

## RESCHER'S LOGIC OF PREFERENCE AND LINGUISTIC ANALYSIS

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Professor Rescher ranks along with Henrick von Wright and S. Hallden as one of the pioneers in the attempt to evolve a logicized semantics of preference. Though influenced by von Wright's ideas concerning states of affairs and how these are useful in explaining certain formal implications between preferences, it is Rescher who introduces the method of attaching numerical units of merit to possible world state descriptions reflecting preferences. His aim in doing this is to arrive at purely formal distinctions between various expressions of preferring. Thus preference-principles are found by Rescher to have the same rigor as that of arithmetical truths, since they are considered apart from any *aspectival* and *synoptic* contexts.

Rescher's overall purpose in proceeding as he does is to bridge the gap between the «logico-philosophical» tradition for a logic of preference, which was manifested in Europe from the early 1900's, and the predictive «mathematico-economic» tradition which underlies recent decision and game theories. His analysis leads him to an early rejection of a purely intuitive and axiomatic method for devising such a logic, as is found in the works of von Wright, Chisholm, Sosa, and R.M. Martin. Alternatively, Rescher pursues a strictly semantic approach, with a view towards illustrating the mathematical necessity which he believes the intension of preferential discourse translates into, once a context of possible preferential state descriptions is posited, as is done in economics.

The aim of this paper is to investigate the soundness of Rescher's approach, insofar as it employs a mathematical model to elucidate a linguistic phenomenon. First, certain incongruities are noted between Rescher's purely linguistic conceptualization of preference expressions and Alan R. White's revealing remarks concerning the grammar of discourse involving the modality of needs, which seems to underly preferences. Secondly, Rescher's method of attaching numerical merit to states of affairs is not found to reflect the kind of «mathematical rigour» among expressions of preference, which he believes he has

demonstrated. These observations lead to a third and broader discussion concerning the usefulness of formalization, and whether talk about preference defies quantitative analysis, at least in the way suggested by Rescher.

Though problems can be recognized in Rescher's presentation, it must be said that the value of his work as an exploratory effort is without question considerable.

# I.

«... The study of preference-principles acceptable upon abstract, formal, systematic grounds rather than upon any particular substantive theory of preferability-determinations is the task which the philosophically orientated «logic of preference,» as we envisage it, is to set for itself.»<sup>(1)</sup>

In the above quote Rescher tries to emphasize his interest in the formal characteristics which expressions of preference exhibit. To capture the purely formal character of preference, he predicates his remarks on determining in some suitable way «a numerical measure of merit:  $\mu(a)$ », so that the evaluations of preference, expressed propositionally as: (a), would be identified and ordered according to their priority. Rescher observes that his particular approach of using numerical merit can be substituted by another modality, such as that of the desirable, undesirable, etc. and the results would be the same.<sup>(2)</sup>

His remarks concerning how modalities such as the desirable, etc. can be substituted univocally in place of the method of attaching numerical merits reveal a basic assumption relative to his interpretation of preferences. Namely, he sees preferences as an economist would, i.e., as having value, or of being valued, because of some intrinsic quality they presumably possess. For this reason he finds no difficulty in introducing the modality of desirability as an alternative means of expressing the evaluative aspect of preference. The desirous is considered by him as intrinsically desirous, much in the way Moore speaks of the intrinsic goodness of things. Hence, he sees the attaching of numerical merit to a preference, or the determination of

whether it is desirous or not, as alternative ways of expressing the value of the preference which somehow inheres as given within the preference itself.

The assumption of taking preference as having some inherently intrinsic value permeates Rescher's important distinction between *first order* preference and *differential* preference. In the former case, preference is considered simply in terms of the *immediate* effect upon someone when a particular state of affairs comes about. For example, where the preference is the gaining of \$1, then one is better off, should this event occur, because the effect of the event is something the individual would want or should seek out. In Rescher's view there is no question as to the intrinsic goodness of gaining \$1. Similarly, the notion of intrinsic value plays a role where Rescher speaks of differential preference. In the case of the latter, the preference for the lesser of two evils, say, losing one dollar to losing one hundred dollars, is still a preference for something which «under the circumstances, the occurrence of losing of one dollar is *itself* (my italics) a very good thing...»<sup>(3)</sup>

Rescher is aware of the traditional problems which the notion of «intrinsic» goodness or value entails. Yet he feels constrained to use it as a means of pursuing his «semantic» analysis. Significantly, his use of the term «intrinsic» is consistent with his adaptation of the methodology of economists, who employ it so as to arrive at an ordinal indexing of preferences conceived as expressions of an individual's desire for or his wanting of some commodity. Indeed, it is their use of numerical ordering which inspires his own attempt to introduce numerical units of merit as a means of differentiating between various expressions of preference. However, it is his adaptation of this idea which will be at issue here, as well as the allied presupposition that preference is somehow related to the wanting or desiring of an object.

A preference is not generally conceived of as an object in the physical sense, but as a *relation* between an individual and some particular state of affairs. One sees, however, that Rescher employs a methodology found in economics to develop his version of the logic of preference which emphasizes *only* the objects which preferences involve. Economists attach values (i.e. prices) to objects in the context of supply and demand as determined within a market place

exchange. However, where one is concerned with the analysis of preference as a linguistic phenomenon, the issue of whether one is dealing *simply* with physical objects is highly debatable. For it can be seen that, though desires and wants are said to play a role in the determination of pricing, economists merely mention them without going on to explain how they play a role in determining preferences. Hence, to what is Rescher attaching the units of merit: to the objects *of* desire or want, or to the wants and desires themselves *in relation* to these objects? The former alternative would lead him towards adopting a strictly extensional sense of preference, which is something he explicitly avoids in the body of his presentation. The latter alternative, involving attaching numerical units of merit to subjective states in relation to objects, raises the foreboding issues of establishing criteria for a private language, spoken of by Wittgenstein in the *Philosophical Investigations*. Consequently, these immediate difficulties beset Rescher's fundamental procedural assumptions regarding whether one can attach numerical designations to objects of desire and want in the manner analogous to that found in economics, while also alluding to the intrinsic desirability of the values of that which is preferred.

Interestingly, Rescher often relates the idea of preferring to desiring or wanting, much in the way of suggesting that the logic common to the latter can be used to elucidate the formal relations of preferences. In light of Alan R. White's insightful remarks in *Modal Thinking*, however, it is important to see that one does not speak of wanting or desiring to prefer. In an important passage White says it makes no sense to want: «... to expect, *prefer* (my italics), fancy, imagine, regret, envy, dread or mind anything, but it makes sense to say that one *needs* (my italics) or does not *need* (my italics) to do any of these...»<sup>(4)</sup>

To understand the direction of White's thinking and how it pertains to Rescher's position, one must first introduce the basis of White's view as it relates to the distinction between 'lack' and 'want'. White sees a confusion in supposing that one *always* wants that which he does not have. This confusion is based upon believing that 'wanting' is the same as 'lacking', which is thinking that «to want is to want to get». He points out that one can want that which he has, as for example, one can want his car so that he will not have to lend it to

someone else.<sup>(5)</sup> Hence his wanting that which he has does not introduce the idea of 'lacking' into the picture.

