

## IMPERATIVE INFERENCE

A TOPIC which has been widely discussed in recent philosophy is the logic of practical reasoning. If theoretical reasoning is argument whose purpose is to answer the question "what is the case?", practical reasoning may be characterised as argument whose purpose is to answer the question "what is to be done?" Now just as theoretical logic attempts to formulate rules in accordance with which we may in theoretical reasoning pass from true premises to true conclusions, so the task of practical logic may be said to be to formulate rules in accordance with which we may pass from premises to conclusions about what is to be done. That there is such a thing as practical reasoning seems to be generally recognised, though occasionally one does come across a philosopher who denies a **specific kind** of practical inference (as, for example, Professor R. B. O. Williams, who denies that there is in general such a thing as **imperative** inference); but there is no general agreement about the logical principles involved in it. Some have maintained that practical logic is isomorphic with theoretical logic, while others are of opinion that practical reasoning has a logic of its own which is more or less widely different from theoretical logic. I propose in this paper to take a brief survey of the arguments and counter-arguments in one part of this rather wide area, and while I cannot presume to settle any issues or make a new contribution in this very obscure sphere, I hope to derive at least the kind of advantage which a wide view usually gives.

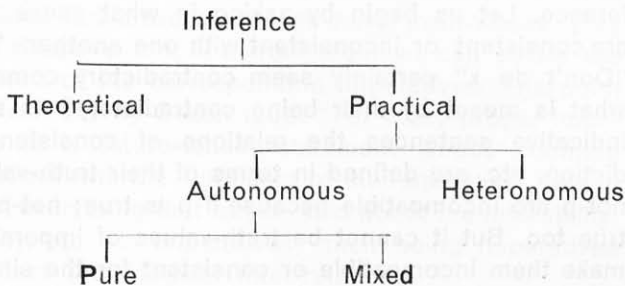
### I

Practical reasoning we have broadly characterised as reasoning aimed at answering the question "what is to be done?" Its conclusion is an answer to this question. We can also say alternatively that practical reasoning is reasoning whose conclusion is a practical sentence. A practical sentence may be defined as one whose normal and primary use

is to tell somebody (who may be oneself) what (to do. Now there are various ways of telling somebody what he is to do, and there are correspondingly various kinds of practical sentences. There are, to begin with, sentences in the imperative mood, uttered to issue straightforward commands. Then there are "should"-sentences used for giving counsel, "ought"-sentences used for giving moral advice, and "must"-sentences used for telling what is indispensable for the satisfaction of certain purposes. Finally there are sentences in the optative mood which perhaps stand at the other end of the scale as being the least practical, expressing as they do merely wishes. All these different kinds of practical sentences can be regarded as standing in the conclusion's place in a practical reasoning, and by standing there making the reasoning practical.

Several questions arise with regard to such reasoning. (1) On the analogy of theoretical reasoning we naturally think of practical reasoning as consisting of premises and conclusion and of the latter as following from the former. Now in theoretical reasoning both the premises and the conclusion are propositions, and in a valid inference the conclusion follows from the premises in the sense that if the premises are true, the conclusion cannot be false. Thus the relation of **following from** is defined in terms of truth and falsity of premises and conclusion. Now a difficulty which arises in the case of practical reasoning is that its conclusion, and usually also one or more of its premises, are practical sentences, and practical sentences are obviously, neither true nor false. So how are we to understand the following of a conclusion from premises in a practical inference? (2) Another question which is also very important, and which has been discussed a good deal recently, is about the premises of a practical argument. Must all the premises of a practical argument be practical, or may some or all of them be theoretical? On this question two diametrically opposed positions have been taken up and defended by philosophers, one group maintaining that a practical conclusion cannot be inferred from premises at least one of which is not practical, and the other group maintaining that this is possible. R. M. Hare, who may be

taken as a representative of the first group, has stated a rule of imperative inference thus: "No imperative conclusion can validly be drawn from a set of premises which does not contain at least one imperative."<sup>1</sup> (This has been called the principle of the **autonomy of practical discourse**.) There would then be two kinds of practical inference according to the autonomists; (i) **pure** practical inference, in which both the premises and the conclusion are practical sentences and (ii) **mixed** practical inference, in which the premises are both practical and theoretical. All these inferences may be arranged in a tabular form thus:



Another division of practical inference should be here mentioned. We saw above that practical sentences are of various kinds, ranging from imperative sentences at one end of the scale to optative sentences at the other, with "should"-, "ought"-, and "must"-sentences coming in between. Now practical inference may be divided on the basis of what kind of practical sentences occur as premises and conclusions in it. One kind of practical inference will then be **Imperative** Inference, i.e. inference in which an imperative is inferred from one or more imperatives. Next there will be what is called **Deontic** Inference in which "deontic" sentences, i.e. "ought" sentences and their variants appear as premises and conclusion. Similarly there will be kinds of inferences in which either "should"-sentences or "must"-sentences appear as premises and conclusions. Each of these kinds of practical inference has received attention, and there have arisen consequently a number of "logics" (e.g. imperative logic,

deontic logic, etc.) corresponding to the different kinds of practical inference mentioned above.

