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HUMANISTIC INTERPRETATION BETWEEN HEMPEL AND POPPER

ABSTRACT. The theory of rationality (Kmita, Nowak, Świdorski), its assumptions and relation to humanistic interpretation are discussed, followed by comparison between Popper's and Hempel's views on the rationality principle as well as on physical and historical explanations. They are then confronted with W. Dray's concepts. The author presents von Wright's scheme of inference (practical syllogism) pointing out its differences from and analogies with Kmita's scheme. He concludes that Kmita's model is closer to the spirit of the Popper-Hempel conception of scientific explanation than that of von Wright.

1. The most convenient starting point for this account of humanistic interpretation is the criticism of psychologism which, as taken up by Popper, is of both a normative and a descriptive character (cf. Kmita, Nowak 1968, pp. 95-6). The descriptive criticism consists of pointing out that the human sciences make use of what Popper calls the "logic of situation", which has nothing to do with psychological laws as it presupposes the theory of rational action. This theory, however, is not understood in the same way as it is by Hempel, who maintains the assumption of rationality as an abbreviate formula which stands for a complex psychological theory, that is, as "a surrogate for specific psychological laws which do not employ in their formulation the concepts standardly employed in the description and explanation of action" (Świdorski 1985b, p. 77).

The concept of rational action, originally advanced in the economic field by neo-Classical theories, was later precisely defined by Giedymin, who lists seven meanings of the term (cf. Kmita, Nowak 1968, pp. 104-5), of which Kmita and Nowak accept the one they consider to be the most general, and the one which was also applied in the game theory by Luce and Raiffa (1958). First, however, the concept of behaviour (*zachowanie*) is defined in general as a functional dependence in which the dependent variable is a certain class of human actions (*czynność*), while the independent variable is a certain class of conditions which and only which are of relevance for the performance of the action (Kmita, Nowak

1968, p. 101), of the following kind: $C = f(O_1, \dots, O_n)$, where C = action and $O_1, \dots, O_n$ are the conditions.

A person behaves rationally (henceforward we will assume for the sake of simplicity that he or she acts in conditions of certainty) when the following conditions apply: a) he/she has to choose one of various "alternative" actions; b) each of these alternatives has, from the point of view of the person's knowledge, a certain effect; c) the various alternatives are ordered for the person as more or less advantageous in a hierarchy of values assigned to their various outcomes (there exists, that is, a "utility function" which assigns a certain value to the outcome of a given action and all the values can be ordered); d) the person undertakes the alternative which corresponds to the highest value, i.e. the action whose outcome maximizes its usefulness. In other words the assumption of rationality can be formulated in the following way:

Z_1 : If (at the moment t) x has to undertake one of the actions $C_1, \dots, C_m$, which according to his knowledge (at moment t) exclude each other and add up (all) together, and unfailingly lead to results $S_1, \dots, S_m$ respectively (while $m \leq n$), and the said results $S_1, \dots, S_m$ are ordered by a relation of preference of X (at t), then X will (at moment t) undertake the action C_j ($j = 1, \dots, m$) leading to the dominating (i.e. having the highest preference rank) result S_j ($j = 1, \dots, m$). (Kmita 1971a, pp. 7-8)¹

Having said this, it is now possible to give a definition of rational action:

By rational action we mean here any action which is a functional dependence of the action (to be undertaken) out of those which belong to a given class C from: 1) a knowledge of the type W describing a) the set of actions to be undertaken in certain situational systems (and which thus determine class C), b) by the possible outcomes (values) of these actions, 2) the system of norms of the type N which establishes a (partial) order of values. (Kmita, Nowak 1968, pp. 110-1)

The expression "knowledge of the type W " means a set of statements $W_1, \dots, W_n$ of which a given individual has knowledge, and the expression "system of norms of the type N " indicates a certain class of norms, $N_1, \dots, N_n$, accepted by the given individual. Obviously, in any concrete case a certain knowledge, W_i , and a certain system of norms, N_k , are presupposed, which determine by means of the functional relation: $C = f(W, N)$ a certain action C_j . So an individual rational action is an ordered pair:

$$[1] \quad \langle W_i, N_k; c_j \rangle$$

¹ This formulation is different from the one presented in Kmita, Nowak (1968, pp. 306-7), which was of a metalinguistic or methodological nature, whereas the version presented here deals with the object level and is therefore closer to the realistic assumption underlying all Kmita and Nowak's thought (cf. Kmita 1970, p. 68). Concerning the reasons for this change, see the accurate analysis made by Świdorski (1985b, pp. 99-114). Lastly, it is worth while remembering that this definition is given in conditions of certainty: for a formulation of the assumption of rationality in conditions of uncertainty or risk, see the example and definition contained in Kmita (1973, pp. 19-21).

where W_i stands for a certain knowledge possessed by a given individual, N_k stands for the system of norms he/she accepts, and c_j is the individual action he/she undertakes. Therefore rational actions are determined by three kinds of factors: 1) the class of activity, C , 2) the class of knowledge, W , and 3) the type of norms which establish a (partial) order of values N (cf. *op. cit.*, pp. 111-2).