Rescher is unconcerned with the difference between 'lacking' and 'wanting', at least with respect to the development of a logic preference. For he sees his approach to the formalization of preference as «... an *evaluative* one, in which preference relations are based derivatively upon an essentially *quantitative* approach, the assessment (measure) of the intrinsic merit (goodness) of the objects involved».<sup>(6)</sup> In this passage the underlying assumption is clear, namely, valuation necessary for determining the formal relations of preference is derived from «possible world» situations which are considered to be desired and meritorious according to their «intrinsic» value. His thinking here is apparently similar to G.E. Moore's perception of intrinsic value.<sup>(7)</sup> For the latter, intrinsic value is explained in terms of securing or attaining invaluable pleasure. Specifically, Moore says that any state which contains an *excess* of pleasure over pain is intrinsically valuable.<sup>(8)</sup> Given how most humans seek to avoid pain and attain pleasure, and the attainment of pleasure is usually the result of difficult effort which yields momentary gratification, one finds the whole concept of intrinsic value (and thus that of the evaluation of preference relations for Rescher) entwined within the notions of 'want' and 'lack'.

Significantly, Alan R. White goes on to observe that there is a difference between 'want' and 'need', primarily in the way that 'need' always seems to involve a context of instrumental end. White points out how the grammar common to the word 'want' is radically different from that which is common to 'need'. For example, expressions of 'want' do not necessarily carry along with them a reference to an end-state, whereas talk about needs invariably does involve such a reference. Expressions involving needs come to suggest some sort of constraint standing in the way of an end, whereas this is not the case where one speaks of wants. Again, only animate creatures can be said to want, whereas anything may be said to need; e.g. «morale» may be said to need a boost, as well as some professor's salary. Finally, one can allude to the fact that since all cases of wanting are confined to animate objects, it is involved with one's personal beliefs and perceptions of the world. The same is not the case with respect to needs. The latter requires demonstrable considerations dealing with «real» things

that are «in the way of» something happening.<sup>(9)</sup>

Yet in arguing for the adoption of some of White's insights when trying to clarify the meaning of preference, one must be selective in choosing which aspects of his analysis of need are relevant and which are not. For preference is understood here solely as an expression of human concern towards the manifestation of a particular state of affairs. Thus it would be wrong to argue that inanimate things prefer, for example, just as it would be difficult to justify the view that animals prefer. Hence, where White speaks of sub-human or inanimate things needing, these would be aspects of the meaning of need which does not pertain to the meaning of preference. Still, one would want to preserve those aspects of the meaning of need which seem to be very basic to the understanding of preference, such as where White sees needs in terms of their expressing a constraint standing in the way of a goal or an end-state, or as involving some sort of instrumentality.

It is interesting to observe that Rescher begins his paper by quoting from Aristotle's *Topics*, Book III. According to Rescher, Aristotle was the first to consider the problem of how preferences are to be analyzed. Rescher mentions casually the term αἰρετώτερον, often used by Aristotle to speak of preferences. However, the αἰρετώτερον has a remarkable resemblance to all that Alan White says concerning the notion of 'need'. For Aristotle speaks of preference in terms of securing or seizing that which stands in one's way to an object. For example, Aristotle considers rational thought to be a state more preferable than that of pleasure or wealth, because of the greater permanence of the reflective faculty as opposed to the latter two states of being. Aristotle justifies the rationale of his observation on account that a disciplined mind will be instrumental to securing both wealth and pleasure, whereas the reverse is not a surety for the development of the intellect. One can observe this same reference to the instrumentality of preference αἰρετώτερον in Plato's *Philebus* where Socrates says that it is «better» (more preferable) to have understanding of the values of various tones and how they can be put together *in order to* create music. Thus it is observed also in Plato how the preferable case is the one where something has been secured or grasped so as to be of *use* in attaining some higher end.<sup>(10)</sup>

The role of one's *needing* to prefer is quite strong in both excerpts,

and it reflects White's idea that preference must have some connection with objective conditions and determinable states of affairs which must be mastered or altered in some way. The idea of instrumentality is thus basic to that which is preferred for these classical writers, and inner states of desire really have little to do with the notion of preference as expressed in their works. Rather, they are suggesting that somehow the preferable must be connected with the rational, wherein the latter involves an analysis of conditions and obstacles in securing a goal.

Evidently, the modalities of 'want' and 'lack' do not take into account a broad spectrum of consequences for states of affairs, whereas expressions of 'need' do. Furthermore, if 'need' is the modality which creates the context for expressions of preference, the latter should be looked at cumulatively, i.e. in terms of the actions which some particular agent must perform relative to a given state of affairs. Instrumentality thus seems to be basic to understanding preferences and their logic. To see discourse involving preferences in terms of wanting and desiring is to miss the actual complexity of what is being investigated.

Whether he is considering first-order preferences or differential preferences, Rescher does not allude to the role of 'needs'. He considers preferences solely in terms of how one is effected by certain states of affairs. This tends to make preferences into occurrences which *happen* to people, rather than situations which reflect an individual's active part in an environment, irrespective of the role of desires and wants.

The implication of White's position on Rescher's view is quite significant, since it raises the question of whether the logic of discourse which deals with pursuing the intrinsically good can ever serve legitimately as a model for a logic of preference. Robert Ackermann roughly perceives the problem with Rescher's position in that he sees how Rescher does not consider the role of *purpose* in preference. For example, one can prefer a Cadillac to a Volkswagen on account of the comfort which the former offers, or the reverse may be the case if one seeks economy of operation. Hence the asymmetry and intransitivities which Rescher accepts as implicit in his notion of first-order and differential-difference do not seem to reflect sufficient flexibility to capture the complexity of the notion of preference.<sup>(11)</sup>



Ackermann's criticism does not touch the precise problem which limits Rescher's thesis, in that he does not see that it is the individual's needs which create the context for understanding preferences. For Ackermann the idea of purpose is taken in a very broad sense, and he goes on to despair at the eventual evolution of a logic of preference because of the as yet unsatisfactory analysis of the idea of human purpose.<sup>(12)</sup> Surely White's insights contribute towards appreciating the depth which the notion of preference presupposes.

Furthermore, the concept which seems crucial to the development of the logicized semantics of preference, namely 'need', complicates the issue of how one is to attach numerical value to state descriptions. Surely if 'need' is the basis of preference, then one must consider whether 'need' can be measured at all. At least, this question is to be answered first, if one is to proceed according to Rescher's method of determining the numerical value which underlies preference relationships.

The problems which the above question involves turn out to be formidable. For one can feel a *pressing* need to eat rather than to listen to Chopin. Does one determine the *importance* of the need in terms of *what* is needed, or is one to count the *intensity* of the need as a purely psychological occurrence? The latter alternative raises serious difficulties regarding the establishment of criteria for a private language. The former raises equally difficult issues. For example, which aspect of the need, if any, will be selected and assessed as possessing the merit? Moreover, it can be argued along with White that a need *by itself* is a state of affairs which does not allow for degrees, meaning that once something is recognized as a need, then regardless of what it may involve, that need is of the same importance as any other need involving some other state. Though it may be granted that one may have a hierarchic ordering of needs, so that from a larger perspective one need may be said to precede another, this temporal differentiation does not determine a higher value for the need itself. In this respect one might argue that the concept of need resembles the concept of possibility, in that the latter (unlike the concept of probability) also does not allow for degrees.