In what follows I propose to confine myself entirely to the logic of imperatives.

## II

Now a doubt has been expressed by some philosophers whether there is such a thing as imperative inference. They grant that imperatives do have certain logical relations to one another, such as consistency, inconsistency, contradiction, etc., but they think that this is not enough for imperative inference. Let us begin by asking in what sense imperatives are consistent or inconsistent with one another. "Do x" and "Don't do x" certainly seem contradictory commands; but what is meant by their being contradictory? In the case of indicative sentences the relations of consistency, contradiction, etc. are defined in terms of their truth-values; p and not-p are incompatible because if p is true; not-p cannot be true too. But it cannot be truth-values of imperatives which make them incompatible or consistent for the simple reason that imperatives do not have truth-values at all. How then are we to conceive of these relations in respect of imperatives? One answer which has been given is that corresponding to every imperative sentence there is a second-person future-tense indicative sentence, and that the logical relations of imperatives are derived from these corresponding indicative sentences. Thus corresponding to the imperative "Post this letter", there is the second-person future-tense indicative sentence "You will post this letter". The idea of this correspondence can be brought out clearly with the help of a useful distinction made by Hare between what he called the "phrastics" and the "neustics" of imperative and indicative sentences.<sup>2</sup> The phrastic of a sentence is the descriptive content of that sentence, whether the sentence is indicative or imperative. "Post the letter" and "You will post the letter" both have a common descriptive content, viz. "your posting the letter in the immediate future." What the two sentences differ in is their mood, which is indicated

in English by a different word-order and by the addition or omission of a word or words. In a formal representation the two moods could be indicated by two distinct signs, either verbal or non-verbal, which may be called "mood-indicators". Hare calls these mood-indicators "neustics", and uses the words "please" and "yes" for the imperative and the indicative moods respectively. Our two sentences would become in this formal representation (1) "Your posting the letter in the immediate future please" and (2) "Your posting the letter in the immediate future, yes." It is now clear how, given an imperative sentence we can obtain a corresponding indicative sentence. Since indicative sentences have truth-values, they have logical relations too, and from them we can derive the logical relations of the corresponding imperatives. The point has been put briefly by Geach thus: "For every proper imperative, there is a future-tense statement whose 'coming true' is identical with the fulfilment of the imperative. This is the source of everything that can be said about the inferability, incompatibility, etc. of imperatives; their being imperatives does not affect their logical inter-relations."<sup>3</sup>

This is a most attractive suggestion. If it is true, it makes imperative logic completely parallel to indicative logic. According to it, corresponding to every imperative inference there is an indicative inference, and the validity or the invalidity of the former is derived from the validity or the invalidity of the latter. Unfortunately this suggestion breaks down in some cases at least. There are imperative arguments which seem to be patently invalid, though their indicative parallels are perfectly valid. Consider the following pair of arguments :

- (la) Post this letter. So post this letter or burn this letter.
- (lb) You will post this letter. So you will post this letter or burn this letter.

It is clear that (lb) is perfectly valid; it is the valid argument-form of truth-functional logic; "p; therefore p or q." But it is equally clear (at least intuitively) that (la) is invalid. A person who gives the command "Post this letter" can hardly be said to be giving by implication the command "Post this letter or burn this letter", for it is possible for the addressee to

fulfil the conclusion of this inference by burning the letter and to disobey the premise. Or consider another pair of arguments:

(2a) Vote for the Labour candidate. So vote for somebody.

(2b) You will vote for the Labour candidate. So you will vote for somebody.