A role of particular importance is assumed by the third factor, which is seen in a realistic sense and not the instrumentalistic one typical of positivists.² In order to illustrate this, let us examine an example given by the authors. Let us consider the following argument:

The tyrants ... wanted to appear as leaders of the masses. In order to gain their support, they had to make an effort to give them jobs. So several tyrants undertook programmes of public works, such as the building of canals, aqueducts and roads, and supported commerce, craftsmanship and agriculture. (Kumaniecki, quoted after Kmita, Nowak 1970, p. 47)

In this argument one asks: "why did the tyrants offer programmes of public works, etc.?" The answer is: "because they wanted to give the masses jobs". And why did they want to give the masses jobs? A further answer: "because they wanted their support in order to become their leaders". In this way we have an entimematic form of explanation in which the behaviour of individuals or groups is explained by reference to their aims or intentions. The explicative scheme which answers the question "Why did X undertake activity C ?" therefore contains two components:

- (1) "The aim of the action, C , was the achievement of the state S "
- (2) "Y believes that by undertaking the action C he will achieve the state S "

But the conjunction of (1) and (2) does not imply the proposition contained in our question, that is:

- (3) "X undertook the action C ".

What has to be added to propositions (1) and (2) in order to obtain (3)? That is, what is missing for the explicative scheme given above (2) to conform to the model of nomologico-deductive explanation of Popper and Hempel? Well, whereas psychologists affirm that the missing link is a psychological law which allows premises (1) and (2) to be connected to conclusion (3), the anti-psychologists, including Kmita and Nowak,

² "... for positivists the ordering of values, as well as the scale of values based on it, only express in an abbreviated form the observational data obtained in the course of observation of the choices of actions; the anti-positivist, on the other hand, will maintain that the ordering of activities is the observable symptom of a theoretical order of values, which is something more than a useful instrument, an abbreviated description of the observed ordering of values" (Kmita, Nowak 1968, p. 110).

maintain that the missing link is the assumption of rationality (Z_1) which characterizes the behaviour of a given subject in the situation being explained (cf. Kmita 1971a, pp. 5-6; 1971b, p. 24).

So assuming (Z_1) and suitably modifying (1) and (2) as follows:

Z_2 S_j is the dominant result for X (at the time t).

Z_3 According to the knowledge of X (at the time t)³ the action C_i inevitably leads to the result S_j ,

there follows the *explanandum*:

Z_4 X undertakes the action C_i (at the time t).

In other terms,

$$[2] \quad Z_1 \wedge Z_2 \wedge Z_3 \rightarrow Z_4$$

The kind of explanation reconstructed here is defined by Kmita with the term *humanistic interpretation* (cf. Kmita 1971a, pp. 7-8; 1971b, pp. 28-9): it is none other than the deductive model of explanation used in natural sciences (cf. Kmita, Nowak 1968, p. 302), precisely the one described by Hempel, in which the role of law (strictly universal assertion) is played by the assumption Z_1 , and that of the initial conditions by assertions Z_2 and Z_3 , none of which has an introspective nature, and so the whole procedure of rational interpretation does not have a psychological character at all (cf. *op. cit.*, 307).

The action described by means of the assumption of rationality is obviously not to be identified with the practical, empirically observed behaviour of subjects acting in concrete circumstances. That is, the empirical domain of the semantic model of this assumption of rationality that is, the hypothesis which affirms that a given empirical domain is sufficiently close to the domain of rational action, is in many cases legitimate" (Kmita, Nowak 1968, p. 114)⁴. Every rational action referring to a given empirical domain, in relation to which the assumption of rationality has been made, will be called "behavior". So, whereas the term "action" (*czynność*) always implies intentional behaviour directed towards the achievement of an aim in the theory of rational action,

³ This reference to the knowledge of the subject, as well as the reference to his scale of values, is taken from what Znaniecki has called the "human coefficient" of any action or product. Cf. on this subject Świdorski (1984, p. 100).

⁴ Świdorski points out the vicious circle one falls into: "... the rationality assumption postulates that there is in an empirical domain which 'corresponds' to the model of rational behaviour despite the circumstance that no independent access exists to the former in order to confirm the model, the terms of which are already at work in the descriptions at the 'basis' level of 'fact' gathering" (Świdorski 1985b, p. 89).

"behaviour" (*zachowanie*) implies activities considered in terms of their concrete execution (cf. Kmita 1973c, p. 26). This distinction acknowledges that there is a gap between action as described from the point of view of the intentions of the agent and assuming rationality on his part, and the results actually obtained by this action (cf. Świdorski 1985a, pp. 257-8).

