointed out above in the case of Braithwaite (see p 75), allows that "the question 'why' . . . may be pressed indefinitely"²⁶, and every "ultimate explanation" is ultimate only in the sense that man has not yet found a further explanation for it. "On the regularity ["empiricist"] view the ultimate laws will be brute facts; whilst they will be intrinsically necessary propositions . . . on the entailment ["rationalist"] view."²⁴

It might be asked if this division of explanation into "rationalist" and "empiricist" concepts is independent of the distinction I made earlier between the "covering law model" and the "proximate-condition analysis" types of explanation. Since the "empiricist" concept of explanation appeals to 'order' in the universe rather than to necessity it would seem that the obvious way of supplying such an explanation would be to show that the explicandum is similar to many other events. But to subsume the explicandum under a more general law does exactly this: It relates the event to a wider regularity. However, the "empiricist" concept would not appear to fit with the "proximate-condition" analysis form of explanation. For the latter

does not appeal to any wider regularity, and, if it were to be "empiricist", it could not appeal to any necessity. So, presumably, the "empiricist" - "proximate-condition" combination would not explain in any sense whatsoever, and so is not an admissible combination. Indeed, if the "proximate-condition" analysis is to be any explanation at all, it must be a "rationalist" explanation; for it must rely on the necessity involved in the particular event for its explanatory power.

The interesting combination, however, and the one that is significant for this thesis, is the "rationalist" - "covering law model" combination. For this is the one that Taylor adopts. I pointed out in chapter two that he accepted the "covering law model". The fact that he accepts the "rationalist" concept is just as clear. His insistence on basic explanation and on the fact that this explanation must be basic because it appeals to "non-contingent" correlations is obviously "rationalistic". The fact that he uses an obscure term like "non-contingent" instead of, say, "analytic" or "logically necessary" shows that he wishes to avoid the extreme "rationalist" position which would assimilate this non-contingency to formal logical necessity. His basic explanations are not necessary in the formal logical sense; they are rather, to use Nowell-Smith's terminology, "logically complete" or "full" explanations, that is, explanations which "make a repetition of the [why?] question logi-

cally odd."²⁵ By this, Nowell-Smith means a reply beyond which, in the context in which the question was asked, no one would know how (in the sense of knowing what was needed) to go about answering further "why?" questions.

The significance, then of Taylor's conception of explanation is that, if he could successfully defend it, he would have a form of explanation acceptable to both the upholders of the "empiricist" and the upholders of the "rationalist" concepts of explanation. The covering law part of his concept would satisfy the "empiricists" by appealing to wider regularities, while the basic explanations in terms of non-contingent correlations would satisfy the "rationalists." He would have a type of account which would meet the criteria of intelligibility for both schools of thought. Taylor's theory, then, could start a new era in communication between the two schools, a result considerably beyond his original stated aim.

Unfortunately, the point of much of my previous criticism has been precisely to show that he has not produced an "empiricist"- "rationalist" concept of explanation. For to maintain an "empiricist" concept of explanation he would have had to maintain that under his formulation teleological explanations were explanations by subsumption under general laws. But I have suggested that they fit much better into the category of "proximate-condition analysis" explanations and these are not explanations by

subsumption under law. In other words, Taylor does not have one concept of explanation covering both causal and teleological explanations (the only difference being the form of the laws appealed to) but rather two distinct concepts of explanation.

I maintain, then, that Taylor accepts elements of both "rationalist" and "empiricist" concepts of intelligibility without clearly distinguishing between them. But they are independent concepts and it is possible to reject one while still holding the other. I have given the example of Nagel as a philosopher who holds the "empiricist" concept while totally rejecting the "rationalist" one.

As an example of a thinker who accepts the "rationalist" concept while rejecting the "empiricist" one, I will discuss, briefly, the views of Pierre Duhem. He claims that "if the aim of physical theories is to explain experimental laws, theoretical physics is not an autonomous science; it is subordinate to metaphysics."²⁷ He continues:

In order for the philosophers belonging to a certain metaphysical school to declare themselves completely satisfied with a theory constructed by the physicists of the same school, all the principles used in this theory would have to be deduced from the metaphysics professed by that school. If an appeal is made, in the course of the explanation of a physical phenomenon, to some law which that metaphysics is powerless to justify, then no explanation will be forthcoming and physical theory will have failed in its aim

Now no metaphysics gives instructions exact enough or detailed enough to make it possible to derive all

the elements of a physical theory from it.²⁸

Hence, in order to avoid saying that physical theory has failed in its aim, Duhem insists that the aim of physical theory (an presumably he would say this of all science) is not to explain, but simply to describe. Only metaphysics explains.

