

## CHAPTER 1

**Dilemmas**

THERE are different sorts of conflicts between theories. One familiar kind of conflict is that in which two or more theorists offer rival solutions of the same problem. In the simplest cases, their solutions are rivals in the sense that if one of them is true, the others are false. More often, naturally, the issue is a fairly confused one, in which each of the solutions proffered is in part right, in part wrong and in part just incomplete or nebulous. There is nothing to regret in the existence of disagreements of this sort. Even if, in the end, all the rival theories but one are totally demolished, still their contest has helped to test and develop the power of the arguments in favour of the survivor.

However, this is not the kind of theoretical conflict with which we shall be concerned. I hope to interest you in quite a different pattern of disputes, and, therewith, in quite a different sort of settlement of these disputes.

There often arise quarrels between theories, or, more generally, between lines of thought, which are not rival solutions of the same problem, but rather solutions or would-be solutions of different problems, and which, none the less, seem to be irreconcilable with one another. A thinker who adopts one of them seems to be logically committed to rejecting the other, despite the fact that the inquiries from which the theories issued had, from the beginning, widely divergent goals. In disputes of this kind, we often find one and the same thinker—very likely oneself—strongly inclined to champion both sides and yet, at the very same time, strongly inclined entirely to repudiate one of them just because he is strongly inclined to support the other. He is both well satisfied with the logical credentials of each of the two points of view, and sure that one of them must be totally wrong if the other is even largely right. The internal administration of each seems to be impeccable but their diplomatic relations with one another seem to be internecine.

This whole set of lectures is intended to be an examination of a variety of concrete examples of dilemmas of this second kind. But I shall adduce,

here and now, three familiar examples in order to illustrate what I have so far described only in general terms.

The neuro-physiologist who is studying the mechanism of perception, like the physiologist who is studying the mechanism of digestion or reproduction, bases his theories upon the most solid kind of evidence that his work in the laboratory can provide, namely upon what he and his collaborators and assistants can see with the naked or the instrumentally assisted eye, and upon what they can hear, say, from the Geiger counter. Yet the theory of perception at which he arrives seems constitutionally to entail that there is an unbridgeable crevasse between what people, including himself, see or hear and what is really there—a crevasse so wide that he has apparently and can have no laboratory evidence that there exists even any correlation between what we perceive and what is really there. If his theory is true, then everyone is systematically debarred from perceiving the physical and physiological properties of things; and yet his theories are based on the very best experimental and observational evidence about the physical and physiological properties of such things as ear-drums and nerve-fibres. While at work in the laboratory he makes the best possible use of his eyes and ears; while writing up his results he has to deliver the severest possible censure upon these sham witnesses. He is sure that what they tell us can never be anything like the truth just because what they told him in his laboratory was of the highest reliability. From one point of view, which is that of laymen and scientists alike while actually exploring the world, we find out what is there by perceiving. From the other point of view, that of the inquirer into the mechanism of perception, what we perceive never coincides with what is in the world.

There are one or two features of this embarrassment which should be noticed. First, it is not a dispute between one physiologist and another. Doubtless there have been and are rival physiological hypotheses and theories, of which some will be defeated by others. But what are at loggerheads here are not two or more rival accounts of the mechanism of perception, but between a conclusion derivable apparently from *any* account of the mechanism of perception on the one side and everyone's workaday theory of perception on the other. Or, rather, I am stretching the word 'theory' over-violently when I say that the dispute is between a physiological theory of perception and another theory. For when we use our eyes and ears, whether in the garden or in the laboratory, we are not trading on any theory to the effect that we can find out the colours, shapes, positions and other characters of objects by seeing, hearing, tasting and the rest. We are finding out these things or else, sometimes, getting them

wrong, but we are not doing so under instruction from any theory. We learn to use our eyes and tongues before we can consider the general question whether they are of any use; and we continue to use them without being influenced by the general doctrine that they are of some use or by the other general doctrine that they are of no use.