We can now introduce the concept of significant structure which, although it is linked with certain anti-naturalistic intuitions (tied to expressions such as "finalistic structure", "finalistic bond", etc.), constitutes a particular case of the kind of structures which are to be found in natural sciences as well. Let there be given a certain rational individual activity determined as in [1]:

$$[3] \quad S_x = \langle U; Z, C, R, F, z \rangle$$

where:

- 1) U is the set of states of affairs which the knowledge, W_i , possessed by X is able to describe;
- 2) Z is a subset of U constituting a subclass designated by the values N_k an indicates the set of results x attributes to his actions;
- 3) C is a subset of U which constitutes the class of possible actions which — on the basis of the knowledge W_i — can be undertaken and which lead to results belonging to the states of affairs which are elements of Z ;
- 4) R is the relation which sets up a (partial) order in the set Z ;
- 5) z is the state of affairs (the "situation") which univocally prefigures the effects of the activity in C ;
- 6) F is the function which assigns a result from z to each pair consisting of an action in C and the state of affairs z (so that undertaking an action in C in the situation z leads to a certain effect in Z) (cf. Kmita, Nowak 1968, pp. 215-7, 305).

Structure [3] is the significant structure designated (*wyznaczona*) by the knowledge W_i and the norms N_k instituting a rational activity, c , for which $C = f(W_i, N_k)$. If we use the term privileged value (*wartość wyróżniona*) of the significant structure on which this action depends to indicate the value towards which the given individual action, c , aims, we can say that this value is the dominant one in the partial order R . It constitutes the sense (or meaning) of this activity (cf. *op. cit.*, pp. 217-8)⁵.

⁵ The conception of Kmita and Nowak we have outlined so far was later substantially modified, both as far as the statute of the assumption of rationality (Z_1) is concerned, which constitutes the nomological part of the explanans, and as regards the role idealization has in the logical structure of humanistic interpretation. Corrections were first made by the two authors (and this is the version we have presented here), then by Nowak (who distinguished between assumption and principle of rationality) (cf. Nowak 1974,

Therefore, since the researcher knows the knowledge and norms of the person x , he can reconstruct the significant structure S_x : He knows the universe that the knowledge of this person can describe, the ordering of values, the actions which lead to the desired state of affairs and the relevant state of affairs for undertaking actions which lead to a more or less appreciated state of affairs. (*op. cit.*, p. 305)

Considering that the character of an action, as a rational action, is related to the dependence on this significant structure (so only by locating a given action within a significant structure can we understand its sense), it derives that any knowledge of a given individual action as a rational activity is related to knowledge of the corresponding significant structure. The latter is therefore cognitively prior to any single rational action. So, in order to understand the sense of an observational statement describing the action of a given agent, we have to refer to a certain theory — in this case, to a significant structure on which the given action depends. Taking up the same argumentative structure underlying Giedymin's criticism of the absoluteness of the basic assertions (*cf.* Giedymin 1966), Kmita therefore maintains that:

knowledge of a respective significant structure which determines in particular the sense of a given individual action has cognitive priority over the knowledge of this action as a rational action; empirical verification of this kind of assertion must always be related to a corresponding significant structure, while the knowledge of a given significant structure can be empirically verified without being related to a rational action. (*op. cit.*, p. 220; *cf.* also *op. cit.*, p. 230)

This is precisely the thesis of methodological structuralism, descending directly from hypothetism, which asserts the theoretical-contextual nature of any observational statement.

2. At this point, we have all the necessary elements to make certain considerations. First of all, let us go back to Kmita's thesis according to which his approach based on the assumption of rationality descends directly from Popper's "zero-method", in order to support its similarity with the laws of natural sciences.⁶ Popper's approach is, of course,

pp. 124-5) and then by Patryas (who rejects methodological structuralism and therefore original theoreticism) (*cf.* Patryas 1979) in the light of a more articulated theory of science as idealization, which was not yet present in the 1968 work. For a detailed presentation of these variations, it is useful to consult Świderski (1985b, pp. 123-38) and in general the whole volume, the 468 pages of which are devoted to the evolution and various versions of humanistic interpretation.

⁶ "From Newton's abstract laws of mechanics we can deductively reach empirical laws which it is possible to test directly on the basis of observations; likewise, from the postulates of the theory of rational action in conjunction with the data to fill a concerning the possibility to fill a gap between a given act and the model of rationality in the strict sense, we can deductively reach the description of the action of men who belong to an empirical domain. This is the method of research Popper defines as the «zero-method»" (Kmita, Nowak 1968, pp. 116-7).

completely linked to the nomologico-deductive model of explanation (or the model based on "covering laws") advanced by Hempel and Popper himself.⁷ However, Popper's position can't immediately be identified with that of Hempel, at least as far as the problem of explanation in historical sciences is concerned.