Thus, one can reason that if 'need' is the modality, which, like possibility, does not allow for degrees, then one cannot employ the methodology of economics to analyze preference within a philosophi-



cal context. For the latter deals with evaluating degrees of wants and desires in order to determine market demand, whereas needs cannot be analyzed in this manner. Yet, Rescher refers to Alfred Marshall's classic work, *Principles of Economics*, so as to justify the general thesis that one can proceed by assigning numerical units of merit to various states of possible satisfaction. In fact, a number of instances can be noted where Marshall is arguing for the attaching of a unit measure to desires and wants. An excellent example of this is the following quote: «... Utility is taken as the correlative of Desire or Want... desire cannot be measured directly, but indirectly by the outward phenomenon to which it gives rise: ... the price the person is willing to pay for the satisfaction of his desire...»<sup>(13)</sup>

The question of whether economics does in fact deal with preferences or with desires and wants may be important for further investigation. The resolution of the issue seems to lie in saying that there does not seem to be any serious attempt to distinguish preference from desire in economics, which may be what leads Rescher into thinking that one can apply economic modes of analysis to philosophical investigations of preferences. Without entering beyond the immediate area of discussion, White's observations on the grammar of expressions of need call for a serious re-examination of how desire relates to preference – if at all. Thus, from the level of linguistic analysis, there seems to be genuine doubt whether economists and philosophers talk about the same thing when they speak about preferences.

## II.

Rescher believes that the «formal characteristics» manifested in investigating discourse involving preferences are independent of the specific context one uses to illustrate merit assessments. Since his semantic approach is prefaced on the notion of «possible» world states, Rescher claims that certain formal relationships of preference can be generated without necessarily mentioning any specific instantiation. It is this claim which will be scrutinized next, especially since it utilizes the idea of the applicability of the mathematical model to the formalization of relationships of preference.

Looked at carefully, what is being done when numerical value is

attached to a state description is the attempt to represent within a mathematical context some value judgments one is likely to make in ordinary discourse. However, the numerical units of merit one attaches to a state of affairs do not become criteria for individuation of these states of affairs, since the individuation has already occurred through the implicit evaluation performed by the person setting up the merit assessment of the states of affairs and their possible world distribution. Consequently, the issue emerges: whether the mathematical relationships Rescher sees as independent criteria for a logic of preference are really explicative of anything in such a logic, or whether these mathematical relations are actually inseparable from the calculus of preference itself.

By way of illustration, Rescher's «semantic» approach involves the setting forth of possible world situations, where the state of affairs of these worlds is taken to be intrinsically valuable and therefore meritorious. For example, one may have the following distribution:<sup>(14)</sup>

<i>Possible Worlds</i>	<i># (First-Order Preference) Value</i>
$w_1: p \& q$	a
$w_2: p \& \neg q$	b
$w_3: \neg p \& q$	c
$w_4: \neg p \& \neg q$	d

The above shows that four world states can be specified, *given* the conjunction of two states of affairs expressed by 'p' and 'q'. Furthermore, it is *also* given that the «most» preferable world state is that where p and q obtain as a conjunction, and in the order where p is prior to q. Hence, the value expressed by 'a' is the highest value, and all the other possible world states receive values of proportionately lesser merit, e.g. b, c, and d.

Within the indicated distributions Rescher claims that one can observe «preference-tautologies», such as  $pP^\# q \rightarrow \neg qP^\# \neg p$ . Here ' $P^\#$ ' is to be taken to express an extensional and ordering relation of first-order preference, and the entire expression can be read as: where p is preferred to q, then  $\neg q$  is preferred to  $\neg p$ . This is an «acceptable» preference-tautology *since* it «... goes over into an arithmetical truth.»<sup>(15)</sup> Rescher illustrates this by showing how the above

principle actually means:  $\frac{a+b}{2} > \frac{a+c}{2} \rightarrow \frac{b+d}{2} > \frac{c+d}{2}$ , which reduces to the following arithmetical truth:  $b > c \rightarrow b > c$ . The quantitative «greater than» ' $>$ ' is taken to replace ' $P^\#$ ' of the natural language.<sup>(16)</sup>

It is important to observe that the preference-tautology is recognized as such only because it is seen to «yield» an arithmetical truth when it is considered in terms of its numerical value. The suggestion is that its real tautological nature is not evident without the introduction of the mathematical model. Rescher puts the matter more strongly by saying that in order for a proposition to be «accepted» as a preference-tautology, it «must» translate over to an arithmetical truth. The mathematical equivalence becomes the «criterion» for determining whether some proposition expresses a preference-tautology.

The immediate question seems to be: in what way is the mathematical element determining the tautological character of the proposition which expresses the preference-tautology. Rescher's so-called «criterion» for a preference principle is that it must express an arithmetical truth. How is this arithmetical truth somehow «reflected by» the preference principle?

In an ordinary language context one does not presuppose an arithmetical criterion when expressing a preference. Yet Rescher's approach requires that one interpret the relation of direct preference (expressed by ' $P^\#$ ') in terms of greater numerical merit (expressed by ' $>$ '), and that this reveals the tautological character of the preference principle. However, the mathematical model should be conceptually independent of the discovery of the preference-tautologies. For one must have the possible world permutations separate so as to determine the character of the preference principle. Is it justified to say from Rescher's viewpoint that the preference principles in some way reflect independent mathematical truths which emerge from the possible world distributions and their relative value assignment?

This question revolves around saying whether the entire set-up (the possible world states with their values) could be had at all without the evaluation process which sets down the values (a through d), superseding and determining the numerical context. Irrespective of the fact that possible world states do not refer to any actual states of affairs, the evaluational activity is distinctively an irreducible structural

component which has direct bearing on the mathematical significance of the so-called preference-tautologies. Consequently, what kind of «criterion of acceptability» can these mathematical truths be, if *what* they are designed to examine is directly influencing their structuring?

The values expressed by 'a' through 'd' do not represent simply numerical quantities. Rather they represent an ordering of presumed value relative to some possible state of affairs. Hence, these numerical assignments are set within a context of value, receiving their rationale within that context. This is an important point in that for Rescher, preference is conceived in terms of what is intrinsically valuable. Yet one sees here how the very presupposition of intrinsic value is operating in the structuring of the mathematical model. For this reason it is difficult to see what the «criterion of acceptability» is designed to exemplify.

One has here again a Wittgensteinian point, namely, if something is going to count as a criterion, then there must be some way of «independently justifying» the *correct* application of the criterion to the thing studied.<sup>(17)</sup> However, if the criterion itself is influenced by what is being studied, then no justification can be brought to bear showing that what is being analyzed is comparable to the independent standard, the mathematical units of merit in this case. Hence, it can be argued that the very operation of assigning numerical values to possible states of the world makes problematic the process of determining preference-tautologies.

The matter is different from, say, the case of the Pythagorean discovery that mathematical proportion governs musical harmony. The mathematical ratios of music are derived from *within* the musical composition itself. This is to say that the mathematical dimension of music is discovered within the compositional score as a natural characteristic of the music. There is no mathematical model which is independent of the music and *to which* the score is compared and contrasted. In the case of Rescher's semantic analysis of preference, there is the suggestion that the mathematical dimension of the preference-tautologies is somehow the standard which the latter must translate into. Thus the preference principle must *reflect* the supposedly independent mathematical criterion.