This point is sometimes expressed by saying that the conflict is one between a scientist's theory and a theory of Common Sense. But even this is misleading. It suggests, for one thing, that in using his eyes and ears the child is after all taking sides with a theory, only with a popular, amateurish and unformulated theory; and this is quite false. He is not considering any theoretical questions at all. It suggests for another thing that the ability to find things out by seeing, hearing and the rest is dependent on, or is a part of, common sense, where this phrase has its usual connotation of a particular kind and degree of untutored judiciousness in coping with slightly out of the way, practical contingencies. I do not exhibit common sense or the lack of it in using a knife and fork. I do in dealing with a plausible beggar or with a mechanical breakdown when I have not got the proper tools.

Seemingly inescapable consequences of the physiologist's account of perception appear to demolish not just the credentials of some other theory of perception, but the credentials of perception itself; to cashier, that is, not just some supposed opinion held by all plain men about the reliability of their eyes and ears, but their eyes and ears themselves. This apparent conflict is not, then, to be described as a conflict between one theory and another theory, but rather as a conflict between a theory and a platitude; between what certain experts have thought out and what every one of us cannot but have learned by experience; between a doctrine and a piece of common knowledge.

Consider, next, a very different sort of dilemma. Everyone knows that unless a child is properly brought up he will probably not behave properly when grown up; and if he is properly brought up he is quite likely to behave properly when grown up. Everyone knows, too, that though certain actions of lunatics, epileptics, kleptomaniacs and drowning men are regrettable, they are not reprehensible or, of course, commendable either, where similar actions of a normal adult in normal situations are both regrettable and reprehensible. Yet if a person's bad conduct reflects his bad upbringing, it seems to follow that not he but his parents should be blamed—and then, of course, in their turn, his grandparents, his great-grandparents and in the end nobody at all. We feel quite sure both that a person can be made *moral* and that he cannot be *made moral*; and yet that both cannot be true. When considering the parents' duties, we have no

doubt that they are to blame if they do not mould their son's conduct, feelings and thoughts. When considering the son's behaviour we have no doubt that he and not they should be blamed for some of the things that he does. Our answer to the one problem seems to rule out our answer to the other, and then at second remove to rule itself out too. We are embarrassed in partly similar ways if we substitute for his parents Heredity, Environment, Fate or God.

There is a feature of this embarrassment which is more strongly pronounced than was the case with the former dilemma about perception, namely that here it is very common for one and the same person to feel equally strong ties of allegiance to both of the seemingly discrepant positions. On Mondays, Wednesdays and Fridays he is sure that the will is free; on Tuesdays, Thursdays and Saturdays he is sure that causal explanations of actions can be found or are actually already known. Even if he does his best to forswear one view in favour of the other, his professions of conviction give forth a loud because hollow sound. In his heart he would prefer saying that he knows that both views are true to saying that he knows that actions have no causal explanations or that he knows that people are never to blame for what they do.

Another noteworthy feature of his embarrassment is this. Rival solutions of the same problem clamour for reinforcements. The evidence or reasons for one hypothesis are palpably not yet strong enough if the evidence or reasons for its rivals still have some strength. If there remains anything to be said for them, not enough has yet been said for it. More evidence and better reasons must be found.

But in this logical dilemma which we are now considering and in all of the dilemmas which we shall be considering, each of the seemingly irreconcilable positions may have all the support that anyone could want for it. No one wants further evidence to be culled in favour of the proposition that well brought up children tend to behave better than badly brought up children; nor yet in favour of the proposition that some people sometimes behave reprehensibly. Certain sorts of theoretical disputes, such as those that we are to consider, are to be settled not by any internal corroboration of those positions, but by an arbitration of quite a different kind—not, for example, to put my cards on the table, by additional scientific researches, but by philosophical inquiries. Our concern is not with competitions but with litigations between lines of thought, where what is at stake is not which shall win and which shall lose a race, but what are their rights and obligations *vis à vis* one another and *vis à vis* also all other possible plaintiff and defendant positions.