In fact, although Popper accepts the thesis of the similarity between the methods of natural and human sciences, he realizes that the thesis has to be more specific when one is dealing with historical sciences. In the latter case, the historian's interest is not in the discovery and proof of general laws (which is the task of theoretical sciences), but in the explanation of singular or specific events thanks to the tacit, undiscussed acceptance of general laws which are usually too trivial to be explicated (this is the task of historical sciences, whether they concern the history of man or the history of science) (*cf.* Popper 1957, pp. 127-8). It is the "triviality" of the laws which the historian presupposes which directs Popper's attention towards the way in which the historian actually proceeds to describe events, the way in which, for example, Tolstoy explains the events of Napoleon's invasion of Russia (*cf.* *op. cit.*, pp. 131-2). Here Popper discovers what was most important in his previous intuitions, and what he had not yet been able to come to grips with: "it was the problem of "rationality" (or the "rationality principle" or the "zero method" or the "logic of situation")" (Popper 1974, p. 93). Popper devoted most of his attention to the "logic of situation":

The main point here was an attempt to generalize the method of economic theory (*marginal utility theory*) so as to become applicable to the other theoretical social sciences. In my later formulations, this method consists of constructing a model of the social situation, including especially the institutional situation, in which an agent is acting, in such a manner as to explain the rationality (the zero-character) of his action. Such models, then, are the testable hypotheses of the social sciences; and those models that are "singular", more especially, are the (in principle testable) singular hypotheses of history. (Popper 1974, pp. 93-4)

Explanations on the basis of the "logic of situation" are, according to Popper, "rational theoretical reconstructions" and thus are ultra-simplified and over-schematized, and therefore usually false (*cf.* Popper 1962, pp. 121-2). Nevertheless they can be good approximations to the truth and are susceptible to criticism. "Logic of situation" explanations thus assume the "rationality principle", but Popper does not seem to have achieved an acceptable clarification of the epistemological status of the latter. His observations on the subject are "typically vague" (Watkins

⁷ Popper claims paternity of the formulation of the nomologico-deductive model (*cf.* Popper 1974, p. 92-3), although it was undoubtedly Hempel who perfected it in his classic studies (conducted in collaboration with K. Oppenheim), now mostly collected in Hempel (1965).

1970, p. 172) and also changed over the years (cf. Koertge 1976, p. 441). In any case, Popper sees the "rationality principle", and therefore the use of the "zero method"⁸ as being typical only of the social sciences and as having no place in natural sciences. Indeed, it is just this use which constitutes what is perhaps the most important difference between their methods (cf. Popper 1957, p. 125), as there exists between them at most a certain "vague parallelism" (*op. cit.*, pp. 126f.) According to Popper, therefore, explanation on the basis of the logic of situation means the explanation of a single event (a human action) with reference to the situation in which the agent finds himself, so as to make it "comprehensible", that is, adequate to the situation as seen by the agent, with the assumption of the principle of rationality. Popper uses the term "problem situation" to refer to the situation in which the agent finds himself and his convictions, expectations, etc. (cf. Popper 1972, pp. 165-8). He concludes that "the historian's task is, therefore, so to reconstruct the problem situation as it appeared to the agent, that the actions of the agent become adequate to the situation" (*op. cit.*, p. 189).

If we now compare what has been said with Hempel's views, we see that there is a considerable difference. Hempel's scheme is the following:

$$[4] \quad \frac{L_1, \dots, L_n}{C_1, \dots, C_n} \quad E$$

where $L_1, \dots, L_n$ are the presupposed universal laws, $C_1, \dots, C_n$ are the initial conditions (which both make up the explanans) and E is the *explanandum*. This scheme remains unaltered for Hempel both for physical and for historical explanations. Whereas Popper accepts this scheme for physical sciences, he thinks it should be modified in the case of historical sciences in the following way (if I have correctly reconstructed what he says on the matter):

$$\frac{(L_1, \dots, L_n)}{C_1, \dots, C_n} \quad A$$

$$\frac{\text{-----}}{E}$$

⁸ Elsewhere Popper states that by this he means the method of constructing a model by postulating complete rationality (and perhaps also postulating complete possession of all the necessary information) on the part of all the individuals involved, and by calculating the deviation of the actual behaviour of these persons from the model behaviour, using the latter as a kind of zero co-ordinate (cf. Popper 1957, pp. 125-6).

where $L_1, \dots, L_n$ has been put in brackets to indicate Popper's lack of interest in these laws as, even though tacitly presupposed, they are trivial. $C_1, \dots, C_n$ can be the initial conditions describing the so-called "problem situations". A is the assumption of rationality⁹ and E is the event to be explained. Does E deductively follow from the given premises? The dotted line is to show that Popper does not give a clear answer to this question, although one might argue that for him E does deductively follow from the premises. There are, however, repeated affirmations in which Popper maintains that the task of the historian is *only* to reconstruct by conjecture the problem situation, to understand the conditions in which a given agent acted, etc.