Conversely, one also finds that Rescher's explanation of the relationship of preferring is presented within a highly mathematical

setting. Considering again the preference-principle:  $p \text{ P\# } q \rightarrow \neg q \text{ P\# } \neg p$ , it is interesting to note that Rescher finds no difficulty in equating the meaning of the implicational symbol ' $\rightarrow$ ' from a semantic context of preference to the meaning of ' $\rightarrow$ ', of the supposedly independent context of mathematics. The intra-contextual use of this symbol underscores from another direction the point already made regarding the non-independence of the mathematical context from the evaluative one of preference. Moreover, the symbol ' $\text{P\#}$ ' was seen to be expressive of an extensional and ordering relation. By an «ordering» relation, Rescher means a relationship that is transitive, asymmetric, and irreflexive. On the other hand, he interprets an «extensional relation» as one which admits «the substituting of provable equivalents.»<sup>(18)</sup> One notices how already the meaning of ' $\text{P\#}$ ' is actually being defined in terms of the idea of greater numerical sum. This is what his sense of «ordering» must come down to. (For one would not know how to handle the alternative that «ordering» relates to the idea of greater «intrinsic goodness».) Furthermore, what he means by «substitution of provable equivalents» is also not clear, unless he means substitution of mathematical equivalents. Hence his conception of the preference relation as ' $\text{P\#}$ ' is already couched in mathematical terms. Thus the so-called independence of the linguistic context of preference from that of mathematics cannot be supported by Rescher's use of his own symbol ' $\text{P\#}$ '. It is misleading to claim that the above preference principle, as well as the others he alludes to, are tautologies *because they translate over* to arithmetical truths. The idea of translation presupposes *two separate* systems which, following Quine, are linked by some common index which enables the translator to convert expressions from one system into the other.<sup>(19)</sup> Here, however, both contexts of discourse (i.e. the one of preferences and that of mathematics) have been intermixed, and there is no index of translatability.

One can also realize the above inter-crossing of contexts in the incisive analysis of Rescher's work by Anthony Willing.<sup>(20)</sup> The latter's discussion deals with the way in which a counter example suggested by Chisholm and Sosa to Rescher's preference principle  $p \text{ P } q \rightarrow \neg q \text{ P } p$  is actually found to be consistent within Rescher's semantics. Briefly, Willing attempts to show that, by way of *reductio ad absurdum*, one can arrive at an explicit contradiction within a

context of possible world distributions as set forth by Rescher, given the negation of the consequent of the Chisholm/Sosa counter example:  $pP\#q \rightarrow ((p\&r)P\#(q\&r)\&(p\&-r)P\#(q\&-r))$ .

Willing prefaces the ensuing proof with important observations. First, he points out that there are two fundamental assumptions Rescher makes where he speaks of the derivation of valuations of possible worlds from 'raw' valuations of states of affairs. This is to say that Rescher's determination of the following possible world valuations:

<i>Possible World</i>	<i># Valuation</i>
$w_1: p\&q$	+4.5 units
$w_2: p\&-q$	+3.0 units
$w_3: -p\&q$	+0.5 units
$w_4: -p\&-q$	-1.0 units

are *from* the intrinsic state of affairs valuations.

If it is the case that , then the resultant utility-value is

$p$	+4.0 units
$-p$	0.0 units
$q$	+0.5 units
$-q$	+1.0 units

Thus possible world valuations are derived from the assigned ('raw') values of particular states of affairs. Moreover, one can determine the propositional valuations from the possible world valuations so that the former exhibit the following structure:

<i>Proposition</i>	<i># Value</i>
$p$	+3.75 units
$-p$	-0.25 units
$q$	+2.50 units
$-q$	+1.00 units

One notices that in the above table, the propositional value of  $p(+3.75)$  is the value of  $w_1$  plus the value of  $w_2$ , divided by 2, etc.<sup>(21)</sup>

The assumptions that Rescher makes in setting up these distributions are: <sup>(22)</sup> (1) the values of the possible worlds are a *function* of the sum of the raw values of the states of affairs which pertain to them; this, Willing calls the «Additive Assumption.» In other terms,  $\#(w_1) = V^r(p_1) + \dots + V^r(p_n)$ , etc. (2) the raw value of each proposition about a state of affairs retains this same truth value for every possible world within which it is true; this, Willing calls the «Retentive Assumption».

It is doubtful whether one need go fully into Willing's proof of his *reductio* argument, since its author concentrates on the purely formal deficiencies of Rescher's method. It is important, however, to discuss the two assumptions mentioned above and how they reflect the inter-crossing of the mathematical context with the context of preferences.

Willing's point concerning the two assumptions mentioned above indicates the manifestation of two contexts, the mathematical and the linguistic (preferential) and how they actually seem never to be reconciled in Rescher's semantics of preference. A brief look at Willing's proof will serve to illustrate this point.

The counter-example given by Chisholm and Sosa, and said by Rescher to be unacceptable' as a preference-tautology, states the following:

$$pP\#q \rightarrow ((p\&r)P\#(q\&r) \& (p\&\neg r)P\#(q\&\neg r))$$

Willing offers the following possible world distribution, together with suggested value assignments:

Possible Worlds	#-Values
$W_1: p \quad q \quad r$	2
$W_2: p \quad q \quad \neg r$	2
$W_3: p \quad \neg q \quad r$	4
$W_4: p \quad \neg q \quad \neg r$	4
$W_5: \neg p \quad q \quad r$	4
$W_6: \neg p \quad q \quad \neg r$	2
$W_7: \neg p \quad \neg q \quad r$	4
$W_8: \neg p \quad \neg q \quad \neg r$	4

Given the above table, one can show that the counter example is



false. For the value of  $\#(p) = \frac{(2+2+4+4)}{4} = 3$ , and the value of  $\#(q) = \frac{(2+2+4+2)}{4} = 2.5$ . Hence it follows that  $\#(p)$  is of greater value than  $\#(q)$ , which means for Rescher that  $pP\#q$ . On the other hand, it is seen that  $\#(p\&r) = \frac{(2+4)}{2} = 3$  and  $\#(q\&r) = \frac{(2+4)}{2} = 3$ . Thus it is false that  $(p\&r)P\#(q\&r)$  is true, since  $(p\&r)$  is not greater than  $(q\&r)$ . Thus if  $(p\&r)P\#(q\&r)$  is false, then the *entire* consequent is false, being that it is a conjunction. This makes the whole counter example false, given that its antecedent,  $pP\#q$ , is true and its consequent is false.

However, Rescher cannot claim victory for his refusal to accept the counter-example because of the above argumentation. For Willing proceeds to show that from another approach, the example is consistent within Rescher's semantics.

Given the antecedent as a premise in his reductio proof, Willing proceeds to argue as follows:

- (1)  $pP\#q$
- (2)  $\neg((p\&r)P\#(q\&r)\&(p\&-r)P\#(q\&-r))$ , the negation of the consequent of the counter-example.
- (3)  $\#(p) > \#(q)$ , definitional transformation of (1).
- (4)  $\neg(\#(p\&r) > \#(q\&r)\&\#(p\&-r) > \#(q\&-r))$ , definitional transformation of (2).
- (5)  $(\#(q\&r) \geq \#(p\&r)) \vee (\#(q\&-r) \geq \#(p\&-r))$ , definitional transformation of (4).

Willing proceeds to observe that if one can arrive at a contradiction between (3) and the first disjunct of (5), as well as a contradiction between (3) and the second disjunct of (5), then he would have proved the consistency of the counter-example in Rescher's semantics. For this paper, however, it will suffice to show how he proves the first contradiction.

