Philosophica 14, 1974 (2), pp. 73–82.

RATIONALITY, SOME PRELIMINARY REMARKS

Etienne VERMEERSCH

1. These remarks are to be regarded as preparatory to a discussion on some important issues concerning rationality, viz. the problem of wether there is a form of rationality other than that which is typical for scientific procedure, and, whether there can exist a rational foundation for ethical and political options.

These are old problems : time and again great philosophers have tried to find a scientific or philosophical (i.e. rational) basis for ethics and politics, but neither their starting points nor their conclusions have ever obtained general consensus. On the other hand there has been a tendency, which is most clearly formulated in the emotive theory of ethics (e.g. Stevenson), to contend that there is an essential difference between disagreements in belief and disagreements in attitude. The former could in principle be eliminated by scientific research, the latter would depend on differences in attitudes, preferences, tastes, and therefore could not be removed by scientific argumentation alone.

In this discussion some philosophers of the phenomenological and hegelian tradition (but also Anglo Saxon "good reasons" philosophers) would perhaps be inclined to reply that even when *scientific* arguments are inadequate in an ethical discussion, a *rational* argumentation could do very well.

During the last decade, not only philosophers but a good many renowned scientists (e.g. Heisenberg, Monod, Eccles, Skinner, Chomsky, etc.) found it justified to depart for a while from their highly specialized work and to devote themselves to the general problems of man and society; obviously, they too believe it can be done in a rational way.

But is there such a rational procedure, distinct from scientific method, and if so, how can it be characterized, what are its criteria of soundness and how can it be distinguished from wild

speculation ?

2. The adjective 'rational' is mainly used in two kinds of contexts. (a) We can speak of rational beliefs, rational thinking, or, more generally, rational ways of acquiring *knowledge*. I will use the expressions 'k-rational' and 'k-rationality' in these contexts. (b) Where rationality of *doing*, of acts, is meant I shall use the expressions d-rational, and d-rationality. Other uses of the term 'rational' (rational politics, rational man) can be related to one of these meanings or to both.

a. *k-rationality*. Since the mastery of true scientific method is a comparatively recent phenomenon, man had for many centuries to use other methods in his search for knowledge.

The first of these is *common sense :* a set of beliefs, acquired by simple learning processes in the course of contact with the surroundings and with other people. In all pre-scientific cultures this 'knowledge' is amplified with a system of beliefs that spring from fantasy and are accepted without criticism; this we call (simplifying) the *mythical* (including the dogmatic) mode of belief formation. Common sense always contains some sound information (where it rests upon direct experience of clearly distinguishable phenomena), but as a whole it cannot be considered a reliable knowledge system because the boundary between the certain and the dubious is not clear-cut. As far as myth and dogma are concerned, the situation is even worse since, apart from some paltry tendencies towards coherence, there is no criterion of certainty whatsoever. The result of this situation is that many of common sense beliefs and almost all mythico-dogmatic views greatly differ from one culture to another.

Since, as Heraclitus so beautifully said, the private different world views are typical of dreaming people, whereas the awakened have one and the same world, it could be expected that sooner or later the need for awakening would arise, the longing for a method so convincing that universal acceptance could be reached.

Such a method was first discovered in Greek mathematics. After a few decades it seemed clear to everybody acquainted with that science that the proofs of the theories were so overwhelmingly convincing that they ought to be universally accepted.

This reliability was due to (a) explicit and exact definition of the basic properties and relations, (b) a method of construction of new entities from the basic ones, so that new properties could easily be deduced, (c) the elimination of hypotheses that lead to contradiction. This logico-mathematical method has proved very

fruitful in the creation of new and indubitable knowledge, but it is knowledge of a special world : of the mathematical constructions themselves, and so it is not directly pertinent to the knowledge of the world we experience.

After some limited preambles in statics, hydrostatics and astronomy, finally in the 17th century a second criterion for reliable knowledge was found : the *experimental* method.

The essential thing here is to investigate — through observation and experiment — only those properties of the world that can be formulated in an exact theory. Thus the advantages of the logico-mathematical method are combined with those of limiting oneself to the perception of highly discriminable data. This method can of course be extented to the use of not strictly mathematical languages, and to the detection of non-experimental but otherwise clearly distinguishable facts. As had been the case with mathematics this new approach too made on all those who used it an impression of infallibility and the succeeding explosion of science has proved that they were not wrong.

We conclude that *reliable knowledge* can be reached by using a language and a theory so precise that contradictions easily show up, and on the other hand by verifying (or trying to falsify) these theories on the basis of facts the occurrence of which can be unmistakably ascertained.