This impression is confirmed by Popper's affirmations about the differences in the logical structure of explanation between the procedure followed by the theoretician and that of the historian.¹⁰ In the former case one has to test and verify a universal law, L_0 . In the latter, a historical hypothesis, I_0 , has to be tested. The respective schemes will be:

$$\frac{L_0}{L_1, \dots, L_n} \quad \frac{C_1, \dots, C_n}{I_0}$$

$$\frac{P_1, \dots, P_n}{P_1, \dots, P_n}$$

It is obvious that the difference between the first of these schemes and that of Hempel [4] is only apparent, since to explain E it is sufficient to be able to deduce it from the conjunction between L_0 and $L_1, \dots, L_n$. That these two kinds of law are distinct in Popper depends on the fact that the theoretician's aim in this case is to test the law L_0 . But what does Popper mean when he states that in the second scheme " I_0 is the historical hypothesis, the historical description, which is to be examined or tested. It is kept constant throughout the tests; and it is combined with various (mostly obvious) laws $L_1, \dots, L_n$ and with corresponding initial conditions $C_1, \dots, C_n$ for deriving various predictions $P_1, \dots, P_n$, etc." (Popper 1972, p. 355). What does the historian wish to explain? What is the event to be understood? Obviously, if it is I_0 , it does not follow deductively from the other premises. And what does the "deriving" of "predictions", which do not coincide with the event to be explained, mean in a historical

⁹ "... besides the initial conditions describing personal interests, aims, and other situational factors, such as the information available to the person concerned, it tacitly assumes, as a kind of first approximation, the trivial general law that some persons as a rule act more or less rationally" (Popper 1943, II, p. 449).

¹⁰ Below, for the sake of uniformity, we have modified the notation used by Popper, Hempel and the other authors quoted.

explanation? Does it perhaps mean that it is possible in history to make prediction about future events? Popper never tired of combating this kind of possibility.

Things become clearer if model [4] is accepted as the one reconstructing Popper's theses and is seen as it was understood by Hempel. The validity of this hypothesis is, in fact, born out by Hempel's response to the objections of William Dray. In a well-known volume, Dray had criticized the "covering-laws model", maintaining that these laws do not play a fundamental role in historical explanation as it has to account for the thought and intentional actions of men, a dimension which is absent in the explanations of the natural sciences. For him historical explanation aims at showing that a given action was the most appropriate in the given situation. Historical explanation, that is, has to reconstruct the calculations made by the agent, his "reasons", and then point out the rational foundation which led him to behave in one way rather than in another.¹¹ Dray calls these explanations of actions by means of reason "rational explanations", the aim of which is to show that what was done was to be noted for the given reasons, rather than showing just what is done on such occasions in compliance with certain laws (however loose), so that in these explanations there exists an element of evaluation of what has been done (cf. Dray 1957, p. 172). Together with Popper, Dray therefore stresses the importance of the rational behaviour of the agent, but rejects Hempel's scheme. His explanation can be summed up schematically as follows:

[5] "X finds himself in a situation of type z"

"In a situation of type z, the thing to be done is C if one wishes to achieve the result S"

As can be seen, this scheme coincides quite closely with the assumptions Z_2 and Z_3 in Kmita's scheme. But just as in the latter scheme the thesis Z_4 does not follow from Z_2 and Z_3 , in Dray's scheme it does not follow from the two given premises that:

[6] "X performed the action C"

This is exactly what Hempel objected to. In fact, to explain that [6] derives from [5], "the explanans would have to include a further

¹¹ "Understanding is achieved when the historian can see the reasonableness of a man's doing what this agent did, given the beliefs and purposes referred to; his action can then be explained as having been an "appropriate" one. The point I want to emphasize is that what is brought out by such considerations is a conceptual connection between understanding a man's action and discerning its rationale" (Dray 1963, p. 69).

assumption, to the effect that at the time in question X was a rational agent, and was thus disposed to do what was appropriate in the given situations" (Hempel 1953, p. 100). Dray's scheme would become:

[7] "(a) X was in a situation of type z

(b) X was disposed to act rationally

(c) Any person who is disposed to act rationally will, when in a situation of type z, invariably (with high probability) do C" (Hempel 1962, p. 74)

Hence it follows that:

"X did C"

Is Dray's explanation in this way linked to Hempel's model, taking into account the requirement Popper pointed out with the principle of rationality? This is what Hempel thinks when he states "by this explanans X's having one C is accounted for in the manner of a deductive or of probabilistic nomological explanation" (Hempel, *op. cit.*, 74).¹² However, although it is true that the explanation maintains its nomological form and X's single action is logically deduced from the premises, the fact remains that scheme [7] is different from [4], which is the one originally presented by Hempel. Scheme [7], in fact, has the following structure:

[8] $C_1, \dots, C_n$
A

E

But if [8] really is the scheme followed in historical explanation as reconstructed by Hempel, it is evident that Popper is also right in maintaining that strictly universal laws are trivial and can be tacitly presupposed. The only universal assertion explicitly presupposed here is the one expressed in [7] by assertion (c), which is the so-called rationality principle. It is enough to reject it (as Dray does (1963, p. 206)) and of course the whole scheme collapses and the explanation no longer has a nomological character. Scheme [4] would be an alternative solution. But it would have to admit universal laws, $L_1, \dots, L_n$, laws of a historical nature or extremely trivial ones (and here Popper has the winning hand),