- (5a)  $\#(q\&r) \geq \#(p\&r)$
- (6) 
$$\frac{\#(W_1) + \#(W_2) + \#(W_3) + \#(W_4)}{4} > \frac{\#(W_1) + \#(W_2) + \#(W_5) + \#(W_6)}{4},$$

the interpretation of the first disjunct of (5) according to the last table.

- (7)  $\frac{\#(W_1) + \#(W_5)}{2} \geq \frac{\#(W_1) + \#(W_3)}{2}$ , the interpretation of (5a) according to the last table.
- (8)  $\#(W_5) \geq \#(W_3)$ , from (7) by implication.
- (9)  $\#(W_4) > \#(W_6)$ , by implication of (6) together with (8).

Therefore,

- (10)  $(V^r(p) + V^r(-q) + V^r(-r)) > (V^r(-p) + V^r(q) + V^r(-r))$ , applying the Additive Assumption on (9). This is to say that the value of the former part of the expression is *collectively* of greater value than the collective value of the latter part of the expression.
- (11)  $(V^r(p) + V^r(-q)) > (V^r(-p) + V^r(q))$ , assuming the Retentive Assumption on (9). This means that the individual value of  $p$ ,  $q$ ,  $-p$ , and  $-q$  are such that  $p$  and  $q$  must be greater than  $-p$  and  $-q$ , and  $-r$  *simply cancels out on both sides of the expression*.
- (12)  $(V^r(p) + V^r(-q) + V^r(r)) > (V^r(-p) + V^r(q) + V^r(r))$ , applying the Retentive Assumption on line (11). This is the brilliant move in Willing's proof. It shows that the value of line (11) is unaffected by the introduction of  $V^r(r)$  on both sides of the expression. Yet by doing this, one is saying in effect that:
- (13)  $\#(W_3) > \#(W_5)$ , the interpretation of (12) according to the last table above. By line (13), however, one has a contradiction with line (8). Hence, Willing has proven his *reductio ad absurdum*.<sup>(23)</sup>

Willing's proof reflects a tension between expressing value numerically, and expressing the explicit designation of a world state having value, such as  $\#(W_3)$  and  $\#(W_5)$ . In this way, his proof focuses upon the weakness in Rescher's conception of the role of mathematics, functioning as a means of illustrating the rigor contained within a linguistic expression. For it can be seen in the proof Willing offers that the mathematical factor is not sensitive to the «meaning» of a possible world state, as composed of a number of states of affairs, in a

particular sequence, and thus having a special identity. In this formal analysis one sees that there is a gap between the mathematical context and the context of language, so that it really cannot be maintained that the former «elucidates» the latter.

The strength of this proof results from Willing's careful examination of the assumptions which are implicit in Rescher's semantics of preference. These assumptions are actually the bi-polar and antithetic aspects of Rescher's entire thesis. The former, the Additive Assumption, makes possible the mathematical component of his analysis, which is the standard by which one is to determine preference-tautologies. This is to say that the general value of possible world expressions which compose the content of preferences must reflect a summational character, since the values of their constituent states of affairs go into making their general intrinsic value. In short, the values of the individual possible worlds are formed as the aggregate value which results from adding the values of the particular states of affairs. Without the Additive Assumption, one would be unable to claim that a particular possible world is preferred over another different possible world. It is seen here that this first assumption actually makes possible the necessary numerical evaluation which forms the basis of preference-tautologies for Rescher. On the other hand, The Retentive Assumption insures the preservation of the individual identity or «uniqueness» of each possible world. For if the constitutive states of affairs expressed by 'p', 'q', 'r', etc are not held as being always distinct, while constituting the molecular possible world state, i.e. they are not allowed to retain their particular identity, then there is no way of differentiating one possible world from any other. Hence, the Retentive Assumption is vital for preserving the separate character of the preference it addresses itself towards. This second assumption is useful in securing and clarifying the extremely important individuating aspects of expressions of preference, which is a way of accounting for the semantic component of the analysis. This is to say that the second assumption tries to accommodate the uniqueness of a possible world state, and in doing so reflects the special meaning of that particular state.

Basically, the difficulty with Rescher's entire thesis is that it is not clear how values are to be added, in a mathematical sense. The assumption is that numbers are going to stand for the values of

possible world states. In saying so, however, one is contradicting the Retentive Assumption. For when numbers are added together, no restriction holds as to which numbers can or cannot be added together. Nor does it make any sense to say that a given aggregate sum will be distinct from an equal aggregate sum because it contains within it the addition of some particular number. Numbers have a sense which is determined by the system of mathematics itself, and if they are used to represent evaluative determinations, then they can only have a simple ordering capacity. Yet Rescher claims that his logic of preference is not merely ordinal but evaluative as well. He begins by having the units of merit operate as numbers ordinarily do, and proceeds to generate the tautological character of preference principles by way of allowing for the addition, subtraction, and division of numerical units of merit. In all of this there is no discussion as to how these units of merit can function both as numbers and as indices of evaluative distinctions. What sense does it make to say that «units of merit» can be added, etc. while at the same time trying to claim that each value is distinct, unique, and «intrinsic», as the Retentive Assumption insures?

One may also argue that Rescher's Additive Assumption appears to incur the fallacy of composition in the attributive sense. For Rescher is seen as saying that, because certain states of affairs are found to be desirable and are thus given  $x$ -number units of merit, therefore the value of the whole possible world which is composed of these states of affairs is the aggregate value of all these units of merit, and thus this aggregate value is greater (preferred) than any other value of a possible world whose constitutive states of affairs have less numerical value. Of course, it does not follow that, because an individual finds desirable certain states of affairs which go into making a whole possible world, he will find that whole possible world desirable as well. Yet the numerical method which Rescher uses reduces all values to the common denominator of number, and this leads one to reason that the more desirable state is the one whose aggregate reflects the highest units of merit.

Willing does not consider the full ramifications of his discovery beyond that of showing the «formal acceptability» of the Chisholm/Sosa counter-example. His work, when set in a broader perspective, touches the very heart of the difficulty with Rescher's

analysis of preference. Willing's concentration on the two seemingly irreducible assumptions in Rescher's semantic analysis illustrates graphically that the mathematical and the linguistic contexts are not reconciled. This comes out exactly at the point where one must decide: when to attach either a numerical value to an entire molecular possible world state or to endeavor to provide an effective means of differentiating one possible world from another. The logical incongruity Willing has brought out is in essence a reflection of Rescher's apparently unconscious blending of these two indissolubly distinct realms of discourse.

### III.

Rescher sees his semantic approach as a «superior» means of analyzing preferential discourse, in contrast to axiomatization, with its reliance on «faulty intuition».<sup>(24)</sup> He grounds his claim on the belief that he has arrived at a means by which preference-principles can be determined according to precise mathematical criteria. In fact he lists the different philosophers who have tried to axiomatize preference, and proceeds to show their confusion in how they disagree on which preference-principles are intuitively valid. Though Rescher's research on this point is sound, with a few exceptions, one must inquire whether the alternative he offers is better as far as disambiguating the notion of preference is concerned.<sup>(25)</sup> The preceding section illustrated that Rescher has not succeeded in convincingly securing his objective. The question remains whether the kind of precise criteria Rescher is searching for are *at all* applicable to his conception of the analysis of discourse involving preferences in terms of possible-world states.