Here too the indicative inference (2b) is valid; it is the valid argument form of quantificational logic;  $Fa \therefore (Ex) (Fx)$ . But the imperative inference (2a) looks obviously invalid, for the person issuing the command "Vote for the Labour candidate" is not implicitly issuing the command "Vote for somebody". The addressee can obey the inferred command by voting for the Conservative candidate and thus disobey the premise. This failure of correspondance in respect of validity between indicative and imperative inference destroys whatever plausibility Geach's suggestion might at first sight appear to have. And in fact in a later paper he himself expressly rejected it.<sup>4</sup> He points out that the reason why an imperative inference and the corresponding indicative inference are not always both valid or both invalid is to be traced to the very different ways in which imperatives and indicatives are related to the world. Miss Anscombe has put this point very well.<sup>5</sup> She gives the example of a shopping list given to a man by his wife, and of another list drawn up by a detective following the man and making a report of his activities. She brings out the difference between the two lists thus: If there is a discrepancy between the shopping list (order) and the purchases, the mistake is in the purchases; but if the discrepancy lies between the detective's list (report) and the purchases, the mistake is in the list. In the case of an order it is the facts which have to conform to the order; but in the case of a report, it is the report which has to conform to the facts. When a prediction does not come true, it is the prediction which is at fault; but when an order is not fulfilled, it is person commanded whom we take to task. How does this account of the relationship between a command and the state of affairs commanded, on the one hand, and between a statement and the state of affairs described, on the other,

throw light on the lack of parallelism between indicative and imperative inference? The matter seems to be somewhat as follows. The point of an imperative is to get somebody to **bring about** a state of affairs which does not already exist, but which one **wants** brought about; the point of a statement is to describe or report a state of affairs which exists or will exist irrespectively of whether one wants it or not. Now, to take one of the above examples, voting for Labour is related to voting for somebody as something more determinate to something less determinate. If a state of affairs can be truly described in a comparatively determinate manner, a less determinate description of it is equally true of it, and the latter can therefore be inferred from the former. (E. g. if it is true that x is a man, then it is also true that x is an animal.) But if a determinate state of affairs is what I **want**, then I cannot be said to want a state of affairs described in less determinate terms. The reason for this is that the less determinate description will equally fit another state of affairs which is different from and incompatible with the state of affairs which I want. That is why we can pass from a more determinate **statement** to a less determinate one without falling into error, but we cannot pass from a more determinate command to a less determinate one. In fact the relation of inferability between commands is the converse of the relation of inferability between statements: we can pass from a less determinate command to a more determinate one. (But of this more presently. See Section IV below.)

### III

Now these and similar difficulties have led some philosophers to deny that there is such a thing as imperative inference at all. B. A. O. Williams, e.g., argues in a paper entitled "Imperative Inference" that "while imperatives have some logical relations, there is not in general anything that can be called imperative inference."<sup>6</sup> He takes as his examples two imperative argument-forms modelled on two argument-forms of truth-functional logic, and gives reasons why considered as inferences they must be disqualified. His first example is

(3a) Do x or do y; do not do x; so do y. which corresponds to the truth-functional schema

(3b) p or q; not p; so q.

With regard to (3a) he argues that it cannot be construed as an inference because its premises are mutually inconsistent. He begins by asking what the function of such an imperative as "Do x or do y" is. "One function it has", he says, "as opposed to the simple imperatives 'do x' or 'do y', is to give the recipient of the command a choice of what he is to do—it allows him some latitude in its obedience...Such a command permits the agent not to do x, so long as he does y, and permits him not to do y, so long as he does x. Thus the notion of such a command introduces the notion of permission—permission implicitly given or admitted by the commander. However this is not all that is to be said about the **permissive presuppositions** (as I shall call them) of this command. For it is clear that the conditional permissions already identified, viz 'I permit you not to do x, if you do y' and 'I permit you not to do y, if you do x' would not in fact constitute genuine permissions unless y and x, respectively, were themselves permitted."<sup>7</sup> Now if we admit these permissive presuppositions of the disjunctive command, we can see, Williams says, why the schema (3a) cannot be construed as a pattern of inference. For the first premise "Do x or do y" presupposes permission to do x, but the second premise "Do not do x" obviously denies this permission. The speaker when he goes on to the second command has **changed his mind** or gone back on what he had first said. "This destroys any resemblance of this sequence of commands to an inference; it is essential to the idea of an inference q from a set of premises P that in reaching q, the speaker should not go back on or change his mind about any of the members of P—the form of an inference is 'given P, q'.<sup>18</sup>

Williams makes the same point with the help of his other example (which happens to be the same pair of argument-forms (1a) and (1b) which we considered in the last section), viz

(1a) Do x; so do x or y

which is parallel to the truth-functional valid schema

(1b) p; so p or q.