¹² Koertge demonstrates that it is possible, by suitably interpreting Popper's rationality principle and eliminating the ambiguities present in its formulation (or formulations), to reach the conclusion that "... explanations in terms of the Rationality Principle satisfy all of the traditional formal and epistemological requirements for scientific explanations" (Koertge 1976, p. 450), that is, those which comply with Hempel's model.

or not so trivial but extremely debatable ones (which are in any case lacking in sufficient empirical support or, in other words, are always falsified by some instance of observation).¹³

To illustrate this let us consider the example given above of the behaviour of the tyrants. We can formulate the argument in the following way:

$$\begin{array}{l}
 [9] \quad \forall x(T(x) \rightarrow L(x)) \\
 \quad \quad \forall x(L(x) \rightarrow P(x)) \\
 \quad \quad \hline
 \quad \quad T(a) \\
 \quad \quad \hline
 \quad \quad P(a)
 \end{array}$$

That is, (1) "For every x , if x is a tyrant, x wishes to be leader of the masses"; (2) "For every x , if x wishes to be leader of the masses, x has to give the masses jobs"; (3) " a is a tyrant"; hence " a has to find the masses jobs". In this case, however, two strictly universal empirical generalizations are admitted, (1) and (2), about the validity of which any historian would be doubtful. It would be sufficient, Popper would say, for a single tyrant not to have wanted to be leader of the masses or for there to have been cases in which it was not a question of finding jobs for the masses in order to be one, but, for example, of putting shows on at the circus (something the Roman emperors knew how to do very well), and the two laws of the explanas would be falsified. In this case, one could at most fall back on statistical explanations, with all the relative consequences (they would not, in any case, answer the fundamental question of "why" a certain event happened).

If we therefore stick to scheme [7] (or [8] respectively), at this point we can ask: what is the nature of assumption (c) (or A) it contains? Is it an empirical law about how rational agents actually behave, or is it an analytical assertion which defines the meaning of "rational agent"? Hempel considers the concept of "rational agent" as a dispositional concept or even a symptom-concept, the meaning of which boils down (according to Carnap's theory of assertions of reduction) to the class of

¹³ This is the "original difficulty" in Hempel's model of which Dray speaks and which had already been pointed out by Berlin (1960); Dray formulates it as follows: "If we challenge a historical explanation by asking for the law which renders it deductive, we can usually, in fact, think of some fairly plausible universal generalization which would bring the proffered explanation into line with the requirements of the model. By any ordinary standards, however, the inductive warrant we could claim for the laws we could, with a certain amount of ingenuity, in this way often provide, is not very strong. More significantly, it is generally much less strong than our confidence in the explanation given. We are thus left with the paradox that, on covering law theory, good explanations have to be represented as deriving logically from questionable laws" (Dray 1963, p. 75).

manifestations or symptoms which reveal its presence (cf. Hempel 1962, pp. 76-7). Assumption (c) is therefore quite similar to empirical laws containing theoretical concepts (including dispositional ones). As can be seen, this position is completely different from that of Kmita and Nowak, who were to interpret the assumption of rationality (and therefore the statement Z_1) as a truly idealizing assumption, even though this was to happen in works published after 1968, when the idealizational context of their theorizing was much clearer (cf. Kmita, Nowak 1970, p. 54, and more explicitly Nowak 1974).

The reconstruction of Kmita and Nowak, then, just takes up the formulations of Popper, unites it with the these of Hempel, making explicit what in the latter was implicit, and completes it by assigning a precise epistemological status to the assumption of rationality in a theory of science which was later to be developed in a different manner from both that of Popper and the standard conception represented by Hempel. To illustrate this, let us take an example from Kmita and Nowak (1968, pp. 303-5) and show how it incorporates the characteristics of Hempel and Popper's model, of which it is a sort of "rational reconstruction".

Let us explain the action c_1 = "the Irishman x at the time t emigrated to the United States". Let us assume that x has knowledge, W , according to which emigrating to the States means finding a higher standard of living (w_1), whereas staying in Ireland means having a low standard of living (w_2) (that is, $W = \{w_1, w_2\}$). Let the significant structure be given as in [3], i.e.:

$$S_x = \langle U; Z, C, R, F, z \rangle$$

where:

- (a) U is the Irishman's knowledge x at the time t ,
- (b) $Z = \{\text{obtaining a higher standard of living } (z_1); \text{ keeping the same standard of living } (z_2)\}$; that is, $Z = \{z_1, z_2\}$;
- (c) $C = \{\text{going to the USA; staying in Ireland}\}$, i.e. $C = \{c_1, c_2\}$;
- (d) R is the functional relation which sets up a total order between the elements in Z , such that $z_1 < z_2$, i.e., that z_1 precedes z_2 (let z_1 , that is, be preferable to z_2);
- (e) let z be the state of affairs in which x operates, that is, the "situation";
- (f) F is the function according to which $z_1 = f(c_1, z)$ and $z_2 = f(c_2, z)$ (that is, the privileged situation, obtaining a higher standard of living, depends univocally on undertaking the action c_1 and the situation z).