This leads us to the following definitions.

D1 In a first approach the search for *k-rationality* can be regarded as the search for *reliable knowledge* : in other words, the search for beliefs that are not manifestly denied in man's interaction with his surroundings, and that can make a claim to universality (that seem to be *de iure*, convincing).

D2 Up to now highly reliable knowledge has only been achieved by means of the above described scientific method, so it is reasonable to call it the rational method "par excellence". In what follows, the adjective *k-rational*$_1$ will be used to refer to beliefs, knowledge etc. which have been reached by strictly scientific procedures.

D3 A belief is *k-irrational* when it is contradicted by the results of (k-rational$_1$) science and when this belief is held by a person who has the intellectual and cultural opportunity to know the existence of this contradiction (e.g. a physicist who believes in astrology).

D4 A *k-rational* man can be defined as a person with a craving for reliable, universally valid knowledge. Having been confronted with the successes and the intrinsically convincing character of the above mentioned methods, the k-rational man will try to introduce

k-rationality$_1$ in all his inquiries.

There is, however, a difficulty with the k-rational approach to the world. A lot of problems cannot yet be solved by scientific methods : the data may be too difficult to explore, or the complexity of the problems may exclude for the moment the possibility of constructing a clear and consistent theory. This is the case in some areas of psychology, sociology and philology, where we would not easily recognize the typical rational$_1$ characteristics, although the ideal is not renounced. The problem is manifested most acutely in the studies and discussions concerning ethical and political problems where the guarantees of science seem to be lacking completely. Still the impression remains, and most of the participants would certify that even there 'rational' procedures are used.

In order to facilitate the analysis of this transition area we will admit that efforts are being made there to arrive at one or another form of reliable knowledge; in other words that a kind of k-rationality is being searched for. We call it *k-rationality*$_2$ in order to distinguish it on one side from the true rational$_1$ approach and on the other side from myth, dogma and wild speculation.

What are the characteristics now of these rational$_2$ procedures ? Since the ideal of reliable knowledge seems to us to be the central one, and since this aim has only been achieved thus far by maximalizing the two criteria of scientific method, the rational$_2$ method cannot show new positive criteria.

D5 The adjective *k-rational*$_2$ (for beliefs, methods, etc.) is used when the aim of getting reliable knowledge is maintained, and criticism is admitted, but on the other hand the requirements of the rational$_1$ method are weakened : the language is less precise and the standards of rigour in the control of the data are reduced.

D6 A belief will be called *k-nonrational* when it is not *based* on the use of k-rational$_1$ or k-rational$_2$ methods, but otherwise could not be considered k-irrational (e.g. the religious beliefs in modern liberal theology).

The question could be asked whether our rather meager definition of k-rationality$_2$ does full justice to the enormous amount of thought and ability by which such theories and beliefs are constructed. This, however, misses the point : what we are looking for is not ingenuity but rationality, i.e. reliability, and nobody has ever produced a new generally accepted criterion of certainty apart from the two mentioned above; so if their stringency is reduced, rationality is weakened too. Nevertheless it should be admitted that

in some respect the above definitions are provisional simplifications : they suggest the existence of a clear-cut dichotomy (1—2 rationality) where there is rather a continuous transition (on a scale from strict rational$_1$ to very weak rational$_2$).

This leads us to an important thesis.

T1 To the extent to which one moves away from the standards of k-rationality$_1$, in the same degree the answers to the questions will be *less reliable* ; but the stricter one's adherence to these standards, the fewer problems one will be able to treat.

Thus it seems reasonable to ask how a k-rational man can be induced to leave the safe field of science and become involved with problems that admit only loose rational$_2$ methods. I am afraid that the answer cannot be given in k-rational terms. Indeed, a k-rational man is primarely interested in reliable, *de iure* universal beliefs, and hence could not easily find reasons to engage in k-rational$_2$ studies whose results remain very often debatable. Only in taking into account d-rationality may this issue be clarified.

b. *d-rationality*. In most contexts concerning rational *doing* or activity the basic idea seems to be that at least the following conditions are required. In order to act rationally, (a) one should have well defined aims, (b) one ought to use the means one thinks to be most efficient to reach the aims, and (c) the act will be regarded as more or less rational according to the more or less k-rational character of the beliefs concerning the efficiency. Therefore, acts performed under the influence of alcohol, or determined by anger or anxiety are called irrational, because the awareness of the goal may be confused, or the means inadequate. It should be remarked that the use of magic by primitives may be called d-rational to a certain extent in as far as the criteria (a) and (b) are present and the deficiency on the (c)-level is not due to k-irrationality.