Here the permissive presuppositions of the conclusion are inconsistent with the premise, for the conclusion permits the recipient of the command not to do *x*, whereas the premise by categorically asking him to do *x* withholds permission not to do *x*. Once again the inconsistency has to be interpreted as change of mind on the part of the commander. Williams therefore concludes that "when we examine the function of disjunctive commands, we see an objection to construing the schema (D2) [our schema (1a)] as anything that could be called a pattern of inference."<sup>9</sup>

Several discussions of this article by Williams have appeared and the writers of those discussions have found fault with his arguments. They all disagree with his stronger conclusion that there is no such thing as imperative inference, and most of them also disagree with the weaker conclusion (not actually drawn, but implied) that imperative inference, if it exists, cannot be isomorphic with indicative inference. By far the most considerable of these discussions is R. M. Hare's article "Some Alleged Differences between Imperatives and Indicatives",<sup>10</sup> in which he maintains that the reasons which philosophers have for alleging differences between imperative and ordinary logic are based on misunderstandings. Hare's examination of these reasons is divided by him into two parts, and I shall be mainly concerned to expound and examine only the first of these which deals almost exclusively with Williams's arguments. These arguments, according to Hare, are based on certain misunderstandings which can be removed "by a straightforward application of Mr Grice's recent work on what he calls 'implicatures'".<sup>11</sup> Grice's view has been summarised by Hare as follows: "There is a set of general conventions which have to be observed if communication is to work and misunderstandings, disharmonies and other failures of communication are to be avoided...The existence of these conventions means that, if we say some things, in some contexts, we imply (or, to adopt Grice's term, 'con conversationally implicate') certain other things which we have left unsaid."<sup>12</sup> Grice has given several examples of such implications, but the one which is relevant for our purpose is the following. "If someone says 'My wife is either in the kitchen

or in the bedroom' it would normally be implied that he did not know in **which** of the two rooms she was."<sup>13</sup> It is clear that this implication is different from entailment; one cannot say, e.g., that "My wife is in the kitchen or in the bedroom" **entails** "I do not know in which of the two rooms she is". Grice calls this kind of implication "implicature" or "conversational implicature". (I say this on the authority of Hare, for in the only paper cited by Hare I do not find these expressions used anywhere. I surmise that Grice wrote again on this topic and that these expressions were introduced by him then.) Now how does this concept of conversational implicature help Hare to meet the arguments of Williams? It helps in the following way. Hare points out that the validity of the indicative inference "p; so p or q" is not affected by the fact that the conversational implicatures of the premise and the conclusion are inconsistent. The assertion of "p" implies that the speaker believes "p" to be true, whereas the assertion of the conclusion "p or q" implies that the speaker is ignorant of the truth-values of the disjuncts. But "we do not commonly hear it argued that the inference from 'p' to 'p or q' in the indicative mood is inadmissible because 'p' is inconsistent with a conversational implicature of 'p or q' ".<sup>14</sup> Now if we could say that what Williams calls the "permissive presuppositions" of commands are really their conversational implicatures, then the fact that the permissive presuppositions of the premises conflict, or that the permissive presuppositions of the premise conflict with those of the conclusion, need not invalidate the inference from "Do x" to "Do x or y", or from "Do x or y, and Do not do x" to "Do y". If this could be done, Williams's arguments against the possibility of imperative inference (and similar arguments of others against the isomorphism of indicative and imperative logics) would be refuted.

What are we to say of this argument? It seems quite cogent at first sight. But a second look brings doubts.

Hare's defence of the isomorphism thesis may be summarised in the following question: If the fact that the conversational implicatures of disjunctive statements are inconsistent with those of either disjunct taken singly does not invalidate the

inference from "p" to "p or q", why should a similar inference from "Do x" to "Do x or y" be rendered invalid by what seem to be conversational implicatures of commands? I welcome this formulation of the crucial question as regards the similarity or difference of indicatives and imperatives, for if there are some radical differences between the two, an attempt to answer the above question is sure to bring them out into the open.