Instead, however, of mixing the "rationalist" and "empiricist" concepts, as Taylor does, or rejecting the former, as Nagel does, or the latter, as Duhem does, it is possible to hold that both concepts are equally valid approaches to understanding the world. The Thomists appear to hold this view. I pointed out above that they hold to a "rationalist" concept of explanation but, nonetheless, they do not reject the "empiricist" type of explanation as a valid form of explanation, they just consider it to be a different form. Gilson says, for instance, "For centuries final causes [i.e., those appealed to in teleological explanations] have been mistaken for scientific explanations by so many generations of philosophers that today many scientists still consider the fear of final causes as the beginning of scientific wisdom."²⁹ Rather, explanation by final causes, or, as I have called them, teleological explanation, are metaphysical explanations. But note that Gilson allows "scientific explanation" and, unlike Duhem, does not relegate science to a role of sheer description. An interesting side-comment on this quotation is that Gilson designates as metaphysical explanations

precisely these explanations with respect to which Taylor is most "rationalistic", viz., teleological explanations. The Thomists, then, hold the view that there may be more than one concept of explanation applicable to the world, i.e., they reject the idea of a unified "Science" (by "science" is meant any body of knowledge). Copleston, himself a Thomist, traces the birth of the "unified science" position, at least in Modern Philosophy, to Descartes. He says that:

Descartes' theory that all the sciences are ultimately one science and that there is one universal method separates him at once from the Aristotelians . . . Descartes thus turned his back on the Aristotelian and Scholastic idea of different types of science, with their different methods of procedure, and substituted instead the idea of one universal method.³⁰

Collingwood, like the Thomists, says that the world may be approached using different sets of concepts (of explanation, intelligibility, etc.). He calls these basic concepts "absolute presuppositions". He even goes as far as to state that "metaphysics is the historical science of absolute presuppositions".³¹ It is his claim that "different sets of absolute presuppositions correspond . . . with differences in the structure of what is generally called scientific thought."³² These absolute presuppositions form the foundations of what Taylor calls "conceptual schemes". The Thomists, however, differ from Collingwood in that they see no reason why we cannot use two such conceptual schemes simultaneously, that is, two such sets of absolute pre-

suppositions, one in science and one in metaphysics (in the traditional meaning of the term, not as Collingwood defines it).

The Cartesian idea of a unified science implies that the "rationalist" and "empiricist" concepts of explanation are exclusive. Since this idea has recurred almost continuously throughout Modern Philosophy it is not surprising that there has been almost constant conflict between the upholders of the "rationalist" concept and the upholders of the "empiricist" conception. Taylor's position is an attempt to produce a unified science, at least of man, using as his foundation a marriage of the two concepts. In chapter two I tried to show, in effect, that this marriage is a poor one and that we would do much better to adopt a two science approach: One, the "empiricist" science would attempt to find causal explanations of phenomena (in Taylor's case, of animate phenomena) using the "covering law model" concept of explanation; the other, the "rationalist" "science"³³, would attempt to explain phenomena using the "rationalist" concept of explanation. It would appear that teleological explanations and explanations by "proximate-condition analysis" would fit under this second "science".

Footnotes to Chapter III

1. Brian Ellis. "The Origin and Nature of Newton's Laws of Motion". in Robert G. Colodny (Ed). Beyond the Edge of Certainty. Englewood Cliffs, New Jersey: Prentice-Hall, 1965. p. 51.
2. Taylor. The Explanation of Behaviour. p. 3, 4.
3. Ibid., p. 4.
4. Herbert Feigl. "Some Remarks on the Meaning of Scientific Explanation". in Herbert Feigl and Wilfred Sellars. Readings in Philosophical Analysis. New York: Appleton-Century-Crofts, 1949. p. 511.
5. I will continue to use this term with 'scare quotes' in order to distinguish it from other more usual and wider senses. I will not use it with any other meanings or implications than those herein defined and illustrated.
6. See note 5 above.
7. Peter Alexander. Sensationalism and Scientific Explanation. New York: The Humanities Press, 1963. p. 118.
8. Brand Blanshard. "Current Structures on Reason". in Philosophical Review, Vol. LIV (1945). p. 361.
9. Spinoza. Ethics. Prop. XLIV. Translation taken from that by R. H. M. Elwes in The Rationalists. New York: Doubleday, No date. p. 250.
10. Fulton J. Sheen. Philosophy of Science. Milwaukee: The Bruce Publishing Co., 1934. p. 54.
11. St. Thomas. The Summa Theologica. Q2, Art. 1. in Basic Writings of Saint Thomas Aquinas. Anton C. Pegis. (Ed) Vol. 1. New York: Random House, 1945. p. 19.
12. in Ernest Nagel. Sovereign Reason. Glencoe, Illinois: The Free Press, 1954.
13. Ibid., p. 27.