In this way the explanation of the fact that x undertakes the action c_1 is presented in the following way:

Z_1 If at the time t the Irishman has to choose between c_1 and c_2 , and c_1 leads to the result z_1 , whereas c_2 leads to the result z_2 (according to the knowledge W) and $z_1 < z_2$ (on the basis of the normative system N), then x will undertake the action c_1

Z_2 c_1 leads to the result z_1

Z_3 $z_1 < z_2$

Z_4 x undertakes the action c_1

The explanation follows the model of Hempel, in the sense that it is deductive ($Z_1 \wedge Z_2 \wedge Z_3 \rightarrow Z_4$), but at the same time it includes Popper's principle of rationality. The only universal assertion assumed is Z_1 , while several empirical laws are implicitly given; these, however, are part of the knowledge of z and motivate x 's actions. In addition, the reconstruction of the "problem situation", which Popper considers to be the main task of the historian, only consists of finding out the significant structure in which x acts, that is, finding out what his normative system, his knowledge of the given situation, the situation in which he finds himself and so on, are from this point of view, then, methodological structuralism, which requires knowledge of the significant structure in order to explain the action of a given individual, constitutes a completion of the theses supported by Popper, indeed a natural consequence of them.

In this, however, there lies another difference between the humanistic interpretation and Popper's model. Although it is true that the human sciences are based on the assumption of rationality, "his [Popper's] acceptance of the thesis of methodological individualism is an extremely incoherent step" (Kmita, Nowak 1968, p. 220). The rejection of structuralism (or better "holism") on the part of Popper and his followers, like Watkins for example, is accounted for by the fact that the structuralism they have in mind is not methodological, but ontological structuralism which, as such, has a metaphysical character, unlike the former which, as an element of a certain logical reconstruction of the human sciences, can be falsified on principle (*op. cit.*, pp. 222-3).

We have seen that Kmita and Nowak's scheme of explanation is a rational reconstruction of Popper's scheme integrated with some requirements stipulated by Hempel. Swiderski, in the preface to his work (Swiderski 1985b, pp. 1-9), has also stressed the evident analogies between Kmita and Nowak's formulation and the contemporary elaborations made by von Wright in his classic work (cf. von Wright 1971). Going back to the theses of Elizabeth Anscombe and her rediscovery

of the importance of the practical syllogism identified by Aristotle, von Wright maintains that it provides the human sciences with a model of explanation which represents an alternative to the theoretical subsumption model advanced by Popper/Hempel. In general terms, the practical syllogism is to the teleological explanation and the explanation in history and the social sciences what the theoretical subsumption model is to the causal explanation and explanation in the natural sciences (cf. von Wright 1971, p. 48). Underlying von Wright's rejection of the theoretical subsumption model and therefore of the thesis concerning the methodological difference between the human and natural sciences, there is the confusion he has made between positivism and naturalism — a positivism conceived of in a limited, confused way which prevents him from distinguishing, as Kmita and Nowak do, between positivistic and anti-positivistic naturalism (cf. Giedymin 1975, p. 284). The inference or practical syllogism is presented in his basic scheme in the following way (cf. von Wright 1971, p. 121):

[10] (a) X intends to achieve S

(b) X feels he cannot achieve S unless he does c

(c) X therefore sets out to do c

The inferential scheme [10] is very similar to [2], the only fundamental difference being the absence of the premise Z_1 , that is, the assumption of rationality which, in Kmita and Nowak's scheme (and also in Hempel's scheme [7]) ensured the logical connection between the premises and the conclusions. Von Wright in fact answers the question of whether practical inference is logically conclusive or not by distinguishing between the two different conceptions regarding the relation between the "internal" and "external" aspect, which he calls causalistic and intentionalistic, respectively. By a causalist he means anyone who maintains that intention can be a Hume'an cause of behaviour (where Hume'an cause means that cause and effect are logically independent of each other) (cf. Kmita, Nowak 1968, p. 117), whereas intentionalists are those who maintain that the connection between intention and behaviour is of a conceptual or logical nature (*op. cit.*, p. 120). If the connection between intention and cognition on the one hand (premises (a) and (b) in [10]) and behaviour on the other (conclusion (c) in [10]) is of a causal nature, there exists for von Wright a general law and a nomic connection. So the premises of the argument represent the antecedent, while the conclusion is the consequent of this law. The law together with the single propositions thus represented logically imply the conclusion. In the causalistic conception, therefore, practical inference (and also teleological explanation) is for von Wright only a disguised form of

nomological-deductive explanation complying with the model based on general laws (von Wright 1971, p. 123).