Let us begin by considering carefully the indicative member of the pair of inferences under review. In Indicative logic, from "p", "p or q" can always be validly inferred because the logical connective "or" is so defined in this logic that if "p" is true, "p or q" must be true too. "p or q" is false if and only if both "p" and "q" are false, otherwise it is true; and since "p" is given true by the premise, the possibility of the falsity of "p or q" is ruled out. Two things become clear from this: (1) "or" is defined in terms of truth values, and (2) "valid inference" is also defined in terms of the truth-values of the premises and the conclusion. Whatever additional meaning (beyond that specified by the definition "or") a disjunctive statement has is relegated to the sphere of "conversational implicatures". Now when we come next to imperatives we immediately meet with an obstacle, for imperatives being incapable of having truth-values, both the notions of "or" and the notion of "valid inference" are left without a clear meaning. Unless we can define these notions clearly and satisfactorily, it is simply useless to enquire into the logical relations of disjunctive and simple imperatives. We have seen already that the question "what is to take the place of truth-values when we examine the logical relations of imperatives?" has exercised logicians a great deal; but according to Hare this enquiry is misguided. About Kenny's answer to this question,<sup>15</sup> he says: "since there is nothing to correspond to truth in the case of commands, those who look for a kind of **ersatz** truth to form the basis of a logic of imperatives are looking in the wrong place."<sup>16</sup> But if there is **nothing** in commands which corresponds to truth in propositions, what reason can we possibly have for holding that the logic of imperatives is isomorphic with that of indicatives? How are we to understand the

meaning of a disjunctive command or of one command being inferable from another? I do not find any reply to this question in Hare, and it is doubtful if he even considered it. But unless this question is first satisfactorily answered, we cannot ask whether what Williams calls the permissive presuppositions of commands are merely their conversational implicatures. We must therefore investigate the matter ourselves in order to be in a position to decide whether Williams's permissive presuppositions are Gricean implicatures.

We have already noted one very important difference between a command and a statement. A statement is modelled on reality and it claims to be true of reality. But a command is uttered in order that some state of affairs may be brought into being: here reality is to be modelled on a command. This is of the essence of a command. Which statement is true is determined by what is the case; but a command has reference to what is not the case, but what the commander wants to be the case. It therefore comes about that when the commander changes his mind about what he wants, he changes his commands. But a statement cannot change its truth-value. If it is true, it is eternally true, and if false, eternally false.

So much about commands in general. Let us now consider disjunctive commands. In issuing any command, I am asking somebody to do something. In issuing a disjunctive command what am I asking him to do? It is clear that I am asking him to do one of two actions, leaving it to him to choose which one he will. I am indifferent which of the two actions he chooses to do, so long as it is one of the two. And therefore the command "Do x or y" is inconsistent with the command "Do x" which categorically requires that x be done. But isn't there a similar situation in the case of indicatives? "p or q" says that at least one of the two propositions "p" and "q" is true without saying which one that is; and would not this be inconsistent with the premise "p"? The answer is that the cases are not similar because the truth-values of "p" and "q" are already determinate, and what is indeterminate is only our knowledge. So if "p" is true, then it cannot be false in "p or q", and therefore "p or q" is never inconsistent with "p". In the case of a disjunctive command "Do x or y", on the

other hand, what I want is really indeterminate; either action will equally meet my requirements. And therefore it is all the same to me if the recipient of the command does x and omits y, or does y and omits x. Thus it is part of the very meaning of a disjunctive command that it is really indeterminate as regards the alternative which the recipient of the command chooses for obeying. There is thus an irreducible asymmetry between indicatives and imperatives. What Williams calls the permissive presuppositions of commands are required to define them and cannot be ignored as mere implicatures which do not affect the validity of the inference into which they enter as premises or conclusions.

Hare's attempted refutation of Williams thus fails. But before we take leave of Hare, I should like to refer to two of his statements which tell us what imperative logic, according to him, does or is expected to do. About the "logic of satisfaction"<sup>17</sup> Hare says: "A logic of satisfaction would still be an imperative logic in the sense that it would tell us how to know, when given a command, what other commands **must** necessarily be fulfilled if we are to fulfil the first command. And this is what we are looking for in most imperative inferences."<sup>18</sup> This strikes me as a most perplexing statement. I entirely agree with Hare's reason for calling a logic of satisfaction a logic of imperatives, viz that it should tell us what other commands must necessarily be fulfilled if we are to fulfil a given command, but I am puzzled because the logic of satisfaction precisely does not do this. It tells us what other commands will be fulfilled if we fulfil a given command; but this is very different from telling us what commands must be fulfilled if we are to fulfil a given command. We should get into serious trouble if we thought that in order to fulfil the command "Post the letter" we must fulfil the command "Post the letter or burn it" which follows from it in the logic of satisfaction though we would be perfectly justified in thinking that by fulfilling the command "Post the letter" we would be necessarily fulfilling the command "Post the letter or burn it". And it is only this latter that the logic of satisfaction guarantees, not what Hare thinks (rightly) that an imperative logic should guarantee.