14. Ibid., p. 29.
15. See p. 22.
16. Brand Blanshard. "Current Strictures on Reason". p. 361.
17. Nagel. Sovereign Reason. p. 66.
18. Ibid., p. 305.
19. Nagel. The Structure of Science. New York: Harcourt, Brace and World Inc., 1961. p. 53.
20. G. W. Leibniz. Theodicy. London, Routledge and Kegan Paul Ltd: 1951, p. 74. My underlining.
21. A.C. Ewing. "Mechanical and Teleological Causation" in Aristotelean Society, Suppl. Vol. 14. (1935) p. 66.
22. Ibid., p. 66.
23. Nagel. The Structure of Science. p. 53, my underlining.
24. C. D. Broad. "Mechanical and Teleological Causation" in Aristotelean Society, Suppl. Vol. 14. (1935). p. 99.
25. P. H. Nowell-Smith. Ethics. Baltimore: Penquin Books. 1954. (1964 printing). p. 113.
26. Nagel. Sovereign Reason. p. 29.
27. Pierre Duhem. The Aim and Structure of Physical Theory. New York: Atheneum, 1962. p. 10.
28. Ibid., p. 16.
29. Etienne Gilson. God and Philosophy. New Haven: Yale University Press, 1959. p. 129.
30. Frederick Copleston. S. J. A History of Philosophy. New York: Doubleday Image Books, 1963. Vol. 4. p. 81.
31. R. G. Collingwood. An Essay on Metaphysics. Oxford University Press: 1962, p. 41.
32. Ibid., p. 72.
33. I have used 'scare quotes' because the term "science" has come to be used strictly for what I have called "empiricist science".

IV

Conclusion

I conclude this thesis with a summary of the salient points in the previous three chapters.

Psychologists of the behaviourist persuasion attempt to find mechanistic (causal) explanations of animate behaviour. If they were to succeed, it would appear that our present ideas about human life would have to be drastically revised. Some believe that all our concepts of virtue, moral standards, purpose or meaning in life, even the attainment of truth itself would all be illusions. Whether or not such results would actually follow upon a behavioural reinterpretation of human behaviour, Taylor obviously fears that they do. In order to preserve these values, he feels it necessary to explain human behaviour teleologically.

It might be possible to let the case for teleological explanation of human behaviour rest on the absurdity of the resulting picture of human life if mechanism were accepted. But Taylor approaches the behaviourist's program in a different manner. He attempts, rather, to show that, so far, the behaviourists have failed on empirical grounds and that these psychologists should therefore change their present method of research and attempt,

rather, to explain their results teleologically. Many thinkers, however, on sheerly a priori grounds, have rejected any role whatsoever for teleological explanations in science. Taylor, then, must show that teleological explanations are empirically verifiable. To do this, Taylor gives a formal characterization of teleological explanation as explanation which appeals to laws of the form "Whenever a behaviour is required for the goal of the organism, the behaviour occurs." He claims that all the terms in such a law are just as observable as the terms of a regular causal law of the form, "Whenever event A, then event B." However, the question of whether human behaviour is purposive or not cannot be solved by discovering empirically that human behaviour can be subsumed under teleological or causal laws. Rather it must be discovered which of the two kinds of explanations explains the behaviour, on the most basic level. Taylor then defines a more basic explanation as one which, together with a set of initial conditions, is capable of explaining why the less basic explanation holds.

Taylor also characterizes a basic explanation as one which not only is not further explained, but cannot be further explained because of some intrinsic feature. Teleological explanations are basic in this sense since they appeal to "natural tendencies." This appeal to natural tendencies also results in teleological explanation having another unusual property—that of asymmetry.

"Asymmetry" is the property of an explanatory system such that some of the behaviour that one would expect to be explained in the system is "natural" and cannot, therefore, be explained.

Although the principle of asymmetry is similar to mechanical principles such as the Principle of Inertia, Taylor claims that there is an important disanalogy between them.

In my criticism, I attacked this disanalogy and attempted to prove that the two principles were directly analogous. If so, then the factors which determine our choice of "natural" behaviour or motion should be the same in both the teleological system built on the principle of asymmetry and in the Newtonian mechanistic system built on the Principle of Inertia. Brian Ellis gives excellent reasons for the thesis that the Principle of Inertia is based partially on convention, and so it would appear that the principle of asymmetry is also based partially on convention. But if this is true, then Taylor's thesis that our choice of teleological or causal explanation of behaviour, on the most basic level, is an empirical choice, is incorrect. The choice is ultimately based on convention.