It has been seen that Rescher centers his analysis around expressing mathematically the evaluative aspect of preference. Preference is considered by him in an intrinsic sense, whose value is translated into mathematical units. However, at the outset one is faced with the assumption that *the* value of the preference is some sort of object *to which* the merit – as a number – is *attached*. This makes *the* value of the preference manifest itself as an entity, existing *independently* of the expressed preference. Yet, it would seem more correct to say that

the value of an expressed preference emerges from within an interaction of an individual with his environment, and that apart from this interaction, *the* value of a preference as an independent intrinsic entity makes no sense. This would be consistent with the view expressed above. Namely, being that «need» is the modality which underlies the notion of preference, the latter can only be understood in extensional terms, -- i.e. in terms which involve relevant instrumentality.

It was seen in Section II that Rescher speaks of the «propositional valuations» emerging from possible-world valuations. The problem with this way of handling the formalization of preferences seems to be analogous to the difficulties Alan R. White discusses in his perceptive book, *Truth*.<sup>(26)</sup> White points out that it often happens that philosophers speak of words or sentences *bearing* their «meaning» or «proposition». Thus there is a tendency to objectify the sense of the uttered expression, and then to say of this objective meaning or «proposition» that it is true or false, accurate or exaggerated, etc. White continues:<sup>(27)</sup>

«... What is said is embodied in and has no existence separate from the various media in which it is said any more than a shape, which may be common to many objects, exists separately from the objects which have this shape. This is why what is said can occur wherever and whenever the appropriate words occur, e.g. in the Nicene Creed or in the pulpit on Easter Sunday. This is why to read, take down, print, preserve, alter, or destroy what is said is to read, take down, print, preserve, alter, or destroy what is uttered or written. The introduction of a special name for what is said in an utterance, e.g. «proposition», «statement», or «judgment», *leads us to overlook these indissoluble connections between what is said and the medium in which it is said.* (my italics)»

Though White gears his remarks towards the analysis of the notion of truth, much of what he says can be used to scrutinize the notion of preference as Rescher conceives of it. For White is saying that one cannot separate the meaning of what is said from what is said as a verbal utterance. Yet Rescher permits this very same separation

where he talks of the intrinsic value of the preference as *something to which* a unit of merit is to be applied. In divorcing the value of a preference from the expressed preference, one is caught talking about an entity which has no meaning apart from the context of the preference itself. What is *the intrinsic value* of the preference? Apart from the particular preference itself, it has not sense of its own; it is vacuous!

The above point can be brought out quite clearly where one recalls the discussion in Section I, which differentiated expressions of preference from expressions of desire and want. There it was seen that, because need plays an important part in the determination of preferences, one can be preferring things which are not desired, simply because they are needed. Thus the values of preferences are «indissolubly» connected with the world surrounding the person doing the preferring. Apart from this pragmatic relation between language-user and the extension of the utterance he uses to express what he prefers, the idea of intrinsic preferential value existing as somehow separate from the context of the preference itself simply fails to signify anything. Thus the ostensive conditions which constitute or set the stage for the preference must be taken into account, so as to secure a cogent explanation of a preference's value. Where this is not done, however, then an internal inconsistency emerges when trying to define the concept of the value of a preference. For the extension of this concept requires reference to the conditions which constitute the need underlying the preference. Yet it is seen that Rescher employs a view of preferential-value which entitles it into a self-contained and independent thing. Continuing from this, he considers such value as a *type* of entity, whereas evidently it can only be spoken of in terms of it being a *token* of the interaction of a number of conditions. Hence there is an inconsistency between the objectively determinable extension of the concept of a preferential-value, and Rescher's conception of its intension.

It can be argued, however, that Rescher chooses the semantic mode of analysis as a way of more suitably accommodating preferential-value within a possible-world mode of analysis. This is to say that where preferential-value is seen as a context-free individual, then the variability of the value of the preference can be conveniently expressed as represented by a variety of possible-world states. Hence, *the value* of



the preference, as an individual to which a unit of merit is attached, is taken as functioning as a variable within a possible-world mode of analysis.

Thus one is led to the broader question of whether Rescher can credibly formalize the semantics of preference by means of a possible-world mode of analysis, while also conceiving of preferential-value in wholly intrinsic terms. In essence it can be said that Rescher's aim is to elucidate formally the subjunctive *intension* of preference by means of a possible-world analysis. The approach itself is not being questioned. This is to say that throughout Rescher's presentation, no difficulty was raised concerning the ontological status of possible-world states, and why this method of analysis requires that it be entered into only when one bypasses certain critical philosophical problems. Throughout the prior section, possible-world states were allowed to function exactly as they were intended by Rescher, i.e. as individuals in a propositional calculus. This was done for the sake of allowing Rescher's position to unfold.

Nevertheless, when this method of analysis is applied to preferences, serious difficulties are encountered relative to its suitability as an analytical tool. For example, in section II, tension was seen to be manifested between the mathematical formalisms Rescher tries to derive and the linguistic character of preferential-discourse, considered in connection with its distinct evaluative component. Such difficulties may be taken as suggesting that, due to the fact that preferences can be interpreted in terms of subjunctive (future perfect) conditionals, on a deeper level they do not lend themselves to a possible-world type of analysis. No doubt Rescher is aware that such analyses have been employed as a means of getting around some of the problems raised by R. Chisholm and N. Goodman on the analysis of conditionals in the context of law-like explanations in science. However, though Rescher's presentation of both first-order and differential-preference is presented in subjunctive terms, this by itself *may not* justify using the possible-world method of analysis when dealing with preferences. It is important to note that where this method has been used to elucidate the signification of scientific laws, issues of evaluation do not play a direct role.

Hence one arrives at the problem of the suitability of possible-world state analyses for the formalization of expressions of preference. A

related discussion becomes very sharply defined in a recent talk by Professor Stalnaker, entitled «Formal Semantics and Philosophical Problems.»<sup>(28)</sup> In outlining the difficulties which a review of the history of possible-world state analyses reveals, he illustrates with admirable clarity the shortcomings of some of these efforts. Bearing directly on the matter at hand is the thesis he develops concerning the differentiation between the indicative-conditional and the subjunctive-conditional. The first is illustrated by the example: «If Oswald did not shoot Kennedy, then somebody else did.» The second is illustrated by the example: «If Oswald had not shot Kennedy, somebody else would have.» Stalnaker argues that the former, the indicative-conditional, can be given a cogent interpretation in terms of possible-world state descriptions. However, the latter the subjunctive-conditional, as yet defies formalization in terms of possible-world states. The reason for this is that the causal connectedness between the antecedent and the consequent of such conditionals is of a much more illusive nature than one finds in the indicative-conditional.<sup>(29)</sup>

Stalnaker points out that it is difficult to specify what states of affairs will satisfy the conditions expressed by words such as: «had not» and «would have.» This is because such terms refer to no one determinable state, but to an indefinite contingency of possible-world states. Moreover, any causal connectedness between these conditional states within the subjunctive mode virtually defies pinning down.