In another place (the concluding paragraph of his paper) Hare says: "What is needed, rather, is a logic which tells us what other things we are, implicitly, commanding when we give a certain command, just as ordinary logic tells us what other things we are, implicitly, asserting when we make a certain assertion. We want to be able to say: 'If you command that p, you are commanding, implicitly, that (at least) q'. For example, we want to be able to say: 'If you command that the letter be posted, you are commanding, implicitly, that it be at least posted or burnt'."<sup>19</sup> Again I agree with Hare about the kind of logic we need; but I find it simply incomprehensible that when I command somebody to post a letter, I am implicitly commanding him at least to post it or burn it. This seems to be merely another case of a philosopher lapsing into nonsense in the espousal of a theory.

Now supposing that Hare's critique of Williams fails, does it follow that Williams is right in his denial of imperative inference? I do not think so. For though he does point out certain difficulties in admitting certain sequences of imperatives as inferences, this is by no means enough evidence for his sweeping conclusion that **in general** there is no such thing as imperative inference. Rescher and Robison in their discussion of Williams's paper<sup>20</sup> have pointed out that it is surprising that Williams should have based his case for the general impossibility of imperative inference on the consideration of disjunctive argument-forms alone, and should not have paid any attention to the far more plausible conjunctive and conditional argument-forms :

- (1) Do x and y; so do x
- (2) Do x; do y; so do x and y
- (3) Do x if you do y; do y if you do z; so do x if you do z.

Also the following disjunctive form:

- (4) Do x or y; so do y or x.

These argument-forms seem valid enough, at least some of them. (1) and (4) perhaps present difficulties; but there seems to be nothing wrong with (2) and (3). The proper conclusion to draw therefore would be, not that there is in general no imperative inference, but that there is no general parallelism between imperative and indicative logics. If we remember

that imperatives and indicatives are related to facts in very different ways, we should in fact expect to find a certain lack of parallelism. The examples given by Rescher and Robison are all modelled on schemata of indicative logic. But consider the following simple inferences:

(1) Do x or y; so do x

(2) Do x or y; so do y

I suggest that both these are valid, though their parallels in indicative logic are patently invalid. When the recipient of a disjunctive command chooses one of the disjuncts and obeys it, is he not inferring another command from the given command? He sees that the disjunctive commands offer him a choice, and so he chooses one of the disjuncts and obeys it. Even if he does not choose and obey one of the disjuncts, his seeing that it is indifferent which alternative he obeys so long as he obeys one of them, is certainly a case of seeing an implication. I therefore think that (1) and (2) are perfectly good examples of valid argument-forms. If they are valid, then we have enough evidence to prove both that imperative inference is possible, and that it is not isomorphic (at least not completely isomorphic) with indicative logic.

#### IV

We began by asking the question: What is to replace truth-values in imperative inference? and we have considered one answer to it, viz. the values which take the place of "true" and "false" are "satisfied" and "not satisfied." To say that an imperative is satisfied is simply to say that the state of affairs commanded is realised. We have seen that on this view the logic of imperatives is completely isomorphic with the logic of indicatives. And we have also seen that this logic (called by Kenny "logic of satisfaction") cannot be the whole logic of imperatives.

Kenny, in a most interesting paper entitled "Practical Inference"<sup>20</sup> starts at this point. If it is not "satisfaction" which is the property that is (or is to be) preserved in imperative inference, what property is it? Kenny suggests that the property we are looking for is what he calls "satisfactoriness".

He explains the notion of satisfactoriness thus. The primary purpose of practical discourse is to get done what we want done. If a command is one which will satisfy our purpose when fulfilled, then it is satisfactory for that purpose. When in imperative inference we pass from one imperative to another, it is this property which is to be preserved. In short we must never pass from an imperative which is satisfactory to one which is not satisfactory. The rules of imperative inference are intended to preserve satisfactoriness, and these rules constitute the "logic of satisfactoriness". This logic is very different from the logic of satisfaction, but it is nevertheless related to it in a most interesting and surprising manner. Their relationship turns out to be that of a thing and its mirror-image. That is to say, whenever the logic of satisfaction permits the inference from B to A, the logic of satisfactoriness permits the inference from A to B. This feature can be illustrated by a few simple examples. "Post the letter; therefore post the letter or burn the letter" is valid in the logic of satisfaction; but its mirror-image "Post the letter or burn the letter; therefore post the letter" is valid in the logic of satisfactoriness. Similarly the inference from "Vote for the Labour candidate" to "Vote for somebody" is valid in the logic of satisfaction, but its mirror-image "Vote for somebody, so vote for the Labour candidate" is valid in the logic of satisfactoriness.