Since then, the type of motion or behaviour which is to be called "natural" is determined partially by convention, it follows that a "basic" explanation is basic only with respect to a given conceptual scheme. The correlations appealed to, within that scheme, are non-contingent and so cannot possibly

be further explained. If, then, we change to a new conceptual scheme, the terms in the non-contingent correlation may change meanings, and hence the correlation may not longer be non-contingent. Even with this understanding of basic explanation as basic relative to a conceptual scheme, however, I still cannot accept Taylor's theory that all teleological explanations are intrinsically basic. This part of his theory creates the problem that, given a situation where we have both causal and teleological explanations for an event, we can know, on a priori grounds, that the teleological explanation is the most basic. This is inconsistent with the rest of Taylor's theory. I showed that this difficulty was due to Taylor's mistaken belief that all teleological explanations were explanations in terms of natural tendencies or non-contingent correlations. The inconsistency can be easily avoided by allowing the existence of some teleological explanations which cannot be reduced to explanations in terms of natural tendencies, and which are therefore not basic. Only a subclass of teleological explanations, then, are basic, a position which fits better with the immediate evidence.

Since explanation in terms of Taylor's "requirement" condition did not seem to fit the form of either a sufficient or a necessary condition law, I suggested that it might not be an explanation by the "covering law model" at all. The alternative suggested was that it was explanation by "proximate-condition

analysis." This is a form of explanation proposed by both Scriven and Dray by which one picks out the factor "responsible" for this event, in the given particular case. This seems to fit very well with Taylor's explanation of behaviour in terms of what is required for the goal in the particular case. With this analysis, however, we are no longer forced to discover empirically which of the two types of explanation are applicable at the most basic level. Now, both may be applicable.

I emphasized in chapter three the significance and importance of this discussion about the existence and nature of basic explanation. It is significant on the practical level for the scientific investigator; for his choice of experiments and his decision about what constitutes a solution to a particular problem are both determined largely by the concept that he has of basic explanation. But I argued that Taylor's theory has potentially even more philosophical significance than this, because it appears to bridge the gap between the "rationalist" and "empiricist" concepts of explanation. His teleological explanations appears to be part of a system which appeals, for its explanatory power, both to wider regularity and to necessity. However, it seems that his refusal to allow hierarchies of teleological explanations, his confusion about the law-like status of appeal to natural tendencies, and the difficulty of the "requirement" condition being neither sufficient nor necessary,

all throw doubt on the "empiricist" nature of teleological explanation. I have therefore argued that Taylor really has two separate concepts of explanation which involve two distinct concepts of intelligibility and that he has not succeeded in integrating them into the one conceptual scheme.

The main conclusion to be drawn is that although Taylor's thesis (that we should use empirical methods to determine whether the most basic explanation of behaviour is to be teleological or causal) does not stand up to criticism, it does not follow that teleological explanation need therefore be discarded. For both Taylor and his mechanistic opponents hold the fundamental assumption that man must use only one, monolithic, conceptual framework in his search for intelligibility in the universe. The only disagreement is about which framework to adopt, and why. But there does not appear to be any good reason for accepting this "monolithic" view. Why could man not adopt a number of different conceptual schemes in which to explain the world? It is clear that we do ask, pre-analytically, more than one type of "why?" question. Sometimes our "why?" means "give a covering law"; sometimes it means "give a proximate-condition"; and probably it has other meanings also. Why limit these meanings? The answers to all these questions certainly give "understanding" and, indeed, precisely the understanding we asked for. Distinguish, certainly, between the different meanings of "why?", of "explain" and of

"intelligibility", even call them by different names if it is required, but do not reduce the richness of human knowledge by arbitrarily allowing man to use only one conceptual framework.

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ABSTRACT

Charles Taylor, in his book The Explanation of Behaviour, maintains the position that the decision as to whether animate behaviour is to be explained, on the most basic level, in a teleological or causal manner can and must be made on empirical grounds.

The present thesis examines these views about such explanation on the most basic level. Taylor characterizes "most basic" as referring to the position of the explanation in a deductive explanatory hierarchy. He describes teleological explanation in two ways, one in terms of requirement for a goal and the other in terms of "natural tendencies". Under this second description, teleological explanations are always on the most basic level; their position in the explanatory hierarchy follows immediately from the very nature of such explanations.

Taylor's views are criticized in the light of a number of contemporary schools of thought. The author argues that explanations are basic only relative to a given conceptual scheme, not absolutely basic as Taylor has implied. Therefore, the decision as to whether the basic explanation of animate behaviour is to be teleological or causal, ultimately is based on conventional, not empirical, grounds. The author also argues that teleological explanations are not always basic explanations, as Taylor explicitly states; a hierarchy of such explanations is possible. It is suggested that teleological explanations are better treated, not under

the 'covering law model', as Taylor attempts to do, but rather as what Scriven has called 'proximate-condition analyses'.

Finally the importance of discovering the nature of basic explanation is discussed. It is important for practical methodology, for ethics and for certain metaphysical problems.

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