He goes on to refine this point by noting that, in the case of an indicative-conditional such as: 'If Oswald did not shoot Kennedy, somebody else did.' one has the situation where if the antecedent turns out to be false, then the consequent is still true, since the facts confirm the case that President Kennedy was indeed shot. Hence the context in which the indicative-conditional is uttered functions closely with the sense of the expressed indicative-conditional. This same close relationship between context and expressed conditional is not evident where one deals with subjunctive-conditionals. Again, considering the case he gives: «If Oswald had not shot Kennedy, somebody else would have.», one sees that in the subjunctive mood the expressed conditional introduces a wider variety of possibilities into the meaning. This is to say that the subjunctive-conditional perhaps implies that had Kennedy not been shot, his performance in office would have, could have (?), induced his assassination. This, together

with many other nuances of meaning, appears to be suggested by the subjunctive. Stalnaker observes that from these two examples it becomes clear that the indicative-conditional imposes a greater constraint on its context than the subjunctive-conditional. Consequently, it is more reasonable to advocate the application of a possible-world state analysis to indicative conditionals than to subjunctive-conditionals. The subjunctive-conditional assumes the suspension of the background of presupposition which the indicative-conditional does not. For this reason one would expect the subjunctive-conditional to have a richer variety of connotation, which the indicative-conditional does not possess. On the other hand, the indicative-conditional expresses a clearer causal connectedness between antecedent and consequent than one finds in the subjunctive-conditional. The causal connectedness of the former is again a reflection of the contextual constraint which the indicative-conditional demands, and which the subjunctive suspends.<sup>(30)</sup>

The relation of all this to the interpretation of expressions of preference, considered in terms of possible-world analyses, turns upon the fact that Rescher construes expressions of preference, either first-order preference or differential preference in terms of subjunctive-conditionals. This makes the application of possible-world analyses to expressions of preference difficult to accept in view of Professor Stalnaker's observations. One recalls how Rescher expresses first-order or direct-preference as that desirable state one would prefer *should* some state of affairs come about. Moreover, he considers differential-preference as the one state of affairs between two competing possible-world states which *would* be desirable. Thus in the case of both differential – and direct-preference there is a presupposition of the subjunctive mood, though usually with the disguise of the gerundive, such that one has expressions such as: «p's *being* ... (the case) ...» and the «... *happening of* p ...»<sup>(31)</sup> If one considers the way Rescher explicates his preference-principles, one finds that the gerundive locution hides the implied «... if p *were* preferred to q, then it *would be* the case that such and such *would be* preferred ...» Quite clearly, in light of Stalnaker's insights concerning the contextual suspension which the subjunctive involves, the issue directly ahead is whether a possible-world type of analysis can be used to elucidate the semantics depth of preferential discourse.

Can one apply a possible-world state analysis to explicate the semantics of preference, rendered in the manner of subjunctive-conditionals? This question would not merit a blanket negative from the standpoint of Stalnaker's analysis. Rather, as he points out, there are some serious and unresolved problems which those who have engaged in these types of analyses simply have not come to grips with. Apart from the issue of the suspension of the background of presupposition which the subjunctive-conditional apparently necessitates, there is the question of explaining what sort of relationship, if any holds between that which is preferred, and the consequence it entails. If one looks closely at an expression of preference, especially when taken in the form of a principle, such as:  $p \text{ P } q \rightarrow \neg q \text{ P } \neg p$ , one finds that it expresses a generalization concerning that *where*  $p$  is preferred to  $q$ , then it *would* be the case that one *would* prefer  $\neg q$  to  $\neg p$ . Rescher's position here is that to prefer  $p$  to  $q$  «means» that one *would* prefer  $\neg q$  to  $\neg p$ .<sup>(32)</sup> Yet what is the sense of «means» here?

One possible interpretation would be that if one knows of some agent, say  $X$ , who prefers  $p$  to  $q$ , then on some occasion it would be expected from this that  $X$  would prefer  $\neg q$  to  $\neg p$ . Hence his preference of  $\neg q$  to  $\neg p$  seems to be conditioned by his preferring  $p$  to  $q$ . That this is a logical implication appears dubious. Rather here one is evidently dealing with an empirical relatedness which achieves expression linguistically. Rescher of course argues that such principles express a mathematical truth, which is the result of certain regularities between numerically-indexed possible-world states. Apart from the framework of his analysis, it can be seen that expressions of preference-principles, taken as expressions of need with respect to a possible situation, are somehow tied to a context of action, involving an agent and his immediate or proximate environment. Thus, to prefer  $p$  to  $q$  does entail that the consequences of preferring  $\neg q$  to  $\neg p$  are the same as in the antecedent. In essence, is it not the case that to choose  $p$  to  $q$  is the same thing in terms of effects as that of choosing  $\neg q$  to  $\neg p$ ? For it is the *effect* of preferring which is the same in both cases.

Yet if the above preference-principle expresses in some specifiable sense the sameness of effect between the antecedent-preference and the consequent one, how is this sameness to be explained by means of a possible-world mode of analysis? Is it sufficient simply to have reference only to the numerical merit one attaches to world states, and

to argue that both preferential expressions are the same because they exhibit a numerical identity? The problem is more complex however, due to the fact mentioned earlier, namely: that the subjunctive-conditional always tends to suppress the contextual background, and hence it is not quite clear how any manner of numerical indexing can serve as a means of pointing out any sameness relation between antecedent and consequent, which constitute the expression of a preference-principle. The question then turns squarely on the issue of the explanatory power of the possible-world mode of analysis, in light of the subtlety of preference-principles, when expressed in terms of the subjunctive-indicative.

Virtually the same difficulty is recognized by Stalnaker where he reviews the efforts of those who have endeavored to explain formally the nature of contrafactuals, who also used possible-world modes of analysis to account for the «connections and dependencies among facts: mysterious, unobservable ties that relate observable events of the world.» In this enterprise, Stalnaker reminds the reader of C.I. Lewis' efforts at finding some criterion of sameness by which to relate distinct possible-worlds, while also trying to avoid the circularity of assuming the very connections one is trying to explicate.<sup>(33)</sup> Interestingly, one finds in the case of Rescher's setting forth of preference-principles a similar attempt at capturing within a framework of possible-world states the necessary implication of the act of preferring, i.e. what the '→' sign is interpreted as meaning. Yet he, like Lewis, does not consider what the criteria of sameness are so as to bring off this characterization in credible fashion. Somehow the idea prevalent in Rescher's work is that preference-principles must express transitive and irreflexive relations between the first preference expression (i.e.  $p P q$ ) and the latter preference expression (i.e.  $\neg q P \neg p$ ). Though it is not disputed that a preference-principle of this kind may exhibit transitivity and irreflexivity, to understand and accept this in Rescher's semantic analysis, some explanation of what it is for a possible-world-state to be the same as another world-state must be given first. Simply to refer to an identical numerical sum for world-states hardly captures the complexity of the issue at hand. Moreover, this complexity is deepened by the apparent role of time in the expression of preference-principles. For it is seen that such a principle is saying: if  $p$  is preferred to  $q$  at time  $t$ , then  $\neg q$  is preferred

to  $\neg p$  at time  $t_1$ . The implied sense here is that if the former were preferred, then the latter would be preferred as well. Unless a principle is couched in these subjunctive terms, its instrumentality is seriously undermined. However, how is its time element to be captured within the framework of a possible-world mode of analysis? Time is a vital aspect of the nuance of meaning of the expressed meaning; yet this element seems to be beyond what the possible-world states can characterize. Of equal interest here is the role of intention in preference. Surely in preferring one is choosing between possible alternatives. Thus there is a conscious intending to act which forms part of the meaning of preference, and which again seems remote or beyond access of a possible-world mode of analysis at this time.