Kenny says that "the logic of satisfactoriness, and not the logic of satisfaction, is the principal logic of imperatives."<sup>21</sup> It will be noticed that Kenny does not say that the logic of satisfactoriness is **the** logic of imperatives, but merely that it is the **principal** logic of imperatives. This means that according to him imperative inference obeys the rules of two different logics. Can we lay down general rules in accordance with which we might find out which imperative inference is valid in one or the other logic? Kenny's answer is clear. There are imperative inferences which are valid in the logic of satisfaction. (Let us call this logic Logic 1.) These can be found out by checking them against corresponding inference-forms of theoretical logic. Now where an inference is valid in Logic 1, its mirror-image is valid in the logic of satisfactoriness (let



us call it Logic 2), and this too can be checked "by an appeal to truth-tables and quantificational truths" of assertoric of logic. "For instance, you wish to know whether  $FKpq$  can be inferred from  $FApq$ . To test it whether can you write  $CKpqApq$  and test for tautology in the usual manner."<sup>22</sup> (The letter **F** in the above symbolic expressions is Kenny's mood-indicator for **fiats**, which may here be taken to be roughly (though not strictly) the same as imperatives. I should also mention that I have used the Roman letter F for the Gothic one used by Kenny.)

All this is of course very interesting, if true. It certainly seems to be true in some cases at least. But it may be doubted whether it is generally true. Consider, for example, the following inferences:

(A1) Post the letter; so post the letter or burn the letter.

(A2) Post the letter or burn the letter; so post the letter.

Kenny says that (A1) is valid in Logic 1, and so its mirror-image (A2) is valid in Logic 2. But the question which arises here is whether (A1) is valid at all. It certainly looks a very odd inference, as we have seen; and the fact that you invent a logic called the logic of satisfaction and define validity in it in such a way that any imperative inference which corresponds to a valid inference of future-tense indicatives becomes valid in it, does not alter the bizarre look of the imperative inference. We must remember that it was the counter-intuitive look of (A1) which drove Kenny to look for another logic. Unless we grant that (A1) is invalid, there is no reason to hunt for some property other than "satisfaction" to take the place of truth in imperative inference. On the other hand, if (A 1) is invalid, and the logic of satisfaction makes it valid, the only conclusion which follows is that the logic of satisfaction is not the logic of imperatives at all. In this connection it is instructive to compare with (A1) the following inference:

(B1) Kill all conspirators, Brutus is a conspirator; so kill Brutus.

(A1), I have suggested, is patently invalid; but (B1) seems perfectly in order. If I am asked to kill all conspirators, then the only way to proceed to obey this order is by finding out who IPQ...2

are the conspirators. Then being informed that Brutus is a conspirator, I infer the imperative "Kill Brutus" and proceed to kill him. This inference then seems perfectly sound. How does this inference fare in Logic 1 and Logic 2? It is obviously valid in Logic 1, for the corresponding future-tense indicative inference, "You will kill all conspirators, Brutus is a conspirator, so you will kill Brutus", is valid in assertoric logic. It must therefore be invalid in Logic 2 on Kenny's theory. But as a matter of fact it looks perfectly valid in Logic 2 too. If "Kill all conspirators" is satisfactory, then if Brutus is a conspirator, "Kill Brutus" must be satisfactory too. Kenny however considers this argument invalid on the ground that the order "Kill all conspirators" has not been fully obeyed by someone who obeys the order "Kill Brutus", unless Brutus is the only conspirator, which the premises do not entitle us to conclude.<sup>23</sup> This looks very much like special pleading; for Kenny supposes that the recipient of the command makes one inference with regard to Brutus and then stops, which we have no reason to suppose. On the other hand we naturally expect him to make similar inferences with regard to the rest of the conspirators till the last conspirator is tracked down. It is thus not right to say that the conclusion of (B1) is not satisfactory. But that is not the end of Kenny's troubles. By his own account another inference, the mirror-image of (B1) will be valid in Logic 2:

(B2) Kill Brutus; Brutus is a conspirator; so kill all conspirators.

But this inference will not do at all. Kenny does not consider it, so we do not know how he would have dealt with it. But it does seem to be a clear counter-example to his "mirror-image" theory.