Things would be different if the relation were only "intentional". But in dealing with intentional action, which (in his opinion) alone constitutes the specific nature of the human sciences, von Wright seems to be more concerned with outlining a general theory of behaviour than the problem of the explanation of human actions. In his view the problem is as follows: given a certain intention and knowledge associated with it, how does the corresponding action follow? *Vice versa*, the problem of humanistic interpretation was: given a certain action — already performed — how can we explain it? This different approach leads von Wright to pose a whole series of problems which are absent in humanistic interpretation. One wonders, in fact, if from the fact that X intends to achieve S and considers doing c to be sufficient for the purpose, it follows that X sets out to do c (*ibid.*, pp. 123-5). Again, in the condition in which X considers it necessary to do c in order to achieve S and knows that he cannot do c , does it follow that X will set out anyway to do C ? (*ibid.*, pp. 125-8). Von Wright also takes the temporal dimension of action into consideration (*ibid.*, pp. 128-9) or the fact that the agent may be prevented from achieving his action (he could break a leg, for instance!) (*ibid.*, pp. 130-1). Again, he examines cases in which a given agent X is induced by means of a compulsion of some kind, to perform a certain action (*ibid.*, pp. 169-74) or, lastly, the case of so-called intentional actions derived from "completely gratuitous choices" (*ibid.*, pp. 188-90). This different approach made by von Wright is explicitly, although indirectly, admitted when he affirms that the premises of a practical inference do not imply the behaviour as a logical necessity and the "existence" of a conclusion complying with them. If it leads to an action, the syllogism is "practical" and does not represent a fragment of a logical demonstration. We only have a logically conclusive argument, on the other hand, when the action is already present and a practical argument is constructed to explain or justify it. It could therefore be said that the need for the scheme of practical inference is conceived *ex post facto* (*ibid.*, p. 141).

In this case, then, the difference between von Wright's scheme, [10], and that of Kmita would seem to lie in the fact that in the latter explicit reference is made to the assumption of rationality which is never explicitly mentioned in the former, even though it seems at times to come out from between the lines (as when, for instance, it is stated that the first premise of the practical inference "implicitly contains the assumption that the agent thinks he knows how to achieve the object of his intention". Shortly afterward, however, von Wright admits the

possibility that the subject may have an "incorrect idea" of what the situation requires of him (*ibid.*, pp. 127-8). But it would be sufficient to add the assumption of rationality to [10] as a further premise, and the *explanandum* could be logically derived from the premises. Practical inferences would be nothing more than a subset of nomological-deductive explanations (cf. Giedymin 1975, pp. 291-2).

In addition, as Topolski was to make clear later (1973, pp. 227-9), in relation to the conception of von Mises, one should not confuse rational and intentional or teleological actions (*działania celowe*) and think that any action of the latter kind is a rational action *per se*. Rational activity, in fact, is a concretized correspondent of a rational action and is not a subjectively premeditated action undertaken by an idealized subject, but rather an action really undertaken:

In other words, a teleological action is an action determined not only (as in the case of rational action) by the knowledge and the ordering of values he possesses (which are the fundamental factors), but also by other additional factors above all by uncontrolled emotions, unconscious impulses or pathological deviations. It can therefore be said that every rational action is an idealized teleological action while — with reference to these factors of "disturbance" — not every teleological action is a (full) rational action. (Topolski 1973, p. 227)

So, whereas teleological actions, as concretized rational actions, concern real, concrete men, rational actions regard ideal men. This explains why von Wright is interested in describing not only the logical model of the explanation of an action which has already been performed (in which case the model of rational explanation can be applied), but the components of intentional or teleological behaviour in general, and so he takes into account all the circumstances which can affect the performance of this action (compulsion, accidents, unconscious motivations, etc.). Whereas rational action as described by Kmita is expressed by the functional relation $C_r = f(W, N)$ defined above, the teleological action von Wright speaks of could be expressed by the functional relation $C_{r,i} = f(W_i, N_i, E_k)$, where $C_{r,i}$ indicates the teleological action undertaken by a particular individual i and E_k is the set of additional factors which affect the performance of the action undertaken by the single individual on the basis of his knowledge W_i and his normative system N_i .

In short, von Wright's conception, as a general theory of human behaviour comprises a broader spectrum of actions but it is less accurate as far as a certain subclass of actions is concerned — those actions which have already been undertaken and only need an explanation. The analogies Świderski found between the conceptions of von Wright and those of Kmita concern the general characteristics of their respective programmes rather than the actual models of explanation they proposed (practical inference and humanistic interpretation); that is, a shared

anti-positivism (although differently motivated), the desire to give new dignity to the human sciences by demonstrating that they can contain genuine explanations by means of coherent logical schemes, and the attempt to reconcile explanation and understanding (cf. Świdorski 1985b, pp. 1-6). But this programme was developed differently, and Kmita's model certainly remained more faithful to the spirit of the Popper-Hempel conception of scientific explanation than that of von Wright.

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