However, it will not suffice to make reference to adequate means and specific aims to provide a satisfactory definition of d-rationality. Human action viewed over a long period cannot be analysed as a mere succession of act sequences each resulting in separate ends : a great many only realize partial goals which function themselves as means to more general, more important ends. It cannot be excluded therefore that in some cases adequate means are used to achieve the particular aims, and that by this very action the general goals are endangered. Then this micro-action is rational in itself, but it is 'alienated' from the general goals; viewed on a macro level, such behavior would rightly be termed irrational. So we suggest the following definitions.

D7 A particular act sequence (micro level) is *d-rational* when clearly defined goals are intended, when the most adequate means are used and when the beliefs concerning the means-goal relation are not k-irrational. Given these basic conditions, the degree of d-rationality is a function of the degree of k-rationality of these beliefs.

D8 A micro act sequence is *d-irrational* when at least one of the following situations occurs : (a) there is no clear consciousness of a goal (e.g. when the person is drunk), (b) the best means one knows are not used (e.g. in a state of panic), (c) the belief concerning the adequacy of the means is k-irrational.

D9 Human activity or behavior on the ***macro level*** is *d-rational* (a) when the person has an overview of his own value system or the hierarchy of the goals he wants to achieve over a considerable period of time (the optimal length of this period being itself an element of the value system). (b) when 'micro-goals' are chosen in only two different ways : (i) they may be irrelevant to the basic value system; in this case (micro-) d-irrationality should be avoided; or (ii) they contribute to the realisation of the goal hierarchy and then (micro-) d-rationality is needed. The second criterion is stricter because of the importance of the central goals (c) In both cases the relation with the value system should be ascertained by k-rational methods.

D10 *d-irrationality* on the *macro level* occurs when an explicit or implicit goal hierarchy is jeapordized through d-irrationality on the micro level or through 'alienation', e.i. a dysfunctional relationship of micro goals to the basic aims. (A value system is thought to have been implicitly present when the disruption of it causes regret comparable to that of an explicit one).

D11 When we speak of a *d-rational man*, rationality on the *macro level* is always meant, since this is the fundamental standard for judging human action : by definition it guarantees the realization of the most important goals one has.

c. By analogy it is possible to introduce now the notions of a k-rational and a d-rational society.

D12 In a *k-rational society* there would be a broad consensus that reliable knowledge should be searched for and that this ideal should be realized by using scientific methods were possible, and by introducing rational$_2$ approaches when there is no other resource. k-irrationality of course would be abhorred.

D13 In a *d-rational society*, the goal hierarchies would be clearly formulated and the activities of subsystems and individual people would meet the criteria of d-rationality (macro level).

D14 Here again it is clear that d-rational functioning of a subsystem (e.g. an army) could be disastrous to the implicit or explicit aims of a society in general. In this case the society would be *d-irrational*.

3. As the foregoing definitions may seem too sophisticated from one point of view and oversimplified from another, their introduction could only be justified if it leads to a more precise formulation of some old problems and the discovery of some new theses.

T2 A k-rational man will try to introduce (micro) *d-rationality* in his activities : when it is clear for him on k-rational$_1$ (or -2) grounds what are the most adequate means to some end, he will use them (it would be silly to want something and not to use the best means to get it). There are however a lot of problems concerning means that cannot be solved thus far by k-rational methods, so for many actions non-rational criteria will be unavoidable. (This will lead to scepticism and tolerance whereas irrational beliefs entail dogmatism and absolutism).

T3 After some reflection, a truly k-rational man should come to the insight that *d-rationality* on the *macro level* has to be pursued. He will be aware that the more efficiently some particular goals can be reached the greater will be the tendency to work on them, with the consequence that the balance of the goal hierarchy could be disturbed and the attainment of the most important goals impaired. Since, by definition, the most important goals are those that are aimed at in the first place, it would be absurd to prefer particular goals to the general; to avoid this, macro d-rationality is needed.

D14 For the above reasons I will only call somebody a *rational person* in the full sense of the word when he has come to the insight that internal consistency of action and thought is only possible when macro d-rationality as well as k-rationality are the guiding principles. (One could be tempted here to introduce a form of the socratic paradox : a rational man would actually *show* both kinds of rationality in his life, but that would suppose a complete domination of thought over all other human drives, which seems to be an illusion).