In the two disputes that we have so far considered, the apparently warring theories or lines of thought were in a general way views about the same subject-matter, namely human conduct in the one case and perception in the other. But they were not rival solutions to the same question about that same subject-matter. The proposition that people tend to behave as they have been trained to behave is, perhaps, a somewhat truistic answer to the question 'What differences are made to a person by the scoldings and coaxings that he has received, the examples set to him, the advice, homilies and chastisements given to him, and so on?' But the proposition that some behaviour is reprehensible is a generalization of the answers to questions of the pattern 'Was he wrong to act as he did, or did he do it under duress or in an epileptic seizure?'

Similarly the proposition that we can discover some things by looking, others by listening, but none by dreaming, guessing, romancing or reminiscing is not an answer, true or false, to the question 'What is the mechanism of perception?' It is, rather, a platitudinous generalization of the answers to such questions as 'How did you find out that the clock had stopped?' or 'that the paint was wet?'

In a stretched sense of the word 'story', there can be two or twenty quite different sorts of stories about the same subject matter, each of which may be supported by the best possible reasons for a story of that sort, and yet acceptance of one of these stories sometimes seems to require total rejection of at least one of the others as not merely a wrong story of its sort but as the wrong sort of story. Its credentials, however excellent of their kind, do it no good since they themselves are of a worthless kind.

I want now to illustrate this notion of litigation between theories or bodies of ideas with another well known example in order to bring out some other important points. In the eighteenth and again in the nineteenth century, the impressive advance of a science seemed to involve a corresponding retreat by religion. In turn mechanics, geology and biology were construed as challenges to religious belief. There was in progress, it was thought, a competition for a prize which would be lost by religion if it were won by science. We can see in retrospect that much of the impetus to philosophy in the first half of the eighteenth century and in the second half of the nineteenth century came from the seriousness of just these disputes.

The opening claims made were the simple ones. Theologians argued that there was no truth in Newton's physics or in Lyell's geology or in Darwin's biology. The champions of the new sciences correspondingly argued that there was no truth in theology. After a round or two both sides withdrew on certain points. Theologians ceased to defend Bishop

Ussher's way of fixing the age of the earth, and admitted that, say, Lyell's way of fixing it was in principle the right way. Geological questions could not be answered from theological premisses. But conversely, pictures like the biologist T. H. Huxley's picture of man as a chess-player playing against an invisible opponent, came to be seen as a piece not of good scientific but of bad theological speculation. It had not a vestige of experimental backing. It was not a physical, a chemical or a biological hypothesis. In other ways it came off badly by comparison with the Christian picture. It was not only baseless but also somewhat cheap, where the Christian picture, whatever its basis, not only was not cheap but itself taught the distinctions between what is cheap and what is precious. At the start the theologians had not had a suspicion that geological or biological questions were not continuous with theological questions; and many scientists had not come to suspect either that theological questions were not continuous with geological or biological questions. There was no visible or tangible fence between their questions. Expertness in one field was assumed to carry with it the techniques of handling problems in the other.

This instance shows not only how theorists of one kind may unwittingly commit themselves to propositions belonging to quite another province of thinking, but also how difficult it is for them, even after inter-theory litigation has begun, to realize just where the 'No Trespassing' notices should have been posted. In the country of concepts only a series of successful and unsuccessful prosecutions for trespass suffices to determine the boundaries and the rights of way.

There is another important point which is brought out by this historic but not yet archaic feud between theology and science. It would be a gross over-simplification, if a momentarily helpful one, to suppose that theology aims to provide the answer to just one question about the world, while geology, say, or biology aims to provide the answer to just one other, disparate, question about the world. Passport officials, perhaps, do try to get the answer to one question at a time and their questions are printed out for them on forms and are numbered off in serial order. But a theorist is not confronted by just one question, or even by a list of questions numbered off in serial order. He is faced by a tangle of wriggling, intertwined and slippery questions. Very often he has no clear idea what his questions are until he is well on the way towards answering them. He does not know, most of the time, even what is the general pattern of the theory that he is trying to construct, much less what are the precise forms and interconnexions of its ingredient questions. Often, as we shall

see, he hopes and sometimes he is misled by the hope that the general pattern of his still rudimentary theory will be like that of some reputable theory which in another field has already reached completion or is near enough to completion for its logical architecture to be apparent. We, wise after the event, may say in retrospect ‘Those litigating theorists ought to have seen that some of the propositions which they were championing and contesting belonged not to competing stories of the same general pattern but to non-competing stories of highly disparate patterns’. But how could they have seen this? Unlike playing cards, problems and solutions of problems do not have their suits and their denominations printed on their faces. Only late in the game can the thinker know even what have been trumps.