But Kenny has taken account of another argument which raises a similar difficulty for his theory. In logic 1 the following inference is valid:

(C1) Do x and do y; so do x

It is parallel to the truth-functional pattern:  $p$  and  $q$ ; so  $q$ . So on Kenny's theory its mirror-image

(C2) Do x; so do x and y

would be valid in Logic 2. But this will certainly be a very odd

inference. From "Open the door" one could not be said to infer "Open the door and smash the window". But Kenny tries to defend this inference. He argues that the conclusion of this inference does not contradict the premise; it only contradicts "the commander's tacit desire that the window should not be broken".<sup>24</sup> This can be prevented, he says, by expressly including another command in the original command, viz "Don't smash the window". Thus the paradox in (C2) is, he says, only apparent. Gombay in his discussion of Kenny's paper has rightly pointed out that one could not possibly include in a command all the things one does not want done.<sup>25</sup>

Our examination of Kenny's theory may be summed up as follows; (1) The discovery of the logic of satisfactoriness does seem an important discovery in practical logic, for it seems to give an eminently satisfactory account of many inferences which on any other existing logic must be invalid, but which nevertheless seem perfectly all right to our intuition. (2) It does not however fit all imperative (and in general practical) inference. (3) The "Mirror-image" parallelism supposed to hold between the logics of satisfaction and satisfactoriness seems to break down in some cases. (4) While we can say clearly where the logic of satisfaction applies, we cannot be sure that the inferences allowed by this logic will seem sound to our intuition or even make sense. (5) Finally even in the limited sphere claimed for it by Kenny, the logic of satisfactoriness sometimes fails.

#### NOTES

I shall close this review with a quotation from Bar-Hillel. He has pointed out that a large part of our trouble in the investigation of imperative logic arises out of the complicated behaviour of our natural languages. The difficulties are not confined to the investigation of the logic of practical discourse, but have beset logicians investigating the logic of indicative discourse too. It is well-known that conjunction which is taken by logicians to be commutative is not always so in ordinary English (or for that matter in innumerable other natural languages). Recall only the stock example, "Paul and

Mary got married and a son was born to them" versus "A son was born to Paul and Mary and they got married". Similarly in the case of imperative sentences. The imperative disjunctive is not always commutative in English. Compare, e. g. a teacher saying to a naughty boy: "John, stop that foolishness or leave the class' with "John, leave the room or stop that foolishness". "There exists no logic," says Bar-Hillel,<sup>16</sup> "that covers all English imperative sentences, just as there exists no logic that covers all English declarative sentences. But just as there exists a logic of statements made by uttering English declarative sentences ..... underdeveloped as it may be, so there exists a logic of commands ..... issued by uttering English imperative sentences, ..... though this logic has hardly been developed at all. In order to develop such a logic formally the commands (and statements) have to be presented first in some normalised form, preferably in some formalised language, but at least in some "natural" language that has been sterilised and exempted from all disturbing pragmatic features . . . One should therefore not be surprised to find clever logicians writing slightly foolish papers when they succumb to the temptation of not paying sufficient attention to certain distinctions in their treatment of natural languages just because these distinctions are immaterial for language systems."

Vidarbha Mahavidyalaya  
Amravati (Maharashtra)

**D. Y. Deshpande**

#### NOTES

- 1 Language of Morals, p. 28
- 2 Hare, *Ibid.*, p. 13. Hare later proposed the term "tropic" for "neustic".
- 3 *Analysis*, 18.3, January 1958, p. 51.
- 4 *Analysis*, 23 (Suppl.), Jan. 63, p. 39.
- 5 *Intention*, p. 56.
- 6 *Analysis*, 23 (Suppl.) Jan. 63 pp. 30-36.
- 7 *Ibid.*, p. 31.
- 8 *Ibid.*, p. 32.
- 9 *Ibid.*, p. 33.
- 10 *Mind*, July 1967, pp. 309-323.
11. Hare, *Ibid.*; p. 309.
12. *Ibid.*, p. 311.

13. Grice: "The Causal Theory of Perception", *Aristotelian Society Proceedings*, Suppl. Vol. XXXV, 1961, p. 130.
14. Hare, *Ibid*; p. 133.
15. See Section IV below.
16. *Ibid*; p. 325.
17. Kenny's name for the early Geachean variety of imperative logic which Hare characterises thus, "The 'logic of satisfaction' makes use of the idea that in a valid imperative inference the premises cannot be fulfilled or satisfied without the conclusion being satisfied". (*Analysis*, 24·5, April, 1964)
18. *Ibid*; p. 325.
19. Hare, *ibid*, p. 326.
20. *Analysis*, 26·3, Jan. 66, pp. 65-75.
21. *Ibid*; p. 73.
22. *Ibid*. pp. 73-4.
23. *Ibid*: p. 74
24. *Ibid*; p. 74.
25. *Analysis*, 27·5, April 1967, pp. 147-48,
26. "Imperative Inference", *Analysis*, 26·3, Jan. 66, pp, 81-82,