4. We may now try to answer the question of how a k-rational man, working with k-rational$_1$ methods, can be induced to leave this safe and rewarding field and engage in research that only admits k-rational$_2$ approaches (cf. the examples of Monod, Chomsky, etc.). Being a truly *rational* man (cfr T2) he may have come to the conclusion that an exclusive involvement in science may let him

succeed very well in particular activities, while some of his basic goals are neglected or are not even made explicit. In so far as the problems concerning these aims are not accessible for k-rational$_1$ methods it is completely *rational* (D14) and even imperative to introduce the k-rational$_2$ approach.

Still some confusion is possible on this point since we have pointed out thus far why a k-rational person should introduce d-rationality with reference to his own goals. But most of the authors mentioned seem not to be interested in the first place in their *personal problems* but in those of human society in general. Is there a rational basis for this engagement, is the "unbearable pity for the suffering of mankind" (Russell) more than an attitude, a preference, a taste ?

To clarify the issue, let us first consider the relation between a k-rational and a d-rational society.

In a k-rational society there is a broad consensus that cognitive problems should be tackled with k-rational$_1$ or, in default of these, with k-rational$_2$ methods. General agreement could be reached also with regard to the need of introducing d-rationality on the macro level. This ideal of a *rational society* is perhaps what most philosophers of the Enlightenment had in mind. Now we realize that in our time the level of *k-rationality*$_1$ is certainly much higher than in the 18th century: more people are convinced of its efficiency : a considerable number of problems have been solved and its basic principles are almost universally spread through education. So one would expect that d-rationality has been achieved too. This, however, seems not to be the case. The experience of two world wars and local wars following them, the continuing existence of nations with fundamentally diverging goals and types of organisation, the awareness of the possibility of a disaster for mankind, as a result of atomic war, population explosion, lack of food, exhaustion of raw materials or pollution; all this makes it clear for many people that ours is not a truly rational society. So if k-rationality must entail d-rationality on the macro level, something must have gone wrong.

The situation may perhaps be analysed in the following way. Instead of strengtening the need for the introduction of d-rationality, the successes of the k-rational$_1$ method have led to what I call the *scientific-technological optimism* : the confidence that all human problems will be solved, that progress in general will be achieved, by accelerating the development of science and technology. Now it is very important that we realize that this belief is not based on k-rational procedures, but is simply a myth. A

k-rational society would try to solve its cognitive problems with k-rational methods and would try to introduce d-rationality in the field of action, but there is no guarantee that all cognitive problems can be solved, nor it is sure that the development of science and technology as such should be considered a basic aim of society without taking into account the other goals. In fact, what has been going on is the progressive establishment of institutions or organisations with particular goals in the field of science and technology, and by this very optimism they have been able to develop a micro-d-rationality on their own or in function of micro-rational economic, military or political aims.
As no basic value system could control these developments, there has been no progress in d-rationality but rather, owing to the greater power and autonomy of the micro-rational subsystems, an increase of d-irrationality, and so of irrationality in the general sense. The conclusion is either that a k-rational society does not lead necessarily to a d-rational one, or that until now we have never had a real k-rational society.

In what sense does this situation concern the rational *individual*; how can he be induced to take into account the values of society in organizing his goal hierarchy; in other words is there a rational basis for socially oriented ethics and politics :

A definitive answer is perhaps not possible and, anyway, would go beyond the scope of this article. But perhaps the following suggestions can be made.

Great dangers to human society — war, pollution, lack of food etc. — are liable to have a negative impact on the private value hierarchy of the individual, whereas the coming of a sane rational society would promote the individual goals of most people. Thus a rational person should be concerned about the value system of a society and its degree of d-rationality. The opinion of a number of scientists that everybody should do his own duty, more precisely that scientists and politicians should only mind their own business, is a very dangerous one since it takes for granted that the values of the politicians coincide with the general goal hierarchy of society and since it ignores the dangers of micro-d-rationality in their own work. The realisation of a truly rational society is not to be considered a matter of course, but rather a very precarious ideal that has only a small chance of being realized even if all k-rational people become engaged in it.

As has been said in the beginning, k-rational people tend to universality, to a conviction that their belief should be shared by all

men. If people tend to be consistent in their attitudes, we may expect that rational persons would prefer their value systems to be universally valid too. Therefore, even if there is no necessary transition from beliefs to attitudes, the spread of a common world view through k-rationality may further the tendency to construct the same goal hierarchies. A rational individual would then automatically try to adjust his own goals to those of other people and to those of society in general.

Rijksuniversiteit Gent