Certainly there are some domains of thought between which inadvertent trespassing could not easily occur. The problems of the High Court Judge or the cryptographer are so well demarcated off from those of the chemist or the navigator that we should laugh at anyone who seriously pretended to settle juridical issues by electrolysis or to solve ciphers by radiolocation, as we do not laugh, straight off, at the programmes of ‘evolutionary ethics’ or ‘psycho-analytic theology’. But even though we know quite well that radiolocation methods could not be applied to the cryptographer’s problems, since his are not that sort of question, still we have no short or easy way of classifying into contrasted sorts the questions of cryptography and those of navigation. Cryptographers have questions not just of one kind but of multifarious kinds. So have navigators. Yet all or most cryptographic questions differ from all or most navigational questions so widely, not only in subject-matter but also in logical style, that we should have no reason for surprise if we found that a man, equally well trained in both disciplines, proved to be able to think powerfully and swiftly in the one field but only slowly and inefficiently in the other. A good High Court Judge might, in the same way, be an inferior thinker in matters of poker, algebra, finance or aerodynamics, however well coached he might be in its terminology and its techniques. The questions which belong to different domains of thought, differ very often not only in the kinds of subject-matter that they are about, but in the kinds of thinking that they require. So the segregation of questions into their kinds demands some very delicate discriminations of some very unpalpable features.

Part of the general point which I am trying to express is sometimes put by saying that the terms or concepts entering into the questions, statements and arguments of, say, the High Court Judge are of different

'categories' from those under which fall the terms or concepts of the chemist, the financier or the chess player. So competing answers to the same question, though given in different terms, would still be in cognate terms of the same category or set of categories, whereas there could be no competition between answers to different questions, since the terms in which these very questions were posed would themselves be of alien categories. This idiom can be helpful as a familiar mnemonic with some beneficial associations. It can also be an impediment, if credited with the virtues of a skeleton-key. I think it is worth while to take some pains with this word 'category', but not for the usual reason, namely that there exists an exact, professional way of using it, in which, like a skeleton key, it will turn all our locks for us; but rather for the unusual reason that there is an inexact, amateurish way of using it in which, like a coal-hammer, it will make a satisfactory knocking noise on doors which we want opened to us. It gives the answers to none of our questions but it can be made to arouse people to the questions in a properly brusque way.

Aristotle for some excellent purposes of his own worked out an inventory of some ten heads of elementary questions that can be asked about an individual thing or person. We can ask of what sort it is, what it is like, how tall, wide or heavy it is, where it is, what are its dates, what it is doing, what is being done to it, in what condition it is and one or two others. To each such question there corresponds a range of possible answering-terms, one of which will, in general, be true and the rest false of the individual concerned. The terms satisfying one such interrogative will not be answers, true or false, to any of the other interrogatives. '158 pounds' does not inform you or misinform you about what Socrates is doing, where he is or what sort of a creature he is. Terms satisfying the same interrogative are then said to be of the same category; terms satisfying different interrogatives are of different categories.

Now, aside from the fact that Aristotle's inventory of possible interrogatives about an individual may contain redundancies and certainly is capable of indefinite expansion, we have to notice the much more important fact that only a vanishingly small fraction of askable questions are demands for information about designated individuals. What questions, for example, are asked by economists, statisticians, mathematicians, philosophers or grammarians which would be answered, truly or falsely, by statements of the pattern 'He is a cannibal' or 'It is now simmering'?