The difficulties which are being pointed out here serve to suggest that there is a shortcoming in the method of analysis proposed by Professor Rescher. In essence it is the difficulty of describing in terms of possible-world states the subtleties of language which discourse about preference seems to presuppose. Thus, it is not easy to accept the view proposed by Rescher at the end of his paper, to the effect that the semantic analysis he is proposing is superior to the axiomatic attempts initiated by others in this field. Rescher's point – that the axiomatizers have not achieved a consensus as to what the principles of preference are, and thus their efforts are in hopeless disarray – is perhaps too premature. One could always counter by saying that Rescher's effort does not consider the full range of a preference's reference when he attempts to present its logic, that is, he does not refer to the role of agent, time, object, action, intention, etc. Simply to attach a number to a possible-world state is not to achieve precision in the analysis of this semantic entity. Though the possible-world mode of analysis may provide a future means of expressing linguistic subtleties, at the present time much remains unexplained relative to the way mathematical structuring can tell us anything about the precision of language.

Throughout this analysis of Rescher's work the attempt was made to see preference, or rather to interpret it, in terms of needs within a specifiable environment. In this way it was hoped that the full richness of the notion of preference could be understood, and that perhaps it could be shown that Rescher's work only dealt with a limited aspect of

preference. At this juncture it is perhaps best to recall George Henrik Von Wright's insights concerning his three-part characterization of the range of moral analyses, namely, *Deontology*, *Axiology*, and *Philosophical Anthropology*. The latter he envisions as the study of concepts such as «needs and wants, decision and choice, motive, end and action.»<sup>(34)</sup> Von Wright continues by observing that «moral philosophy is a special study of concepts of all three groups.» Here it is important to observe that Von Wright clearly states that moral philosophy must proceed from a careful study of these three groups, meaning that the clarification of notions in these groups forms a kind of prerequisite for considering moral concepts which reside at a higher level of theoretical abstraction. This is in essence the line of thinking which has been followed in the criticism of Rescher's viewpoint.<sup>(35)</sup>

For needs seem to require to be considered basically together with decisions, choices, motives and actions – prior to any conception of preference that can be contemplated. To use Von Wright's terminology *Philosophical Anthropology* must be set down first, and then the concept of preference can be set forth and understood in terms of the richness of its implications and logic. Von Wright's observations are geared towards the conception of a logic of preference which has applicability in enriching the logic of moral discourse, and thus calls for a conception of preference which is more complete in its scope. Professor Rescher, as it was seen, models his logic of preference on a conceptualization found in economics, and as such its applicability to philosophical investigations may be severely limited.

In retrospect, it must be said that Rescher's attempt is a significant step in its time. It represents a new direction, in that, as he mentions at the very beginning of his paper, his aim is to bridge the gap between the «mathematico-economic» approach at developing a logic of preference, and the «logico-philosophical» one. Yet as such, it *may be* hampered by the very methodology he seeks to apply to the broader area of philosophical analysis. This is to say that whereas the possible-world type of analysis may have applicability in the relatively defined area of economic decision making, its applicability in the wider context of philosophical discussion may not be as smooth as Professor Rescher apparently assumes it to be. This is not to say that his approach has no merit in itself, and that it is therefore impossible to achieve the kind of mathematical rigor Rescher demands as a



criterion for determining preference-principles. Rather the point is that there are unresolved problems in the way of accepting the possible-world mode of analysis, as Professor Stalnaker astutely points out. These difficulties prevent acceptance of his overall thesis that the approach he is pursuing is clearly superior to that which endeavors to axiomatize preference principles in terms which seem intuitively certain.

Dr. Nicholas J. MOUTAFAKIS

#### FOOTNOTES

(<sup>1</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, University of Pittsburgh Press, 1968, p. 38.

(<sup>2</sup>) *ibid.* pp. 45-46.

(<sup>3</sup>) *ibid.* p. 40.

(<sup>4</sup>) Alan R. WHITE, *Modal Thinking*, Cornell University Press, Ithaca, New York, 1975, p. 113.

(<sup>5</sup>) *ibid.* pp. 114-116, and p. 109.

(<sup>6</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, University of Pittsburgh Press, 1968, p. 46.

(<sup>7</sup>) George E. MOORE, *Ethics*, Oxford University Press, New York, Chapter I.

(<sup>8</sup>) *ibid.* pp. 8-9.

(<sup>9</sup>) Alan R. WHITE, *Modal Thinking*, p. 103.

(<sup>10</sup>) ARISTOTLES, *Opera Omnia*, Vol. 1. 1973. Georg Olms Verlag, Hildesheim, New York, ΤΟΠΙΚΩΝ, Book III, Ch. I, p. 197.

PLATO, *The Collected Dialogues of Plato*, Edith Hamilton and Huntington Cairns, eds. Princeton University Press, 1969, *Philebus*, 11. 16<sup>c</sup> - 17<sup>d</sup>.

(<sup>11</sup>) Robert ACKERMANN, «Comments on N. Rescher's 'Semantic Foundations for the Logic of Preference'», in *The Logic of Decision and Action*, Nicholas Rescher, ed. pp. 71-72.

(<sup>12</sup>) *ibid.* p. 71.

(<sup>13</sup>) Alfred MARSHALL, *Principles of Economics*, 9th Edition, New York, The Macmillan Company, 1961, Chapter VI<sup>a</sup>, p. 92.

(<sup>14</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, p. 44.

(<sup>15</sup>) *ibid.* p. 45.

(<sup>16</sup>) *ibid.* p. 45.

(<sup>17</sup>) Ludwig WITTGENSTEIN, *Philosophical Investigations*, G.E.M. Anscombe, translator, The Macmillan Company, 1970, pp. 59<sup>e</sup> - 60<sup>e</sup>.

(<sup>18</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, p. 42.

(<sup>19</sup>) Willard VAN ORMAN QUINE, *Word and Object*, The M.I.T. Press, Cambridge Massachusetts, 1964, p. 26-28.

(<sup>20</sup>) Anthony WILLING, «A Note on Rescher's 'Semantic Foundation for the Logic of Preference,'» *Theory and Decision*, Vol. 7, No. 3, July, 1976, p. 221.

(<sup>21</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, p. 55.

(<sup>22</sup>) Anthony WILLING, «A Note on Rescher's 'Semantic Foundation for the Logic of Preference'», p. 224-225.

(<sup>23</sup>) Anthony WILLING, «A Note on Rescher's 'Semantic Foundation for the Logic of Preference'», pp. 226-229.

(<sup>24</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, p. 54.

(<sup>25</sup>) *ibid.* p. 54.

(<sup>26</sup>) Alan WHITE *Truth*, Anchor Books, New York, 1970.

(<sup>27</sup>) *ibid.*, p. 16.

(<sup>28</sup>) Robert STALNAKER, «Formal Semantics and Philosophical Problems,» Paper presented at the American Philosophical Association Meeting, Dec. 1979, typed manuscript, p. 6.

(<sup>29</sup>) Robert STALNAKER, pp. 6-7.

(<sup>30</sup>) *ibid.*, pp. 7-8.

(<sup>31</sup>) Nicholas RESCHER, *The Logic of Decision and Action*, p. 40-41

(<sup>32</sup>) *ibid.*, p. 42 (One must keep in mind that for Rescher 'P' is a symbol which expresses an ordering relation which means that '→' must also express the manifest ordering of that relation.)

(<sup>33</sup>) Robert STALNAKER, pp. 11-13.

(<sup>34</sup>) Georg Henrik VON WRIGHT, *The Logic of Preference*, Edingburgh University Press, 1963, p. 7.

(<sup>35</sup>) *ibid.*, p. 7.