Some loyal Aristotelians, who like all loyalists ossified their master's teaching, treated his list of categories as providing the pigeon-holes in one or other of which there could and should be lodged every term used or



usable in technical or untechnical discourse. Every concept must be either of Category I or of Category II or . . . of Category X. Even in our own day there exist thinkers who, so far from finding this supply of pigeon-holes intolerably exiguous, find it gratuitously lavish; and are prepared to say of any concept presented to them 'Is it a Quality? If not, then it must be a Relation'. In opposition to such views, it should suffice to launch this challenge: 'In which of your two or ten pigeon-holes will you lodge the following six terms, drawn pretty randomly from the glossary of Contract Bridge alone, namely "singleton", "trump", "vulnerable", "slam", "finesse" and "revoke"?' The vocabularies of the law, of physics, of theology and of musical criticism are not poorer than that of Bridge. The truth is that there are not just two or just ten different logical *métiers* open to the terms or concepts we employ in ordinary and technical discourse, there are indefinitely many such different *métiers* and indefinitely many dimensions of these differences.

I adduced the six Bridge terms, 'singleton', 'trump', 'vulnerable', 'slam', 'finesse' and 'revoke', as terms none of which will go into any one of Aristotle's ten pigeon-holes. But now we should notice as well that, though all alike belong to the specialist lingo of a single card-game, not one of them is, in an enlarged sense of 'category', of the same category with any of the other five. We can ask whether a card is a diamond or a spade or a club or a heart; but not whether a card is a singleton or a trump; not whether a game ended in a slam or in a revoke; not whether a pair of players is vulnerable or a finesse. None of the terms is a co-member of an either-or set with any of the others. The same thing is true of most though naturally not of all of the terms that one might pick at random out of the glossaries of financiers, ecologists, surgeons, garage-mechanics and legislators.

It follows directly that neither the propositions which embody such concepts nor the questions which would be answered, truly or falsely, by such propositions admit of being automatically entered into a ready-made register of logical kinds or types. Where we can fairly easily and promptly docket short, specimen sentences as being of this or that registered grammatical pattern, we have no corresponding register of logical patterns, direct reference to which enables us without more ado to accomplish the logical parsing of propositions and questions. A logician, however acute, who does not know the game of Bridge, cannot by simple inspection find out what is and what is not implied by the statement 'North has revoked'. For all he can tell by simple inspection, the statement may be giving information of the same quality as that given by the statement 'North has coughed'.

To pull some threads together. Sometimes thinkers are at loggerheads with one another, not because their propositions do conflict, but because their authors fancy that they conflict. They suppose themselves to be giving, at least by indirect implication, rival answers to the same questions, when this is not really the case. They are then talking at cross-purposes with one another. It can be convenient to characterize these cross-purposes by saying that the two sides are, at certain points, hinging their arguments upon concepts of different categories, though they suppose themselves to be hinging them upon different concepts of the same category, or vice versa. But it is not more than convenient. It still remains to be shown that the discrepancies are discrepancies of this general kind, and this can be done only by showing in detail how the *métiers* in ratiocination of the concepts under pressure are more dissimilar from one another or less dissimilar from one another than the contestants had unwittingly supposed.



My object in the following pages is to examine a number of specimens of what I construe as litigations and not mere competitions between theories or lines of thought, and to bring out both what seems to be at stake in those disputes and what is really at stake. I shall also try to exhibit what sorts of considerations can and should settle the real claims and counter-claims.

But I have one apology to offer for this programme and one *démenti* to make about it. Mr Tarner who endowed these lectures wished the lecturers to discuss ‘the Philosophy of the Sciences and the Relations or Want of Relations between the different Departments of Knowledge’. He hoped, I gather, that it would be to the Want of Relations that we should chiefly testify—a piece of unsentimentalism which I find pleasingly astringent.

Now I should probably have complied most faithfully with Mr Tarner’s wishes had I, like most of my predecessors, chosen to discuss certain of the disputes in which are involved two or more of the accredited sciences. I have heard rumours, for example, of sovereignty-disputes between the physical and the biological sciences and of boundary-disputes between psychologists and Judges. But I am disqualified from trying to arbitrate in these disputes by the simple bar of technical ignorance. I have no first-hand and very little second-hand knowledge of the specialized ideas between which these systems of thought are braced. I have long since